25 June 2019

2020 EU-Wide Stress Test

Methodological Note

Contents

List of tables

List of boxes

Abbreviations

A-IRB	advanced internal ratings-based (approach)
ABCP	asset-backed commercial paper
ABS	asset-backed security
ALM	asset and liability management
AMA	advanced measurement approach
APR	all price risk
BoY	beginning of the year
bps	basis points
BRRD	Bank Recovery and Resolution Directive 2014/59/EU
CA	comprehensive approach
CCF	credit conversion factor
CCP	central counterparty
CCR	counterparty credit risk
CDO	collateralised debt obligation
CDS	credit default swap
CET1	Common Equity Tier 1
CMBS	commercial mortgage-backed security
COREP	common reporting framework
CQS	credit quality step
CRD	Capital Requirements Directive 2013/36/EU
CRM	credit risk mitigation
CRR	Capital Requirements Regulation (EU) No 575/2013
CSV	calculation support and validation
CVA	credit valuation adjustment
DGS	Deposit Guarantee Scheme
DGSD	Deposit Guarantee Scheme Directive 2014/49/EU
DTA	deferred tax asset
DTC	deferred tax credit
DTL	deferred tax liability
DVA	debt valuation adjustment
EaR	earnings at risk

EBA	European Banking Authority
ECAI	external credit assessment institution
ECB	European Central Bank
ECL	expected credit losses
EIR	effective interest rate
EL	expected loss
EMEA	Europe, the Middle East and Africa
EoY	end of the year
ESRB	European Systemic Risk Board
EU	European Union
F-IRB	Foundation IRB
FINREP	financial reporting framework
FTE	Full-time equivalent
FVO	fair value option (designated at fair value through profit or loss — as defined in IFRS 9)
FVOCI	fair value reported in other comprehensive income (as defined in IFRS 9)
FVPL	fair value through profit or loss (as defined in IFRS 9)
FX	Forex
HFT	held for trading (as defined in IFRS 9)
IFRS	International Financial Reporting Standards
IPS	Institutional Protection Schemes
IRB	internal ratings-based (approach)
IRC	incremental risk charge
L1/L2/L3	level 1/level 2/level 3
LGD	loss given default
LGD_{REG}	regulatory loss given default
LR	loss rates
MDA	Maximum Distributable Amount
NFCI	net fee and commission income
nGAAP	national accounting framework based on EU Bank Accounts Directive (BAD) (86/635/EEC)
NII	net interest income
NPE	non-performing exposure
NPL	non-performing loan

NTI	net trading income
OCI	other comprehensive income
P&L	profit and loss (account)
PD	probability of default
REA	risk exposure amount (risk-weighted exposure amount)
RF	Resolution Fund
RI	relevant indicator
RMBS	residential mortgage-backed security
RW	risk weight
S1/S2/S3	stage 1/stage 2/stage 3
SEC-ERBA	securitisation – external ratings-based approach
SEC-IAA	securitisation – internal assessment approach
SEC-IRBA	securitisation – internal ratings-based approach
SEC-SA	securitisation – standardised approach
SICR	significant increase in credit risk
SMEs	small and medium-sized enterprises
SREP	supervisory review and evaluation process
SRT	significant risk transfer
SSM	Single Supervisory Mechanism
STA	standardised approach
STS	simple, transparent and standardised
SVaR	stressed value at risk
TE	trading exemption
TI&RH	items held with a trading intent and their related hedges
TR	transition rates
TRA	Transparency
VaR	value at risk

1. Introduction

1.1 Background

1. The EBA is required, in cooperation with the ESRB, to initiate and coordinate EU-wide stress tests to assess the resilience of financial institutions to adverse market developments.

2. The objective of the EU-wide stress test is to provide supervisors, banks and other market participants with a common analytical framework to consistently compare and assess the resilience of EU banks and the EU banking system to shocks, and to challenge the capital position of EU banks. The exercise is based on a common methodology, internally consistent and relevant scenarios, and a set of templates that capture starting point data and stress test results to allow a rigorous assessment of the banks in the sample.

3. In particular, it is designed to inform the SREP carried out by competent authorities. The disclosure of granular data on a bank-by-bank level is meant to facilitate market discipline and also serves as a common ground on which competent authorities base their assessments.

1.2 Objectives of this note

4. This document describes the common methodology that defines how banks should calculate the stress impact of the common scenarios and, at the same time, sets constraints for their bottom-up calculations. In addition to setting these requirements, it aims to provide banks with adequate guidance and support for performing the EU-wide stress test. This guidance does not cover the quality assurance process or possible supervisory measures that should be put in place following the outcome of the stress test.

5. The templates used for collecting data from the banks, as well as for publicly disclosing the outcome of the exercise, are an integral part of this document. In addition, this document should be read in conjunction with any additional guidance provided by the EBA on templates, methodology, scenarios and processes.

6. The note also lists components of banks' projections for which banks are required to provide additional information in accompanying documents (e.g. on the methods applied) as input to the quality assurance process. A summary of the minimum information requirements in this respect is provided in the annex.

1.3 Key aspects

1.3.1 Sample of banks

7. The EU-wide stress test exercise is carried out on a sample of banks covering broadly 70% of the banking sector in the euro area, each non-euro area EU Member State and Norway, as expressed in terms of total consolidated assets as of end 2018. Since the EU-wide stress test is run at the highest level of consolidation, lower representativeness is accepted for countries with a wide presence of subsidiaries of non-domestic EU banks.

8. To be included in the sample, banks have to have a minimum of EUR 30 bn in assets.

9. The criteria chosen are designed to keep the focus on a broad coverage of EU banking assets and to capture the largest banks. In particular, the EUR 30 bn materiality threshold is consistent with the criterion used for inclusion in the sample of banks reporting supervisory reporting data to the EBA, as well as with the SSM definition of a significant institution.

10. Competent authorities could, at their discretion, request to include additional institutions in their jurisdiction provided that they have a minimum of EUR 100 bn in assets.

11. Banks subject to mandatory restructuring plans agreed by the European Commission could be included in the sample by competent authorities if they were assessed to be near the completion of the plans. Banks under restructuring are subject to the same methodology and assumptions as other banks in the sample.

12. The list of participating banks is given in Annex I.

1.3.2 Scope of consolidation

13. The exercise is run at the highest level of consolidation. The scope of consolidation is the perimeter of the banking group as defined by the CRR/CRD.

14. Insurance activities are therefore excluded from the balance sheet, the P&L and OCI. Institutions may be permitted to not deduct the holdings of own funds instruments of an insurance company if this has been previously agreed with their competent authority based on Article 49 of the CRR — however, this cannot be applied solely for the purpose of the EU-wide stress test. In case the contributions of insurance activities are included in the balance sheet, P&L or OCI, they need to be projected in line with the baseline and adverse scenario.

15. In case of major events having affected the scope of consolidation and/or the bank's structure before the launch of the exercise, banks may be allowed to use pro-forma data to reflect in the caps and floors included in the methodological note these major events. This will be the case only for those P&L items affected by caps or floors based on historical information (i.e. end-of-year 2019 or the years before). For such constraints, banks may be allowed to use pro-forma data if the event is in line with the scope of this section.

16. Pro-forma data may be introduced for the year in which the event happened and for any preceding year, depending on the amount of years of data needed for the calculation of the constraint. The adjustment will only be allowed for single events resulting in an impact of more than 12.5% in total assets.

17. Banks are permitted to use pro-forma data only for a selected list of events that are considered affecting the banks' scope of consolidation and/or banks' structure so that the financial statements are no longer showing a representative view of the bank. The list is included below:

- Mergers;
- Acquisitions;
- Spin-off of relevant business units;
- Divestments.

18. Competent authorities will present to the EBA a list of the relevant cases above the materiality threshold before the first submission date. Only the cases in line with the scope of this section will be considered, so that the bank would be allowed to adjust the historical data for calculation of the specific constraints in its submissions.

19. If the event is recognised, the bank may be asked to submit a set of relevant information to the competent authority for the calculation of the adjustment.

20. No adjustment to historical constraints will be permitted for the cases not proposed or not recognised.

1.3.3 Macroeconomic scenarios and risk type specific shocks

21. The exercise assesses the resilience of EU banks under a common macroeconomic baseline scenario and a common adverse scenario. The scenarios cover the period of 2020-2022.

22. The application of the market risk methodology is based on a common set of stressed market parameters, calibrated from the macroeconomic scenario.

23. The credit risk methodology includes a prescribed increase in REA for securitisation exposures, as well as prescribed shocks to credit risk losses for sovereign exposures.

1.3.4 Time horizon and reference date

24. The exercise is carried out on the basis of year-end 2019 figures, and the scenarios will be applied over a period of 3 years from end 2020 to end 2022.

1.3.5 Definition of capital and regulatory regime

25. The impact of the EU-wide stress test will be reported in terms of CET1 capital. In addition, the Tier 1 capital ratio and total capital ratio, as well as a leverage ratio, will be reported for every year of the exercise. Capital ratios are reported on a transitional basis and on a fully loaded basis.

26. The definitions of CET1, Tier 1 and total capital that are valid during every year of the time horizon of the stress test should be applied (i.e. the CRR/CRD definition of capital with transitional arrangements as per December 2019, December 2020, December 2021 and December 2022). Capital components subject to transitional arrangements are reported separately and publicly disclosed. The regulatory framework regarding capital requirements should also be applied as of these dates, including any relevant transitional arrangements. National discretions defined in the CRR/CRD apply unless specified otherwise.

27. The applicable regulatory framework includes decisions by competent authorities regarding the application of the CRR/CRD that were taken before 1 January 2020. These should be applied as of their entry into force.

28. Any changes to the existing regulatory framework shall be applied only if, at the launch of the exercise, they are known to be legally binding during the stress test time horizon and if the requirements (including their implementation schedule) have been endorsed and publicly announced by the relevant authority. Banks are not required to anticipate other changes to the regulatory framework.

29. The use of new internal models and modifications of existing internal models is mandatory as long as these are approved by the competent authority by 31 December 2019. In case banks have implemented by 31 December 2019 a new definition of default to incorporate the Regulatory Technical Standards on materiality threshold of credit obligation past due under Article 178 of the CRR[1] and the Guidelines on the application of the definition of default under Article 178 of the CRR[2], the new definition should be used in the stress test[3] and an impact assessment of the new definition when compared to the previously implemented shall be

[1] Commission Delegated Regulation (EU) 2018/171; EBA/RTS/2016/06.

[2] EBA/GL/2016/07.

[3] It should be noted that banks might implement the new definition of default for exposure classification independent of its use in approved internal models. If implemented for exposure classification and used in the supervisory reporting for the cut-off date, banks are expected to use the new definition of default in the estimation of credit risk impairment even if they have still not obtained supervisory approval for the internal models used to calculate capital requirements.

included in the explanatory note (i.e. change of each parameter due to the implementation of the new definition upon request by the competent authority).

30. Neither the roll-out of new internal models nor modifications of existing internal models after 31 December 2019, or transitions between different regulatory treatments during the stress test time horizon, are to be considered for the calculation of the REA.

1.3.6 Hurdle rates

31. No hurdle rates or capital thresholds are defined for the purpose of the exercise. However, competent authorities will apply stress test results as an input to the SREP in line with the EBA Guidelines on common procedures and methodologies for the SREP and supervisory stress testing.[4]

1.3.7 Accounting and tax regime

32. All balance sheet and P&L projections over the years 2020-2022 shall be carried out on the basis of the applicable accounting regime valid on 31 December 2019.

33. Banks are not required to anticipate other changes to the accounting and tax regimes that come into effect after the launch of the exercise. The regimes that are valid as at the launch of the exercise should be applied during every year of the time horizon of the stress test. However, for the purpose of the EU-wide stress test, banks are asked to apply a common simplified tax rate of 30%. Historical values until end-2019 should be reported based on the regimes that were valid for the corresponding reporting dates, unless banks were required to restate their public accounts.

1.3.8 Static balance sheet assumption

34. The EU-wide stress test is conducted on the assumption of a static balance sheet as in previous exercises. This assumption applies on a solo, sub-consolidated and consolidated basis for both the baseline and the adverse scenario. Assets and liabilities that mature or amortise within the time horizon of the exercise should be replaced with similar financial instruments in terms of type, currency, credit quality at date of maturity, and original maturity as at the start of the exercise. No workout or cure of S3 assets is assumed in the exercise. In particular, no capital measures taken after the reference date 31 December 2019 are to be assumed.

35. Furthermore, in the exercise, it is assumed that banks maintain the same business mix and model (in terms of geographical range, product strategies and operations) throughout the time

[4] EBA/GL/2014/13.

horizon. With respect to the P&L revenues and costs, assumptions made by banks should be in line with the constraints of zero growth and a stable business mix.

36. The static balance sheet assumption should also be assumed for assets and liabilities denominated in currencies other than the domestic (reporting) currency — i.e. assets and liabilities remain fixed in the reporting currency. If the euro is not the reporting currency, all stock projections should be translated by applying the exchange rate as of 31 December 2019. In particular, FX effects should not have an impact on the projection of REA. Constraints regarding the impact on P&L items are defined in section 6.

37. There are no exemptions from the static balance sheet assumption. In particular, it also applies to those institutions subject to mandatory restructuring plans formally agreed with the European Commission that are included in the sample at the request of the competent authority (see paragraph 11). Similarly, any divestments, capital measures or other transactions that were not completed before 31 December 2019, even if they were agreed upon before this date, should not be taken into account in the projections.

38. Selected completed capital measures, i.e. the raising, repayment or conversion of capital instruments as well as significant losses realised between 1 January and XX XX 2020 shall be reported 'below the line' on a separate template (CSV_CAPMEAS) and will be publicly disclosed. Capital measures finalised during this time may be included in this template at any of the three submission dates of the EBA stress test. If the information provided by the bank has changed after one of the first submissions, data in that template should be amended in the next submission as long as the issuance was fully completed by the XX XX 2020. However, these events will not have an impact on the stress test result in terms of capital ratios for the relevant banks.

1.3.9 Approach

39. The approach of the exercise is a constrained bottom-up stress test — i.e. banks are required to project the impact of the defined scenarios but are subject to strict constraints and to a thorough review by competent authorities.

1.3.10 Risk coverage

40. The EU-wide stress test is primarily focused on the assessment of the impact of risk drivers on the solvency of banks. Banks are required to stress the following common set of risks:

- Credit risk, including securitisations;
- Market risk, CCR and CVA;
- Operational risk, including conduct risk.

41. In addition to the risks listed above, banks are required to project the effect of the scenarios on NII and to stress P&L and capital items not covered by other risk types.

42. The risks arising from sovereign exposures are covered in credit risk and in market risk, depending on their accounting treatment.

1.3.11 Process

43. The process for running the EU-wide stress test involves close cooperation between the EBA, the national competent authorities and the ECB, as well as the ESRB:

- The adverse macroeconomic scenario and any risk type specific shocks linked to the scenario are developed by the ESRB and the ECB in close cooperation with competent authorities, the EBA and national central banks. In particular, the ECB supplies the macroeconomic baseline scenario.

- The EBA coordinates the exercise, defines the common methodology as well as the minimum quality assurance guidance for competent authorities, and hosts a central question and answer facility. The EBA acts as a data hub for the final dissemination of the common exercise. The EBA also provides common descriptive statistics to competent authorities for the purpose of consistency checks based on banks' submissions.

- Competent authorities are responsible for conveying to banks the instructions on how to complete the exercise and for receiving information directly from banks. Competent authorities are also responsible for the quality assurance process — e.g. for validating banks' data and stress test results based on bottom-up calculations, as well as for reviewing the models applied by banks for this purpose. Competent authorities, under their responsibilities, may also run the EU-wide stress test on samples beyond the one used for the EU-wide stress test, and may also carry out additional national stress tests. They are also responsible for the supervisory reaction function and for the incorporation of the findings from the EU-wide exercise into the SREP.

44. The results of the EU-wide stress test on a bank-by-bank basis and in the form of aggregated analyses and reports are published by the EBA using common disclosure templates.

1.3.12 Overview of the methodology by risk type

Table 1: Overview of the methodology by risk type

Section	Scope	Impact on P&L and OCI	Impact on REA	Key constraints
Credit risk	P&L: amortised cost; sovereign positions included; CCR and fair value positions excluded REA: CRR scope for credit risk including securitisations; CCR and fair value positions included	Banks' internal models based on stressed point-in-time PD and LGD parameters and grade migration reflecting the losses of initially performing exposures entering into S3 as well as the losses linked to initially S1 exposures that enter into S2 and become subject to lifetime ECL Additional impact — for initially S3 defaulted assets based on worsening LGD Additional impact — for initially S2 assets based on worsening LGD and lifetime PD Prescribed loss parameters for sovereign exposures	CRR requirements based on stressed PD and LGD parameters Prescribed stressed risk weights applied to securitisation positions	No release of accumulated provisions for S3 exposures permitted The coverage ratio for S1 assets cannot decrease No cures from S3 assets, i.e. no transitions from S3 to S2 or S1 REA floored at 2019 value (separately by regulatory approach) REA for securitisations floored at restated 2019 value separately for each securitisation approach

Section	Scope	Impact on P&L and OCI	Impact on REA	Key constraints
Market risk, CCR and CVA	P&L: FVPL, FVOCI, FVO, hedge-accounting portfolios; sovereign positions included; CCR exposures, positions subject to CVA accounting REA: CRR scope for market risk and CVA	Banks' own projections for client revenues for their positions held with a trading intent CA banks: full revaluation to all asset categories with full or partial fair value measurement under IFRS 9 TE banks: revaluation of all assets and liabilities with a full or partial fair value behaviour except items held with a trading intent and their related hedges Special treatment for L2 and L3 instruments to take into account modelling uncertainty Default of the two most vulnerable of the 10 largest stressed CCR exposures net of stressed collateral.	Constant for STA approaches VaR constant in the baseline and replaced by SVaR in the adverse Stressed IRC and CVA capital requirements APR constant in the baseline and scaled in the adverse	No impact for the baseline scenario Prescribed simplified approach for TE banks: 0.20% of the sum of the FV of assets and liabilities (net of economic hedges) Simplified approach serves as floor for the impact of the comprehensive approach NTI baseline values prescribed as the minimum of the averages across the last 2, 3, and 5 years (the 2-year average floored at 0) CA banks' own projections for client revenues capped at the larger of 75% of client revenues and 75% of baseline NTI REA for IRC and CVA floored at the increase for IRB REA

Section	Scope	Impact on P&L and OCI	Impact on REA	Key constraints
NII	P&L: all interest-earning or interest-paying positions across all accounting categories	Banks' NII projections based on the repricing/replacement of their portfolio Separate projections for margin and reference rates	N/A	NII cannot increase under the adverse scenario Under the adverse scenario, assumptions cannot lead (at group level) to an increase in the bank's NII compared with the 2019 value before considering the impact of the increase of provisions for non-performing exposures on interest income Under the adverse scenario, banks are required to project income on non-performing exposures net of provisions, subject to a cap on the applicable EIR Under the baseline scenario, banks are required at a minimum to reflect a proportion of the changes in the sovereign bond spread of the country of exposure in the margin component of the EIR of their repriced liabilities Under the adverse scenario, the margin paid on liabilities cannot increase less than the highest amount between a proportion of the increase in the sovereign spread and that of an idiosyncratic component The increase of the margin on repriced assets is capped at a proportion of the increase in sovereign spreads

Section	Scope	Impact on P&L and OCI	Impact on REA	Key constraints
Conduct risk and other operational risks	P&L: impact of potential future losses arising from conduct risk and other operational risks REA: CRR scope for operational risk	Banks' own estimations Specific approach based on qualitative guidance and additional reporting requirements for material conduct events Losses calculated as a function of gross earnings (the relevant indicator) as a fall-back approach in case banks are unable to provide historical data	Banks' own projections for the AMA, basic approach and standard approach	Losses from new conduct risk events are subject to a floor, computed in the baseline scenario as the average of the historical conduct risk losses reported by the bank during the 2015-2019 period for non-material events only. A more conservative floor in the adverse scenario is achieved by applying a stress multiplier to the average Other operational risk losses are subject to a floor computed in the baseline scenario as the average of the historical losses during the 2015-2019 period times a multiplier. A more conservative floor in the adverse scenario is achieved by applying a stress multiplier to the average Capital requirements for operational risk cannot fall below the 2019 value

Section	Scope	Impact on P&L and OCI	Impact on REA	Key constraints
Non-interest income, expenses and capital	P&L and capital items not in scope of risk types or NII	Banks' own estimates, but subject to constraints for specific P&L items Market risk methodology and macroeconomic shocks applied for non-financial assets and defined benefit pension plans	N/A	Dividend income, NFCI and the share of the profit of investments in subsidiaries, joint ventures and associates outside the scope of consolidation cannot exceed the 2019 level in the baseline, while a minimum reduction of net income from each item compared with 2019 is prescribed for the cumulative projections in the adverse scenario Other remaining administrative expenses, remaining other operating expenses, depreciation and other provisions or reversals of provisions cannot fall below the 2019 value, unless an adjustment for one-offs is permitted. One-off adjustments are subject to a threshold of 5bps of 2019 REA Common tax rate of 30% applied No P&L contribution for realised gains or losses, derecognition, goodwill, FX effects Other operating income capped at the 2019 value. Operating leasing income is subject to a minimum reduction of 10% compared with 2019 in the adverse scenario. For dividends paid: pay-out ratio based on publicly declared dividend policies. If no policy is available, the pay-out ratio in the baseline is the maximum of 30% and the median of the pay-out ratios in profitable years 2015-2019; in the adverse, the same pay-out ratio as in the baseline scenario shall be assumed (0 accepted in years in which a bank is making losses)

2. Credit risk

2.1 Overview

45. Banks are required to translate the credit risk impact of the macroeconomic scenarios on both the capital available — i.e. via impairments and thus the P&L — and the REA for positions exposed to risks stemming from the default of counterparties. Banks are required to make use of their models considering a number of conservative constraints.

46. The estimation of credit impairments requires the use of statistical methods and includes the following main steps: (i) estimating starting values of the risk parameters, (ii) estimating the impact of the scenarios on the risk parameters, and (iii) computing changes in the stock of provisions that will drive the P&L impact.

47. Banks are required to forecast credit impairments resulting from the materialisation of two separate scenarios (baseline and adverse) on the basis of IFRS 9 as prescribed in the methodology laid down in this section unless they are subject to nGAAP.[5] Considering the wide range of practices used by banks for the implementation of IFRS 9, Box 1 below lists a number of key assumptions to be used in the context of the stress test exercise.

Box 1: Summary of key assumptions for projection under IFRS 9

- The projection of provisions is based on a single scenario in each macroeconomic scenario (baseline and adverse) (paragraph 130).
- Perfect foresight on macroeconomic projections is assumed, i.e. banks should assume the subsequent path of a variable to be known in line with the scenario for the remaining lifetime and possible workout period of the exposure (paragraph 125).

[5] In this case, the requirements stated under Annex VI shall be adhered to.

- For S1 and S2 exposures, and for the purpose of estimating the respective ECL after the end of the scenario horizon, the adverse scenario credit risk parameters (i.e. stage transition probabilities and the corresponding loss rates across stages) are assumed to revert to the 2022 baseline credit risk parameters. A linear 6-year reversion is assumed. For S1 and S2 exposures, the baseline credit risk parameters are assumed to stay flat after the end of the scenario horizon (paragraph 126).
- For S3 exposures, both the adverse and the baseline credit risk parameters assume a flat profile for the macroeconomic variables after the end of the scenario horizon (paragraph 125).
- A common definition of S3 assets as non-performing exposures is applied for the starting point and for the projections (paragraph 57).

48. For the estimation of REA, banks are required to adhere to regulatory requirements based on stressed regulatory risk parameters (section 2.5).

49. For securitisation exposures, banks are required to project specific credit risk adjustments based on the risk parameters of the underlying pool. For the estimation of REA, a fixed risk weight increase will be applied to the different credit quality steps (section 2.7).

50. Banks' projections are subject to the constraints summarised in Box 2.

Box 2: Summary of the constraints on banks' projections of credit risk

- No cures from S3 exposures are permitted (paragraph 91), i.e. the only acceptable transitions are from stage 1 to stage 2, stage 2 to stage 1, stage 1 to stage 3 or stage 2 to stage 3.
- No release of accumulated provisions for any given S3 exposure is permitted over the scenario horizon (paragraph 143).
- The coverage ratio for S1 exposures[6] (i.e. ratio of provisions to exposure) cannot decrease over the time horizon of the exercise (paragraph 138).

[6] For banks not subject to IFRS 9, this applies to all performing exposures.

- The end-2019 level of REA serves as a floor for the total REA for non-defaulted and defaulted exposures in the baseline and adverse scenarios. This floor is applied separately to overall aggregate IRB and STA portfolios (paragraph 154).
- For securitisation exposures, the restated end-2019 level of REA serves as a floor for the total risk exposures separately for SEC-IRBA, SEC-SA, SEC-ERBA and SEC-IAA (paragraph 186).

2.2 Scope

51. For the estimation of the P&L impact, the scope of this section covers all counterparties (e.g. sovereigns, institutions, financial and non-financial firms, and households) and all positions (including on-balance and off-balance positions) exposed to risks stemming from the default of a counterparty, except for exposures subject to CCR and fair value positions (FVOCI and FVPL) which are subject to the market risk approach for the estimation of the P&L effect (or through capital, via OCI, for FVOCI) as stated in section 3. For the avoidance of doubt, FVOCI and FVPL positions are excluded from the estimation of credit risk losses.

52. Hedge-accounting hedges related to positions within the scope of this section can be considered only to the extent that they are already reflected in CRM or substitution effects as of the reference date. Additionally, they should also be treated as explained in section 3.1.

53. Conversely, the estimation of REA follows the CRR/CRD definition of credit risk. Therefore, exposures subject to CCR and fair value positions (FVOCI and FVPL) are to be included.

54. Specific requirements for securitisation positions are separately covered in section 2.7.

55. The methodology described in this section also applies to the capital charge for IRC (see section 3.7).

2.3 High-level assumptions and definitions

56. The credit risk methodology for the 2020 exercise takes the following approach at a high level:

- The exposure transitions between the three impairment stages defined in IFRS 9 need to be projected for each year.
- For exposures in S2 and S3, banks are expected to provide stressed lifetime expected loss rates.

- The ECL calculation for S1 and S2 is performed based on the impairment stage where the exposures are at the end of each year, incorporating forward-looking risk parameters (i.e. parameters estimated for the next year).

- The ECL calculation for S3 exposures is performed incorporating the same year's risk parameters.

- A perfect foresight approach is adopted for the calculation of LGD/LR and lifetime ECL, whereby the full macroeconomic scenarios should be treated as known when calculating expected credit losses.

2.3.1 Definitions

57. Banks are required to provide starting point values as of 31 December 2019 and projected figures, split between S1, S2 and S3 exposures, as per the IFRS 9 regulation:

- **S1** exposures are, as stated in IFRS 9 5.5.5, those whose credit risk has not increased significantly since initial recognition at the reporting date and for which an entity shall measure the loss allowance at an amount equal to 12-month expected credit losses.

- **S2** exposures are those whose credit risk has increased significantly since initial recognition at the reporting date and for which the entity shall measure loss allowance at an amount equal to the lifetime expected credit losses while the exposure does not meet the definition of S3. Banks are required to project significant increase in credit risk in line with their accounting approaches, i.e. apply the S2 classification criteria used in their IFRS 9 models. However, for the purpose of the stress test projections banks are also required to assume, without prejudice to other triggers, that S1 exposures which experience a threefold increase of lifetime PD (as defined under IFRS 9) compared with the corresponding value at initial recognition undergo an SICR and hence become S2. If lifetime PDs for an exposure are unavailable, banks may apply a 1-year PD as a proxy, e.g. a threefold increase of TR^{1-3} (as defined in paragraph 85) compared with the corresponding value of forward-looking[7] TR^{1-3} at initial recognition could instead be used as a backstop for S2. For the purpose of the stress test, an instrument may be considered to be of low credit risk in a particular year *t* of the stress test if the instrument's $TR^{1-3}(t)$ for that year is less than 0.30%. Instruments which are of low credit risk may be exempted from the classification as S2. For the avoidance of doubt, banks should in general use their own accounting practices where these lead to

[7] Forward-looking in this case is meant to account for expected movements of TR^{1-3} during the lifetime of an exposure.

more conservative results for SICR in the stress test. Banks are required to provide in the explanatory note a description of their internally applied S2 definition and of how the low credit risk exemption was implemented in the stress test. In this note, banks are also required to comment on how the definitions applied for the stress test differ from internally used criteria for the SICR and in particular the low credit risk exemption.

- **S3** exposures are those for which existing evidence indicates a 'detrimental impact on the estimated future cash flows' as per the definition of a credit-impaired financial asset in Appendix A of the IFRS 9 regulation. For the avoidance of doubt, all non-performing exposures as per EBA Implementing Technical Standard,[8] defaulted exposures as per Article 178 of the CRR, or impaired exposures as per the applicable accounting standard shall be classified as S3 on 1 January 2020 and for the stress test horizon. In the explanatory note, banks are required to comment on how this definition differs from their internally applied criteria for S3 exposure.

- For the remainder of the document, performing exposure refers to the sum of S1 and S2 exposures, and non-performing exposure refers to S3. For the avoidance of doubt, non-performing exposures should not be reported as S1 or S2 on 1 January 2020 and for the projected periods.

58. **Performing exposure (Exp)** is the performing exposure after substitution effects and after CCF, calculated for exposures in the scope of the credit risk stress test impairment framework according to paragraph 51 and to which the stage 1 and 2 definitions of paragraph 57 are applicable.[9] As a reference for the exposure definition, a link to COREP is provided below. However, some differences to the COREP figures are expected due to: (i) different scope (paragraph 51); and (ii) exposure amount should be aligned with the calculation of provisions (e.g. accounting CCF according to IFRS 9). If materially different from the COREP figures, banks are required to explain the differences in the explanatory note.

    - For IRB portfolios, banks should consider, as a reference, the definition of column 110 ('exposure value') as per COREP table CR IRB 1, and remove non-performing exposures.

    - For STA portfolios, banks should consider, as a reference, a post-CCF equivalent of column 110 ('net exposure after CRM substitution effects pre-conversion factors') as

[8] https://www.eba.europa.eu/documents/10180/449824/EBA-ITS-2013-03+Final+draft+ITS+on+Forbearance+and+Non-performing+exposures.pdf

[9] Non-performing exposures shall be reported separately.

per COREP table CR SA. Since provisions have already been deducted (column 30 in CR SA), they need to be added to the exposure.

59. Exp is further split into **of which: S1 (Exp S1)** and **of which: S2 (Exp S2)** based on classification — as either S1 or S2 — of the exposure as defined in paragraph 57. Exp should equal the sum of S1 (Exp S1) and S2 (Exp S2).

60. **S1-S2 flow (S1-S2 Flow)** measures the amount of exposures that transition from S1 to S2 during a given year.

61. **S3 flow (SX-S3 Flow)**[10] measures the amount of exposures that entered into S3 during a given year out of those that were performing (S1 or S2) at the beginning of the year. It includes all S3 events that occur during a year. Exposures that enter into S3 several times in 2019 are to be reported once. The projected values will be computed based on the methodology stated in this section.

62. S3 flow (SX-S3 Flow) is further split into **S3 flow S1 to S3 (S1-S3 Flow)** and **S3 flow S2 to S3 (S2-S3 Flow)** based on classification — as either S1 or S2 — of the exposure at the beginning of the year. S3 flow (SX-S3 Flow) equals the sum of S3 flow from S1 (S1-S3 Flow) and S3 flow from S2 (S2-S3 Flow).

63. **S2-S1 flow (S2-S1 flow)** measures the amount of exposures that are S1 at the end of a given year out of those that were S2 at the beginning of the year.

64. **Non-performing exposure (Exp S3)** refers to S3 exposure after substitution effects and after accounting CCF. Exp S3 definition is analogous to paragraph 58 and has to be applied to exposures in the scope of the credit risk stress test impairment framework according to paragraph 51 and the stage 3 definition according to paragraph 57. S3 exposures shall be allocated to each asset class in line with Article 112 of the CRR.[11]

65. Exp S3 is further split into:

- Existing S3 exposures at the beginning of the exercise (**Exp Old S3**): this is the initial stock of S3 exposures at the beginning of the exercise, i.e. as of 1 January 2020.

[10] The memorandum item PD PiT (%) in the CSV_CR_SCEN template shows the S3 flows as a percentage of the beginning-of-year performing exposure stock.

[11] "Exposure in default" under the STA shall be reported according to the nature of the counterparty.

- Cumulative New S3 exposures since the beginning of the stress test horizon (**Cumul New Exp S3**): this is the sum of SX-S3 flows since the beginning of the stress test horizon, i.e. 1 January 2020).

66. For example, as cures from S3 are not to be recognised for exposures' projections, the Cumulative New S3 exposures (**Cumul New Exp S3**) at the end of 2021 should be the sum of the SX-S3 flow during 2020 and the SX-S3 flow during 2021. The total stock of S3 exposures at the end of 2021 is therefore the sum of the existing S3 exposures at the beginning of the exercise (**Exp Old S3**) and the Cumulative New S3 exposures (**Cumul New Exp S3**) at the end of 2021.

67. **Funded collateral (capped)** covers all funded collateral, including real estate property, that is available to cover the performing exposure (Exp) or non-performing exposure (Exp S3) as defined above. Only CRR/CRD eligible collateral and only the bank's share of collateral (if collateral is assigned to several debtors) is to be reported. No regulatory haircuts should be applied, but the value of collateral should be adjusted by haircuts applied for accounting purposes (if any). Collateral has to be capped at the exposure level, which means that, at the exposure level, collateral cannot be higher than the corresponding exposure. All CRR/CRD eligible collaterals are to be reported regardless of the credit risk mitigation approach or regulatory own funds requirement calculation approach. Banks are required to provide in the explanatory note detailed information on how the collateral values have been determined and how often appraisals are refreshed. Provisions on IFRS 9 exposures should be calculated based on internal definitions of the collateral available while REA should be calculated taking into account the regulatory treatment of collateral.

68. Banks are required to report the **LTV ratio** for selected real estate related exposure classes (see template CSV_CR_SCEN) as the exposure-weighted average of the LTV ratio at loan level. The LTV ratio at loan level is given by exposure divided by real estate collateral value. Exposure follows the definitions given in paragraphs 58 and 64. Real estate collateral values follow the definition in paragraph 69.

69. Real estate collateral (available) covers all funded real estate collateral that is available to cover S1 exposures (Exp S1), S2 exposures (Exp S2) or non-performing exposures (Exp S3) as defined above. Only CRR/CRD eligible collateral and only the bank's share of collateral (if collateral is assigned to several debtors) is to be reported. No regulatory haircuts should be applied, but the collateral value should reflect the evolution of real estate prices in the respective macroeconomic scenario.

70. The historical values of the **Stock of provisions (Prov Stock)** are the stock figures as of the end of the year in accordance with the accounting framework to which the reporting entity is subject. This value should be in line with the closing balances of allowances from FINREP template 12 column 100 ('Movements in allowances and provisions for credit losses'). It is split

by **Of which: non-performing assets (Prov Stock S3)** and **Of which: performing assets (Prov Stock Perf)**, which is also further split into **Of which: S1 (Prov Stock S1)** and **Of which: S2 (Prov Stock S2)**.

71. **Prov Stock S3** is the sum of **Prov SX-S3** and **Prov old S3** in each historical period and the sum of **Cumul Prov SX-S3** and **Prov old S3** in the projection horizon**.**

72. **Provisions new S3 (Prov SX-S3)** are the accounting stock figures as of the end of the respective year, relative to the S3 exposures that were S1 or S2 in the beginning of the respective year. Provisions new S3 (**Prov SX-S3**) are the sum of Provisions S1 to S3 (**Prov S1-S3**) and Provision S2 to S3 (**Prov S2-S3**).

73. Cumulative provisions new S3 (**Prov Cumul SX-S3**) are the sum of Provisions new S3 (Prov SX-S3) since the beginning of the exercise (i.e. since 1 January 2020).

74. **Provisions S1 to S1** (**Prov S1-S1**) reflects the S1 provisions for assets that begin and end the year in S1. It reflects, for example, changes in ECL due to macroeconomic scenario changes or rating migrations. Like for the other provisions of performing exposures that stay within the same stage during the year *t* (Prov S2-S2), provisions are calculated based on an underlying exposure that is already adjusted for exposures that transition to other stages.

75. **Provisions S1 to S2 (Prov S1-S2)** reflects the S2 provisions on exposures that begin the year as S1 assets and migrate to S2 — thus becoming subject to a lifetime ECL with perfect foresight.

76. **Provisions S1 to S3 (Prov S1-S3)** reflects the S3 provisions on exposures that begin the year as S1 assets and migrate to S3 — thus becoming subject to a lifetime ECL with perfect foresight.

77. **Cumulative provisions S1 to S3 (Prov Cumul S1-S3)** reflects the sum of Provisions S1 to S3 (Prov S1-S3) since the beginning of the exercise.

78. **Provisions S2 to S1 (Prov S2-S1)** reflects the S1 provisions on exposures that begin the year as S2 and migrate to S1.

79. **Provisions S2 to S3 (Prov S2-S3)** reflects the S3 provisions on exposures that begin the year as S2 and migrate to S3.

80. **Cumulative provisions S2 to S3 (Prov Cumul S2-S3)** reflects the sum of Provisions S2 to S3 (Prov S2-S3) since the beginning of the exercise.

81. **Provisions S2 to S2 (Prov S2-S2)** reflects the S2 provisions on exposures that begin and end the year in S2 (regardless of the stage they end up eventually during their lifetime). As such, provisions for exposures transitioning to another stage within the year *t* are reflected in other "Prov" items and the underlying exposure for the calculation of the Prov S2-S2 is therefore

adjusted for those exposures. In line with paragraph 125, banks are required to reflect the full impact of the scenario (with perfect foresight) on the calculation of lifetime ECL on S2 exposures. ECL on S2 assets may change afterwards only if, during the stress test horizon, exposures mature, amortise or migrate to S3 or S1.

82. The projected **Provisions old S3 (Prov old S3)** reflects the provisions on S3 assets already existing at the beginning of the stress test exercise (i.e. related to Exp Old S3). The historical values of **Prov old S3** correspond to the accounting stock figures as of the end of the respective year, relative to the S3 exposures that were already S3 in the beginning of the respective year.

83. **Cure rates** are not observed values but forecast values affecting LGD estimation in 2019 and in the projected period across both scenarios. While the impact of cures for reducing projected S3 exposures are not considered for the purpose of this exercise, assumed cure rates after the stress test horizon are an important component of the LGD estimations. In doing so, banks are required to model cure rates when estimating PDs and LGDs, and report them in the template CSV_CR_SCEN according to the definitions below in a manner that is consistent with the prescribed definitions of each of the stages and LGD. This applies for projections, as well as actual and historical data. If a bank does not explicitly calculate cure rates because of its methodological approach, they do not need to be reported in the template but the bank is required to outline its calculations of each LGD in more detail in the explanatory note. Cure Rate (*t*) is the component of the LGD(*t*) calculation that corresponds to the assumptions made for the cumulative proportion of existing or projected S3 exposures that cure (through repayments) with zero loss in all years following year *t*. This depends on the characteristics of the loans at time *t*.

84. Cure Rate$^{i\text{-}3}$(*t*) is the average cure rate observed during a determined period of time (workout period), for Si exposures reaching S3 within year *t*. The cure rate should be calculated over a determined period of time (workout period) during which the S3 exposures may return to performing status, which may vary per asset class. For example, Cure Rate$^{1\text{-}3}$(*t*) refers to the cure rate of exposures that were in S1 at the beginning of the year *t* and reached S3 at the end of the year *t*.

85. **Point-in-time risk parameters** are the forward-looking projections of the 12-month transitions between each of the three stages and the associated loss rates. Transition rates (TR) denote the probability of moving between the stages (S1, S2 or S3) within 12 months. LGD refers to projected losses associated with possible S3 events. For the lifetime horizon (denoted by a subscript LT), loss rates (LR) have to be reported and they refer to the expected credit losses due to stage 3 events expected over the lifetime of the exposures. For example, the total exposure in S2 multiplied by $LR_{LT}^{2\text{-}2}$ should give the lifetime expected credit losses required. Superscripts indicate the applicable transition in that year (e.g. 1-3 indicates that the parameter refers to S1 to S3 transitions in year *t*):

- **TR^{1-3}** refers to the probability of an exposure starting the year in S1 and transitioning at some point in time during the year to S3. The loss rate associated with the exposure that transitions from S1 to S3 is **LGD^{1-3}**.

- **TR^{2-3}** refers to the probability of an exposure starting the year in S2 and transitioning at some point in time during the year to S3. The loss rate associated with the exposure that transitions from S2 to S3 is **LGD^{2-3}**.

- **TR^{1-2}** refers to the probability of an exposure starting the year in S1 and ending in S2.

- **TR^{2-1}** refers to the probability of an exposure starting the year in S2 and ending in S1.

- **$LRLT^{1-2}$** refers to the lifetime expected loss rate of those exposures that begin the year *t* in S1 and end it in S2.

- **$LRLT^{2-2}$** refers to the lifetime expected loss rate for all exposures that begin and end the year in S2 regardless of the stage they end up eventually during their lifetime.

- **$LRLT^{3-3}$** refers to the lifetime expected loss associated with all exposures that are in S3 at the beginning of the exercise ("old S3"). For the avoidance of doubt, in each year *t*, this loss rate is applied to the same amount of S3 exposure, i.e. to the stock of S3 in the beginning of the exercise (1 January 2020). Note that S3 exposures cannot transition to another stage because of the 'no cure' constraint.

86.The following requirements apply to TR, LGD and LR used for the projection of impairments:

- Since they are reported at a portfolio level, each TR is an exposure-weighted average[12], and each LGD and LR is a TR * exposure-weighted average. The aggregation of the LGD for impairment purposes in the template CSV_CR_SCEN will therefore be different from the aggregation of LGDreg in the template CSV_CR_REA as the latter follows the COREP instructions (i.e. weighted only by the exposure at default).

- All TR, LGD and LR used for forecasting impairments are point in time (pit) parameters which capture current trends in the business cycle. In contrast to the regulatory PD and LGD parameters, they are required for all portfolios, including STA and F-IRB. They may include portfolio improvement effects where banks calculate risk parameters at a rating class level. Banks for which projected credit risk parameters are affected by portfolio

[12] Exposure defined in paragraph 58.

improvement effects may be asked by the competent authority to report the exposures and default probability per rating class.

- LGDs and LRs should take collateral into account. The development of these parameters is affected by grade migrations and such an effect are to be addressed in the estimation.

- Although TR, LGD and LR are reported together with non-performing and expected credit loss amounts within the projected year, they refer to exposures as of the beginning of the year.

87. **Average maturity** refers to the performing exposure-weighted residual maturity of the exposures included in the asset class reported. This field refers to the remaining contractual period until the expiration date of the exposure, should be the same maturity used in the IFRS 9 projections and should not be confused with the period of time until the loan is repriced. The calculation of this field should not consider assets that do not have a defined maturity. If a specific asset class is entirely composed of assets without defined maturity, the "average maturity" field should not be filled in for those asset classes for which no credit risk benchmarks are available [13] and should be calculated on a best effort basis for the remaining. See section 2.3.2 for further detail on the treatment of residual maturity under a static balance sheet assumption.

88. **Exposure value** refers to exposure serving as the basis for computation of REA, according to COREP definitions, as set out in Article 111 of the CRR (for the STA portfolio) and Articles 166-168 of the CRR (for the IRB portfolio).

89. **Regulatory risk parameters (PDreg and LGDreg)** refer to those parameters used for the calculation of capital requirements for defaulted and non-defaulted assets as prescribed by the CRR (i.e. LGDreg should be reported exposure-weighted).

90. **ELreg** is the EL based on regulatory risk parameters following the prescriptions of the CRR/CRD for defaulted and non-defaulted IRB exposures.

[13] No credit risk benchmarks are available for the IRB portfolios of "Central Banks", "Equity", "Securitisation" and "Other non-credit obligation assets" and for the STA portfolios of "Central Banks", "Public sector entities", "Multilateral Development Banks", "International Organisations", "Items associated with particularly high risk", "Covered bonds", "Claims", "CIU", "Equity", "Securitisation" and "Other exposures".

2.3.2 Static balance sheet assumption

91. According to the static balance sheet assumption, banks are not permitted to replace S3 exposures. New S3 exposures are moved into the stock of S3 exposures, reducing the stock of S1 and/or S2 and keeping the total exposure at a constant level. Furthermore, for the purpose of calculating exposures, it is assumed that no cures from S3, charge-offs or write-offs should take place within the 3-year horizon of the exercise.[14]

92. Within the credit risk framework, and for the purpose of calculating the credit REA, the initial residual maturity is kept constant for all assets. For example, a 10-year bond with residual maturity of 5 years at the start of the exercise is supposed to keep the same residual maturity of 5 years throughout the exercise — if it matures or amortises during the stress test horizon it has to be replaced with a bond having the same residual maturity and credit risk characteristics. It should be noted that the constant residual maturity applies, in particular, to the maturity factor used in A-IRB, but also the favourable risk weights for short-term exposures in STA.

93. For the purposes of calculating impairments over the 3 years of the scenario, the assumption of a constant balance sheet is also held. Thus, if assets mature or amortise during the stress horizon they have to be replaced with assets with the same credit risk characteristics (including IFRS 9 or nGAAP stage classification) and residual maturity to keep the balance sheet stable.

94. Consistent with the static balance sheet assumption, credit exposure changes result only from yearly S1, S2 or S3 exposure flows. Market value fluctuations have no impact on the exposure and, in particular, cannot decrease the exposure. In addition, fair value effects shall have no impact on exposure and REA. This includes changes in the FX rate.

2.3.3 Asset classes

95. For the purpose of this stress test, banks are required to report their exposures using the asset classes specified in Table 2 and Table 3, which are based on the exposure classes for IRB and STA exposures in the CRR (see Articles 112 and 147 of the CRR) reported in COREP. Competent authorities can require participating banks to report additional breakdowns for exposures where they see significant risks. Table 2 and Table 3 show in bold text the original COREP categories.

96. The initial segmentation should consider the transfer of exposures to other asset classes through credit risk mitigation techniques (substitution approach). This transfer has to be performed in

[14] This is not to be confused with the inclusion of assumptions on future cure rates and write-offs in the generation of LGD parameters, which are implicitly assumed, where applicable.

line with the asset classes given in Table 2 and Table 3 and the exposure should be reported in asset classes after substitution. For the remainder of section 2, any definitions and calculations need to be consistent with this approach. For instance, default and loss rates, as well as TR, LGD and LR estimations, are required to be calculated and estimated taking into account the substitution of the risk to a different counterparty.

97. The initial segmentation shall not change for the reporting of the projections (e.g. changes in the value of collateral or the increase of collateral when an exposure becomes non-performing shall not lead to reporting exposures, risk exposures or provisions in asset classes different than the initial one). However, the REA shall always reflect changes that, according to the CRR, would lead to different risk weights (e.g. a decrease in the value of the collateral shall lead to an increase of REA for STA banks driven by a lower amount of exposure under the preferential treatment of secured by immovable property).

98. The following tables contain the asset classes to be used for both credit risk impairments and REA. The breakdown of guaranteed retail loans secured by real estate property (Prêts cautionnés) have to be reported only by banks with relevant exposures to this asset class as per paragraph 105.

Table 2: Overview of IRB asset classes

IRB asset classes
Central banks
Central governments
Institutions
Corporates
Corporates — Specialised lending
Corporates — Specialised lending — Secured by real estate property
Corporates — Specialised lending — Not secured by real estate property
Corporates — SME
Corporates — SME — Secured by real estate property
Corporates — SME — Not secured by real estate property
Corporates — Others
Corporates — Others — Secured by real estate property
Corporates — Others — Not secured by real estate property
Retail
Retail — Secured by real estate property
Retail — Secured by real estate property — SME
Retail — Secured by real estate property — Non-SME
of which: Residential guaranteed loans (Prêts cautionnés) insured by an eligible residential property loan guarantor
of which: other than Residential guaranteed loans (Prêts cautionnés) insured by an eligible residential property loan guarantor
Retail — Qualifying revolving
Retail — Other retail
Retail — Other retail — SME

IRB asset classes
Retail — Other retail — Non-SME
Equity
Securitisation
Other non-credit obligation assets

Table 3: Overview of STA asset classes

STA asset classes
Central banks
Central governments
Regional governments or local authorities
Public sector entities
Multilateral development banks
International organisations
Institutions
Corporates
Corporate — SME
Corporate — Non-SME
Retail
Retail — SME
Retail — Non-SME
Secured by mortgages on immovable property
Secured by mortgages on immovable property — SME
Secured by mortgages on immovable property — Non-SME
of which: Residential guaranteed loans (Prêts cautionnés) insured by an eligible residential property loan guarantor
of which: other than Residential guaranteed loans (Prêts cautionnés) insured by an eligible residential property loan guarantor
Items associated with particularly high risk
Covered bonds
Claims on institutions and corporates with ST credit assessment
Collective investment undertakings
Equity
Securitisation
Other exposures

2.3.4 Reporting requirements

99. Banks are required to provide credit risk information by regulatory approach for the total exposure, for the most relevant countries of counterparties to which the banks are exposed as defined in paragraph 101, and for an 'Other Countries' section. The cells for the whole banking group contain the overall exposure of the group towards all counterparties and are the sum of the country-by-country and 'Other Countries' cells.

100. The country of the counterparty refers to the country of incorporation of the obligor or, if different, the country of the underlying risk, i.e. an ultimate-risk basis. Hence, CRM techniques

can change the allocation of an exposure to a country. For this purpose, exposure against international organisations are to be reported under the section for 'Other countries'.

101. The breakdown by country of the counterparty will be reported according to a minimum of:

- 95% of the sum of total exposure (Exp S1 + Exp S2 + Exp S3), as defined in section 2.3.1, reported in aggregate for three regulatory approaches (i.e. A-IRB, F-IRB and STA).
- Top 10 countries in terms of total exposure, as stated above.

102. For example, a bank with 95% of its exposure concentrated in six countries will fill in data only for those six countries specifically. By contrast, if the aggregate sum of exposure of a bank towards the largest 10 countries is below 95% of the total aggregate exposure, the bank will fill in the template only for the top 10 counterparty countries specifically. In either case, the 'Other Countries' section needs also to be populated.

103. The cut-off date to define the 95% of aggregate sum exposure and top 10 countries is 31 December 2019. The selected countries of the counterparties and their order remain constant for the two credit risk templates (CSV_CR_SCEN and CSV_CR_REA). Banks are required to report discontinued operations that were still in the balance sheet at the cut-off date and these exposures will contribute to the total when identifying reportable country breakdowns as per the thresholds from paragraph 101.

104. In order to identify the top 10 countries of counterparties in terms of total exposures, as paragraph 101 refers to exposure (instead of exposure value), the respective definitions in paragraphs 51 (i.e. the 'P&L scope'), 58 and 64 apply.

105. Banks with loans under large-scale or nationwide guarantee schemes where the indirect exposure on the guarantor is significant are required to report the guaranteed exposures separately from the non-guaranteed ones using the respective rows in templates CSV_CR_SCEN and CSV_CR_REA (i.e. "of which: Residential guaranteed loans (Prêts cautionnés) insured by an eligible residential property loan guarantor"). Banks are required to explain in the explanatory note how LGDs for guaranteed exposures were modelled and projected.

106. The same cut-off date applies for the allocation of asset classes across the regulatory approach. This means that a bank that applied the STA at the beginning of 2019 but the A-IRB approach at the end of 2019 is required to report 2019 information in the A-IRB section of the template. This should be applied at an individual exposure level.

107. Historical values shall be reported for 2018 and 2019 in CSV_CR_SCEN for both the beginning and the end of the year. These values shall be reported on the basis of the accounting

standard applicable and provisions shall be net of releases. The list of fields required is given in Table 4.

108. The parameter values reported for 2018 and 2019 are estimates from banks' own models (following the hierarchy of approaches outlined in section 2.4.1 of the methodological note) using observed macroeconomic variables during the corresponding year based on the current (end-2019) decomposition of the portfolio. These historical parameters do not need to be recalculated with the current (end-2019) definition of default.

109. The field of "Provisions old stage 3" for historical periods shall be reported with the provisions allocated to the exposures that started and ended the respective year in S3. This differs from the reporting of the projected periods, where these provisions shall always relate to the stock of S3 as of 1 January 2020.

Table 4: Historical parameters to be provided for 2018-2019

Fields to be populated historically
Performing exposure, of which: stage 1 (Exp S1)
Performing exposure, of which: stage 2 (Exp S2)
Non-performing exposure (Exp S3)
Stage 1 flow (S2-S1 flow)
Stage 2 flow (S1-S2 flow)
Stage 3 flow from Stage 1 (S1-S3 Flow)
Stage 3 flow from Stage 2 (S2-S3 Flow)
Stock of provisions (Prov Stock)
Of which: stage 1 (Prov Stock S1)
Of which: stage 2 (Prov Stock S2)
Of which: non-performing assets (Prov Stock S3)
Provisions new stage 3 (Prov SX-S3)
Provisions old stage 3 (Prov old S3-S3)

110. Starting point parameter values are to be reported for 2019 as given in Table 5. These values are estimates from banks' models using historical macroeconomic variables for 2019 (i.e. not considering the stress test macroeconomic scenario).

Table 5: Starting point parameters to be provided for 2019

Parameter	**To be provided for 2019**
TR	TR^{1-3}, TR^{1-2}, TR^{2-1}, TR^{2-3}
LGD	LGD^{1-3}, LGD^{2-3}
Cure rates	$Cure^{1-3}$, $Cure^{2-3}$
LR	LR_{LT}^{1-2}, LR_{LT}^{2-2}, LR_{LT}^{3-3}

111. The reporting of provisions in the CSV_CR_SCEN template and REA in the CSV_CR_REA template should be fully in line with IFRS 9 and exclude IFRS 9 transitional arrangements.[15]

112. Assets valued according to the simplified approach of IFRS 9 (as defined under IFRS 9 5.5.15) shall be reported under S2 for the purpose of this stress test. Purchased or originated credit-impaired assets (POCI) shall be reported as they are under FINREP template 4.4.1 row 150 ("of which: purchased credit-impaired financial assets").

2.4 Impact on P&L

2.4.1 Starting point-in-time risk parameters (a hierarchy of approaches)

113. The following paragraphs describe a hierarchy of methods that banks are required to adhere to when they set the starting (unstressed) point-in-time risk parameters. As a general principle, banks should resort to data from models rather than from accounting approximations:

- Banks are required in the first instance to extract the relevant parameters from the models that they use to compute provisions according to the relevant accounting standard.

- For IRB portfolios where there is no model to produce IFRS 9/nGAAP provisions, banks are required to base their estimation of starting level point-in-time values on their approved internal parameter estimation models.

- For portfolios for which starting level point-in-time parameters cannot be extracted from approved internal models, banks should use non-approved models to extract point-in-time parameters, provided that those models are regularly used in internal risk management and stress testing, and that the competent authority agrees with using them for the purpose of the EU-wide stress test.

- For portfolios where no appropriate internal models are in use for estimating the starting TRs, LGDs or LRs, banks are expected to approximate these values using historically observed equivalents (e.g. the S3 transition and loss rates from S1 for TR^{1-3} and LGD^{1-3}). While banks are expected to present parameters reflective of both 2019 macroeconomic conditions and the credit quality of the portfolios, in the calibration of point-in-time starting parameters the overarching objective is the parameter's suitability for projection. Therefore, banks are expected to consider factors that may

[15] Except for banks not subject to IFRS 9.

lead to the observed performance for 2019 being unrepresentative or unsuitable for a sufficiently conservative projection or for small portfolios in which no default has been observed. Only those adjustments of the historical values that result in a more conservative starting point are permitted.

114. Irrespective of which approach is followed and the extent of the adjustments, banks are required to provide in the explanatory note a description of the methodology employed for deriving point-in-time parameters for all portfolios. Banks should apply the terminology used in this note, wherever applicable.

115. Participating banks will be subject to cross-sectional comparisons of starting level point-in-time parameters after the submission of the results, and might be asked to revise internal figures if they are deemed not suitable for projections.

2.4.2 Projected point-in-time parameters (a hierarchy of approaches)

116. Likewise, for the estimation of projected parameters, as a general principle, banks should use models rather than resort to benchmarks to determine stressed TR, LGD or LR parameters (under both the baseline scenario and the adverse scenario). However, banks' models will be assessed by competent authorities against minimum standards in terms of econometric soundness and responsiveness of the risk parameters to ensure that the model specification results in a prudent outcome.

117. For portfolios where no appropriate satellite models are available for estimating the stressed TRs, LGD or LRs, banks are expected to use the benchmark parameters provided by the ECB, without any adjustment (i.e. without applying any expert adjustment or scaling). Benchmarks should be applied at portfolio level, not at rating class level.

118. The bank's initial choice regarding the use of internal models or the ECB benchmark parameters for the estimation of projected parameters cannot change, unless the competent authority approves this change.

119. Banks are required to fill in the 'ECB benchmarks parameter application' columns in CSV_CR_SCEN with the percentage of exposures for which benchmark parameters were used due to the lack of appropriate satellite models. If the banks' satellite models do not ensure the estimation of all the PD/TR and LR/LGD parameters, respectively, for a minimum of 10% of the pivot asset class exposure[16], the benchmark parameters need to be applied to the entire pivot

[16] Pivot asset class refers to the lowest level of aggregation (e.g. 'Corporates – SME - Secured by real estate property).

asset class exposure (e.g. use the benchmark LR/LGD parameters for the entire exposure of 'Retail – Secured by real estate property – SME' if the banks' satellite models do not ensure the estimation of all the LR/LGD parameters for a minimum of 10% of the total exposure to that asset class). If the 10% threshold is exceeded, unless the competent authority provides further instructions, banks can use a weighted average between internal models' and benchmark's parameters for the same asset class. The use of a mix between internal models' and benchmark's parameters shall be duly justified in the explanatory note.

120. Irrespective of the approach, the ECB benchmark parameters will serve as an important benchmark to gauge internal parameter estimates in the baseline as well as in the adverse scenario as described in the following paragraphs. Moreover, banks will be subject to cross-sectional comparisons after the submission of the results and might be asked to revise internal figures if they are deemed overly optimistic.

121. If banks' models allow the estimation of the relationship between point-in-time parameters and the macroeconomic variables at a rating class level, banks are required to employ a rating transition matrix-based approach, considering the effects of TR/LR grade migration on the level of defaults and impairments projected in the stress test horizon for the given scenarios. In this case, banks are required to calculate point-in-time transition matrices. Transition matrices need to ensure that the TR/LR for each grade are adjusted appropriately to reflect the scenario.

122. Conversely, if the bank's models allow for the estimation of the relationship between point-in-time parameters and the macroeconomic variables at a portfolio level, aggregate parameters for each portfolio are obtained. In addition, banks are required to document in the explanatory note the approach followed for this estimation.

123. In the projection of LGD/LRs, banks are required to take into consideration the possible impact caused by the decrease in the fair value of credit risk mitigants (e.g. a shock on real estate prices will affect real estate collateral).

124. The LGD/LR parameters need to be estimated by taking into account both the characteristics of the exposures in S3 and the given scenario. Prudent assumptions are required on the implicit cure rate, the costs associated with the liquidation of collateral, and any other factor affecting the level of impairment. The development of these assumptions across the time horizon for the given scenarios will need to be justified.

125. For the estimation of the LGD/LR and lifetime ECL, it is assumed that there is perfect foresight and, therefore, the full macroeconomic scenarios for the remaining lifetime and possible workout period of the exposure should be treated as known when calculating ECL. This means that, whenever lifetime ECL is calculated during the stress test (i.e. for initial S2 or S3 exposures and for exposures that transition from S1 to S2 or to S3), the lifetime ECL has to be booked in that year with perfect foresight and ECL may change afterwards only if, during the

stress test horizon, exposures mature, amortise or migrate to S3 or S1. The first year of the LGD/LR calculation shall incorporate, for example, the cumulative house price shocks and the impact of the scenario in the workout period and respective time-in-default. For the estimation of LGD/LR and lifetime ECL for 2020-2022, banks are required to assume that future macroeconomic parameters and property prices for realising collateral will develop as described in the given scenarios. After the scenario horizon — excluding GDP, for which constant growth rates shall be assumed — those values shall be assumed to stay flat (i.e. stable absolute house prices and all other macroeconomic variables considered in the modelling). This has the impact that loss rates for exposures which have moved to S3 by 2022 shall be calculated assuming this flat profile for the macroeconomic variables.

126. Notwithstanding these assumptions on macroeconomic variables, for the purpose of calculating the loss rates for S1 and S2 exposures, after the scenario horizon the 2022 baseline credit risk parameters (i.e. stage transition probabilities and the corresponding loss rates across stages) are kept constant. The adverse scenario credit risk parameters (i.e. stage transition probabilities and the corresponding loss rates across stages) for S1 and S2 exposures from 2023 onwards are assumed to revert from their 2022 levels to the 2022 baseline parameters. The path of each of the credit risk parameters for S1 and S2 exposures is assumed to linearly revert to those observed at the end of the baseline scenario over 6 years following the end of the adverse scenario.

127. In order to assess the projected LGD/LR parameters, historical LGD/LR parameters for 2019 are requested as memorandum items. In addition to the LRs based on the coverage ratio, banks are also required to provide the LGD/LR parameter estimates under the assumption of holding the 2019 macroeconomic conditions constant, i.e. no changes in property prices or other factors beyond those observed by end 2019. This is to enable the comparison of 2019 values to 2020-2022 estimates under both scenarios.

128. If an exposure towards a Parent Company is subject to the credit risk scope for the 2020 EU-wide stress test, banks should treat the parent exposures at arm's length and provide transition and loss rates for a counterparty considering the credit quality and nature of the exposures (e.g. overnight placements).

129. Projected risk parameters have to be reported in the credit risk scenario template (CSV_CR_SCEN).

2.4.3 Calculation of non-performing assets and provisions

130. The development of the parameters as described in the previous section based on a single scenario in each macroeconomic scenario (baseline and adverse) must be applied for the computation of the provisions resulting from exposure transitions across stages.

131. The additional impairment losses for all the stages computed (as described in the following sections) will be reported in the P&L as 'impairment of financial assets other than instruments designated at fair value through P&L'.

132. In line with the perfect foresight definition from paragraph 125, for initial S2 and S3 exposures and for exposures that transition from S1 to S2 or to S3, banks are required to reflect in the calculation of lifetime ECL the impact of the macroeconomic scenario for the remaining lifetime and possible workout period of the exposure. For example, if property prices drop 10% over the 3-year horizon of the adverse scenario then this drop should be reflected in the impairment loss for old S3 exposures in 2020.

a. Stock of provisions

133. The stock of provisions depends on the existing exposures in each stage and the new exposures that have moved between stages. The stock of provisions for each stage will change over time during the stress period as summarised in Box 3.

Box 3: Development of the stock of provisions

Stock of provisions S1 = Provisions for new S1 exposures + Provisions for existing S1 exposures

$$\text{Prov Stock S1}(t+1) = \text{Prov S2-S1}(t+1) + \text{Prov S1-S1}(t+1)$$

Stock of provisions S2 = Provisions for new S2 exposures + Provisions for existing S2 exposures

$$\text{Prov Stock S2}(t+1) = \text{Prov S1-S2}(t+1) + \text{Prov S2-S2}(t+1)$$

Stock of provisions S3 = Provisions for new S3 + Provisions for existing S3 exposures

$$\text{Prov Stock S3}(t+1) = \text{Prov Cumul S1-S3}(t+1) + \text{Prov Cumul S2-S3}(t+1) + \text{Prov Old S3}(t+1)$$

134. Projected provisions are calculated in the credit risk scenario template (CSV_CR_SCEN).

b. Stock of provisions of S1 exposures

135. The stock of provisions for S1 exposures is given by exposures existing (and remaining) in S1 (Prov S1-S1) and new S1 exposures migrating from S2 to S1 (Prov S2-S1).

136. The calculation method of new S1 provisions is outlined in Box 4.

Box 4: Provisions for new S1 exposures

The provisions for new S1 exposures are computed as follows:

$$\text{Prov S2-S1}(t+1) = \text{S2-S1 flow} * TR^{1\text{-}3}(t+2) * LGD^{1\text{-}3}(t+2)$$

$$\text{S2-S1 flow} = \text{Exp S2}(t) * TR^{2\text{-}1}(t+1)$$

Where:

- Exp S2(t) is the S2 exposures at the beginning of year t.
- $LGD^{1\text{-}3}$ refers to the expected loss rate for exposures that transition from S1 to S3.
- $TR^{1\text{-}3}$ refers to the 1-year transition probability of S1 exposures to S3.
- $TR^{2\text{-}1}$ refers to the 1-year transition probability of S2 exposures to S1.

As the adverse scenario credit risk parameters are assumed to linearly revert to the baseline horizon credit risk parameters within 6 years, then provisions for new S1 in year 3 (2022), under the adverse scenario, are calculated as:

$$\text{Prov S2-S1}_{Adv}(2022\ EoY) = \text{Exp S2}(2022\ BoY) * TR_{Adv}^{2\text{-}1}(2022) * (5/6 * TR^{1\text{-}3}{}_{Adv}(2022) * LGD^{1\text{-}3}{}_{Adv}(2022) + 1/6 * TR^{1\text{-}3}{}_{Base}(2022) * LGD^{1\text{-}3}{}_{Base}(2022))$$

As the baseline credit risk parameters are assumed to stay flat after year 3, then provisions for new S1 in year 3 (2022), under the baseline scenario, are calculated as:

$$\text{Prov S2-S1}_{Base}(2022\ EoY) = \text{Exp S2}(2022\ BoY) * TR_{Base}^{2\text{-}1}(2022) * (TR^{1\text{-}3}{}_{Base}(2022) * LGD^{1\text{-}3}{}_{Base}(2022))$$

137. The provisions for exposures existing in S1 (Prov S1-S1) should reflect the change in ECL due to the scenario and grade migration. Box 5 below outlines the method for calculating provisions on existing S1 exposures.

Box 5: Provisions for existing S1 exposures

The provisions for existing S1 exposures are computed as follows:

$$\text{Prov S1-S1}(t+1) = \text{Exp S1}(t) * (1 - \text{TR}^{1\text{-}2}(t+1) - \text{TR}^{1\text{-}3}(t+1)) * \text{TR}^{1\text{-}3}(t+2) * \text{LGD}^{1\text{-}3}(t+2)$$

Where:

- Exp S1(t) is the S1 exposures at the beginning of year t.
- $\text{LGD}^{1\text{-}3}$ refers to the expected loss rate for exposures that transition from S1 to S3.
- $\text{TR}^{1\text{-}2}$ refers to the 1-year transition probability of S1 exposures to S2.
- $\text{TR}^{1\text{-}3}$ refers to the 1-year transition probability of S1 exposures to S3.

As the adverse scenario credit risk parameters are assumed to linearly revert to the baseline horizon credit risk parameters within 6 years, then provisions for existing S1 in year 3 (2022), under the adverse scenario, are calculated as:

$$\text{Prov S1-S1}_{\text{Adv}}(2022\ \text{EoY}) = \text{Exp S1}(2022\ \text{BoY}) * (1 - \text{TR}^{1\text{-}2}{}_{\text{Adv}}(2022) - \text{TR}^{1\text{-}3}{}_{\text{Adv}}(2022)) *$$

$$(5/6 * \text{TR}^{1\text{-}3}{}_{\text{Adv}}(2022) * \text{LGD}^{1\text{-}3}{}_{\text{Adv}}(2022) + 1/6 * \text{TR}^{1\text{-}3}{}_{\text{Base}}(2022) * \text{LGD}^{1\text{-}3}{}_{\text{Base}}(2022))$$

As the baseline credit risk parameters are assumed to stay flat after year 3, then provisions for existing S1 in year 3 (2022), under the baseline scenario, are calculated as:

$$\text{Prov S1-S1}_{\text{Base}}(2022\ \text{EoY}) = \text{Exp S1}(2022\ \text{BoY}) * (1 - \text{TR}^{1\text{-}2}{}_{\text{Base}}(2022) - \text{TR}^{1\text{-}3}{}_{\text{Base}}(2022)) *$$

$$(\text{TR}^{1\text{-}3}{}_{\text{Base}}(2022) * \text{LGD}^{1\text{-}3}{}_{\text{Base}}(2022))$$

138. A decrease in the coverage ratio (i.e. ratio of provisions to exposure) for the S1 exposure is not permitted. This floor is applied in the summary template CSV_CR_SUM.

c. Stock of provisions of S2 exposures

139. The stock of provisions for S2 exposures is given by exposures existing in S2 (Prov S2-S2) and new S2 exposures migrating from S1 to S2 (Prov S1-S2).

140. Box 6 outlines the method for calculating provisions on S1 exposures that deteriorate in credit quality and move to S2 within the year. The estimation of lifetime LR shall reflect the impact of the macroeconomic scenario.

Box 6: Provisions new S2 exposures

The provisions for exposures that move from S1 to S2 are computed as follows:

$$\text{Prov S1-S2}(t+1) = \text{S1-S2 flow} * LR_{LT}^{1\text{-}2}(t+2)$$

$$\text{S1-S2 flow} = \text{Exp S1}(t) * TR^{1\text{-}2}(t+1)$$

Where:

- Exp S1(t) is the S1 exposures at the beginning of year t.
- $LR_{LT}^{1\text{-}2}$ refers to the lifetime ECL parameter for the following year.
- $TR^{1\text{-}2}$ refers to the 1-year transition probability of S1 exposures to S2.

As the adverse credit risk parameters are assumed to linearly revert to the baseline horizon credit risk parameters within 6 years, then provisions for exposures that move from S1 to S2 in year 3 (2022), under the adverse scenario, are calculated as:

$$\text{Prov S1-S2}_{Adv}(\text{2022 EoY}) = \text{Exp S1(2022 BoY)} * TR^{1\text{-}2}{}_{Adv}(2022) * (5/6 * LR_{LT}^{1\text{-}2}{}_{Adv}(2022) + 1/6 * LR_{LT}^{1\text{-}2}{}_{Base}(2022))$$

As the baseline credit risk parameters are assumed to stay flat after year 3, then provisions for exposures that move from S1 to S2 in year 3 (2022), under the baseline scenario, are calculated as:

$$\text{Prov S1-S2}_{Base}(\text{2022 EoY}) = \text{Exp S1(2022 BoY)} * TR^{1\text{-}2}{}_{Base}(2022) * LR_{LT}^{1\text{-}2}{}_{Base}(2022)$$

141. Box 7 shows the approach for calculating provisions for existing S2 exposures (Prov S2-S2). Prov Stock S2 is calculated by adding the provisions for additional S2 exposure (Prov S1-S2).

Box 7: Provisions for existing S2 exposures

The provisions for S2 exposures that were also categorised at the beginning of the year as S2 are computed as follows:

$$\text{Prov S2-S2}(t+1) = \text{Exp S2}(t) * (1 - TR^{2\text{-}1}(t+1) - TR^{2\text{-}3}(t+1)) * LR_{LT}^{2\text{-}2}(t+2)$$

Where:

- Exp S2(*t*) is the S2 exposures at the beginning of year *t*.
- $TR^{2\text{-}1}$ refers to the 1-year transition probability of S2 exposures to S1.
- $TR^{2\text{-}3}$ refers to the 1-year transition probability of S2 exposures to S3.
- $LR_{LT}^{2\text{-}2}$ refers to the lifetime ECL parameter for the following year.

As the adverse credit risk parameters are assumed to linearly revert to the baseline horizon credit risk parameters within 6 years, then provisions for existing S2 exposures in year 3 (2022), under the adverse scenario, are calculated as:

$$\text{Prov S2-S2}_{Adv}(2022\ EoY) = \text{Exp S2}(2022\ BoY) * (1 - TR^{2\text{-}1}{}_{Adv}(2022) - TR^{2\text{-}3}{}_{Adv}(2022)) * (5/6 * LR_{LT}^{2\text{-}2}{}_{Adv}(2022) + 1/6 * LR_{LT}^{2\text{-}2}{}_{Base}(2022))$$

As the baseline credit risk parameters are assumed to stay flat after year 3, then provisions for exposures that move from S1 to S2 in year 3 (2022), under the baseline scenario, are calculated as:

$$\text{Prov S2-S2}_{Base}(2022\ EoY) = \text{Exp S2}(2022\ BoY) * (1 - TR^{2\text{-}1}{}_{Base}(2022) - TR^{2\text{-}3}{}_{Base}(2022)) * LR_{LT}^{2\text{-}2}{}_{Base}(2022)$$

d. Stock of provisions of S3 exposures

142. The stock of provisions for S3 exposures is given by the sum of provisions allocated to exposures existing in S3 at the beginning of the exercise (Prov Old S3), new S3 exposures migrating from S1 to S3 (Prov S1-S3) and new S3 exposures migrating from S2 to S3 (Prov S2-S3).

143. No release of accumulated provisions for any given S3 exposure is permitted for any year or scenario and this restriction shall be applied at the exposure level.

144. Provisions for new S3 exposures from S1 and S2 shall be calculated as shown in Box 8 below. Given the restriction of no release of accumulated provisions for any S3 exposure, provisions on new S3 exposures are accumulated throughout the stress test horizon.

Box 8: Provisions for new S3 exposures

The provisions for new S3 exposures at time *t* is given by:

$$\text{Prov SX-S3}(t+1) = \text{Prov S1-S3}(t+1) + \text{Prov S2-S3}(t+1)$$

$$\text{Prov S1-S3}(t+1) = \text{Exp S1}(t) * TR^{1\text{-}3}(t+1) * LGD^{1\text{-}3}(t+1)$$

$$\text{Prov S2-S3}(t+1) = \text{Exp S2}(t) * TR^{2\text{-}3}(t+1) * LGD^{2\text{-}3}(t+1)$$

Where:

- Exp S1(t) is the S1 exposures at the beginning of year t.
- Exp S2(t) is the S2 exposures at the beginning of year t.
- TR1-3 refers to the 1-year transition probability of S1 exposures to S3.
- TR2-3 refers to the 1-year transition probability of S2 exposures to S3.
- LGD1-3 refers to the expected loss rate for exposures that transition from S1 to S3.
- LGD2-3 refers to the expected loss rate for exposures that transition from S2 to S3.

For S3 exposures, both the adverse and the baseline credit risk parameters shall assume a flat profile for the macroeconomic variables after year 3 (paragraph 125).

Provisions for new S3 exposures in year 3 (2022), under the adverse scenario, are calculated as:

$$\text{Prov S1-S3}_{Adv}(\text{2022 EoY}) = \text{Exp S1}(\text{2022 BoY}) * TR^{1\text{-}3}{}_{Adv}(2022) * LGD^{1\text{-}3}{}_{Adv}(2022)$$

$$\text{Prov S2-S3}_{Adv}(\text{2022 EoY}) = \text{Exp S2}(\text{2022 BoY}) * TR^{2\text{-}3}{}_{Adv}(2022) * LGD^{2\text{-}3}{}_{Adv}(2022)$$

Provisions for new S3 exposures in year 3 (2022), under the baseline scenario, are calculated as:

$$\text{Prov S1-S3}_{Base}(\text{2022 EoY}) = \text{Exp S1}(\text{2022 BoY}) * TR^{1\text{-}3}{}_{Base}(2022) * LGD^{1\text{-}3}{}_{Base}(2022)$$

$$\text{Prov S2-S3}_{Base}(\text{2022 EoY}) = \text{Exp S2}(\text{2022 BoY}) * TR^{2\text{-}3}{}_{Base}(2022) * LGD^{2\text{-}3}{}_{Base}(2022)$$

145. Box 9 below describes the approach to be used to derive the provisions for existing S3 exposures.

146. As described in paragraph 125, perfect foresight applies to impairment losses on existing S3 exposures. In addition, due to the fact that these exposures are already in default, the provisions should be calculated based on the first year risk parameter.

Box 9: Provisions for existing S3 exposures

The provisions for existing S3 exposures are given by:

$$\text{Prov Old S3}(t+1) = \text{MAX}\{\text{Old Exp S3}(t) * LR_{LT}^{3\text{-}3}(t+1) ; \text{Prov Old S3}(t)\}$$

Where:

- Old Exp S3(t) is the S3 exposures at the beginning of the exercise.
- Prov Old S3(t) is the stock of provisions for existing S3 exposures at t.
- $LR_{LT}^{3\text{-}3}$ is the LR estimated at t+1 for the stock of existing S3 exposures at the beginning of the exercise. Due to the perfect foresight assumption, this loss rate is the same in every year of the projection.

e. Provisions on sovereign exposures

147. Banks are required to estimate default and impairment flows for sovereign positions recorded at amortised cost according to the macroeconomic baseline and adverse scenarios. This in particular covers only sovereign positions whose exposure (Exp) is reported under the categories 'central governments' for IRB portfolios, as well as 'central governments' and 'regional governments or local authorities' for STA portfolios. For exposures to central banks zero loss rates are to be applied under the baseline and adverse scenarios. Fair value positions (i.e. FVOCI and FVPL) will be subject to the market risk approach.

148. In order to compute these provisions, banks will be provided with a set of stressed TR, LGD and LR parameters developed by the ECB for a selection of countries. The application of these parameters is mandatory for all banks and for all countries regardless of whether a country has to be reported separately according to paragraph 99. For the estimation of provisions on sovereign exposures for countries where the ECB does not provide stressed credit risk parameters, banks are required to estimate their own parameters with an adequate degree of conservatism.

2.4.4 FX lending

149. Banks with significant foreign currency exposure are required to take into account the altered creditworthiness of their respective obligors, given the FX development under the baseline and adverse scenarios. The marginal impact from the risk emanating from FX lending exposure has to cover both TRs and LRs. For TRs, the impact should be based on satellite models that link the macroeconomic scenario to the transition rates. For the loss rate, the impact should be based on an add-on for the LTV ratio in the case of collateralised exposures, while, in the case of uncollateralised exposures, banks should apply the appropriate FX add-on based on relevant historical information.

150. In particular, banks are required to evaluate this impact for exposures denominated in a currency other than the local currency of the borrower at asset class level for each country of counterparty if the total share of exposures in foreign currencies is above the thresholds described in Table 6 and Table 7 below.

Table 6: FX lending threshold (per country of counterparty) — IRB asset classes

IRB asset classes	Threshold (%)
Corporates — Specialised lending	5
Corporates — SME	5
Corporates — Other	5
Retail — Secured by real estate property	5
Retail — Qualifying revolving	5
Retail — Other retail	5

Table 7: FX lending threshold (per country of counterparty) — STA asset classes

STA exposure classes	Threshold (%)
Corporate — SME	5
Corporate — Non-SME	5
Retail — SME	5
Retail — Non-SME	5
Secured by mortgages on immovable property — SME	5
Secured by mortgages on immovable property — Non-SME	5

2.5 Impact on REA and IRB regulatory EL

151. Banks are required to simulate the impact on REA and IRB regulatory EL for credit risk caused by the application of the macroeconomic scenarios (baseline and adverse). The scope of the REA templates is wider than the P&L impact section. The exposure values to consider in the REA templates will follow the COREP definitions, taking into account exposures subject to

counterparty credit risk and eligible credit risk mitigation techniques, but according to the "no migration" rule outlined in paragraph 157.

152. The exposure value of the positions included in the FVPL and FVOCI portfolio, whose P&L impact is assessed under the market risk framework, will remain constant for the purpose of the REA estimation.

153. No roll-out of new internal models or modifications of existing internal models are to be considered for calculating the REA, unless they have been validated and formally approved by the competent authority before the cut-off date of 31 December 2019. However, the expected increase in regulatory parameters during the stress horizon, derived from their re-estimation following the addition of new data under stress conditions, shall be considered. The projections shall take into account any specific conditions for the continued use of such models for regulatory capital purposes — e.g. any regulatory floors and/or parameter-level supervisory scalars.

154. For both STA and IRB portfolios, the end-2019 level of REA serves as a floor for the total REA for non-defaulted and defaulted assets calculated using stressed regulatory risk parameters in the baseline and adverse scenarios. This floor is applied separately for the aggregate IRB and STA portfolios.

155. REA for contributions to the default fund of a CCP is assumed to remain constant across both scenarios.

156. The exposure composition with respect to rating classes is expected to change as a result of defaulted asset flows and credit deterioration. For both STA and IRB portfolios, the exposure distribution among risk grades and defaulted exposures need to be adjusted (assuming rating grade migration) based on the banks' own methodologies as appropriate, and consistent with the estimated default flows and migrations for impairment purposes. Accordingly, exposures that are downgraded or that are defaulted must be risk-weighted at the appropriate risk weights (e.g. in the case of STA defaulted unsecured exposures, at 100% or 150%).

157. The impact of the defined scenarios on collateral values and eligibility shall also be considered for REA and IRB EL projections. Banks shall assume no "migration" of exposures and REA between different asset classes, i.e. to consider exposure value of each asset class as static and report the respective REA in the same asset class. This applies in particular for exposures that do not meet definitions of 'fully and completely secured' due to worsened collateral amounts. Banks are required to calculate risk weights as per CRR and project collateral and credit quality in line with the scenarios.

158. For the defaulted exposures, where the institutions apply the LGD values set out in Article 161(1) of the CRR, the REA shall be 0. If banks use own estimates of LGD, the REA for

defaulted exposures is calculated in accordance with Article 153 of the CRR (as shown in Box 10 below).

Box 10: REA estimation for defaulted assets

REA Def (*t*) = MAX {0 ; [LGDreg(*t*) on default stock – ELBE(*t*)] * 12.5 * Def Stock(*t*)}.

Where:

- LGDreg(*t*) on default stock should incorporate downturn conditions and additional potential unexpected losses due to the impact of the scenarios.
- ELBE (in the CSV_CR_REA template) represents the Expected loss best estimate. The ELBE, as also underlined in Article 181(1)(h) of the CRR, should reflect economic circumstances.

159. The IRB excess or shortfall is calculated at an aggregate level, separately for the portfolios of defaulted and non-defaulted exposures. As per Article 159 of the CRR, the IRB excess resulting from the calculation performed for the defaulted portfolio shall not be used to offset an IRB shortfall resulting from the calculation performed for the portfolio of exposures that are not in default. However, the IRB excess from the overall non-defaulted portfolio may be used to cover any IRB shortfall from the overall defaulted portfolio. If the mechanism outlined above results in an IRB excess of credit risk adjustments and additional value adjustments over expected losses, this amount must be included in Tier 2 capital as set out in Article 62(d) of the CRR, i.e. up to 0.6% of REA. The expected loss amounts for equity exposures need to be reported in a dedicated row of the CSV_CR_REA_IRB in case the expected loss for equity exposures is deducted in COREP. The expected loss amounts for other non-credit obligation assets shall be zero.

160. The development of the credit risk adjustments after the starting point is linked to the changes in provisions related to exposures that are determined as described for the estimation of impairments in section 2.4.3.

161. Upon request from the competent authority, the table in Annex VII with the exposure value by LTV buckets for portfolios under the standardised approach should be filled in and included in the explanatory note. This information should be reported separately for SME and non-SME and with reference to 2019 and to each year of the scenario. For exposures with an LTV larger than 100%, banks should report the exposure exceeding the market value of collateral as well as the part of the exposure that equals the market value of the collateral.

2.6 REA for CCR

162. The previous section 2.5 regarding the REA and IRB regulatory EL applies to the exposures subject to CCR (both banking and trading book).

163. For calculating the REA for CCR, regulatory exposures relating to CCR will be reported using the appropriate template (CSV_CR_REA) and asset classes listed in Table 2 and Table 3 for only this purpose.

164. CCR regulatory exposures will remain constant and will not be affected by the impact of market risk scenarios or by any offset for increased accounting CVA in the scenarios (as set out in Article 273(6) of the CRR). In particular, stressed regulatory PD and LGD parameters (PDreg and LGDreg) shall be applied to these constant CCR regulatory exposures for the calculation of stressed REA for CCR.

2.7 Securitisation exposures

165. All exposures subject to Chapter 5 of the CRR (i.e. securitisation banking book positions, both on-balance and off-balance) as well as exposures subject to the specific risk part of trading book positions in accordance with Article 337 of Regulation (EU) 2017/2401 are included in the scope of this section.[17] Therefore, all these positions for which risk weights are calculated (retained originator positions for which SRT has been achieved and investor positions) need to be reported in the securitisation template. Securitisation positions deducted from capital shall not be reported in any of the securitisation templates.

166. Originating banks are required to treat the underlying exposures of securitisation transactions where no SRT has taken place under the credit risk methodology, and should report them accordingly in the credit risk templates.

167. Banks are required to take into account the credit risk mitigation effect in accordance with Article 249 of the CRR. In particular, this holds for originator and investor exposures to securitisations issued or guaranteed by international organisations, multilateral development banks, governments or government agencies, where firms are subject to the credit risk of these institutions rather than the credit risk of the underlying exposures.

168. In line with section 2.3.2, the static balance sheet assumption shall be applied by keeping the outstanding balance of all securitisation exposures unchanged throughout the time horizon

[17] The general risk capital requirements of these exposures shall be reported in the market risk templates.

of the stress test. Fair value changes shall not have an impact on the exposure amount and the REA calculation for the application of the credit risk methodology.

169. All securitisation exposures are to be reported net of specific credit risk adjustments and in accordance with Article 248(1) of Regulation (EU) 2017/2401.

170. For the computation of the P&L impact, banks are required to estimate the amount of specific credit risk adjustments for securitisation exposures that are not subject to mark-to-market valuation, taking into account the features of the baseline and adverse macroeconomic scenarios. FVOCI and FVPL portfolios are thus excluded from the calculation of specific credit risk adjustments. The cumulative specific credit risk adjustments on securitisations shall be reported in CSV_CR_SEC (i.e. incremental impairments must be added to impairments already considered in prior periods). For each individual security, the underlying pool needs to be stressed under the different scenarios to produce consistent impairment estimates. Estimated specific credit risk adjustments should take into consideration the impact of credit enhancement and other structural features when applying the credit risk methodology. Banks are required to outline their calculations in the explanatory note.

171. For securitisation exposures subject to mark-to-market valuation (i.e. FVOCI and FVPL), banks are required to estimate the P&L impact via the mark-to-market loss incurred as a result of the impact of the scenarios according to the market risk methodology (see section 3).

172. For the estimation of the REA, the stress under the securitisation framework is applied to the securitisation positions in both the banking book and the trading book within the scope of this section as per paragraph 165. Thus, all REA impact for exposures in the trading book (e.g. within correlation trading portfolios), except the specific risk of securitisation exposures, are covered by the market risk methodology and shall be reported within market risk templates.

173. At the starting point, i.e. 31 December 2019, banks are required to report exposure values and REA separately as actual and restated figures. Actual figures correspond to the assessment following the applicable standards as of 31 December 2019, namely Regulation (EU) 575/2013. Restated figures will serve as the basis for the stress test projections and shall be based on the applicable standard as of 1 January 2020, namely Regulation (EU) 2017/2401.

174. For the purpose of the stress test it is assumed that the restatement does not affect the SRT achieved as of 31 December 2019. This implies in particular that the restatement does not lead to a transition of exposures between this section and the general credit risk section of the methodological note. Banks are required to include in the explanatory note information about the effect of the restatement on SRT. Furthermore, it is assumed that the restatement does not lead to changes in the amount deducted from capital but rather to the application of a risk weight of 1250%.

175. For all regulatory approaches (i.e. SEC-IRBA, SEC-SA, SEC-ERBA and SEC-IAA), a fixed risk weight increase will be applied. For this reason, all restated exposures have to be mapped to the CQSs from SEC-ERBA look-up tables of Articles 263(3) and 264(3) of Regulation (EU) 2017/2401. Exposures shall be mapped to the CQS that ensures a similar risk weight as the restated one. This mapping shall take into account the tranche-specific seniority, maturity and qualification as an STS transaction based on corresponding applicable definitions from Regulation (EU) 2017/2401 (e.g. Article 243 for the eligibility as an STS transaction or Articles 263 and 264 for SEC-ERBA). SEC-ERBA exposures shall be mapped to the CQS row in line with the ECAI rating, before any adjustment for tranche thickness.

176. The mapping of exposures to the SEC-ERBA look-up tables is required to follow these steps: first, the SEC-ERBA look-up table to be considered depends on the classification as STS (Article 264(3) of Regulation (EU) 2017/2401) or non-STS (Article 263(3) of Regulation (EU) 2017/2401); second, the allocation to a specific column is done in line with the tranche seniority; third, for the allocation to a specific CQS row, unless paragraphs 177 or 178 apply, the exposure is mapped to the CQS row where the restated RW falls within the range of RWs for one year and five year maturity (i.e. CQS_i 1y RW < Sec RW ≤ CQS_i 5y RW); fourth, the exposure is split between the one and five years' cells of the CQS row identified in the previous step so that the weighted average of RW resulting from the split is equal to the restated RW of the securitisation.[18] Box 11 provides examples on the mapping of exposures.

177. In case the RW satisfies two CQS rows, the CQS to select is the one for which the weighted average maturity ensuring the same restated RW is closer to the original maturity of the securitisation[19]; in case the weighted average maturity is equally distant, in absolute terms, to the original maturity, the exposure shall be allocated to the higher CQS.[20]

178. In case a securitisation's restated RW is not in the range of any CQS row – because there is a gap between the RW for five years' maturity of a determined CQS and the RW for one year maturity of the next higher CQS – it is necessary to split the notional between different CQS rows so that the weighted average RW remains equal to the original. In this case, the weight for

[18] 5y weight = (Sec RW – CQS_i 1y RW) / (CQS_i 5y RW – CQS_i 1y RW); 1y weight = 1 – 5y weight.

[19] For example, a senior STS position with maturity of four years and a restated RW of 19% would fall within the ranges of CQS 3 and CQS 4. The allocation that ensures the same average restated RW would lead to a weighted average maturity of 4.2 years and 2.6 years, respectively for CQS 3 and CQS 4. Therefore, the closest weighted average maturity to the original maturity of this securitisation would be the one of CQS 3.

[20] For example, a senior STS position with maturity of four years and a restated RW of 20% would fall within the ranges of CQS 3, CQS 4 and CQS 5. The allocation that ensures the same average restated RW would lead to a weighted average maturity of 5 years, 3 years and 1 year, respectively for CQS 3, CQS 4 and CQS 5. Since the CQS with the closest maturity to the original one are equally distant to that original maturity (absolute distance of CQS 3 and 4 is equal to one), the higher CQS of these two is chosen (i.e. CQS 4).

the five years' bucket of the lower CQS is equal to (CQS_{higher} 1y RW – Sec RW) / (CQS_{higher} 1y RW – CQS_{lower} 5y RW) and the weight for the one year bucket of the higher CQS is equal to (1 - (CQS_{higher} 1y RW – Sec RW) / (CQS_{higher} 1y RW – CQS_{lower} 5y RW)).

Box 11: Mapping of Exposures

A) Illustration of the mapping for a non-senior tranche assessed via the SEC-ERBA and with the following characteristics: initially allocated to CQS 5, maturity of tranche of 3 years and not classified as an STS transaction.

1. According to Article 263(4) of Regulation (EU) 2017/2401, the RW before the correction for the thickness shall be 110% following the linear interpolation between one year (60%) and five years maturity (160%).

2. Since in this example the RW before thickness adjustment is in the middle between the RW for one year and the RW for five years, the exposure shall be allocated to the row of CQS 5 and split equally between one and five years maturity (non-senior tranche columns).

B) Illustration of the mapping for a senior tranche assessed via the SEC-IRBA and with the following characteristics: maturity of tranche of two years, RW of 12.5% and classified as an STS transaction.

1. Given its seniority and RW, the exposure shall be mapped to the column of senior positions and row of CQS 2, since 10% < 12.5% ≤ 15%.

2. The exposure shall be split equally between one year and five years maturity because this is the allocation that ensures a weighted average RW of 12.5% (50% * 10% + 50% * 15%).

C) Illustration of the mapping for a senior tranche assessed via the SEC-SA and with the following characteristics: maturity tranche of 2.5 years, RW of 110% and not classified as an STS transaction.

1. Since the original restated RW does not fall within the range of any single CQS, the exposure needs to be allocated to both CQS 9 (five years bucket; 105% RW) and CQS 10 (one year bucket; 120% RW).

2. The weight for the five years bucket of CQS 9 is 66.7% = (120% - 110%) / (120% - 105%).

3. The weight for the one year bucket of CQS 10 is 33.3% = 1 – 66.7%.

179. Mapped risk weights will be subject to predefined increases to be applied in the stress test horizon. The increased risk weights reflect the effect on REA of the potential rating migration of the positions given the baseline and adverse macroeconomic scenarios. The impact will be shown in template CSV_CR_SEC but separately for the different regulatory approaches.

180. The securitisation positions are allocated to the three different securitisation categories for which the increase in REA is prescribed: low, medium and high risk. The differentiation is dependent on the structure or asset class of the transaction, regional differentiation, the credit quality of the position and the expected sensitivity to the macroeconomic scenario. The classification is based on an analysis of the migration volatility of different products and their origin, where a higher migration probability indicates a higher risk. The risk categories and allocation of products are the following:

- Risk bucket 1 (low risk): ABCP, EMEA RMBS, EMEA ABS, Americas ABS;
- Risk bucket 2 (medium risk): EMEA CMBS, EMEA CDO, Americas CMBS;
- Risk bucket 3 (high risk): Americas RMBS, Americas CDO, re-securitisations and all other positions.

181. In the case of mixed pools, the allocation shall be done in a risk-oriented way, i.e. according to the bucket that covers the highest share of total restated REA within the tranche.

182. Re-securitisations shall be treated in line with Article 269 of Regulation (EU) 2017/2401 and shall always be reported under the respective CQS in the SEC-SA part of the template.

183. Banks are required to estimate the amount of specific credit risk adjustments before the calculation of REA for securitisation positions. Impairments estimated for the computation of the P&L impact will be taken into account in accordance with Article 248(1) of Regulation (EU) 2017/2401. Additional specific credit risk adjustments for securitisations estimated during the stress test horizon will directly impact the P&L.

184. When external ratings are not available and banks use the SEC-IAA approach for REA calculation purposes, these securitisation positions shall be reported according to the assigned CQS. Similarly, when inferred ratings have been derived in accordance with Article 263(7) of Regulation (EU) 2017/2401 for securitisation positions, these securitisation positions shall be reported according to the assigned CQS.

185. Positions subject to additional risk weights resulting from the application of Article 270a of Regulation (EU) 2017/2401 shall also be reported on an aggregate level in the template CSV_CR_SEC_SUM. They are not stressed during the stress test horizon, i.e. REA stays constant at the 2019 restated value for those positions.

186. The restated end-2019 level of REA serves as a floor for the total REA calculated under the baseline and adverse scenarios. This floor is applied separately for each securitisation approach.

187. The impact in terms of REA from the maximum risk weight for senior securitisation positions and the maximum capital requirement outlined in Articles 267 and 268 of Regulation (EU) 2017/2401 shall be reported as a memorandum item. The REA reported for each approach and the RW used for the mapping from paragraph 175 shall consider the impact of the application of the maximum risk weight and maximum capital requirements mentioned above (i.e. report the capped amount, if applicable).

3. Market risk, CCR losses and CVA

188. The impact of market risk on all positions at partial or full fair value measurement is to be assessed via a full revaluation after applying a common set of stressed market risk factor shocks provided in the market risk scenario. Under the trading exemption, banks are allowed to not apply a full revaluation on items held with a trading intent and their related hedges.

189. Banks have to recalculate the CVA and liquidity reserve based on the market risk scenario consistently with the full revaluation. Banks shall also stress their accounting and regulatory reserves to take into account liquidity and model uncertainty for L1/L2/L3 assets and liabilities.

190. In addition, for items held with a trading intent, client revenues can be projected for each year if the bank is able to provide historical evidence of the sustainability of these incomes. Under the trading exemption, banks are allowed to set these revenues to 75% of the baseline NTI.

191. For CCR, it is assumed that the two most vulnerable of the largest 10 counterparties default.

192. In addition, banks are required to determine the impact of the scenarios on REA; however, these are largely based on prescribed assumptions.

193. Banks' projections are subject to the constraints summarised in Box 12.

Box 12: Summary of the constraints on banks' projections of market risk

- No change, i.e. no deviation from the starting value, is assumed under the baseline scenario (paragraphs 252 and 269) for the full revaluation.
- The full revaluation impact on items held with a trading intent and their related hedges is capped at a haircut of the sum of fair value assets and liabilities under the adverse scenario.
- The baseline value for the NTI is defined (based on average historical values) as the minimum of the averages across the last 2, 3 and 5 years, where the 2-year average is floored at 0 (paragraph 286).
- Under the adverse scenario, client revenues projections are capped at 75% of 2019 annual client revenues and 75% of the baseline NTI.

- REA stays constant in the baseline scenario and cannot decrease below the starting value in the adverse scenario (paragraphs 303 and 304).
- REA is assumed to be a multiple of the risk measures for VaR and APR (paragraphs 306 and 308).
- Banks that do not have in place a VaR model approved by the competent authority are assumed to maintain market risk REA constant at the starting value for both the baseline and adverse scenarios (paragraph 303).
- The impact on REA for IRC and CVA is floored at the increase for IRB REA (paragraphs 307 and 310).

3.1 Scope

194. The scope of the market risk stress methodology covers all positions under full or partial fair value measurement — i.e. positions at FVPL, FVOCI and amortised cost positions being part of a hedge-accounting relationship.

195. This scope includes all hedge-accounting portfolios designated to hedge positions measured at fair value (i.e. FVOCI) or at amortised cost. This includes fair value hedges and cash flow hedges.

196. For the portfolio items held for trading and related economic hedges, the revaluation has to be performed under the market risk factor shocks for both the hedged position and the hedging instrument separately (i.e. positions cannot be netted prior to calculating the impact of the stress). The template CSV_MR_FULL_REVAL distinguishes between long and short positions and covers fair-value changes for hedged items and their related hedging items separately.

197. In line with paragraphs 36 and 491 the impact of FX risk on positions at amortised cost not being part of hedge accounting is excluded from the scope. This means, all other items (including amortised cost items and liabilities being part of hedge accounting relationship), the fair-value changes of both, the hedged item and the hedging item, due to the hedged risk factor (e.g. interest rates or FX) are booked as a gain / loss in the P&L separately[21]. The fair value change of a hedging item that is part of an economic hedge with an amortised cost item should be reported in the CSV_MR_FULL_REVAL template.

[21] Or as a gain / loss in OCI separately if paragraph 6.5.8 of IFRS 9 applies for equity instruments designated at fair value through OCI.

198. Also in scope are all positions for which banks calculate CVA, as well as all positions subject to CCR.

199. Securitisation positions held at fair value are also covered in this section. The market risk impact for securitisation positions therefore needs to be reported in the market risk templates depending on their accounting treatment and in line with any other positions in the scope of the market risk methodology. However, the stressed REA for securitisation positions that are not in the correlation trading portfolio are not in the scope of the market risk methodology and are covered under credit risk in section 2.7.

200. Defined benefit pension funds shall be subject to the application of relevant market risk variables as defined in the adverse scenario. In particular, the same set of shocks to long-term interest rates is taken into account for the purpose of computing the change in the actuarial discount rate (the IAS 19 discount rate for banks using IFRS) and should be consistent with the development of long-term interest rates as defined in the macroeconomic scenarios. The asset and liability positions shall be stressed in line with the requirements for all positions under partial or full fair value measurement. As outlined in paragraph 510, the eventual shortfall of assets versus liabilities in defined benefit pension funds, resulting from the application of the scenarios, will have an impact on banks' capital. The impact shall be reported by all banks as a memorandum item on the market risk summary template (CSV_MR_SUM).

3.2 High-level assumptions and definitions

3.2.1 Definitions

201. The **comprehensive approach (CA)** is the approach to be applied if there is no trading exemption.

202. The **trading exemption** is an exemption from reporting the full revaluation impact for items held with a trading intent and their related hedges.

203. **Partial fair value** is an accounting measurement under which only specified risks are measured at fair value through profit and loss. For example, amortised cost items that are hedged via a fair value hedge-accounting relationship are at partial fair value because the changes of the fair value of the instrument related to the hedged risk are reported in the P&L.

204. **Hedge-accounting portfolios** are defined in line with FINREP. Only the fair value changes of hedging instruments (cash flow hedges and fair value hedges) that qualify as hedge-accounting instruments under the relevant accounting framework (e.g. IAS 39 or IFRS 9) as of year-end 2019 are recognised as hedging effects from hedge-accounting instruments.

205. **Cash flow hedged items** are items hedged via a cash flow hedge-accounting relationship under either IFRS 9 or IAS 39.

206. **Portfolio cash flow hedged items of interest rate risk** are items hedged via a cash flow hedge-accounting relationship for a portfolio hedge of interest rate risk under either IFRS 9 or IAS 39.

207. **Fair value hedged items** are items hedged via a fair value hedge-accounting relationship under either IFRS 9 or IAS 39.

208. **Portfolio fair value hedged items of interest rate risk** are items hedged via a fair value hedge-accounting relationship for a portfolio hedge of interest rate risk under either IFRS 9 or IAS 39.

209. **Cash flow hedging instruments** are items that are recognised as hedging instruments in a cash flow hedge-accounting relationship under either IFRS 9 or IAS 39.

210. **Portfolio cash flow hedging instruments of interest rate risk** are items that are recognised as hedging instruments in a cash flow hedge-accounting relationship for a portfolio hedge of interest rate risk under either IFRS 9 or IAS 39.

211. **Fair value hedging instruments** are items that are recognised as hedging instruments in a fair value hedge-accounting relationship under either IFRS 9 or IAS 39.

212. **Portfolio fair value hedging instruments of interest rate risk** are items that are recognised as hedging instruments in a fair value hedge-accounting relationship for a portfolio hedge of interest rate risk under either IFRS 9 or IAS 39.

213. **Items mandatory or optional at FVPL** are positions that are either (i) designated at fair value through profit or loss (IFRS 7.8(a)(i)) or (ii) non-trading financial assets mandatorily at fair value through profit or loss (IFRS 9.4.1.4).

214. **FVOCI items held for (i) collecting contractual cash flows and selling financial assets or (ii) holding or selling equity positions** are all items measured at FVOCI that are not part of any hedge-accounting relationship.

215. **Direct sovereign positions** cover only exposures to central, regional and local governments listed in the EBA list of public sector entities (Article 116 of the CRR) or regional and local governments (Article 115(2) of the CRR). In all other cases, positions are to be considered as an additional risk factor as described in Box 13. The direct sovereign positions shall be treated on an immediate borrower basis, and do not include exposures to other counterparts with full or

partial government guarantees. Exposures towards supranational entities and central banks are treated as non-sovereign positions.

216. **Items held with a trading intent and their related hedges** are all financial instruments reported in HFT in FINREP but excluding economic hedges of items booked in other accounting categories. This includes all items that are held with a trading intent and all the economic hedges used to hedge these positions.

217. **Economic hedges** are financial instruments that do not meet the requirements of IAS 39 or IFRS 9 to qualify as hedging instruments, but that are held for hedging purposes. Economic hedges are defined following FINREP. They include those derivatives that are classified as HFT but are not part of the trading book as defined in Article 4(1)(86) of the CRR. The item 'economic hedges' does not include derivatives for proprietary trading.

218. **Market risk factors** refer to a set of factors identified by the ESRB and the ECB as the main drivers of market risk that were used to calibrate the impact of the adverse market risk scenario on fair value positions. They include interest rates and volatilities for currencies, exchange rates, changes in volatility for equity, commodity and debt instruments, changes in credit spreads for debt instruments, parameters relevant to the correlation trading portfolios and bid/ask spreads to be used for the assessment of the impact on market liquidity. Most, but not all, of these market risk factors are explicitly captured in the full revaluation template (CSV_MR_FULL_REVAL).

219. **Additional risk factors** are factors other than the ESRB and the ECB market risk factors that have a material contribution to the overall full revaluation results.

220. **Basis risk** is defined as the risk arising from the valuation of instruments and positions that are function of risk factors that are similar, but not identical to the ones provided in the market risk scenario.

221. **NTI** is defined as in FINREP ('gains or losses on financial assets and liabilities FVPL, net') , with the exclusion of the following items:

- Net interest income on assets and liabilities in FVPL that are reported in NTI in the course of their periodic financial reporting, which is treated under the NII methodology.

- All components (including related hedges), which will not further impact P&L according to paragraph 36 (e.g. gains and losses from FX positions, which will not re-occur after the market risk ad-hoc shock).

For historical NTI, the abovementioned exclusion should be carried out on a best effort basis. If the national applicable accounting framework mandatory requires to classify the P&L from FX

hedging items as exchange differences instead of NTI, these P&L components have to be netted with the effects from the related hedged items reported under NTI. Banks shall describe how the netting was carried out and report the excluded amounts per year in detail for the historical NTI in the explanatory note. One-off effects (as described in section 6.4.2) shall not be deducted or accounted for in the calculation of the NTI, i.e. historical data for NTI may not be adjusted unless the bank restated its accounts (e.g. for misvaluing derivative positions) over the last 5 years.

222. **Client revenues** from items held with a trading intent are defined as the part of the NTI, which is (i) a retained portion of or a mark-up on the bid/ask-spread, generated from market making or trading activities on behalf of external clients, (ii) prime services revenues and (iii) underwriting fees charged by the bank on a debt underwriting or a debt issuance by a corporate client booked in the trading book. Banks shall describe in the explanatory note how client revenues have been estimated and give a breakdown of which types of transactions are recognised as client revenues. Client revenues as defined above do not include any items treated as "Fee and commission income" according to FINREP template 2 row 200 which are treated under section 6.4.1 of the methodology. Further, P&L due to movements in fair value caused by movements in market prices shall not be included in the client revenues.

223. **Optional derivatives** are all derivatives, as defined under IFRS 9 or IAS 39 that have an optional pay-off.[22]

224. **CCR exposures** are exposures related to the risk that the counterparty to a transaction could default before the final settlement of the transaction's cash flows. This refers to CCR as defined in Article 272 of the CRR, and to the regulatory exposure for capital requirements as calculated in accordance with Article 273 of the CRR. The definition of CCR exposures includes all exposures that are subject to Article 271 of the CRR, including repurchase transactions, securities or commodities lending or borrowing transactions, long settlement transactions and margin lending transactions. The relevant exposure measure that shall be used is current exposure, given by the market value and taking into account legally enforceable counterparty netting and collateral received or posted to the counterparty following the application of the adverse market risk scenarios as defined in section 3.3.2. The exposure for P&L is distinct from

[22] This includes, inter alia, equity single name options, equity index options, equity basket options, equity variance options, equity volatility options, equity warrants, equity convertibles, equity convertible preferred, currency options, FX OTC options, currency swaptions, options on bond futures, options on interest rate futures, options on interest rate swaps and options on CDS. On the other hand, this excludes CDS – single names, CDS – basket, CDS – index, equity index futures, equity forward, equity swaps, equity variance swaps, equity volatility swaps, equity convertible swaps, currency futures, forward FX contracts, currency-linked notes, bond futures, interest rate futures, futures on swaps, single currency interest rate swaps, cross-currency interest rate swaps, basis swaps, bond forwards and forward rate agreements.

the exposure for the calculation of capital requirements as set out in section 2 which refers to regulatory exposure as defined in the CRR — i.e. covering both current and potential future exposure. The exposures for both the P&L and capital requirements calculations should comprehensively capture trades and aggregated exposures across all forms of CCR at the level of specific counterparties.

225. **CVA** is an adjustment to the mid-market valuation of the portfolio of transactions with a counterparty, as per Article 381 of the CRR. This adjustment reflects the current market value of the credit risk of the counterparty to the institution, but does not reflect the current market value of the credit risk of the institution to the counterparty. **DVA** is an adjustment to the measurement of derivative liabilities to reflect the own credit risk of the entity.

226. **IRC** is an approach that captures, in the calculation of capital requirements, the default and migration risks of trading book positions that are incremental to the risks captured by the VaR measure as specified in Article 365(1) of the CRR.

227. **Correlation trading portfolio and APR:** institutions shall use this internal model to calculate a number that adequately measures APR at the 99.9% confidence interval over a time horizon of 1 year under the assumption of a constant level of risk, and adjusted (where appropriate) to reflect the impact of liquidity, concentrations, hedging and optionality (Article 377 of the CRR).

228. **Securitisation positions** are defined as in section 2.7.

229. **L1/L2/L3 instruments** are defined according to FINREP or IFRS 13.

3.2.2 Static balance sheet assumption

230. The market risk shock is applied as an instantaneous shock to all positions in the scope of the market risk methodology, with the exception of FVPL positions held with a trading intent and their related hedges for trading exemption banks.

231. In line with the static balance sheet assumption:

- The notional values of all assets and liabilities under the market risk scope are expected to remain constant over the time horizon of the exercise.
- Banks cannot assume any portfolio management actions in response to the stress scenarios (e.g. portfolio rebalancing or liquidation).

3.2.3 Requirement for the trading exemption

232. Institutions can request the trading exemption to their competent authorities provided that neither of the following conditions holds:

- The institution has at least one VaR model in place, approved by the competent authority under the CRR;

- The institution's total market risk capital requirement is greater than 5% of the total capital requirement.

233. Competent authorities can reject the request for the trading exemption even if the previous conditions are fulfilled.

234. The differences between CA banks and trading exemption banks are also specified in section 3.3.5 and are summarised in Box 36 of the Annex V.

3.3 Full revaluation of positions under partial or full fair value measurement

3.3.1 Reference date and time horizon

235. The reference date for applying the market risk shocks is 31 December 2019.

236. The overall impact on P&L and capital of the market risk shocks is fully recognised in the first year of the stress test horizon (i.e. in 2020).

237. The P&L impact of the market risk stress shall be an instantaneous shock — i.e. no holding period assumptions can be made for any positions for the calculation of gains or losses.

3.3.2 Market risk factors

238. The market risk scenario has been defined in terms of shocks to market risk factors in order to project gains and losses on all positions subject to partial or full fair value measurement, with the exception of items held with trading intent and their related hedges in the case of trading exemption banks. The stressed market risk factors have been estimated for the adverse scenario by the ESRB and the ECB.

239. Not all risk factors provided in the market risk scenarios are explicitly captured in the CSV_MR_FULL_REVAL. Banks' impact projections shall take into account all market risk factors provided in the scenario — e.g. the impact for equity instruments will depend not only on the shocks provided for equity indices, but also on the volatility assumptions in the scenario.

240. If aggregate and more detailed risk factors are provided, e.g. for the EU and on a country level, the most granular relevant risk factor should be applied in each case.

241. As the risk factors provided may not necessarily capture all of banks' market risk drivers, all banks are required to identify and stress all relevant risk drivers, also by stressing additional risk factors that are not included in the scenario but have a material contribution — i.e. on a cumulative basis, for banks with an approved VaR model, in the case of items held with a trading intent and their related hedges, the additional risk factors show a relevant impact, and, along with the factors already considered, explain at least 95% of the actual VaR. When identifying the list of additional risk factors, banks should consider in particular:

- Factors included in the regulatory VaR model;
- Factors which are subject to the standardised approach for market risk;
- Factors which are part of the risks not in the VaR (RNIV) framework;
- Additional risk factors which the bank manages, hedges or limits;
- Any other key illiquid parameters or pricing model inputs, which are relevant for P&L or OCI under stressed market conditions.

242. In addition, banks need to report in the explanatory note the calibration of these risk factors and their impact. This information will be relevant in the quality assurance process in order to assess the degree of fitting between the additional stress factors and the ones included in the scenarios.

243. Banks shall differentiate between two kinds of additional risk factors:

- Risk factors that are part of aggregated risk factors in the given scenario — e.g. different types of oil as part of the oil risk factor;
- Risk factors that are not included in the scenario in aggregate form — e.g. inflation risk.

244. For the first type of risk factors defined in paragraph 243, banks shall in general, not extend the set of risk factors to additional, more granular, risk factors but shall apply the shocks given in the scenario directly. However, banks shall assess whether or not the resulting stress is adequate for their portfolio. If this is not the case, e.g. because of illiquid positions in a bank's portfolio or concentrations in more volatile positions, banks shall also extend the scenario to more granular risk factors. This approach may only increase the stress impact of the bank. The list of more granular risk factors and associated shocks derived using this approach should be reported in the explanatory note.

245. In the case of interest rate and credit curves, the shocks for tenors that are not provided in the market risk scenario are required to be computed by interpolation according to the

hierarchy defined in Box 13. For tenors that are shorter or longer than the range of tenors available in the scenario, shocks to the shortest and the longest tenor available respectively should be used.

246. Banks should define their own approach to derive the additional risk factors that are not provided in the market risk scenario and need to provide evidence to show that this approach is:

- Appropriate (i.e. methods and relationships relied upon should be valid);
- Comprehensive (i.e. material market risks should not be left unstressed);
- Conservative (i.e. where it is impossible to accurately reflect the impact of the stress scenario, banks should overestimate rather than underestimate its impact).

247. The treatment of risk factors and the approach to including additional risk factors, as well as the optional and additional information required by competent authorities, is specified in Box 13. Data that are available in banks' internal systems and are sourced from standard market data providers can be used for the purpose of calibrating shocks to the additional risk factors.

Box 13: Treatment of risk factors

The identification of the market risk shocks should be performed following the steps/hierarchy below:

1. Mapping to EBA shocks (shock to bank risk factor determined directly by the shock to the related EBA risk factor)

This is expected to be the most common approach for most banks, where the shock to the bank risk factor is directly determined by the shock to the related EBA risk factor in the scenario. The mapping can be (i) one-to-one (direct application of EBA shock to one of the bank's market risk driver), (ii) many-to-one (application of one EBA shock to several appropriate bank risk factors, (iii) one-to-many (identification of most appropriate EBA risk factor among many for the respective bank risk factor – largest shock as a fall-back), (iv) many-to-many (identification of most appropriate EBA risk factor for respective set of bank risk factors and apply this shock to all bank risk factors).

2. Statistical expansion

If EBA risk factor time series and additional risk factors can be linked via estimated statistical relationship, the shock size to additional risk factor shall be derived from statistical relationship

and the given shock to the EBA risk factor. This approach may be used if good quality data is available and sound statistical relationship can be established. Such a statistical relationship may also be established between EBA risk factors themselves or bank risk factors to which Step 1 can be applied. The shock for the bank risk factor is determined by feeding the stressed EBA risk or stress risk factors determined by Step 1 into the statistical relationship.

3. Rules-based approach

Shocks shall be derived via interpolation, extrapolation or rules based combination of several other risk factors (either EBA risk factors or additional risk factors derived via approach Step 1 or Step 2) to derive shock to bank risk factor. The shock for the bank risk factor is derived by first shocking the input risk factors used for the rule derived via Step 1 or 2 and then applying the rule.

4. Expert judgement

For cases where (i) insufficient historical data in stressed conditions is available and/or no meaningful statistical relationship can be established and (ii) there are sufficiently related risk factors as to determine a rules based expansion, risk factors shall be stressed taking into account theoretical considerations, such as non-arbitrage relationships, with other risk factors whose shock size can be determined via approaches steps 1 to 3. The theoretical considerations should be justified with historical data demonstrating the conservatism of the approach. The shock for the bank risk factor is determined by first stressing the input risk factors to the theoretical relationship via steps 1 to 3 and then applying the theoretical relationship.

5. Statistical expansion via the market risk scenario

Where bank risk factors cannot be related to the EBA risk factors establishing meaningful relationship between them, but, nevertheless, good quality data is available to support a statistical relationship between the bank risk factor and the market risk scenario, this relationship should be used to calibrate the shocks of the risk factor. The shock for the bank risk factor is determined by feeding the stressed market risk shocks into the determined statistical relationship.

6. Expert judgement using the narrative of the macroeconomic scenario

For cases where insufficient data is available to establish meaningful relationship between the bank risk factor and the EBA risk factors or macroeconomic variables, theoretical reasons to support the calibration of the risk factor shall be applied. These theoretical considerations should be backed with historical data demonstrating the conservatism of the approach. The shock for the bank risk factor is determined by first stressing the input risk factors to the theoretical

relationship via steps 1 to 5 or using the narrative of the macro-economic scenario and then applying the theoretical relationship.

248. The scenario translation and expansion shall include consideration of all relevant basis risks for the bank in the adverse scenario. Banks shall assess if shocks have been applied on a suitable level of granularity to ensure all key basis risks are captured, since methodological choices following from Box 13 may lead to underestimation of basis risk.

3.3.3 Scope of application of the full revaluation

249. All accounting categories under a full or partial fair value measurement are required to be fully revaluated under the adverse scenario (except items held with a trading intent and their related hedges for trading exemption banks).

250. If the systems of a bank do not allow the full revaluation for certain positions that are not held with a trading intent, banks may perform a partial revaluation and apply Taylor approximation techniques. Banks should indicate in the explanatory note how, for which instruments and for what part of the portfolio they applied this approach.

251. For items that are measured at FVOCI and that would be subject to the impairment model of IFRS 9, the impact from changes in the credit risk of counterparties shall be measured at fair value and reported in OCI.

3.3.4 Features of the full revaluation

252. In the baseline scenario, no impact is assumed (i.e. the impact is set to zero).

253. In line with paragraph 236, gains and losses on all position in scope shall be fully recognised in the first year of the stress test.

254. The impact of the full revaluation shall be reported in the template CSV_MR_FULL_REVAL.

255. Banks are requested to conduct full revaluations of all their positions under partial or full fair value measurement (except items held with a trading intent and their related hedges for trading exemption banks) and to report impacts by asset classes, accounting and product type, and by differentiating between optional derivatives and other products. In particular, banks need to report:

- The fair value or accounting value in line with FINREP requirements and notional of the positions. Notional is defined as the sum of the absolute values for assets (positive) and liabilities (positive).

- The gain or losses under the full revaluation.

- The first order sensitivities ('delta') of the positions to the risk factors provided in the template CSV_MR_FULL_REVAL, as of the reference date (31 December 2019) as defined in Table 8. Sensitivities need to be reported for all risk factors included in the market risk scenario other than volatilities and the shocks for reserves for liquidity or model uncertainty.

Table 8: Definition of sensitivities

Risk factor category	Current Value	Greek letter	Greek value
Equity, FX	X_0	DELTA	$F_X'(X_0)\times 1\%$
Interest rate, credit spread	r_0	DELTA	$F_r'(r_0)\times 1bp$

256. In relation to credit risk and interest rate risk factors, the reporting of sensitivities across buckets in the template CSV_MR_FULL_REVAL shall follow a "bucketing" approach. This shall consist in reporting sensitivities for the relevant tenor (as reported in the template CSV_MR_FULL_REVAL) in such a way that the total impact computed from the tenors' sensitivities after bucketing is equivalent to the impact obtained from the actual sensitivity of the cash flows and the related shock .

257. The total impact shall then be separately reported for the following items, in line with accounting standards:

- The impact on OCI from revaluation effects of (i) non-hedged risk factors on hedged items — i.e. the impact on OCI after hedging —, (ii) hedged risk factors on cash flow hedging instruments (effective part) or (iii) all risk factors on FVOCI positions;

- The impact on P&L from revaluation effects of (i) ineffectiveness of hedging instruments that are part of a cash flow hedge-accounting relationship, (ii) hedged risk factors on hedged instruments via fair value hedge accounting or (iii) all risk factors on FVPL positions.

258. Direct sovereign positions' fair value and full revaluation impacts shall be reported in the template CSV_MR_FULL_REVAL for all accounting categories and instrument types. The impact shall be divided among the breakdown by risk factors. As the government bond yield shock

embeds the risk free and the credit spread component, for the split between interest rate and credit spread impact, the sovereign spread is calculated as the difference between the stressed government bond yield and the stressed swap rate for the same country (currency) and maturity. For sovereign positions not denominated in local currency, the splitting takes place via the swap curve of the respective currency.

259. For items that are held with a trading intent and their related hedges, the full revaluation loss for CA banks is capped at a haircut of the sum of asset and liabilities of these positions as described in Box 14. This floor is applied on CSV_MR_SUM on portfolio level.

Box 14: Constraint on the full revaluation of CA banks for items that are held with a trading intent and their related hedges (TI&RH)

Full revaluation impact = VaR scaling factor * Min(-0.20% * Sum(Assets fair value TI&RH, Liabilities fair value TI&RH), Gain or losses on TI&RH items)

Where:

- TI&RH are all positions held with a trading intent and their related hedges, the fair value of assets and liabilities being both positive numbers.
- Gain or losses on TI&RH items are banks' own full revaluations of TI&RH items.
- VaR scaling factor is defined as in paragraph 260.

260. In order to account for the possible lack of representativeness of the end-of-year positions, the total loss projected by CA banks under the adverse scenario for items that are held with a trading intent and their related hedges shall be multiplied by a scaling factor that is computed as follows:

- The ratio between the 75th percentile of the daily VaR[23] figures for the full year 2019 and the daily VaR reported for the reference date 31 December 2019 is calculated.
- This ratio is floored at 1.

[23] Considering a 10-day holding period

- The scope of positions for the VaR is permitted to be the prudential trading book. When a regulatory VaR model is not available for this calculation, banks shall apply internally used VaR models with a 10-day holding period.

- The calculation of this ratio as well as the application of the scaling factor is carried out on CSV_MR_SUM.

261. For the purpose of the stress test, banks shall not, under any circumstances, take into account possible valuation adjustments on debt securities and gains resulting from credit spread widening of own liabilities (for instance DVA). Hence, following a deterioration of own creditworthiness, the bank is not allowed to book a gain on those debt securities (or any other fair value liabilities) that represent a net liability to the bank.

262. The impact of the full revaluation shall be reported including basis risk in line with Paragraph 248. Banks are required to outline the approach taken in the explanatory note.

263. In addition to the accounting breakdown, market shocks are intended to be applied and reported by relevant risk factors (i.e. interest rate, FX, equity, funds, commodities, credit spread). For instance, for a bond the key risk factors to be considered are interest rate and credit risk. Exceptions to this general rule are, for example, funds and other instruments for which the scenario does include the relative change in the fair value or the yield of the products and for which there is no need to disentangle the effects in underlying shocks. In the case of asset classes similar to the ones for which fair value changes are given, banks shall apply the same approach and shocks.

264. The impact of the shock on correlation trading portfolios shall be reported together with other positions in the full revaluation market risk template (CSV_MR_FULL_REVAL). Banks holding a correlation trading portfolio in excess of 1% of total REA are deemed to hold a significant correlation trading portfolio. Competent authorities can ask these banks to provide additional information on the impact of these portfolios.

265. When reporting results, multivariate effects deriving from the application of the market risk parameter shocks shall be taken into account and cumulatively shown in the template in the P&L and OCI impact columns.

266. Banks are requested to provide a narrative, detailing major hedging strategies at portfolio level, for both hedge-accounting portfolios and economic hedges in the explanatory note.

3.3.5 Trading exemption banks

267. For banks classified as trading exemption banks according to the criteria set out in paragraph 232, the impact of FVPL positions held with a trading intent and their related hedges is equal to the haircut used as a floor for the full revaluation results as defined in Box 14.

3.4 Revaluation of market risk reserves

268. For the purpose of the liquidity and CVA reserves stress test losses (as detailed in this section), all banks are required to stress exposures based on the market risk scenarios and risk factor shocks described in section 3.3.2 in the adverse scenario.

269. No additional liquidity or CVA losses are assumed for the baseline scenario.

3.4.1 CVA impact on P&L and exclusion of the DVA impact

270. The negative P&L adjustments arising from CVA changes will reflect deteriorating credit quality for some counterparties under the market risk stress. When calculating the adjustments, all banks, irrespective of whether they are TE or CA banks, should maintain consistency in the calculation of CVA with their internal modelling choice and apply their internal methodology in a prudent way. Banks are required to calculate CVA losses as the CVA at the reference date minus the CVA under the market risk stress, with the latter derived from the application of the prescribed market risk shocks for the adverse market risk scenario.

271. The projection of CVA losses covers all portfolios in which CVA losses can occur according to the accounting treatment of the bank — i.e. it is not limited per se to FVPL positions or to positions for which a CVA capital charge is calculated. All losses will be captured in the P&L. No separate materiality thresholds are set, as banks are required to follow their accounting treatment.

272. In deriving the CVA under the market risk stress, banks may exclude counterparties in default. Banks should pay particular attention to material counterparties whose credit spread is significantly and adversely correlated with the risk factors that drive the CVA related to those counterparties or the collateral posted by those counterparties, in particular making a judgement about whether a more conservative application of their standard methodology would be appropriate in such a material case.

273. The P&L impact of CVA hedges shall be excluded from the stressed CVA reported in the template CSV_MR_RESERVE. Any impact from CVA hedges will be reported following its accounting treatment in the full revaluation template CSV_MR_FULL_REVAL, but no adjustment to those hedges shall be assumed. However, the impact of CVA hedges has to be reported as a memorandum item in the template CSV_MR_RESERVE.

274. Exposures shall be reported net of stressed collateral. No collateral that is to be called beyond what is held at the reference date may be assumed.

275. For the purposes of the stress test, banks shall not take into account possible DVA as explained in paragraph 261. This constraint should be applied within each netting set for derivatives.

276. Banks are not allowed to offset the projected CVA fair value impact by any existing reserves.

277. The resulting CVA impact shall be reported using the reserve template (CSV_MR_RESERVE).

278. Banks are asked to break down CVA positions into investment and sub-investment grade for the set of types of counterparties defined in the template CSV_MR_RESERVE, using their normal approach to distinguishing investment grade according to external ratings or, for counterparties with no external rating, according to an internal methodology if applicable.

279. Banks can optionally be asked by the competent authority to report the information listed in Table 9.

Table 9: Informations about the CVA to be reported in the template CSV_MR_RESERVE

Information	Guidance
Average credit spread	For any given counterparty category, the average credit spread (as of 2019 and under the adverse scenario) should be computed as a weighted average spread, across issuers and tenors, weighted by the exposure amount in each tenor bucket (or time step) used.
Expected positive exposure (EPE)	The EPE should be computed in a manner consistent with the internal methodology used by the bank for the calculation of the CVA in its accounts. If an add-on methodology is used for such determination, the add-on should be reported.
Aggregate EPE	In any given counterparty category, the aggregate EPE should be computed as a simple aggregate (i.e. sum) across all counterparties (in this category) of the average EPE profile for such counterparties. For any counterparty, the average EPE profile should be determined as the weighted average of the EPE profile across the various maturity tenors (or time steps), weighted by the size of this time step (i.e. the difference in time between the start and the end of such time), or any other more detailed methodology provided that it remains a reasonable approximation of the overall EPE against that counterparty in the market scenarios in question and a good predictor of the overall CVA adjustment for the counterparty (when combined with the average credit spread).

3.4.2 Reserves for liquidity and model uncertainty

280. The liquidity and model uncertainty methodology shall be applied to all banks in the sample.

281. To take into account liquidity and model uncertainty, banks shall compute the impact on their fair value adjustments (IFRS 13) and prudential adjustments (AVA, Article 105 of the CRR) of an exogenous widening in the bid-ask spread for the whole portfolio of items for which these reserves are computed.

282. Regarding the accounting adjustment, the scope of application of the bid-ask spread widening shall only concern the fair value adjustment for liquidity issues and model risk; while for AVA calculations, only the adjustments related to market price uncertainty, close out cost and model risk are required to be considered. Other valuation adjustments defined in Article 105 of the CRR (unearned credit spreads, early termination, investing and funding cost, operational risks and future administrative costs) are out of scope for the computation of the liquidity and model risk shocks

283. Banks shall first compute the impact of a market liquidity shock (using the market liquidity shock reported in the market risk scenario) affecting the bid-ask spread of all items in their portfolio (fair value levels L1, L2, L3). For L2 and L3 instruments, an additional bid-ask spread shock accounting for model uncertainty shall be applied (using the model uncertainty shock reported in the market risk scenario). The model uncertainty shock shall be applied in an additive way with the market liquidity shock.

284. Level 2 instruments that are cleared at an exchange or a CCP (either cleared directly with a CCP or cleared with a CCP through a Clearing Member) at the reference date of the stress test exercise (end of 2019) shall be treated as level 1 instruments. Therefore, for those instruments only the liquidity shock shall apply. If requested by the Competent Authority, banks should report in the explanatory note the detailed decomposition[24] of their level 2 portfolio into cleared (i.e. level 2 instruments treated as level 1) and non-cleared instruments for both the starting point reserve and the stressed reserve.

285. The impact coming from the liquidity and model uncertainty shock shall be reported in template CSV_MR_RESERVE. The impact coming from AVA reserves and accounting reserves shall also be reported in the respective columns of the CSV_MR_RESERVE template.

[24] The information should cover the type and the financial characteristic of the items such as, maturity, currency ,coupon type, parameter indexation and optionality.

Box 15: Application of the liquidity and model uncertainty shock

Banks can apply the shocks (only liquidity for L1 instruments and both liquidity and model uncertainty for L2 and L3) at instrument or at portfolio level. In the latter case, a sensitivity approach should be followed to determine the stressed bid-ask spread. Once the stressed price bid-ask spread for an instrument or at portfolio level has been derived, the impact on the accounting and prudential reserves is given by the product between the exposure amount and the stressed bid-ask spread. For instance, the exposure amount to be considered for bonds is the *nominal value*, for exchange traded derivatives, IR and FX swaps is the *notional value* of the instrument while for equities the *fair value* should be used. Some guidance on how to compute the impact on reserves depending on the availability of the bid-ask spread are reported below:

Available bid-ask spread:

I. Instrument level application: In this case the bid-ask spread of the price of the instrument can be directly observed on the market (to be divided by 2). The second step would be to compute a stressed bid-ask spread by applying the liquidity and model uncertainty shock in an additive way. The final impact on reserves is then obtained by applying the stressed price bid - ask to the exposure amount as shown in *Example 1*.

Example 1. For instance, if the shocks in the market risk scenario are 230% (L1) and 180% (L2), and considering that the price is expressed as a percentage of the notional, the stressed price bid-ask spread for an L1 and an L2 interest rate instrument would be:

L1: $StressSpread_{Bid-ask} = [(Price_{bid} - Price_{ask})/2] * 230\% = (100 - 99.90)/2 * 230\% = 0.11\%$

L2: $StressSpread_{Bid-ask} = [(Price_{bid} - Price_{ask})/2] * (230\% + 180\%) = (100 - 99.80)/2 * (230\% + 180\%) = 0.41\%$

Assuming a notional amount of 10,000 €, the final impact on reserves for both instruments would be: $Impact\ on\ reserves = (StressSpread_{Bid-ask}) * Exp_{amount}$

L1→ 0.11% * 10.000 € = 11€ and L2 → 0.41% * 10.000 € = 41€

The stressed reserve to be reported in the CSV_MR_RESERVE will be the sum of the starting point reserve and the impact on reserves computed above.

II. Portfolio exemption approach: In this case, the bid-ask spread should be derived by multiplying half of the bid-ask of the risk factor with the sensitivities of the risk factor at the

starting point. The stressed bid-ask spread is then obtained by multiplying the bid-ask spread times the shocks given by the scenario.

Example 2. For a portfolio of L2 instruments exposed to interest rate risk with a sensitivity equal to 5, the bid-ask spread would be given by:

$(Spread_{Bid-ask}) = [RiskFact_{bid} - RiskFact_{ask}]/2 * Sensitivity_{RiskFact}$ =

(1.05% - 1.02%)/2*5 = 0.075%

$(StressSpread_{Bid-ask}) = (Spread_{Bid-ask}) * Shock = 0.075\% * (230\% + 180\%) = 0.075\% * 410\% = 0.31\%$

The computation of the stressed reserve and the impact on reserves should follow the same approach described in Example 1.

Unavailable price bid-ask spread:

For instruments for which no quoted price is available, or that are "marked to model", the input risk factors bid-ask spread, as for the case of the portfolio exemption, should be followed.

No quoted bid-ask spread available

If no quoted bid-ask spread can be obtained and neither a bid-ask spread of its input risk factors the following guidelines should be followed:

1. For instruments marked at mid-price and with observable input risk factors, in case sufficient data are not available to construct a plausible range of bid-ask spreads, banks should simulate exit prices (bid and ask) repricing the instrument by applying to each sensitivity the risk factor bid (ask) obtained from tradable market quotes (exchange, dealer, broker). For risk factors, used to assess bid-ask spread, where only consensus service data are available (e.g. correlations, OTM volatilities etc.), banks have to apply a conservative quote equal to the 75th percentile of the distribution of the consensus for the month of December (the side of the distribution depends on whether the risk factor position is long or short and the instrument is to buy or to sell). Banks applying the portfolio exemption should calculate the increase in risk factors bid-ask spread from tradable market quotes. For input risk factors where only consensus service data are available (e.g. correlations, OTM volatilities etc.) banks have to apply a conservative bid-ask spread equal to the difference between the 25th and the 75th percentiles of the distribution of the consensus for the month of December to the net exposure sensitivity computed under stressed market parameters.

2. For instruments marked at mid-price and with unobservable input risk factors, the bank shall use an expert-based approach using all qualitative and quantitative information available to

achieve a level of certainty in the prudent value that is equivalent to that targeted in a stressed scenario where a range of plausible values is available. Banks shall report in the explanatory note the exposures for which this last approach is applied, and the assumptions or the framework used to determine the bid-ask spread.

3. If a portfolio is marked directly to an exit price (bid or ask price), institutions shall assess a mid-value in order to apply the methodology.

4. For portfolios marked to "mid-market" and for which a separate fair value reserve for bid-ask spread is held, the stress is equal to the valuation impact of increasing the price bid-ask spread at the reference date (31 Dec 2019) by the amount prescribed in the scenario for each bid-ask spread of the contributions/quotes used to calculate the fair value. The distribution of the bid/ask price should be assumed to widen proportionally, so given its fair value policy, the bank can recalculate its fair value and AVA adjustments.

3.5 Projection of client revenues for items held with a trading intent and NTI impact

3.5.1 Baseline NTI

286. The baseline NTI for each year is defined as the least of the following: the average of the 2018-2019 NTI (floored at 0), the average of the 2017-2019 NTI, and the average of the 2015-2019 NTI (see Box 16). It will be calculated on the market risk template for the projection of client revenues (CSV_MR_PROJ).

Box 16: Definition of the baseline NTI value for all years

$$NTI_{2020,2021,2022\ (baseline)} = Min\{Average(NTI)_{2015\text{-}2019}, Average(NTI)_{2017\text{-}2019}, Max(0,Average(NTI)_{2018\text{-}2019})\}.$$

Where:

- $Average(NTI)_{2018\text{-}2019}$ is the simple average NTI over 2018-2019.
- $Average(NTI)_{2017\text{-}2019}$ is the simple average NTI over 2017-2019.
- $Average\ (NTI)_{2015\text{-}2019}$ is the simple average NTI over 2015-2019.

287. In line with this definition, regardless of the approach used in the market risk stress test, all banks have to report their NTI for the years 2015-2019.

3.5.2 Projection of client revenues under the adverse scenario

a. CA banks

288. If CA banks are able to report quarterly client revenues of items held with a trading intent, as defined in paragraph 222, for the years 2015-2019, banks shall project these revenues under the adverse scenario for the years 2020-2022 taking into account how the market risk scenario would impact this income (i.e. the projection should contain only income from client revenues which is stable even under stress). The projections should take into account possible turmoil that may arise as a consequence of the shock or a reduction in trading income not due to the fair value changes. If historical data for the client revenues cannot be reported for the years 2015-2019, all projections are computed in the CSV_MR_PROJ template as shown in Box 17. Banks shall outline the approach taken to project client revenues in the explanatory note.

289. For each year, the projections of client revenues of items held with a trading intent are capped under the adverse scenario at 75% of 2019 annual client revenues of items held with a trading intent. In addition, client revenues projections are also capped at 75% of the baseline NTI. For each year, if the baseline NTI is negative, the adverse client revenues is equal to the baseline NTI. The resulting NTI calculation is shown in Box 17.

Box 17: Description of the computation of client revenues under the adverse scenario for CA banks

For 2020, 2021 and 2022, Client revenues are computed according to the following criteria:

a. If $NTI_{baseline} < 0$ then, Client revenues = $NTI_{baseline}$.

b. If quarterly client revenues are reported for the years 2015-2019 and $NTI_{baseline} \geqslant 0$

Then,

Client revenues = $\text{Min}(\text{Client Revenues}_{projected}, 75\% * NTI_{baseline}, 75\% * \text{Client Revenues}_{2019})$

c. Otherwise, Client revenues = 0.

Where:

- Client Revenues are the client revenues of items held with a trading intent as defined in paragraph 222.
- Client Revenues projected are banks' own projections of client revenues in each particular year.
- Client Revenues$_{2019}$ are the annual historical 2019 client revenues.

b. Trading exemption banks

290. For each year, the projections of client revenues of items held with a trading intent are set to the NTI baseline if the NTI baseline is negative and to 75% of the baseline NTI otherwise (see Box 18).

Box 18: Formalised description of the computation of client revenues under the adverse scenario for trading exemption banks

$$\text{Client Revenues}_{2020,2021,2022} =$$

$$\text{NTI}_{\text{baseline}}, \text{ if NTI}_{\text{baseline}} < 0.$$

$$75\% * \text{NTI}_{\text{baseline}}, \text{ if NTI}_{\text{baseline}} \geqslant 0.$$

Where:

- Client Revenues are the client revenues of items held with a trading intent as defined in paragraph 222.

c. Adverse NTI

291. For the year 2020, the NTI under the adverse scenario is the sum of the loss under the full revaluation of all items booked in HFT and the client revenues computed on items held with a trading intent. For the years 2019 and 2020, the NTI under the adverse scenario is equal to the client revenues computed in paragraphs 288 to 289. The resulting NTI calculation is shown in Box 19.

Box 19: Description of the computation of the NTI under the adverse scenario

$$NTI_{2020\ (adverse)} = \text{Client Revenues}_{2020} + \text{Liquidity reserve impact}_{2020} + \text{CVA reserve impact}_{2020} + \text{Loss}_{\text{full reval. }2020} + \text{Economic hedges excluding hedges of items held with a trading intent}_{2020}$$

$$NTI_{2021,2022\ (adverse)} = \text{Client Revenues as defined in Box 17 and Box 18.}$$

Where:

- $NTI_{2020,2021,2022}$ (adverse) are final NTI values reported in the P&L sheet.
- Lossfull reval is the market risk loss due to the full revaluation of all items booked in HFT (i.e. items held with a trading intent and all economic hedges) as reported in the template CSV_MR_FULL_REVAL and floored as described in Box 14.
- Client $\text{Revenues}_{2020\ 2021,2022}$ are client revenues computed as in Box 17 or Box 18 for TE banks.

3.6 Counterparty credit risk losses

292. For the purpose of CCR stress test losses in the adverse scenario (as detailed in this section), all banks are required to stress exposures based on the market risk scenarios and risk factor shocks described in section 3.3.2. This does not affect regulatory CCR exposure as reported in the credit risk templates for the calculation of the CCR exposure amount, for which the credit risk methodology sets out in section 2 applies.

293. In addition to the P&L associated with changes in CVAs, counterparty credit losses may arise if counterparties actually default in the stress. This is calculated in the CCR template (CSV_MR_CCR). To gauge the possible impact of this source of P&L, competent authorities will require banks to calculate and report CCR exposure as at the reference date, stressed exposure and appropriate stressed LGD for their top 10 largest counterparties, as described below.

294. In considering counterparty defaults in conjunction with market risk stresses, market risk factor shocks shall be applied to the exposure, whether uncollateralised or collateralised and whether positive or not at the reference date. In cases of collateralised exposures, banks are also required to stress the collateral in line with the market risk shocks, including any FX market risk shocks for cash collateral and assuming (in line with the general assumption of no portfolio rebalancing) that no additional collateral is provided beyond what is held as of 31 December 2019. Exposures shall be stressed based on the scenarios as defined in section 3.3.2.

295. Stressed CCR exposure used to calculate CCR stress test losses shall be reported net of stressed collateral. No collateral that is to be called beyond what is held at the reference date may be assumed. When determining the exposure net of stressed collateral all exposures that are defined as CCR exposures according to paragraph 224 shall be considered.

296. Banks are required to assume the default of the two most vulnerable of their 10 largest counterparties. The procedure for identifying the two most vulnerable counterparties is based on a ranking of the probability of default of the counterparties as described in Box 20.

297. Central governments, central banks, CCPs and other market infrastructures, counterparties explicitly guaranteed by the central government and intra-group exposures shall not be included in the set of counterparties and names used to identify the largest exposure. For banks that are subsidiaries of a non-EU credit institution, the parent shall also not be included in the set of counterparties and names used to identify the largest exposure. Other guarantees and credit risk mitigation eligible under the CRR should be taken into account when determining the 10 largest counterparties and in determining the appropriate stressed LGDs. Firms should use their judgement in determining what constitutes intra-group for these purposes, which in principle would cover those undertakings within the scope of consolidation.

298. The overall CCR loss will be calculated as the default exposure of the counterparty identified in paragraph 296, multiplied by the appropriate stressed LGD and minus the accounting CVA impact on P&L (before the application of the market price stress). Here, the appropriate stressed LGD should be consistent with the banking book risk parameter estimates carried out by the bank, while also taking into account any idiosyncratic factors relating to this particular counterparty with reference to the scenario in question. This loss will be added to the total losses resulting from the market risk scenario. The stressed LGD should take into account any idiosyncrasies which would increase the LGD of the counterparty over the one used in the relevant credit risk segment and geography.

299. The default of the two most vulnerable counterparties covers the effect that the whole CCR exposure assigned to this counterparty has on the P&L if the counterparty defaults. In addition to the CCR effect, banks are asked to calculate losses from the jump-to-default (JtD) of the direct credit exposure (additional to the CRR exposure) to this counterparty in the FVPL and FVOCI portfolios. Here jump-to-default is the net profit or loss resulting from an issuer's instantaneous default. Only indirect exposures to the issuer (i.e. CDS) that are either part of a hedge accounting relationship or that are recognised as credit mitigation effects (according to the Articles 213 and 216 of the CRR), shall be considered under the CCR scope. Off-balance sheet exposures should be included in the jump-to-default calculation. The P&L impact based on the jump-to-default calculation of the direct credit exposure is calculated as the product of the stressed LGD and the JtD exposure. For exposures to the two most vulnerable counterparties in accounting portfolios held at amortised cost no stress is required for the CCR loss calculation.

300. The algorithm for identifying the 10 largest counterparties and the 2 most vulnerable ones is summarised in Box 20.

301. The resulting losses will be captured as impairments in the P&L. The projection of counterparty defaults should be carried out independently from the projection of credit risk losses as defined in section 2.4— i.e. no adjustments should be made for credit risk exposure or credit risk parameters for the projection of credit risk losses as defined in section 2, based on assumed counterparty defaults.

Box 20: Algorithm for identifying and defaulting CCR exposures

- Exclude exposures not within the scope of the largest counterparty default (i.e. central governments, central banks, CCPs and other market infrastructures, counterparties explicitly guaranteed by the central government and intra-group exposures).
- Calculate stressed CRR exposure by applying stress factors defined in the market risk scenario to all positions subject to CCR as defined in paragraph 224, under the adverse market risk scenario.
- Calculate value of stressed collateral by applying stress factors defined in the market risk scenario to all collateral positions.
- Rank counterparties by stressed CCR exposure net of stressed collateral, guarantees and credit risk mitigation eligible under the CRR. The exposure has to take into account the change in the mark-to-market exposure to the counterparties, as well as the revaluation of the collateral.
- Consider only the 10 largest counterparties in terms of stressed CCR exposure net of stressed collateral and eligible credit risk mitigation for the adverse scenario.
- Identify the two most vulnerable counterparties of the 10 largest counterparties according to the following procedure:
  - Calculate an internal PD for each counterparty, this PD shall be the probability of default implied by the internal rating of the counterparty;
  - Calculate an external PD for each counterparty. This PD shall be the probability of default implied by the second lowest external rating available, constrained by the upper bound and lower bound on the Long-run benchmark PD values on Table 1 of Annex 1 of ITS on the mapping of the credit assessments to risk weights of External Credit Assessment Institution (ECAIs) (Commission Implementing Regulation (EU) 2016/1799). Where the

implied external PD is higher than the upper bound for a given credit quality step, the external PD shall be capped at the value of the upper bound of the credit quality step. Where the implied external PD is lower than the lower bound for a given credit quality step, the external PD shall be floored at the value of the lower bound of the credit quality step;

Credit Quality Step	Lower bound	Upper bound
1	0,00 %	0,16 %
2	0,17 %	0,54 %
3	0,55 %	2,39 %
4	2,40 %	10,99 %
5	11,00 %	26,49 %
6	26,50 %	100,00 %

- Assign a PD to each of the 10 largest counterparties as the maximum of either the internal PD and external PD;
- The 10 largest counterparties shall be ranked in order of the assigned PD, from high to low.
- The two counterparties with the highest assigned PDs shall be selected as the two most vulnerable counterparties.

- Calculate the impact of the default of CCR exposures for each of the 2 most vulnerable counterparties. This is equal to the stressed CCR exposure net of stressed collateral and eligible credit risk mitigation multiplied by the respective stressed LGD, netting the CVA impact on the P&L before application of the stress. The impact is floored to zero.
- Calculate jump to default (JtD) loss for the two most vulnerable counterparties as the sum of JtD credit exposures in FVPL and FVOCI accounting categories multiplied by the respective stressed LGD.
- Calculate the final impact of default by summing up the impact of CCR stress losses and the impact of the JtD losses for the two most vulnerable counterparties.

3.7 Impact on REA

302. The starting values for market REA are the values reported as of 31 December 2019.

303. For the purpose of this exercise, banks that do not have a VaR model approved by the competent authority in place are assumed to maintain market risk regulatory requirements

constant at their starting value for both the baseline and adverse scenarios. For the purpose of this exercise, banks that do not have required approvals to use an internal model for CVA are required to stress their CVA capital requirements.

304. Market risk and CVA capital requirements for each year of the stress test horizon are defined as the larger of:

- The initial value of capital charges as of 31 December 2019;
- The sum of capital charges resulting from VaR and SVaR models, IRC, APR and own funds requirements for CVA and STA, as described in paragraphs 305, 306, 307, 308, 309 and 310.

305. Under the baseline scenario, VaR and SVaR are assumed to remain constant at the level reported for the reference date 31 December 2019. Under the adverse scenario, the VaR will be replaced by the SVaR as of 31 December 2019 (see Table 10).

306. In cases of partial use of internal models for market risk, the baseline capital requirements are assumed to remain constant at the value reported for the reference date 31 December 2019. Under the adverse scenario, the new VaR and SVaR (i.e. 2 times SVaR, based on paragraph 305) capital charge is added to the capital requirements computed under the STA, which are also assumed to remain constant.

Table 10: VaR assumptions for the calculation of the REA

Reference date	Baseline	Adverse
VaR	VaR	SVaR
SVaR	SVaR	SVaR

307. Banks modelling IRC must estimate the stress impact of the adverse scenario based on stressed parameters in accordance with section 2. Banks should use the credit spread shocks given in the macro-linked scenario as input to the IRC under the adverse scenario, assumed to be instantaneous and constant over the years ahead. No shocks are assumed under the baseline scenario. Overall, the relative increase in the IRC is floored at the relative increase of REA in the IRB portfolio in the adverse scenario.

308. For correlation trading portfolios, the APR will be assumed to be constant in the baseline scenario. In the adverse scenario, the following scaling is assumed, to derive the stressed APR capital charge:

- 8% floor[25] is not binding: 1.5 times the APR capital charge.
- 8% floor is binding: 2 times the floor.

309. The capital charges for correlation trading positions under the STA are assumed to remain constant at the level of 31 December 2019 under both the baseline scenario and the adverse scenario.

310. All banks that are subject to a credit risk capital charge for CVA are required to calculate stressed regulatory capital requirements for CVA under the adverse scenario. To determine additional CVA capital needs, banks should recalculate the CVA charge under stress conditions, based on their regulatory approach in use for all books within the scope of that approach. To this end, banks should translate the market risk scenarios into underlying risk parameters and determine respective stressed capital charges. Overall, the increase in the CVA charge for the adverse scenarios is floored at the relative increase of REA in the IRB portfolio in the adverse scenario. To be consistent with the approach for the CCR exposure amount, the regulatory exposure used for the calculation of the stressed CVA REA shall be kept constant.

311. The impact on REA shall be reported using the market REA templates (CSV_ MR_REA).

312. REA for the CCR capital requirements is calculated using the approach described in section 2.

313. Finally, for securitisation positions held with a trading intent, the REA shall be reported in the CSV_MR_REA template only for what concerns the general risk part. The REA of other securitization positions shall be treated in accordance with the securitisation methodology described in section 2 as part of the credit risk methodology.

[25] See Article 364(3) of the CRR.

Market risk, CCR and CVA: Questions to participating banks

A. Do you see any challenge in providing quarterly historical data on client revenues as defined in paragraph 222? Can you confirm that items included in the scope defined in paragraph 222 are not reported under "Net fee and commission income" (FINREP template 2, row 200)? Please explain.

B. The EBA is considering to apply a different cut-off date for the market risk methodology to be selected between 1 September 2019 and 31 December 2019 which would be announced at the launch of the exercise. **What is your view on this proposal? Do you see any challenges in running the exercise? Please explain.**

C. Banks are asked to provide their views on the scope of CDS hedging for CCR described in paragraph 299.

4. NII

4.1 Overview

314. Banks may use their ALM systems to project reference rates and margins under both the baseline scenario and the adverse scenario. The split between reference rate and margin components of banks' assets and liabilities is introduced to distinguish two risks affecting banks' NII under stress:

- The risk related to a change in the general 'risk-free' yield curves;
- The risk related to a change in the 'premium' that the market requires or the bank sets for different types of instruments and counterparties, reflecting the impact of credit and other market risks (e.g. liquidity).

315. Banks' projections are subject to the constraints summarised in Box 21.

Box 21: Summary of the constraints on banks' projections of NII

- Assumptions cannot lead (at group level) to an increase in the bank's NII, compared with the 2019 value, under the adverse scenario (paragraph 362).
- Under the adverse scenario, assumptions cannot lead (at group level) to an increase in the bank's NII compared with the 2019 value before considering the impact of the increase of provisions for non-performing exposures on interest income (paragraph 363).
- Under the adverse scenario, banks are required to project income on non-performing exposures net of provisions, subject to a cap on the applicable EIR (paragraph 365).
- Under the baseline scenario, banks are required at a minimum to reflect a proportion of the changes in the sovereign bond spread of the country of location of activity in the margin component of the EIR of their repriced liabilities (paragraph 381).
- Under the adverse scenario, the margin paid on interest-bearing liabilities cannot increase less than the higher of a proportion of the increase in the sovereign spread of the country of location of activity and the same proportion applied to the increase of an idiosyncratic component, derived from the impact on banks' wholesale funding rate of a rating downgrade (paragraph 381).

- Banks are required to cap the margin component of the EIR on their repriced assets at a proportion of the increase in the sovereign spreads of the country of exposure (paragraph 384).
- Under both the baseline and adverse scenario, sight deposits reprice immediately in line with the methodological prescriptions (paragraphs 355 and 359).
- The reference rate of new originated or repriced instruments should be consistent with the macro-financial scenarios for risk-free yield curves (paragraph 320).

4.2 Scope

316. All interest-earning or interest-paying positions across all accounting categories, including not only instruments subject to amortised cost measurement but also those subject to fair value measurement (such as FVOCI positions, FVPL positions and hedge-accounting instruments), are in the scope of this section.

317. Any contractual agreements not in line with the static-balance sheet assumption (e.g. become only effective in the stress test horizon but are not on-balance as of end-of the year of the starting period such as loan commitments, forward rate agreements) are out of scope of the NII methodology.

318. Banks that, in the course of their periodic financial reporting, present the interest income on assets in FVOCI and FVPL as a part of NTI should report this income as a part of NII and remove it on a best effort basis from the recurring NTI in line with the provisions of paragraph 221 of this note. This information shall be also reported in the CSV_NII_SUM sheet. Only NII for these positions is within the scope of the NII methodology; the fair value impact on these positions of the stress test scenarios is captured within the market risk methodology.

319. Fees and commissions that are recognised as NII in the accounting framework are also within the scope of this section. Fees and commissions that can be directly linked to loans should be stressed through the loan's EIR. All other fee and commission income is out of the scope of the NII methodology.

4.3 High-level assumptions and definitions

4.3.1 Definitions

320. **Reference rate (Ref Rate)** is defined as the general underlying 'risk-free'[26] rate relevant for the given instrument, as used by banks in the management of their interest rate risk in the banking book.[27] That rate should not include instrument-specific or entity-specific credit risk spreads or liquidity risk spreads. Examples of acceptable starting point rates are swap rates or, for reference rate tenors below 1 year, the applicable interbank rate (e.g. EURIBOR, LIBOR, EONIA, SONIA, ESTER). The reference rate should reflect the payment profile of the respective instrument. At the starting point, the reference rate should be equal to the risk free rate at the last date of repricing, while for the projections, the new reference rate is given by the value of the swap rate in the baseline/adverse scenario for the year in which the instrument reprices/replaces.

- For a fixed instrument, the applicable value of the swap rate for a given instrument depends on the original maturity of the instrument and its currency. In case no swap rate for a given original maturity is provided in the ESRB scenario, banks must use linear interpolation of the swap rate. The original contractual maturity and not the rounded original maturity as described in paragraph 337 shall be used to determine the applicable swap rate.

- For a floating instrument, the reference rate should be aligned with the index rate and then be repriced in line with scenario developments.

Specific treatments for the reporting of the sight deposits are envisaged in the methodology (paragraph 355 and 359).

321. **Margin** is defined as the 'premium' earned/paid by banks over the instrument's/portfolio's reference rate, and is equal to the spread between the actual effective interest rate of the instrument and the reference rate. The split of reference rate and the margin for all instruments shall be performed using the risk free rate at date of the origination of the instruments. The margin of the new business (end 2019) refers to the margin (notional-weighted) of the instruments that were originated in 2019 and which were on the balance sheet at the end of the year.

[26] The free-yield curve shall be the one provided in the scenario, when available.

[27] See the EBA Guidelines on the management of interest rate risk arising from non-trading activities (EBA/GL/2018/02).

322. The **EIR** for a given instrument, time interval and component (margin or reference rate) is the rate that equals the ratio of interest income/expenses to the volume. For banks reporting according to IFRS 9, this coincides with the EIR as defined in that Standard. At portfolio level the EIR is calculated as a notional-weighted average.

323. **Average 2019:** the volume is the sum of the time-weighted notional over instruments that were on the balance sheet during the year (quarterly average). The time weighted notional of an instrument is defined as the notional of the instrument times the fraction of the year the instrument was on the balance sheet. The EIR is the interest income/expense earned over the year divided by the notional of the average volume of the year. It is expected that the product between the average volume and the average EIR would be approximately equal to the interest income/expenses over the year (starting point) at asset/liability type level.

324. **End 2019:** the volume is equal to the stock being on the balance sheet at the end of the year, while the EIR is the notional-weighted end of the year EIR of the instruments being on the balance sheet at the end year.

325. **Maturity date** is defined as the contractual date on which the Margin or the Ref Rate component of the asset/liability is replaced or repriced:

- For fixed-rate instruments[28] it is assumed that the maturity dates of the Ref Rate and the Margin are the same, and equal to the contractual maturity of the instrument.

- For floating rate instruments it is assumed that the Margin is repriced at the contractual maturity of the instrument, while the reference rate component is repriced whenever the index rate of the floating rate instrument resets[29].

326. **Original maturity** is defined as the total time between the asset's/liability's time of origination and the maturity date. In cases of debt securities, the time of origination should be understood as the acquisition date by the bank and the original maturity should be based on the residual maturity at the acquisition date of the debt security. On a portfolio level the original maturity is the notional weighted average over all instruments.

327. **Average point of maturing (APM)** is the methodologically predefined average fraction of a year at which the maturing positions mature/reprice. Average point of maturing values are

[28] Instruments with overnight original maturity can be considered as fixed rate instruments given that both the reference rate and margin component of the EIR have to be repriced always at the same time on a daily basis.

[29] In this context, as mentioned above, for floating rate products, the index rate of the instrument should be used as the reference interest rate.

provided in the template (CSV_NII CALC) and banks should align the contractual date of repricing/replacement to adjust their internal data to be compliant with the prescribed date of repricing/replacement.

328. **Volume** stands for the notional amount of an instrument, i.e. its gross carrying amount in the case of instruments at amortised cost. In particular, projected volume should abstract from projected fair value changes under both the baseline scenario and the adverse scenario.

329. **Sovereign spread** is the difference between the 10 years yield-to-maturity of a given sovereign's debt security and the 10 years swap rate for the same currency.

330. **Sight deposits** are deposits legally redeemable immediately at demand without penalties and restrictions. The classification of deposits in the fixed or floating category should be based on the contractual condition defined by the banks. Sight deposits should be considered as fixed rate instruments unless their remuneration is referenced to an interest rate index.

331. **Regulated sight deposits** are sight deposits whose EIR is defined by an external authority (e.g. national government) through a public prescribed regulated formula and not by bank/customer negotiations or unilaterally by banks.

332. **Legal floor deposits** are sight deposits for which a floor on the EIR is specified by law or determined by a Supreme Court decision.

333. **Term deposits** are deposits which are not sight deposits, i.e. deposits with a notification period for withdrawal.

4.3.2 Static balance sheet assumption

334. The projections of NII are based on the assumption of a static balance sheet. Assets and liabilities (both in the banking book and in the trading book) that are repriced/replaced within the time horizon of the exercise should be repriced/replaced with similar financial instruments in terms of type, currency, credit quality at the time of repricing and original time to reprice (both reference interest rate and margin) of the instrument. No difference in total volumes between baseline and adverse scenario is expected.

4.3.3 Treatment of maturing assets and liabilities

335. As specified above, banks are required to assume that the residual maturity of their assets and liability equals the contractual date on which the Margin or the Ref Rate component of the asset/liability is repriced/replaced. No additional behavioural assumption shall be taken into account (prepayment features must not be taken into account when determining the maturity schedule). Against this background:

- Banks are requested to assume that all sight deposits reprice immediately, i.e. no internal assumption regarding the maturity schedule should be in place.
- In the case of term deposits, the actual term shall be used as original maturity.
- Debt liabilities that are callable by the bank's counterparty prior to their overall maturity are expected to be exercised on the first possible call date.
- Concerning loans, each repayment shall be treated as an individual maturing product, and shall be reported in the maturity schedule on its contractual repayment date and then repriced with similar financial instruments in terms of type, credit quality at the time of repricing and original time to reprice (both Ref Rate and margin), in line with the static balance sheet assumption.

336. The replacement of maturing positions related both to the Ref Rate and the Margin for all years is based on the methodologically prescribed average point of maturing. For repricing/replacing instruments banks should align their internal values with the prescribed ones.

337. The rounding of original maturity to the nearest integer above its current value (e.g. 0.4 years original maturity is rounded up to 1 years).[30] This provision ensures that there will be no re-maturing instruments within the same year and that the APM is constant over years.

4.3.4 Treatment of non-performing exposures

338. For the sake of simplicity, banks are required to assume that the volume of non-performing exposures is proportionally distributed between fixed rate and floating rate positions. Non-performing events are assumed to take place at the beginning of each time interval.

339. In order to achieve consistency with the banks' projections of non-performing exposures reported in the credit risk template, the following rules apply when reporting both columns of non-performing exposures and the corresponding volumes of provisions in the CSV_NII_CALC template:

[30] In exceptional circumstances, when the rounding assumption leads to significant differences between the NII projected relying on the volume formulas encompassed in the template and the NII projected relying on the real payment schedule, banks are allowed to relax this rounding assumption for assets and liabilities with original maturity <2Y. These deviations would have to be documented by the bank and will be thoroughly reviewed by the competent authorities.

- Banks shall report the volume of non-performing exposures at the cut-off date in the NII template consistent with the data reported in FINREP.

- The ratio of total NPE flows per country reported in the credit risk template CSV_CR_SCEN in 2020, 2021 and 2022 for a given asset class compared with the total exposures (performing and non-performing) for the same country and asset class at the starting point (NPE growth rate) are implemented as the increase in non-performing exposures compared with the total volume at the starting point (end-2019) per country in the CSV_NII_CALC template for the corresponding NII asset type. The NII asset type is determined according to the mapping given in Table 11 and Table 12. The same applies to the flow of provisions compared with the total exposures at the starting point, calculated also by country and asset class breakdown (provisions growth rate).

- Growth rates of NPE and related provisions for exposures that cannot be directly matched at a country-level between credit risk and NII templates are as follows: regarding countries which are not explicitly reported under CSV_CR_SCEN but under CSV_NII_CALC applicable growth rates are based on the CR category 'Other'; notwithstanding this, for countries which are reported under CSV_CR_SCEN while not appearing in CSV_NII_CALC the respective NPE growth rate are incorporated in the NII category 'Other/Other'.

- Derivatives are excluded from the mapping as NPE and provisions should be allocated to the respective counterpart via the CSV_CR_SCEN sheet.

340. The NPE growth rate and the provisions growth rate per country for a given asset class are applied in the CSV_NII_CALC template to each asset type and country for all the currencies, i.e. for all country/currency pairs, and both for fixed and floating rate instruments.

Table 11: Mapping of the IRB credit risk asset class to the NII asset type

Credit risk — Asset class	**NII — Asset type**
Central banks	Assets — Loans and advances — Central banks Assets – Debt securities – Central banks
Central governments	Assets — Loans and advances — General governments Assets – Debt securities – General governments
Institutions	Assets — Loans and advances — Credit institutions and other financial corporations

Credit risk — Asset class	NII — Asset type
Corporates — Specialised lending — Secured by real estate property	Assets — Loans and advances — Non-financial corporations — Other
Corporates — Specialised lending — Not secured by real estate property	Assets — Loans and advances — Non-financial corporations — Other
Corporates — SME – Secured by real estate property	Assets — Loans and advances — Non-financial corporations — SMEs
Corporates — SME — Not secured by real estate property	Assets — Loans and advances — Non-financial corporations — SMEs
Corporates — Others — Secured by real estate property	Assets — Loans and advances — Non-financial corporations — Other
Corporates — Others — Not secured by real estate property	Assets — Loans and advances — Non-financial corporations — Other
Retail — Secured by real estate property — SME	Assets — Loans and advances — Non-financial corporations — SMEs
Retail — Secured by real estate property — Non-SME	Assets — Loans and advances — Households — Residential mortgage loans Assets – Loans and advances – Households – Credit for consumption
Retail — Qualifying revolving	Assets — Loans and advances — Households — Other
Retail — Other retail — SME	Assets — Loans and advances — Non-financial corporations — SMEs
Retail — Other retail — Non-SME	Assets — Loans and advances — Households — Other Assets – Loans and advances – Households – Credit for consumption
Equity	Assets — Other assets
Other non-credit obligation assets	Assets — Other assets

Table 12: Mapping of the STA credit risk asset class to the NII asset type

Credit risk — Asset class	NII — Asset type
Central banks	Assets — Loans and advances — Central banks Assets – Debt securities – Central banks
Central governments	Assets — Loans and advances — General governments Assets – Debt securities – General governments
Regional governments or local authorities	Assets — Loans and advances —General governments Assets – Debt securities –General governments
Public sector entities	Assets — Loans and advances —General governments Assets – Debt securities – General governments
Multilateral development banks	Assets — Loans and advances — Credit Institutions and other financial corporations
International organisations	Assets — Loans and advances — General governments Assets – Debt securities – General governments
Institutions	Assets — Loans and advances — Credit institutions and other financial corporations
Corporates — SME	Assets — Loans and advances — Non-financial corporations — SMEs
Corporates — Non-SME	Assets — Loans and advances — Non-financial corporations — Other
Retail — SME	Assets — Loans and advances — Non-financial corporations — SMEs
Retail — Non-SME	Assets — Loans and advances — Households — Other Assets – Loans and advances – Households – Credit for consumption
Secured by mortgages on immovable property — SME	Assets — Loans and advances — Non-financial corporations – SMEs

Credit risk — Asset class	NII — Asset type
Secured by mortgages on immovable property — Non-SME	Assets — Loans and advances — Households — Residential mortgage loans
Items associated with particularly high risk	Assets — Other assets
Covered bonds	Assets — Debt securities — Credit institutions and other financial corporations Assets — Debt securities — Non-financial corporations
Claims on institutions and corporates with an ST credit assessment	Assets — Loans and advances — Credit institutions and other financial corporations Assets — Loans and advances — Non-financial corporations — Other
Collective investments undertakings (CIUs)	Assets — Other assets
Equity	Assets — Other assets
Other exposures	Assets — Other assets

4.3.5 Curve and currency shocks

341. Where required, banks shall use linear interpolation to add tenors to the provided interest rate curves in the macro-financial scenario. In line with paragraph 245, for tenors that are shorter or longer than the range of tenors available in the scenario, banks are required to use the shocks to the shortest and longest tenor available respectively.

342. Currencies should be stressed independently, based on the curves provided for each currency in the scenario. For currencies where no stress is provided, banks should generate their own curves in a prudent manner and consistent with the macro-financial scenario and provide justification for this expansion.

343. The interest rate shocks are calculated as simple difference between the average rates in Y1 and the average rates in Y0 or through linear interpolation.

4.3.6 Reporting requirements

a. General requirements

344. Starting point (2019) and projections based on the approach described in this section, shall be reported on the NII template (CSV_NII_CALC). Additional historical (2017-2018) NII

information on interest income and expenses, as well as historical data on interest income from non-performing exposures, shall be reported on the NII summary template (CSV_NII_SUM).

345. Banks are required to report volumes and project the interest rates earned (or paid) of all their assets and liabilities (including derivatives) split into the margin and reference rate components with the exception of non-performing assets, for which it is required to not split the EIR between margin and reference.

b. Derivatives and embedded options

346. In the case of assets and liabilities with structured interest coupons that include embedded options, banks are expected to disentangle the financial instruments in their main components before the application of the interest rate scenarios, report the results in the corresponding parts of the NII template and apply the relevant parts of the methodology to each financial instrument. An example would be an instrument that incorporates four components: (i) fixed-rate instruments; (ii) embedded options linked to various reference rates; (iii) the 'structured leg' and (iv) the EURIBOR leg.

347. For the purpose of this section, all interest rate derivatives are in scope, i.e. contracts related to interest bearing financial instruments whose cash flows are determined by referencing interest rates or another interest rate contract such as an option on a future contract to purchase a treasury bill. The interest rate derivatives shall be split into the following categories:

- Fair Value Hedge – Hedging Instruments (FINREP template 11.1 row 010 and template 11.1 row 480)
- Cash Flow Hedges – Hedging Instruments (FINREP template 11.1 row 240 and template 11.1 row 490)
- Economic Hedges and proprietary trading (FINREP template 10.00 row 010)
- Cross-Currency IR Swaps (relevant positions from FINREP template 10.00 row 130 + relevant positions FINREP template 11.00 row 110 + FINREP template 11.00 row 340)
- Other derivatives (interest rate derivatives in scope of FINREP template 10.00 not covered by above categories).

348. In case non-interest rate derivatives generate net interest income, those positions should be reported under the 'Other derivatives' category.

349. Economic Hedges and proprietary trading have to be split into linear and non-linear interest rate derivatives. Non-linear interest rate derivatives are all instruments with an optional pay-off (including caps, floors, collars, corridors, interest rate warrants and swaptions).

350. Banks are required to report interest income and expenses for hedge accounting portfolios on a gross level, i.e. separate for the hedged item, the hedging instrument paying leg and the hedging instrument receiving leg. For all interest rate derivatives the receiving leg should be reported as an asset and the paying leg as a liability. Further, for all interest rate derivatives, the reported interest income/expense shall distinguish between hedging instruments that are used for hedging asset positions and instruments used to hedge liability positions. If banks are reporting derivatives in their supervisory reporting in a different way, they should in their stress test submissions restate the historical data and report their projections in a way that is consistent with the provisions in this paragraph. Furthermore, negative interest rates do not affect the reporting of receiving and paying legs (e.g. a receiving leg of a 3M Euribor has to be reported as an asset with a negative EIR in case the value is negative).

351. Swaptions and other contracts with embedded options (e.g. caps/floors) shall be reported in the relevant derivatives category only if they will be in the money, i.e. they will be exercised during the stress test horizon of the adverse scenario. In this case, initially the nominal volume should be reported as existing volume on both sides of the balance sheet and the EIR should be set to 0 to ensure that static balance sheet assumption is not breached when the swaption is exercised. In the year when the swaption is exercised, the position should be reported as the underlying swap, i.e. the EIR would need to be adjusted to reflect the underlying swap in the new volume with the EIR according to the contract. If the underlying swap matures within the stress horizon, it should be replaced with a similar instrument. Out-of-the-money swaptions should not be initially reported or rolled over within the stress horizon. It is also assumed that the counterparty will exercise the swaption at the earliest strike date when it is in the money.

352. Cross currency swaps that involve the swapping of principal and interest in different currencies should be considered under the scope of the NII treatment. Depending on the counterparty of asset and hedge, FX swap positions might be reported in different exposure classes. Cross-currency swaps should be reported in both currency legs of the transaction. Moreover, to the extent that interest earnings from these instruments are recognised as trading income, the relevant cash flows should be removed from NTI and covered under NII treatment.

c. Sight deposits

353. The split of the rates between the reference and margin components should be made in accordance with paragraphs 320 and 321.

354. For sight deposits, the reference rate to be applied in the scenario horizon is the 1M swap rate or other index rate if it is explicitly prescribed (see paragraph 330).

355. For household sight deposits, the reference rate should be reported as follows:

$$Reference\ Rate_t = \max\{0, Legal\ floor, risk\ free\ rate_{\ t0} + \Delta risk\ free\ rate_{t-t0}\}$$

356. The pass-through on the reference rate starts from the point where the risk free rate is above zero or above the legal floor.

357. Banks are required to provide legal/regulatory evidence about the application of the legal floor. In case the floor is contract specific, this floor reflects an embedded option in the contract and therefore not recognised in accordance with paragraph 375.

358. In case of regulated sight deposits, the outcome of the regulatory formula becomes the floor of the reference rate. Banks are required to provide legal/regulatory evidence about the prescribed application of the regulatory formula to the CA. In any case, regulated sight deposits will be subject to a shock of the margin, subject to a pass-through constraint, to preserve the economic rationality of a stress scenario.

359. For all sight deposits other than households, the reference rate should be reported as follows:

$$Reference\ Rate_t = \max\{Legal\ floor;\ risk\ free\ rate_{\ t0} + \Delta risk\ free\ rate_{t-t0}\}$$

d. Other requirements

360. Debt securities that do not generate interest flows, e.g. hybrid debt instruments that are AT1 eligible instruments, should be excluded from the NII methodology while section 6.4.3 is applicable.

e. Template Breakdown

361. For the country/currency breakdown in the templates, banks shall report the country of the 'location' of the activity for all liabilities, and the country of 'residence of the counterparty' for all assets, including exposures towards sovereigns. 'Location' and 'country of residence of the counterparty' are defined according to FINREP: 'location' means the jurisdiction of incorporation of the legal entity which has recognised the corresponding liability; for branches,

it means the jurisdiction of its residence.[31] 'Country of residence of the counterparty' is defined as the residence of the immediate counterparty following FINREP, which means, if there is more than one obligor, the obligor that was the more relevant, or determinant, for the institution to grant the exposure. The number of country/currency pairs reported will be subject to the materiality thresholds specified in Box 22. First, banks will be requested to limit their reporting to the most significant country/currency pairs. Second, banks whose activities are heavily focused on their domestic market and currency will not be requested to provide this additional information. Intra-group transactions shall not be included in the reporting by country/currency. If a country/currency pair does not reach the materiality threshold, the exposure has to be reported in 'Other/Other'.

Box 22: Application of the materiality threshold on the currency/country breakdown requested

Banks are required to follow the following algorithm to determine the materiality of the country/currency breakdown:

- For each couple of country/currency, banks are required to compute the larger of the notional amount of total assets and total liabilities, excluding (only for the purpose of ranking the country/currency couple) the notional amount of derivatives. This will define the volume associated with each country/currency couple.
- Banks shall rank the country/currency couple according to their volume.
- Banks are requested to report the country/currency breakdown, either:
    - Up to a 90% coverage of the sum of all country/currency volumes; or
    - Up to 15 country/currency couples.

Domestic banks — i.e. banks whose non-domestic exposures are less than 10% of the sum of domestic and non-domestic country exposures, and whose foreign currency exposures are less than 10% of the sum of domestic and foreign currency exposures — are not requested to report any country/currency breakdown with the only exception of the home country with the relevant currency. Domestic banks shall additionally report non-domestic numbers that have not been reported under the first country/currency block under 'Other/Other'.

[31] See EBA ITS on supervisory reporting Annex V, Reporting on Financial Information, paragraph 107.

The template will automatically calculate the Sum/Sum aggregate data.

4.4 Impact on P&L

4.4.1 High-level constraints

362. Assumptions cannot lead (at group level) to an increase in the bank's NII, compared with the 2019 value, under the adverse scenario.

363. Under the adverse scenario, assumptions cannot lead (at group level) to an increase in the bank's NII compared with the 2019 value before considering the impact of the increase of provisions for non-performing exposures on interest income, following the formula in Box 23 below. This is equivalent to specifying that the interest rate earned on performing assets is capped at the starting point. This constraint aims at avoiding the possibility that banks compensate for the decrease in interest income linked to the growth of non-performing exposures with an increase in interest income from performing exposures. It also allows banks to consistently reflect movements of interest rates both in the asset and in the liability sides in a better way than if the constraint were applied to absolute volumes of interest expenses (in the format of a floor).

Box 23: Cap on NII under the adverse scenario

$$NII(t, adverse) \leqslant$$
$$NII(t0) - NII(t0) * ((\Delta ProvNPE(t0 \text{ to } t, adverse)/(VolPE(t0)+VolNPEnet(t0)).$$

Where:

- NII(t, adverse) stands for the total net interest income projected by banks for the time interval t under the adverse scenario.
- NII(t0) stands for the total net interest income projected by banks at the starting point (i.e. reporting for 2019).
- ΔProvNPE(t0 to t, adverse) stands for the increase of total provisions on non-performing exposures reported by banks for the time interval t compared with the starting point under the adverse scenario.
- VolPE(t0) stands for the volume of performing exposures at the starting point.

- VolNPEnet(t0) stands for the volume of non-performing exposures net of provisions at the starting point.

364. Under both the baseline scenario and the adverse scenario, banks should project the interest accrued on performing exposures (including S1 and S2 exposures) in line with their standing accounting practice and the applicable EIR, projected in accordance with the methodology. The interest revenue on performing exposures is calculated on the gross carrying amount.

365. Banks are required to project income on non-performing exposures on a net basis, i.e. on the value of the exposure net of provisions. Under the adverse scenario the applicable effective EIR is subject to a cap on an aggregate level as well as on country/currency level separately for fixed and floating portfolios as defined in Box 24 below.

Box 24: Cap on the EIR for non-performing exposures

The effective interest rate to calculate interest income on non-performing assets is subject, under the adverse scenario, to the following simplified constraint:

$$\text{EIR Non Performing } (t, \text{adverse}) \leq \text{EIR Non Performing } (t0).$$

Where:

- EIR Non Performing (*t*, adverse) stands for the effective interest rate for a given non-performing portfolio at both aggregate and country/currency level and separately for fixed and floating rate portfolios for the time interval *t* under the adverse scenario.
- EIR Non Performing (*t*0) stands for the effective interest rate for a given non-performing portfolio at both aggregate and country/currency level and separately for fixed and floating rate portfolio at the cut-off date.
- Banks are asked to project the interest income stemming from non-performing exposures capping the increase of the EIR for this type of exposures by the starting point value.

4.4.2 Projection of the components of the EIR

366. Banks will take into account the assumptions given in the following paragraphs to project their interest expense and interest income:

- For fixed-rate products, the margin and reference rate are assumed to remain constant until the contractual maturity. In the year when the instrument matures, the fixed-rate products should be replaced considering a residual maturity equal to the provided average point of maturity. Fixed rate instruments are assumed to be replaced with a fixed rate instrument of the same type, original maturity and currency, and the reference rate of the new instrument will be calculated for a tenor equivalent to the original maturity of the replaced instrument.

- For floating rate products, it is assumed that the margin is replaced in the year when it matures considering a residual maturity equal to the provided average point of maturity (see paragraph 327). The reference rate component is repriced according to the provided average point of maturity. The reference rate for household sight deposits should be reported according to paragraph 355.

367. For each time interval of the projections, banks are requested to provide separate projections for the margin and reference rate components of the EIR. For starting reference rates for fixed rate instruments, banks should rely on the reference rate at the point of origination or acquisition. For the starting reference rates for floating rate instruments, banks should rely on the latest observation of the relevant index for end of year figures and on yearly averages for the average figures. For starting margin rates, banks should rely on the difference between the EIR for the instrument for 2019 and the starting reference rate.

368. In order to ensure the intertemporal consistency of EIRs on maturing, existing and new volumes, the following relationship should hold for the margin and the reference rate components, for performing exposures only:

$$EIR_{Existing}(t) = [EIR_{Existing}(t-1)\ x\ Vol_{Existing}(t-1) + EIR_{New}(t-1)\ x\ (Vol_{Maturing}(t-1) + Vol_{New}(t-1)) - EIR_{Maturing}(t)\ x\ (Vol_{Maturing}(t) + Vol_{New}(t))]/Vol_{Existing}(t)$$

369. In order to avoid numerical instabilities for small volumes of $Vol_{Existing}(t)$, the formula outlined above can be solved alternatively, and in a mathematically equivalent way, for $EIR_{Maturing}(t)$ in order to obtain robust results in those cases where $Vol_{Existing}(t) \leq Vol_{Maturing}(t) + \mathrm{Vol}_{New}(t)$:

$$EIR_{Maturing}(t) = [EIR_{Existing}(t-1)\ x\ Vol_{Existing}(t-1) + EIR_{New}(t-1)\ x\ (Vol_{Maturing}(t-1) + Vol_{New}(t-1)) - EIR_{Existing}(t) x Vol_{Existing}(t)]/(Vol_{Maturing}(t) + Vol_{New}(t))$$

370. This means that if the repriced volume (maturing + new) is larger than the existing volume, banks are expected to use the value projected by their internal model for $EIR_{Existing}(t)$ and solve the intertemporal consistency equation for $EIR_{Maturing}(t)$.

371. These formulas do not affect the way banks have to project the reference rate and margin components of the EIR for new volumes. Instead, the formulas arise naturally from the methodological provision that the EIR of an instrument shall not change unless it reprices. The same methodological provision applies for the NII consistency equations shown in Annex IX.

372. For fixed-rate instruments/portfolios, banks will project the reference rate, applying the general risk-free yield curve.

373. For floating rate products that are contractually linked to an index rate, banks will use the index rate as the reference rate, which should develop in line with the macro-financial scenario. In particular, the reference rate of the floating leg of interest rate swap should be the index rate of the swap, while the reference rate of the fixed leg of the swap will be the fixed rate of the swap itself.

374. For swaps, the reference rate and margin split of the floating leg would be defined similarly as for floating rate products, and the reference rate and margin split of the fixed leg would be defined similarly as for fixed rate products. The margin could be negative depending on the characteristics of a given swap.

375. Instruments with embedded options should reflect the impact of the option in the reference rate component. Upon maturity, it is assumed that the instrument will be replaced with the same instrument with no embedded option, which should be removed with the exception of legal floors. The impact of embedded options on NII should be reported in the explanatory note. The explanatory note should also list cases where embedded options induce violations of intertemporal consistency and the NII consistency equations shown in Annex IX.

376. Interest rate derivatives should not produce interest income or expense after they mature in the scenario horizon. To reflect this in the template, the EIR of the maturing instrument should be set to zero for the rest of the scenario horizon (EIR new will be zero for these instruments).

377. For assets for which banks have the option to adjust the margin at their discretion prior to the maturity of the instrument, it is assumed that banks do not exercise this option.

378. The change in the margin of repriced instruments will be subject to the so-called pass-through constraints, which provide floors for interest-bearing liabilities and caps for interesting-earning assets. These constraints do not apply to the margin of the instrument prior to their contractual maturity. These constraints, however, apply to instruments independent of their accounting treatment and the corresponding risk category they have to be reported.

379. In order to be coherent with the static-balance sheet assumption, banks need to ensure that the projected deposit rate will not result in an outflow of deposits, i.e. the margin paid on deposits should allow banks to maintain the volume of deposits under stress.

380. While there is no explicit forecast of monetary policy in the stress test scenarios, banks are expected to factor in the projected changes in short-term market rates into the costs of central bank funding. More specifically, banks are required to compute the spread between the central bank rates and the relevant short-term rates at the cut-off, and apply it to the projected path of expected reference market interest rates over the stress test time horizon as provided by the scenario. In line with the static balance sheet assumption, the volume of central bank funding is assumed to remain constant and central bank funding instruments are rolled over into similar central bank instruments.

Box 25: Calculation of the NII — Illustration

The evolution of banks' interest income and expenses over the stress test time horizon is the result of (i) the repricing/replacement of maturing assets/liabilities, (ii) the migration of performing positions to non-performing exposures, and (iii) the interest income for non-performing exposures net of provisions. This illustrative example presents the calculation performed for a floating rate product.

Floating rate portfolio

Product: floating product with a notional value of EUR 2 000 million, residual maturity of 0.25 years (rounded at 0.5 in line the provided average point of maturing), an original maturity of 1.5 years (rounded to 2 years in line with paragraph 337); the index rate is EURIBOR 3 months with quarterly resetting date (rounded at 0.2 in line the provided average point of maturing).

Starting point:

Starting point		Maturity schedule of the total portfolio at the cut-off date, split by original maturity									
	2019	2020						2021		2022	
	Total volume (in EUR million)	Margin Total amount (in EUR million)	of which: with original maturity <=1Y (in EUR million)	of which: with original maturity >1 and <=2Y (in EUR million)	Reference Total amount (in EUR million)	of which: with original maturity <=1Y (in EUR million)	of which: with original maturity >1 and <=2Y (in EUR million)	Margin Total amount (in EUR million)	Reference Total amount (in EUR million)	Margin Total amount (in EUR million)	Reference Total amount (in EUR million)
Floating	2 000	2 000	0	2 000	2000	2.000	0	0	0	0	0

Projections:

Projections of margin and reference rate for performing exposures (split between existing, maturing and new) and EIR for non-performing exposures are reported by banks according to their internal systems and used for calculations.

	PROJECTIONS MARGIN									PROJECTIONS REFERENCE								
	2020			2021			2022			2020			2021			2022		
	Existing	Maturing	New	Existing	Maturing	New	Existing	Maturing	New	Existing	Maturing	New	Existing	Maturing	New	Existing	Maturing	New
Floating	Banks' projections																	

	NON-PERFORMING								
	2020			2021			2022		
EIR component	Volume	Provision	EIR	Volume	Provision	EIR	Volume	Provision	EIR
Floating	Banks' projections								

Calculation — Step 1

Total initial interest income/expense Margin:

Total interest earned / paid on the total margin 2020= (Total Volume – Margin Total Amount 2020) * EIR_existing 2020 + Margin Total Amount 2020 * 0.5 * EIR_Maturing 2020 + Margin Total Amount 2020 * (1- 0.5) * EIR_New 2020.

Total interest earned / paid on the total margin 2021= (Total Volume – Margin Total Amount 2021 – Margin Total Amount 2020 (of which: with original maturity <=1Y)) * EIR_existing 2021 + Margin Total Amount 2021 * 0.5 * EIR_Maturing 2021+ Margin Total Amount 2021 * (1- 0.5) * EIR_New 2021.

Total interest earned / paid on the total margin 2022= (Total Volume – Margin Total Amount 2022 - Margin Total Amount 2020 (of which: with original maturity <=1Y) - Margin Total Amount 2020 (of which: with original maturity >1 and <=2Y)) * EIR_existing 2022+ Margin Total Amount 2022 * 0.5 * EIR_Maturing 2022 + Margin Total Amount 2022* (1- 0.5) * EIR_New 2022.

Total initial interest income/expense Reference:

Total interest earned / paid on the total Reference 2020= (Total Volume – Reference Total Amount 2020) * EIR_existing 2020+ Reference Total Amount 2020 * 0.2 * EIR_Maturing 2020 + Reference Total Amount 2020 * (1- 0.2) * EIR_New 2020.

Total interest earned / paid on the total reference 2021= (Total Volume – reference Total Amount 2021 – reference Total Amount 2020 (of which: with original maturity <=1Y)) * EIR_existing 2021 + reference Total Amount 2021 * 0.2 * EIR_Maturing 2021 + reference Total Amount 2021 * (1- 0.2) * EIR_New 2021.

Total interest earned / paid on the total reference 2022= (Total Volume – reference Total Amount 2022 - reference Total Amount 2020 (of which: with original maturity <=1Y) - reference Total Amount 2020 (of which: with original maturity >1 and <=2Y)) * EIR_existing 2022+ reference Total Amount 2022 * 0.2 * EIR_Maturing 2022+ reference Total Amount 2022* (1- 0.2) * EIR_New 2022.

Calculations — Step 2: Adjustment to interest income

Adjustment to interest income 2020= (Total interest earned on margin 2020 + Total interest earned on reference 2020)/ Total Volume * (Volume non performing 2020 – Volume non performing starting point)

Adjustment to interest income 2021= (Total interest earned on margin 2021 + Total interest earned on reference 2021)/ Total Volume * (Volume non performing 2021 – Volume non performing starting point)

Adjustment to interest income 2022= (Total interest earned on margin 2022 + Total interest earned on reference 2022)/ Total Volume * (Volume non performing 2022 – Volume non performing starting point)

Calculations — Step 3: interest income non-performing:

Interest income non performing 2020= EIR NPE 2020*(Vol NPE 2020 – Provision NPE 2020)

Interest income non performing 2021= EIR NPE 2021*(Vol NPE 2021 – Provision NPE 2021)

Interest income non performing 2022= EIR NPE 2022*(Vol NPE 2022 – Provision NPE 2022)

a. Constraints on the margin component for liability positions

381. Under the baseline scenario, banks are required (at a minimum) to reflect a proportion of the changes in the sovereign bond spread of the country of location of the activity in the margin component of the EIR of their repriced liabilities. Under the adverse scenario, the margin paid on interest-bearing liabilities cannot increase less than the higher of a proportion of the changes in the sovereign spread of the country of location of the activity and the same proportion applied to the increase of an idiosyncratic component, derived from the impact on banks' wholesale funding rate of a rating downgrade as described in Box 26. The impact shall be applied immediately at the beginning of the time horizon.

Box 26 Floor for the development of the margin paid on new liabilities (pass-through constraint)

The margin on banks' new liabilities at time *t* is floored at:

$$\text{Margin NewL}(t) = \text{Margin NewL}(t0) + \gamma \text{ Max}(0, \Delta\text{Sov Spread}(t), \Delta \text{ idiosyncratic component}).$$

Where:

- Margin NewL (t) stands for the Margin EIR component on their repriced liabilities during time interval *t*.
- $t0$ stands for the year preceding the stress test horizon.
- Margin NewL $(t0)$ stands for the notional-weighted margin of new business at end of year *t0*.
- ΔSov Spread (t) is the change in the relevant sovereign spread — i.e. difference between the yield-to-maturity of the 10-year sovereign's debt security and the 10-year swap rate for the same currency, between *t* and *t*0.
- γ is a factor specific to the different types of liabilities, which reflects the heterogeneity in the relationship between the sovereign spreads and the funding rates across different types of liabilities as summarised in the table below:

	Central bank - deposits	Households deposits — sight	NFC deposits — sight	Governments deposits — sight	Governments, Households, NFC deposits — term	Deposits from credit institutions and other financial corporations	Other Debt securities	Covered bonds and ABS	Certificates of deposits and repos	Other Liabilities
γ	0	0.1	0.2	0.2	0.5	1	1	0.75	0.2	0.5

- Δ idiosyncratic component stands for the impact on the idiosyncratic component. Under the baseline scenario, the Δ idiosyncratic component will be 0; under the adverse scenario, it will represent the expected change in the margin of senior unsecured debt, issued in the bank's country of origin or main country of funding, denominated in local currency with 5 years' residual maturity, in the event of an instantaneous external credit assessment institution (ECAI) credit rating downgrade (taking the rating as of end 2019 as the starting point). Under the adverse scenario, Δ idiosyncratic component shall be calculated as a single number per bank, used for all liabilities in all countries/currencies and assumed constant over the scenario. The idiosyncratic component is floored, under the adverse scenario, by the values listed below:

Credit rating (Standard & Poor's classification) 31 December 2019	Shock to the idiosyncratic component (bps)
AAA	25
AA+	30
AA	35
AA-	40
A+	45
A	50
A-	60
BBB+	70
BBB	80
BBB-	95
BB+	110
BB	125
BB-	145
B+/B/B-	175
CCC+/CCC/CCC-/CC+/CC/CC-	225

In order to apply the floor, and in cases where the bank has more than one rating from nominated ECAIs, the following criteria will apply:

- (1) Long-term credit ratings will prevail over short-term credit ratings.
- (2) If more than one long-term rating exists, the bank (issuer) rating will prevail over the issue rating.
- (3) If more than one issue rating exists, senior ratings will prevail over subordinated ratings.

- (4a) If two senior rating exists, the most conservative rating will prevail.
- (4b) If more than two senior rating exists, the two ratings generating the two less severe impacts shall be referred to and out of the two preselected, the one with the higher impact will be chosen.
- (4c) If more than one subordinated rating exists, the least conservative rating will prevail. The credit ratings in scope and the selection process shall be reported in the Explanatory Note.

If there is no rating available as of end 2019, banks are allowed to provide a rating available in 2020. In case there is no rating available in 2020 either, banks should provide a rating which corresponds to the calibrated delta idiosyncratic component taking into consideration banks' bond and CDS spreads (e.g. 60bps -> A- Rating).

If the applicable rating is issued by a nominated ECAI other than Standard & Poor's, the bank shall map it to one of the ratings envisaged in the idiosyncratic component floor table. In this mapping, the following constraint will apply: both ratings shall share the same credit quality step according to Annex III of the Joint final draft Implementing Technical Standards on the mapping of ECAIs' credit assessment under Article 136(1) and (3) of the CRR.

In the exceptional case of a bank with only two credit ratings available from nominated ECAIs with a significant gap between them of 3 or more notches, and when the outlook of the worse rating is positive and the outlook of the better rating is either positive or stable, the bank and the competent authority may discuss during the quality assurance process the rationality of this gap and of the applicable idiosyncratic impact. The competent authority may conclude that this gap is not justified and may approve a deviation from the general rule, allowing the institution to apply the impact corresponding to the credit rating resulting from the median of the two ratings, rounded to the worse of two adjacent ratings. These deviations should be communicated to the EBA together with the justification behind it.

Example

The shock to the idiosyncratic component for a bank with a credit rating of AA- as of end 2019 will be +40 bps over the entire stress test period under the adverse scenario. Similarly, the shock to the idiosyncratic component for a bank with a credit rating of BB- as of end 2019 will be 145 bps under the adverse scenario.

382. The pass-through constraint on the development of the EIR applies to all interest expense positions, except derivatives instruments. The floors for the repricing of the margin of interest-bearing liabilities are applicable at country/currency level for each liability type and separately for fixed and floating rate portfolios.

383. Any legally mandated restrictions to pass-through mechanisms should be identified before submission of the data and explained in accompanying documents. Discussions during the quality assurance process may, in exceptional circumstances, lead to deviations from this rule.

b. Constraints on the margin component for asset positions

384. Under both the baseline scenario and the adverse scenario, banks are required to cap the margin on their repriced assets by the sum of the margin starting value and a proportion of the change in the sovereign bond spread in the country of exposure, as explained in Box 27.

385. Exceptional cases of legally prescribed funding matches between the assets and liabilities sides may be identified as part of the quality assurance process, which would need to be taken into account in the stress test when considering the application of the pass-through constraints.

Box 27: Cap on the development of the margin earned on new assets (pass-through constraint)

The Margin EIR component on banks' new repriced assets at time *t* is capped at:

$$\text{Margin NewA}\ (t) = \text{Margin NewA}\ (t0) + \lambda(\text{Max}(\Delta\text{Sov Spread}\ (t), 0)).$$

Where:

- Margin NewA (t) stands for the Margin on the repriced assets in the time interval t.
- t0 stands for the year preceding the stress test time horizon.
- Margin NewA (t0) stands for the notional-weighted margin of new business end of year t0.
- ΔSov Spread (t) is the change in the relevant sovereign spread — i.e. difference between the yield-to-maturity of the 10-year sovereign's debt security and the 10-year swap rate for the same currency, between t and t0.
- λ is a factor specific to the different types of assets under consideration, which reflects the heterogeneity in the relationship between the sovereign spreads and the lending rates across different types of assets as summarised in the table below:

	Household — Residential mortgage	Household — Other	Credit institutions and other financial corporations	Non-financial corporations	Central bank	Government	Other assets
λ	0.15	0.15	0.5	0.15	0	1	0.5

386. These caps on pass-through rates apply to all interest income earning positions except derivative instruments. The caps for the repricing of the margin of interest-earning assets are applicable at country/currency level for each asset type and separately for fixed and floating rate portfolios.

NII: Comments to be provided by participating banks

A. While banks have to perform their NII projections without taking into account FX effects, the EBA is analysing the possibility to introduce a prescribed adjustment to the NII for FX differences that arise between the respective year of the projection and the starting point of the exercise. These might be caused for example by high nominal EIR in countries with high inflation and a possible depreciation of the foreign currency against the reporting currency. In addition to the possible impact on the NII section, the general treatment of FX effects is still under review. Banks are invited to provide their comments on this topic during the industry discussion.

5. Conduct risk and other operational risks

5.1 Overview

387. Banks are required to project the P&L impact of losses arising from conduct risk and other operational risks, using, when relevant, their internal models and, in the case of conduct risk, available qualitative information.

388. Banks are also required to project capital requirements for operational risk within the time horizon of the exercise.

389. Banks' projections are subject to the constraints summarised in Box 28.

Box 28: Summary of the constraints on banks' projections of conduct risk and other operational risks

- Projections of losses that may arise from new conduct risk events are subject to a minimum floor, computed in the baseline scenario as the average of the historical conduct risk losses reported by the bank during the 2015-2019 period for non-material events only — i.e. excluding past losses of historical material conduct risk events reported during this period. This floor is more conservative under the adverse scenario and requires the banks to apply a stress multiplier to the average (paragraph 427).
- Projections of conduct losses connected to material conduct risk events are subject to a floor in the quality assurance process, i.e. banks that submit projections that are lower than the floor are required to justify their projections to their competent authority (paragraph 428).
- Projections of losses due to other operational risks are subject to a minimum floor, computed under the baseline scenario as the average of other historical operational risk losses reported by the bank during the 2015-2019 period times a multiplier. This floor is more conservative in the adverse scenario and requires banks to apply a stress multiplier to the average (paragraph 432).
- Total capital requirements for operational risk in each year of the projection horizon shall not fall below the actual minimum capital requirements for operational risk reported by the bank at the beginning of the exercise (paragraph 434).

5.2 Scope

390. The scope of the operational risk stress is defined to cover the impact on the P&L of potential future losses arising from conduct risk and other operational risks. This also covers the effect of the stress on operational risk capital requirements.

5.3 High-level assumptions and definitions

5.3.1 Definitions

391. **Conduct risk** is defined as the current or prospective risk of losses to a banks arising from an inappropriate supply of financial services, including cases of wilful or negligent misconduct. In the COREP template for operational risk (C 17.00), operational risk losses are classified by event type. For the purpose of reporting historical data and projections in the stress test templates, the assumption is that conduct risk losses will correspond to losses related to event type 4 ('clients, products and business practices') and event type 1 ('internal fraud'). Deviations from this rule (i.e. non-conduct events which are classified as event type 1 or 4 and conduct events which are not classified as event type 1 or 4) are allowed in exceptional cases subject to the approval of the competent authorities. In any case, banks are required to justify the exclusion from the consideration as conduct risk of any event classified as event type 1 or 4 and the inclusion in conduct risk of any events that match the definition provided without being classified as event type 1 or 4, supplying evidence to the competent authority that justifies this reclassification. For example, conduct risk will also include violation of national and international rules and regulations (tax rules[32], internal fraud or internal theft, anti-money laundering rules, anti-terrorism rules and economic sanctions).

392. **Other operational risk** is defined as the risk of losses according to the definition provided in the CRR (i.e. 'operational risk' means the risk of losses resulting from inadequate or failed internal processes, people and systems or from external events, and includes legal risk), but excluding all conduct-related losses. For the purpose of reporting historical data and projections in the stress test templates, banks will consider as other operational risk all event types that are not defined as conduct risk events above.

[32] Banks are required to report any tax fines associated with client business as a conduct event. For instance, fines paid by banks that facilitated tax evasion – such as penalties imposed by the US Department of Justice under the 'Swiss Bank Program' – should be classified as a conduct event. Banks should also include any tax to be paid (including interest and fines) arising from such cases, including e.g. taxes for which the bank had an obligation to withhold.

393. A **historical material conduct risk event** is defined as any misconduct issue that has triggered aggregate gross losses during the period 2015-2019 greater than 10 bps of the bank's end-2019 level of CET1 capital at a consolidated level.

394. A **new conduct risk event** is defined as a misconduct issue that, as of the start of the exercise (31 December 2019), is unknown to the bank or is already known but has not had material P&L impact (below 10 bps of the end-2019 CET1 capital of the bank at a consolidated level) during the 2015-2019 period. In this context, new conduct risk events, known and unknown, are material if the bank projects the event to trigger gross losses greater than 10 bps of the end-2019 CET1 capital of the institution at a consolidated level during the 3 years of the exercise in the baseline or the adverse scenario.

395. **Number of loss events** is defined as the number of operational risk events accounted for the first time in the P&L statement within the reporting period (2015-2019 for actual data and 2020-2022 for projections). In the case of loss adjustments within the reporting period, no additional numbers of loss events should be reported.

396. **Recovery** is defined as an independent occurrence related to the original operational risk loss that is separate in time, in which funds or inflows of economic benefits are received from second or third parties, such as insurers or other parties.

397. **Gross loss** is defined as a loss stemming from an operational risk event or event type before recoveries of any type.

398. **Rapidly recovered loss event** is defined as an operational risk event that leads to losses that are partly or fully recovered within 5 working days. In a rapidly recovered loss event, only the part of the loss that is not fully recovered (i.e. the loss net of the partial rapid recovery) should be considered and reported as gross loss. In exceptional cases where an historical event (i.e. misdirected payments) produces artificially and significantly distorted results through the application of the window for rapidly recovered loss events and the operational risk floor, then a limited extension of the 5-day window may be allowed. This extension is solely for the purposes of computing the floors specified in Box 30 and Box 32. It is subject to the decision of the competent authority and requires the bank to provide compelling evidence of the distortion.

399. **Date of accounting** is defined as the date when an operational risk gross loss or reserve/provision was accounted for the first time in the P&L statement.

400. **Total loss recovery** is defined as the sum of the recoveries accounted for within the reporting period, relevant to loss events included into the 'total amount of gross losses'.

401. The **relevant indicator (RI)** is defined as in Article 316 of the CRR.

5.3.2 Reporting requirements

402. All banks are required to report historical data on incurred gross losses on conduct risk and other operational risks on a yearly basis from 2015 to 2019 in the general operational risk template (CSV_OR_GEN) at a consolidated level, irrespective of the operational risk approach applied. Banks applying the fall-back solution (see section 5.4.3) are still expected to report all available and eligible historical losses incurred during the historical horizon.

403. Banks are required to report, in each year of the reporting period, the total amount of gross losses resulting from the sum of the following elements:

- The gross loss amounts equal or larger than EUR 10 000, corresponding to operational risk events accounted for the first time in the P&L during that specific year, within the reporting period (2015-2019), irrespective of when they have occurred;

- The net loss adjustments arising from, for example, additional settlements, increases of provisions and releases of provisions accounted for during that year and that are equal or larger than EUR 10 000, corresponding to operational risk events accounted for the first time later than January 2009.

404. In those cases where capital requirements are modelled using AMA or standardised approaches, banks will report historical data on incurred gross losses for conduct risk and other operational risks by loss-size-based buckets (minimum size is EUR 10 000) in CSV_OR_GEN. Banks are required to include all losses above EUR 10 000 (or the equivalent, applying the appropriate FX rate at the time of recording the loss), and exclude all losses below this threshold. Historical material conduct risk events will be reported separately in CSV_OR_CON. Banks are required to group all payments relating to the same material conduct risk event for the purpose of populating both CSV_OR_GEN and CSV_OR_CON (thus ensuring that material conduct risk events comprising a large number of small items are appropriately captured).

405. Banks applying the basic indicator approach are also expected to report yearly operational risk-incurred losses from 2015 to 2019 in CSV_OR_GEN, with a split between conduct risk and other operational risks but without further details per loss-size-based buckets. Historical material conduct risk events shall be reported separately in CSV_OR_CON by these banks as well, when relevant.

406. In the case of events with a lifespan of several years, the initial impact and/or the net loss adjustments should be reported in the pertinent years of accounting. The sum of the initial impact and/or net loss adjustments accounted for during the reporting period (2015-2019) will determine the total size of the event for the purpose of classifying it as material or not material, as well for reporting its amounts (i.e. initial impact and/or loss adjustments) in the relevant loss-

size-based bucket. A non-exhaustive list of examples of reporting losses in the relevant loss-size-based bucket is given in Box 29.

Box 29: Examples of reporting losses in the relevant loss-size-based bucket[33]

Example 1

In 2015 the event happens with an initial loss of EUR 15 000, then in 2016 an additional provision of EUR 50 000 is booked for the same event, in 2017 another provision of EUR 200 000 is booked for the same event and finally in 2018 a further provision of EUR 30 000 is again booked for the same event:

Year	Loss	Cumulative loss
2015	15 000	15 000
2016	50 000	65 000
2017	200 000	265 000
2018	30 000	295 000
2019		

The bank should report this event as follows, in accordance with the COREP instructions:

	2015	2016	2017	2018	2019
≥ EUR 10 000 and < EUR 20 000	15 000				
≥ EUR 20 000 and < EUR 100 000		50 000			

[33] Please also refer to question 2016_2867 of the EBA Single Rulebook Q&A on Template C 17.00 (OPR DETAILS) – Reporting of loss adjustments.

≥ EUR 100 000 and < EUR 1 000 000	200 000	30 000
≥ EUR 100 000 and < EUR 1 000 000		

Example 2

The event happens in 2015 with an initial loss of EUR 5 000, then in 2016 an additional provision of EUR 6 000 is booked for the same event, in 2017 another provision of EUR 90 000 is booked for the same event. In 2018 the bank released EUR 40 000 provision for the same event and finally in 2019 it booked a further provision of EUR 50 000 for the same event:

Year	Loss	Cumulative loss
2015	5 000	5 000
2016	6 000	11 000
2017	90 000	101 000
2018	-40 000	61 000
2019	50 000	111 000

The bank should report this event as follows, in accordance with the COREP instructions:

	2015	2016	2017	2018	2019
≥ EUR 10 000 and < EUR 20 000					
≥ EUR 20 000 and < EUR 100 000				-40 000	
≥ EUR 100 000 and < EUR 1 000 000			90 000		50 000
≥ EUR 100 000 and < EUR 1 000 000					

Example 3

In 2015 the event happens with an initial loss of EUR 50 000, then in 2016 provisions of EUR 41 000 are released for the same event and finally in 2017 a further provision of EUR 50 000 is again booked for the same event:

Year	Loss	Cumulative loss
2015	50 000	50 000
2016	-41 000	9 000
2017	50 000	59 000
2018		
2019		

The bank should report this event as follows, in accordance with the COREP instructions:

	2015	2016	2017	2018	2019
≥ EUR 10 000 and < EUR 20 000					
≥ EUR 20 000 and < EUR 100 000	50 000		50 000		
≥ EUR 100 000 and < EUR 1 000 000					
≥ EUR 100 000 and < EUR 1 000 000					

In addition, for all three examples banks should add the initial loss and the additional positive and negative loss adjustments to the 'Total amount of gross losses' corresponding to conduct risk or other operational risk as relevant, in the year when the initial loss and the loss adjustments take place.

407. In the case of a rapidly recovered loss event, only the part of the loss that is not fully recovered (i.e. the loss net of the partial rapid recovery) should be considered and reported as gross loss.

408. In the case of a common operational risk event or multiple events linked to an initial operational risk event generating several events or losses, the related losses should be grouped and entered into the template as a single loss. The bank should report one event, if there is a common operational risk event, and/or the number of the several events linked to the root event, if there are multiple events.

409. In accordance with Article 322(3)(b) of the CRR, operational risk losses that are related to market risk shall be included in the operational risk templates, while operational risk losses that are related to credit risk shall be excluded.

410. When reporting the gross losses, banks will include the following items, in accordance with letters (a), (b), (c) and (f) of Article 28 of the RTS on AMA for operational risk[34]:

- Direct charges, including impairments and settlement charges, to the P&L and write-downs due to the operational risk event;
- Costs incurred as a consequence of the operational risk event, including external expenses with a direct link to the operational risk event (such as legal expenses and fees paid to advisors, attorneys or suppliers) and costs of repair or replacement to restore the position prevailing before the operational risk event;
- Provisions or reserves accounted for in the P&L statement against probable operational risk losses;
- Timing losses.[35]

411. When determining the scope of the gross losses to be reported, banks should also consider the provisions included in Articles 29(3), 29(4) and 29(6) of the RTS on AMA for operational risk.

412. Banks are also requested to provide, in the CSV_OR_GEN template, data on the number of loss events, on total loss recovery and on the relevant indicator.

413. The quality assurance by supervisors of banks' projections is of special relevance in the case of conduct risk, given the high variability of the potential outcomes of the issues when settled, especially the material ones. Banks should support their projections for material conduct risk events with all available evidence, both quantitative and qualitative. Banks may also be asked

[34] Commission Delegated Regulation (EU) 2018/959.

[35] For the definition of timing losses please refer to Article 23 (1)(f) of Commission Delegated Regulation (EU) 2018/959.

by their competent authorities to provide evidence regarding issues that are widespread in the industry and have resulted in losses for other institutions, which could be of relevance for them based on their business activities. When quality assuring banks' projections, competent authorities will take into account not only their supervisory knowledge of the particular bank, but also a comparison to the sector and the impact of similar issues in the bank's peer group.

5.4 Impact on P&L

5.4.1 Conduct risk treatment

414. Banks will stress their conduct risk losses by applying either a qualitative or a quantitative approach in accordance with the instructions below. In both cases, a minimum floor for new non-material conduct risk losses will apply.

415. Under both approaches, the P&L impact of banks' conduct risk estimates will be included in 'gains or losses arising from operational risk' in the P&L template (CSV_P&L), taking into account the applicable floor.

416. Institutions will apply the qualitative approach when they report any historical material conduct risk event during the period 2015-2019. Institutions reporting no historical material conduct risk event during 2015-2019 will also apply the qualitative approach if new material events, known and unknown, are expected, or if the relevant competent authority deems it necessary based on their knowledge of the bank and on their supervisory judgment (if they deem that the institution may face any new material conduct risk event in the future).

417. Projections of losses related to material conduct risk events shall take into account all available information as of DD MM 2020 *[date of the second submission from the competent authority to the EBA]*. This cut-off date does not affect information requests by competent authorities as part of the regular quality assurance. In particular, banks may not withhold information or data they owned (or could have derived from) before the cut-off date. If material conduct risk events, which could not have been anticipated by banks, occur between the cut-off date and the publication, the absence of loss projections for these events will be noted in the published results.

418. All remaining institutions will apply the quantitative approach.

a. Qualitative approach to estimating future conduct risk losses

419. Banks applying the qualitative approach are required to:

- Report historical data on incurred gross losses on conduct risk in the general template (CSV_OR_GEN) as indicated in paragraphs 402 to 405 above. In the same template they

shall report projections of losses for non-material events during the time horizon of the exercise.

- Identify and report (separately) historical material conduct risk events in the conduct risk template (CSV_OR_CON), including an estimate of all potential losses that may still arise from them, in excess of accounting provisions and losses already booked by December 2019, during the time horizon of the exercise. This is applicable for both the baseline scenario and the adverse scenario.

- Include, in the conduct risk template (CSV_OR_CON), a projection of potential losses that may arise from new material conduct risk events during the time horizon of the exercise, under both the baseline scenario and the adverse scenario. Banks are required to project losses for both known (see paragraph 394) and unknown new material conduct risk events. Banks are required to ensure that projections of losses for conduct risk events reflect all information pertaining to these events that is available to the bank until the cut-off date (see paragraph 417).

- The process for treating new material conduct risk events that are not known to the bank shall consider the following steps:

    1. Identification of types of conduct risk events that could arise in areas vulnerable to material conduct risk losses, taking into account a qualitative analysis of areas of conduct risk to which the bank is exposed.

    2. Assessment of the probability of conduct risk events which are unknown to the bank in relation to the types of conduct risk identified in step 1.

    3. Assessment of the magnitude of future losses due to events that are unknown to the bank in relation to the types of conduct risk identified in step 1.

- When assessing the impact of new material conduct risk events in the baseline and adverse scenarios banks are expected to apply techniques and data sources available to the bank, such as historical datasets of conduct losses and statistical models, to ensure that low probability high impact events are correctly captured. The treatment of new material conduct risk events shall be explained and will be subject to scrutiny by supervisors, in particular, zero losses projections in the adverse scenario for unknown material conduct losses should be properly justified.

420. Banks are required to report individually in the CSV_OR_CON the 25 largest historical material events in terms of aggregate projected losses, and also the 25 largest new material events (whether known or unknown) in terms of aggregate projected losses. The rest of material events not included among the 25 historical largest and/or the 25 new largest (if any) shall be

reported jointly in a different single row for historical events and in another single row for new events.

421. Banks' estimates of future conduct costs linked to historical material conduct risk events or new conduct risk events reported in the conduct risk template (CSV_OR_CON) shall be determined, irrespective of whether a provision has been recognised, by evaluating a range of settlement outcomes for each issue and assigning probabilities to these outcomes. Adverse outcomes should be attributed higher probabilities under the adverse scenario than under the baseline scenario, so that banks should have a high level of confidence that, under the adverse scenario, the losses would not exceed the loss estimate for material conduct risk events. These estimates are expected to exceed provisions, except for events where there is a high degree of certainty regarding the eventual cost. Material loss events should be reported regardless of the probability level.

422. When projecting conduct risk losses linked to historical material conduct risk events and new conduct risk events, banks are required to consider the time dimension and report the projected loss in the year when the settlement of the misconduct issue will most likely occur. If there is uncertainty on when the issue will be settled, then banks should distribute the projected loss equally over the 3 years of the exercise.

423. Table 13 below provides an illustration on the approach to follow in order to project conduct risk losses in the adverse scenario.

Table 13: Projection of conduct risk losses under the qualitative approach and in the adverse scenario — Illustration

Existing treatment of the misconduct issue	Possible approach to projecting future conduct risk losses
An accounting provision has been raised. There is a high degree of certainty over the eventual cost.	The estimate will equal the existing provisions.
An accounting provision has been raised. There is a high degree of uncertainty over the eventual settlement cost. While the IAS 37 provision strikes a balance between potential upside and downside, the likelihood of adverse outcomes exceeding existing provisions is greater than remote.	The estimate should exceed the existing provision. Banks are expected to provide an estimate, even if they are unable to reliably quantify the full range of potential outcomes, by exercising expert judgement. In the adverse scenario, banks should have a high level of confidence that the loss would not exceed the loss estimate for material conduct risk events. Adverse outcomes should be attributed higher probabilities under the adverse scenario than under the baseline scenario.

Existing treatment of the misconduct issue	Possible approach to projecting future conduct risk losses
An accounting provision has not been raised. While a settlement cost is not probable, there is sufficient evidence to determine a range of settlement outcomes, and the possibility of a significant settlement cost is greater than remote.	An estimate should be determined by evaluating a range of settlement outcomes and assigning probabilities to these outcomes. In the adverse scenario, banks should have a high level of confidence that the loss would not exceed the loss estimate for material conduct risk events. Adverse outcomes should be attributed higher probabilities under the adverse scenario than under the baseline scenario.
An accounting provision has not been raised. While a possible obligation has been identified, current evidence is insufficient to be able to reliably quantify any potential liability, or range of liabilities, that may exist. The possibility of a significant settlement cost is greater than remote.	An estimate should be determined by exercising expert judgement. In the adverse scenario, banks should have a high level of confidence that the loss would not exceed the loss estimate for material conduct risk events. Adverse outcomes should be attributed higher probabilities under the adverse scenario than under the baseline scenario.

424. Banks are required to provide supervisors with any information — both quantitative and qualitative — they have used in forming this assessment. This information shall include the extent of their business in relevant areas. Banks are required to provide supervisors with a summary of how they allocated each misconduct risk to the categories in Table 13 above.

b. Quantitative approach to estimating future conduct risk losses

425. Banks applying the quantitative approach are required to, directly in the general template (CSV_OR_ GEN), project the P&L impact of conduct risk losses over the 3-year time horizon using banks' own methods. Banks are expected to project unknown material conduct risk losses. Projections of zero losses for such conduct events in the adverse scenario should be properly justified. Banks applying the quantitative approach shall not populate the material conduct risk template (CSV_OR_CON).

c. Floor for conduct risk loss projections

426. Projections of conduct risk losses linked to new non-material conduct risk events shall not fall below a binding floor over the 3-year stress test time horizon under both the baseline scenario and the adverse scenario. The floor is applicable to the total losses from new non-material conduct risk events for the 3 years, but not year by year. If the floor applies, the amount of losses under the floor will be projected equally along the 3 years of the time horizon.

427. In the baseline scenario, the 3-year floor for potential losses linked to new non-material conduct risk events will be computed as 3 times the average of the historical losses reported by the banks during the 5 years prior to the beginning of the exercise (the 2015-2019 period) for non-material conduct risk events only (i.e. excluding past losses of historical material conduct risk events reported during this period). In the adverse scenario, the floor will be more conservative and banks will be required to apply a stress multiplier to the average. This calculation is detailed in Box 30.

Box 30: Floor for conduct risk losses for non-material conduct events

$$\text{Conduct risk floor for non} - \text{material conduct events}_{(\text{b or adv}),3\ years} = 3 * \Omega_{(\text{b or adv})} \frac{1}{5} \sum_{y=2015}^{2019} (\text{historical conduct losses for non} - \text{material events})_{\text{y}}.$$

Where:

- In the baseline scenario, the stress multiplier is $\Omega_{(\text{CR, b})} = 1$.
- In the adverse scenario, the stress multiplier is $\Omega_{(\text{CR, adv})} = 2$.

428. Projections of conduct losses connected to material conduct risk events are subject to a floor in the quality assurance process, i.e. banks that submit projections which are lower than the floor are required to justify their projections to their competent authority. In order to justify their projections banks could apply the following criteria: back-testing of material conduct risk losses in the adverse scenario during the previous EBA stress tests exercises, projection of losses due to unknown material conduct risk events, ratio of new material conduct risk cases in relation to the historical material conduct risk cases, improvements of their internal controls. If the supervisor assesses that the bank is unable to provide a reasonable justification their component authority may request that the bank applies the floor. The floor applies only for the projections under the adverse scenario and is computed as 3 times the average of the historical losses reported by the banks during the 5 years prior to the beginning of the exercise (inclusive of the years 2015-2019) for material conduct risk events multiplied by a stress factor as shown in Box 31. The floor is calculated in the template CSV_OR_ GEN.

Box 31: Floor for conduct risk losses for material conduct events in the quality assurance process

$$\text{Conduct risk floor for material conduct events}_{(\text{adv}),3\ years} = 3 * \Omega_{(\text{adv})} \frac{1}{5} \sum_{y=2015}^{2019} (\text{historical conduct losses for material events})_{\text{y}}.$$

Where:

- In the adverse scenario, the stress multiplier is $\Omega_{(\mathrm{CR,\ adv})} = 1.15$.

429. In all circumstances, banks will be expected to identify their material risks and potential conduct risk losses and these will be subject to challenger models from supervisors — for example, based on statistical models which look beyond simple averages to identify the specific nature of conduct risk, or by using uncertainty-adjusted means to project potential material conduct risk losses and to challenge banks' own projections. Supervisors will consider the criteria set out in paragraph 428 jointly with their own supervisory experience based on the assessment of the bank's internal governance.

5.4.2 Treatment of other operational risks

430. Banks are required to enter the P&L impact of other operational risk losses over the 3-year time horizon directly in the general template (CSV_OR_GEN) using the banks' own methods. Banks' projections should be made considering the 50th percentile of the historical yearly aggregate amount of losses under the baseline scenario, and should reach the 90th percentile of the historical yearly aggregate amount of losses under the adverse scenario. Percentiles refer to the aggregate loss distribution, based on the bank's internal data on the frequency and severity of losses. Therefore, the aggregate loss distribution should be only one distribution over all buckets. Consequently, as set in the templates, banks should just populate aggregate values cells. Moreover, since there is only one probability distribution, the value for each of the three years should be the same.

431. The projection of losses for other operational risks shall be reported in 'gains or losses arising from operational risk' in the P&L template (CSV_P&L), taking into account the applicable floor.

432. Projected losses for 3 years under the adverse and the baseline scenarios must be at least equal to the bank-specific floor computed as shown in Box 32.

Box 32: Floor for the projection of other operational risk losses

$$\mathrm{OOR\ floor}_{(\mathrm{b\ or\ adv}),3\ years} = 3 * \Omega_{(\mathrm{b\ or\ adv})} \frac{1}{5} \sum_{y=2015}^{2019} (\mathrm{OOR\ losses})_{\mathrm{y}}.$$

Where:

- OOR means 'other operational risk'.

- In the baseline scenario, the loss factor is $\Omega_{(\mathrm{OOR,b})} = 0.8$.
- In the adverse scenario, the loss factor is $\Omega_{(\mathrm{OOR,adv})} = 1.5$.

5.4.3 Fall-back solution

433. If a bank is unable to report relevant historical losses for conduct risk and other operational risks or if relevant historical losses are provided only for material events and the projected losses for the material events are not deemed appropriate by the competent authorities, overall operational risk loss projections (aggregate for the 3 years of the exercise) will be calculated as a function of the relevant indicator, as shown in Box 33. In cases where this method applies, the amount of losses will be projected equally along the 3 years of the time horizon.

Box 33: Fall-back solution for conduct risk and other operational risk losses

$$\mathrm{L}_{(\mathrm{b\ or\ adv})} = \Omega_{(\mathrm{b\ or\ adv})} * \mathrm{RI}_{2019}.$$

Where:

- RI is the relevant indicator.
- L is the total loss projected for the 3 years of the time horizon, meaning that, in each of the 3 years, the loss will be L/3.
- In the baseline scenario, the scaling factor is $\Omega_{(\mathrm{b})} = 0.06$.
- In the adverse scenario, the scaling factor is $\Omega_{(\mathrm{adv})} = 0.15$.

5.5 Impact on capital requirements

434. Total capital requirements for operational risk in each year of the projection horizon shall not fall below the actual minimum capital requirements for operational risk, as reported by the bank at the beginning of the exercise (31 December 2019).

5.5.1 AMA

435. Banks are required to use their internal models to estimate their capital requirements for operational risk (which includes both conduct risk and other operational risks) over the time horizon of the exercise, for both the baseline scenario and the adverse scenario. For this, banks using the AMA are required to l take into account the flow of losses projected according to this

note, exceeding the existing provisions already considered by the AMA models (i.e. ex ante provisions are not included in the calculation of the capital requirements) in the loss database used to estimate the capital requirements. Projections of operational risk capital requirements will be challenged by competent authorities during the quality assurance process.

5.5.2 Basic approach and standard approach

436. For operational risk categories where capital requirements are calculated using basic and standard approaches, capital requirements shall, in the baseline scenario and in the adverse scenario, stay constant and equal to capital requirements reported by the bank for the starting point (31 December 2019).

6. Non-interest income, expenses and capital

6.1 Overview

437. Banks are required to use their own methodologies to project their non-interest income and expenses items that are not covered by credit risk, market risk or operational risk, for both the baseline scenario and the adverse scenario.

438. These projections are subject to the constraints summarised in Box 34. The macroeconomic shocks and market risk methodologies should be applied for stressing real estate assets and defined benefit pension plans, respectively.

Box 34: Summary of the constraints on banks' projections of non-interest income, expenses and capital

- For dividend income, NFCI and share of the profit of investments in subsidiaries, joint ventures and associates accounted for using the equity method, net income from each item cannot exceed the 2019 level in the baseline scenario. In the adverse scenario, a minimum reduction of net income from each item compared with the 2019 reported value is prescribed for the projections (paragraph 456). In case the net income from any of these items is negative or zero, the projections are capped at the 2019 value.

- Other remaining administrative expenses, remaining other operating expenses, depreciation and other provisions or reversal of provisions cannot fall below[36] the value observed in 2019 — unless an adjustment of this floor for one-offs is permitted (paragraph 460). Only recognised one-off exceptions exceeding the threshold of 5 bps impact on CET1 ratio will be permitted (paragraph 465).

- For dividends paid, under the baseline and adverse scenarios, banks are required to apply a pay-out ratio based on their publicly declared projected dividend policies. If no dividend policy is available or documented, the bank shall apply the following rule: the pay-out ratio

[36] It is noted that the quantities referred to in this point are reported with a negative sign. Therefore, this constraints statement refers to the absolute amount of these P&L contributions.

in the baseline should be the larger between 30% and the median of the observed pay-out ratios in profitable years over the last 5 years. In the adverse scenario, the same pay-out ratio as in the baseline scenario has to be assumed, unless the bank can provide evidence that it can deviate from this rule and the deviation is approved by the relevant competent authority. In both cases, a zero dividend is accepted if the bank is loss-making (paragraph 475).

- If the projected CET1 ratio for a given year of the stress test horizon falls below the MDA trigger point in line with Article 141 of the CRD, banks are required to project reductions of distributions for the same year following some simplifying assumptions for the purpose of the stress test (paragraph 476).

- A common tax rate of 30% has to be applied. The stock of existing DTAs and DTLs as of 31 December 2019 will not be recalculated according to the simplified tax rate. Banks can use and create both DTAs that depend on future profitability and do not arise from temporary differences and DTAs that depend on future profitability and arise from temporary differences (for OCI only) during the stress test, subject to some simplifying assumptions. The creation of DTAs that do not rely on future profitability is not allowed. DTLs shall be kept constant during the stress test horizon (section 6.4.4).

- Other operating income is capped at the 2019 value. The income related to operating leasing is subject to a minimum reduction of 10% with respect to the 2019 value in the adverse scenario (paragraph 493).

- No impact is assumed for FX effects, realised gains or losses on derecognition of financial assets and liabilities not measured at fair value through P&L, gains or losses on derecognition of non-financial assets, impairments on goodwill and negative goodwill (paragraphs 447, 490, 492, 495 and 497).

6.2 Scope

439. The projections of non-interest income and expenses exclude any P&L positions and capital impacts covered in the approaches for credit risk, market risk, operational risk or NII.

440. The following FINREP P&L items are part of non-interest income and expenses:

- Expenses on share capital repayable on demand;
- Dividend income;
- NFCI;

- Gains (losses) on derecognition of financial assets and liabilities not measured at fair value through profit and loss, net;
- Exchange differences, net;
- Gains or losses on derecognition of non-financial assets, net;
- Other operating income;
- Other operating expenses;
- Administrative expenses;
- Depreciation;
- Modification gains or losses, net;
- Other provisions or reversal of provisions;
- Other impairment on financial assets not measured at fair value through profit or loss;
- Impairment or (-) reversal of impairment on non-financial assets;
- Negative goodwill recognised in profit or loss;
- Share of the profit or loss of investments in subsidiaries, joint ventures and associates accounted for using the equity method;
- Other income and expenses from continuing operations (impairments of investments in subsidiaries, joint ventures and associates, profit or loss from non-current assets and disposal groups classified as held for sale not qualifying as discontinued operations);
- Profit or loss after tax from discontinued operations.

441. In addition to the P&L items listed above, this section captures the impact of taxes, defined benefit pension schemes, leasing income and dividends paid on capital as well as assumptions made regarding the calculation of capital ratios.

6.3 High-level assumptions and definitions

6.3.1 Definitions

442. All items follow IFRS definitions. Banks should align with FINREP reporting. If national accounting frameworks are used, banks are required to map their accounting framework to the IFRS framework. Banks are requested to provide a mapping table in an accompanying document.

6.3.2 Approach

443. Banks will have to use their own methodologies in projecting non-interest income and expense paths for the baseline and adverse scenarios.

444. The assumptions taken as basis for the use of the internal models/methodologies shall be coherent with the macroeconomic scenario (which includes e.g. the assumptions on GDP growth or inflation during the projection years)[37] and with the general assumptions of the methodology (i.e. static balance sheet, same business mix throughout the time horizon) and the constraints listed in this section. Banks are required to provide additional information on the approach followed when projecting the P&L items included in this section (which includes, but it is not limited to, items under section 6.4.1 and 6.4.2) in the explanatory note.

445. Banks are expected to apply models that are regularly used in internal risk management and stress testing, and the competent authority would need to be satisfied with using them for the purpose of the EU-wide stress test. For this reason, when models are deemed not suitable for projections, banks might be asked to revise internal figures, or the methodology may foresee an alternative treatment (such as for items treated in section 6.4.1).

446. The projections should incorporate both exogenous factors and bank-specific characteristics. They should also take into account the specific developments of the originating country. Given potential differences in the business cycles of these countries, the respective income and expense streams accrued by the bank in question will be affected.

447. In line with the static balance sheet assumptions, no FX effects should be accounted for regarding the above-listed P&L items. The only two channels via which FX rate changes affect the P&L are an indirect credit risk from foreign currency lending that is related to the depreciation of local currencies (see section 2), and market risk effects due to revaluation effects

[37] As an example, banks are expected to project their administrative expenses in line with the inflation assumptions of the macroeconomic scenario.

of trading and other fair value portfolios (see section 3). Banks should therefore abstain from accounting for both positive effects (e.g. reduced administrative expenses in countries where a currency depreciates versus the reporting currency) and negative effects (e.g. reduced income in countries where a currency depreciates versus the reporting currency).

6.3.3 Reporting requirements

448. Banks are required to provide 5 years of historical data for dividend payments together with their projections.

449. Gains (losses) arising from operational risk need to be reported as a separate item. To avoid any double counting, other P&L items therefore have to be adjusted to exclude these gains (losses) whenever relevant.

450. All historical and projected profit or loss values shall be reported on template CSV_P&L. Banks are required to report injections to retained earnings in CSV_CAP on the same calendar year in which profits are generated. Any additional impact to capital shall be reported on the capital template (CSV_CAP).

451. The items covered in sections 6.4.1 and 6.4.2 and paragraph 476 follow specific approaches that require the use of separate templates, namely CSV_NFCI_DIV, CSV_ONEOFF and CSV_MDA.

452. In line with the guidance descripted in paragraph 15, banks are required to comment in the accompanying documents how historical P&L items are affected by mergers and acquisitions, and how specific projected P&L values have been determined.

6.4 Impact on P&L and capital

6.4.1 Dividend income and NFCI

453. Banks are required to project dividend income, NFCI and share of the profit of investments in subsidiaries, joint ventures and associates accounted for using the equity method (i.e. outside the scope of consolidation) by making use of their own methodologies and assumptions on the development of volumes, margins, fees etc.

454. NFCI and expense items shall be projected separately at the first level of granularity as in FINREP template 22.1.[38] The sum of these separate projections will form the total NFCI projection.

455. Under the baseline scenario, for each of the three items described in paragraph 453, the projection of total net income for each year cannot exceed its reported value for 2019.

456. Under the adverse scenario, banks are required to follow one of the approaches subject to different constraints to project NFCI, dividend income and the share of the profit of investments in subsidiaries, joint ventures and associates accounted for using the equity method (see Box 35):

i. For banks that model the projections, the cumulative projection of the 3 years of the scenario for each item is subject to a minimum reduction as defined in Box 35 compared with three times the 2019 reported value. If this minimum reduction is binding for a bank, the reduced amount of net income will be projected equally across the 3 years of the time horizon.

ii. Banks that choose not to model the projections themselves are required to apply a more severe reduction of the total net income reported for 2019 and distribute it equally across the 3 years of the time horizon. This simplified approach does not apply to banks reporting significant non-recurring income values in the 2019 starting point for any of the items in the scope of this paragraph. In such case, banks are required to model their projections and are subject to the minimum reductions as defined in (i).

iii. For banks reporting 0 or negative net income for 2019 for one of the items in the scope of this paragraph, (i) and (ii) do not apply. In this case, the projections will be capped at the 2019 value when the bank projects the income items – alternative treatment to option (i) – and it will be equal to the 2019 value when the bank does not project – alternative treatment to option (ii) .

457. Banks making use of internal models should follow paragraphs 444 and 445, which include the requirement to include a description of the model used, along with the mapping applied, in the accompanying explanatory note.

[38] The only exception stands in the amount of insurance products coming from 'Customer resources distributed but not managed [by type of product]', in F22.01; r160.

458. Banks reporting the P&L items in this section with a different level of detail from the one described in this section are required to map their projections to FINREP template 22.1.

Box 35: Constraints for the calculation of NFCI, dividend income and the share of the profit of investments in subsidiaries, joint ventures and associates accounted for using the equity method

For each item in this section, banks that model the projections are required to apply the formula for the cumulative projection in the adverse scenario as follows:

$$\text{NetIncome}_{(\text{I}),3\text{ years}} = \text{Min}[\text{NetIncome}(\text{own models})_{3\text{ years}}; 3 * \text{NetIncome}_{2019} * \left(1 - \gamma_{(\text{Ia or Ib})}\right)]$$

Where:

- $\gamma_{(\text{Ia})}$ is the minimum reduction for NFCI, equal to 10%.
- $\gamma_{(\text{Ib})}$ is the minimum reduction for the remaining two items in this section, equal to 25%.

Banks that chose not to model the projections themselves for any of the items in this section are required to apply an overall more severe reduction, so that:

$$\text{NetIncome}_{(\text{II}),2020,2021,2022} = \text{NetIncome}_{2019} * \left(1 - \delta_{(\text{IIa or IIb})}\right)$$

Where:

- δ_{IIa} is the more severe reduction for NFCI, equal to 20%.
- δ_{IIb} is the more severe reduction for the remaining two items in this section, equal to 50%.

6.4.2 Administrative expenses, other main cost items and one-off adjustments

459. Other remaining administrative expenses, remaining other operating expenses, depreciation and other provisions or reversal of provisions shall be projected through the use of bank-internal models, but cannot fall below the absolute value observed in 2019.

460. Adjustments of these constraints are permitted only for extraordinary costs affecting the items listed in paragraph 459 during the year 2019 and as defined in this section. Possible deviations from the constraints for administrative expenses and other operating expenses related to the MDA requirements of Article 141 of the CRD are instead set out in section 6.4.3.

461. One-off adjustments shall be based on available uncontroversial evidence of the non-recurrence of the event as well as a reasonable estimate of the recurring part of the cost (based on, and linked to, the historical data of the bank).

462. All one-off adjustments are subject to a thorough quality assurance. As a necessary condition, banks are required to submit a list of those one-off events for consideration to the respective competent authority and by the deadlines set by the competent authorities and the EBA. This list of one-off events shall distinguish between one-off events having a positive P&L impact and those having a negative impact and will be limited to five P&L items in total. The same event may affect more than one eligible P&L item (see paragraph 465).

463. Failure to submit the list within the mandated deadlines will lead to automatic disallowance of all one-offs, whereas submission alone constitutes no claim to the eventual approval of the one-off. If items are rejected from the list, banks are not allowed to resubmit further applications.

464. One-off events shall be submitted using a dedicated template (CSV_ONEOFF). The pre-tax projected adjustments to the P&L items in scope in each year of the baseline and adverse scenarios shall be equal to the pre-tax amount of the one-off cost reported for 2019. Banks will have the possibility to modify these amounts to the extent that they result in more conservative adjustments. The total impact of the one-offs on CET1 ratio will then be calculated as the sum of the pre-tax projected adjustments over the 3 years of each scenario, divided by the end-2019 total REA.

465. Only recognised one-off exceptions as defined in this section and exceeding the threshold of 5 bps impact will be permitted. In case of one-off events with impact on more than one eligible P&L items, the sum of the impacts on the different P&L items for the same event shall exceed the 5 bps threshold. In such cases, the institution should report the P&L impacts in separate lines of the CSV_ONEOFF template, one for each eligible P&L item affected. The limit of five maximum P&L items in total and for all the one-offs holds.

466. The resulting adjustments will be recognised in the template CSV_P&L, by singling out the one-off impact for each P&L item in the scope of this section, which will be reported net of the one-off adjustment. The total impact will be allocated equally across the 3 years of the projection.

467. One-off adjustments due to the extraordinary cost produced by the following events shall be permissible for assessment by the competent authority:

- Divestments of business units under the following conditions:
    - The affected business unit was fully divested during the course of 2019; and

- Further follow-up expenses for these divestments are considered in the projection.

- No future benefits materialising in the projection years because of the divestment can be included, which includes all future costs related to the unit that was separated.

- Business unit restructuring, including measures that are part of a restructuring plan approved by the European Commission, leading to non-recurrent integration costs, subject to the following conditions:

  - The restructuring (but not the full restructuring plan in the case of a restructuring plan approved by the European Commission) shall have been completed in 2019; and

  - Permissible restructuring costs are post-merger integration costs (subject to the merger having been completed by 31 December 2019) and set-up costs for a bad bank, wholly taken in 2019.

  - In exceptional cases where the restructuring was completed in 2019 and still future restructuring costs are incurred/expected for 2020-2022, the future restructuring costs need to be incorporated in the forecast, i.e. the projections in CSV_P&L need to be adjusted to take the future costs into account.

- Employee restructuring/lay-offs and the associated severance costs, subject to the following conditions:

  - Severance costs shall have been paid in full or provisioned against by the end of 2019;

  - Any expected future restructuring payments and severance costs still need to be considered in the projection.

  - No future benefits materialising in the projection years because of the exit can be included, which includes all future costs related to the FTEs that were separated during and after 2019.

- Extraordinary (i.e. non-recurrent) ex post contributions to deposit guarantee schemes (DGS), institutional protection schemes (IPS) officially recognised as DGS in the sense of EU Directive 2014/49 and resolution funds (RF), subject to the following conditions:

  - In the case of DGS and IPS recognised as DGS, extraordinary ex-post contributions shall meet the criteria set out in Article 10(8) of the DGSD and Article 104 of the BRRD;

- In the case of RF, extraordinary ex-post contributions are triggered by an exceptional event and can be appropriately documented, e.g. by means of a legislative decree.

468. Other instances than those listed in paragraph 467 may be considered by the competent authority in exceptional cases. The following exceptions are explicitly not considered:

- Income and expenses for which a methodology has already been prescribed in this note. This includes, in particular — but is not limited to — conduct and litigation costs, which shall be treated in accordance with the methodology prescribed in section 5;

- All actions that are not fully implemented by 31 December 2019. This includes, in particular — but is not limited to — mergers and run-off of businesses, which are expected but not executed until year-end 2019. It also includes measures defined in restructuring plans or any contingency plans for stress situations if they are not fully implemented by 31 December 2019;

- Changes in variable compensation;

- Exceptional fees on professional services engagements, unless incurred as part of a one-off event specified in paragraph 467;[39]

- Changes in real estate / occupancy costs due to, for example, a move.

469. In projecting the P&L items described in this section, banks are required to include the phase-in of ex-ante contributions to the Single Resolution Fund, as established in EU Regulation 2015/81.

470. All exceptional adjustments can be considered only if the corresponding adjustment of any income is taken into account, and is consistent with the remaining methodology as presented in this note (e.g. in setting any caps on income projections based on 2019 levels).

471. For provisions not related to conduct or other operational risk no reversals are allowed (i.e. the projection is capped at zero).

[39] E.g. for consultants or lawyers during a business restructuring or transaction advise during the sale of a NPL portfolio.

6.4.3 Dividends paid and distribution restrictions under Article 141 of the CRD

472. The pay-out ratio described in this section is defined to include all voluntary reductions in the capital base. Such reductions shall be made in the same year that the profit is made (i.e. reductions in the CET1 capital for the year 2019 will reflect dividends paid in 2019 from profits made in the same year).

473. Banks are required to report 5 years of historical dividend pay-outs by referring to the ratio between: (i) dividends, other than those paid in a form that does not reduce CET1 capital (e.g. scrip-dividends), distributed to owners of the entity; and (ii) profit after tax attributable to owners of the entity. If, for a given year, the ratio between (i) and (ii) is negative or above 100%, the pay-out ratio shall be deemed to be 100%. If for a given year, (ii) is zero, the pay-out ratio shall be set to 0% if (i) is zero and 100% if (i) is above zero.

474. Under the baseline and adverse scenarios, banks are required to apply a pay-out ratio (or an absolute pay-out per share) based on their publicly declared projected dividend policies. This includes legally binding contracts, such as profit/loss transfer agreements and policies concerning preferred shares. References to publicly declared dividend policies (e.g. from annual reports, listing brochures) shall be provided in the explanatory notes.

475. If no dividend policy is available or documented, the bank is required to apply the following rules:

- Under the baseline scenario, the bank shall apply a pay-out ratio equal to the maximum of 30% and the median of the observed pay-out ratios in profitable years over the last 5 years. If the bank is loss-making, a zero dividend is accepted.

- Under the adverse scenario, if the bank is loss-making, a zero dividend is accepted. If the bank is profit-making, the bank is required to pay a dividend applying the same pay-out ratio as reported in the baseline scenario for the respective year, unless it can provide evidence that it can deviate from this rule and the deviation is approved by the relevant competent authority. In such a case, the projections will be subject to a thorough quality assurance analysis and will be challenged by the competent authorities, taking into consideration the eventual declaration of dividend policies in the annual reports. This rule shall be applied to share buybacks as well.

476. All banks are required to report in CSV_MDA the amount of CET1 capital after distributions, to be checked against the Maximum Distributable Amount (MDA) trigger. If the projected CET1 ratio for a given year of the stress test horizon falls below the trigger point as per Article 141(3) of the CRD, banks are required to project reductions of distributions for the same year in line with the following simplifying assumptions for the purpose of the stress test:

- The detailed reduction amounts shall be inserted exclusively in the CSV_MDA template together with a reference to the concerned P&L line item in which the distribution is reported. Banks are therefore requested to report un-adjusted distributions in CSV_P&L.

- No reduction of distributions beyond the minimum amount needed to meet the MDA requirement of Article 141(3) of the CRD shall be assumed, i.e. in years of the scenario where the MDA trigger would be breached, banks are required to assume that they distribute exactly the MDA.

- The MDA shall always be set to 0 in loss making years when the MDA trigger is breached, unless the presence of pre-tax distributions would offset the loss made.

477. The distribution reductions shall be documented and justified in the explanatory note. The documentation will also contain an assessment of to what extent the projected restrictions are possible given potential legal and reputational constraints. This assessment shall refer to the following documents and policies of the bank, which competent authorities may request for quality assurance of the stress test:

- Dividend policies;

- Remuneration policies that document the banks' entitlement to cut the considered variable remuneration or discretionary pension benefits subject to Article 141(8)(d)(iv) of the CRD;

- Documentation of the relevant AT1 instruments.

478. Given that the stress test is run at the highest level of consolidation, the bank's treatment of distribution restrictions under Article 141 of the CRD shall not take into account any induced effects of a potential MDA breach on a sub-consolidated level from other exercises.

479. For the banks reporting distribution reductions, the impact of the MDA adjustments will be publicly disclosed on TRA_P&L.

480. Competent authorities may request further details with reference to the distribution restrictions if they deem the accompanying documentation insufficient to validate the above assumptions.

6.4.4 Tax treatment

481. Banks are required to apply a common simplified tax rate of 30%. Current taxes in the stress test are calculated by applying the simplified tax rate to the taxable profit in each year, while

the tax expenses/income are calculated as the sum of current taxes and changes in DTAs. The stock of existing DTAs and DTLs as of 31 December 2019 will not be recalculated according to the simplified tax rate.

482. The taxable profit is calculated on the basis of the profit or loss before tax from continuing operations minus those contributions from the P&L template that are reported after income tax in the P&L template, floored at zero and net of any loss carryforward used in the relevant period. Items that are reported after the taxes paid by the entity in FINREP (such as "Share of the profit or (-) loss of investments in subsidiaries, joint ventures and associates accounted for using the equity method" and "Dividend income") shall be included in the taxable profit with an adjusted contribution to make the applied implied tax rate equal to the 30% if the tax rate before reporting was smaller than 30%.

483. Banks are required to report the taxable profit in the respective line of the CSV_P&L template. For simplicity, banks should disregard the fact that some of the items included in the P&L may be neither tax-deductible nor taxable under national law.

484. DTAs that do not rely on future profitability shall be held constant at their starting value for the purpose of the stress test. Other DTAs shall be calculated for the time horizon of the stress test exercise according to the current regulation (Articles 38, 39 and 48 of the CRR) and the instructions given in this section.

485. Banks may project the creation and use of DTAs that rely on future profitability and do not arise from temporary differences (and associated loss carryforwards) under the conditions below. This shall be done in accordance with applicable tax legislation and paying due regard to their own accounting position and the prospects for recovering loss carryforwards under future profitability in line with their accounting procedures:

- Existing DTAs that rely on future profitability and do not arise from temporary differences as of 31 December 2019 will not be recalculated according to the simplified tax rate, as it in the case for all types of DTAs in the stress test (see paragraph 481).

- These DTAs may be created during loss-making years in accordance with applicable tax legislation and paragraph 484 and applying the common tax rate of 30% for the creation of new DTAs.

- The use of loss carryforwards in a given profitable year shall be applied by giving priority to DTAs created during the stress test over DTAs existing as of 31 December 2019.

- On profit making years, banks can use loss carryforwards to offset their taxable amount if the competent tax authority allows it, regardless whether a DTA is created. In such

cases, banks are required to provide undisputable evidence of the background of their approach.

- Banks should, however, consider whether to disregard in full the creation and use of DTAs that rely on future profitability and do not arise from temporary differences, in line with their accounting procedures. In this case, a tax rate of 30% should be applied in profit-making years and a tax rate of 0% in loss-making years.

- Banks should provide an explanation of their approach when calculating tax expenses for the stress test in their explanatory note, including a reconciliation of the effective tax rate with the 30% common tax rate for each year of the stress test horizon.

486. Unrealised gains and losses contributing to OCI under the stress test scenarios are also subject to the simplified tax rate of 30%. The creation and use of the associated DTAs that rely on future profitability and arise from temporary differences may be calculated in the following way:

- Projected OCI gains and losses shall be reported pre-tax in the market risk calculations and will be subject to the simplified tax rate assumption on CSV_CAP.

- DTAs that rely on future profitability and arise from temporary differences shall be projected during the time horizon of the stress test exercise applying the change in Accumulated OCI (reported net of tax charge calculated with the 30% common tax rate, as per COREP C 01.00 table, r180, c010) to the starting amount of DTAs reduced by the associated DTLs (see paragraph 487).

- Banks are required to also provide full transparency on the deferred tax arising from temporary differences in their explanatory notes, detailing how the figures reported in the template were determined.

487. DTAs (net of DTLs, if allowed) that rely on future profitability and arise from temporary differences are deducted according to Articles 38 and 48 of the CRR. DTAs that rely on future profitability but do not arise from temporary differences will be fully deducted. When deducting the amount of DTAs that rely on future profitability, banks shall observe Article 38 of the CRR on the conditions for netting with the amount of DTLs and on the allocation of the DTLs according to the proportion of associated DTAs that rely on future profitability. The total amount of DTLs shall be held constant at the starting point of the exercise. The creation of DTAs that can be converted into tax credits under the conditions of Article 39 of the CRR are not allowed for the projected period.

488. Phase-in provisions in relation to the deduction of DTAs from CET1 capital as per Article 469 of the CRR and the associated schedule in Article 472 of the CRR, and all ancillary rules as

outlined in the CRR, shall apply. Banks are required to also take into account any accelerated phase-in schedule as established by national legislations and the applicable competent authority. The resulting effects shall be included in the banks' projections and reported in template CSV_CAP.

6.4.5 Other P&L impact

489. **Expenses on share capital repayable on demand:** Expenses should be projected in line with the contractual requirements for banks. In the baseline scenario, they cannot fall below the 2019 value. In the adverse scenario, expenses can be lower than in the baseline only if the bank can provide evidence that this reduction is in line with publicly declared pay-out policies.

490. **Gains (losses) on derecognition of financial assets and liabilities not measured at fair value through profit and loss, net:** No realised gains or losses are expected from the sale of financial assets and liabilities not measured at fair value through profit and loss, i.e. the P&L impact should be set to zero.

491. **Exchange differences:** In line with paragraph 447, no impact will be assumed in the baseline and adverse scenarios, i.e. the P&L item should be set to zero.

492. **Gains or losses on derecognition of non-financial assets, net:** No impact will be assumed in the baseline and adverse scenarios, i.e. the P&L item should be set to zero.

493. **Other operating income:** Projected other operating income shall not be higher than the 2019 value. Banks should also consider reducing their annual forecasts of other operating income in a prudent way below the 2019 value where the 2019 results contain significant non-recurring contributions. Income related to operating leasing included in other operating income shall be singled out from CSV_P&L. This income shall be capped at the 2019 value for the baseline scenario, while in the adverse scenario banks are required to apply a minimum reduction of 10% with respect to the relative 2019 value.

494. **Modification gains or losses:** The P&L impact of modification gains or losses should be set to zero.

495. **Other impairment on financial assets:** Impairments on participations shall be computed in line with the results of the (IFRS) test of impairment and will be consistent with the scenarios. This requirement extends to participations in other banks included in the sample of the EU-wide stress test. No impact should be assumed for the impact on impairments on goodwill on financial assets, i.e. the P&L contribution should be set to zero.

496. **Impairment on non-financial assets:** Impairments on non-financial assets shall be included not under depreciation but under 'Impairment or reversal of impairment on non-financial

assets'. Banks are required to project impairments on non-financial assets in line with the economic scenario of the stress test:

- Impairments on residential and commercial real estate will be computed by the application of the shocks from the macroeconomic scenarios on the market value of real estate owned by the bank. Real estate for own use shall be stressed by applying the commercial real estate shocks given in the macroeconomic scenarios.

- Similarly to paragraph 41, banks are required to also stress other non-financial assets (e.g. realised physical collaterals such as ships, residual values of leased out assets) on their balance sheets under the stress test scenarios.

- Impairments on non-financial assets should be projected at the level of individual assets and avoid offsetting effects between the impairments on individual assets.

- No impact should be assumed for impairments on goodwill on non-financial assets, i.e. the P&L contribution should be set to zero.

- No reversal of provisions shall be assumed under the scenarios of the stress test.

497. **Negative goodwill recognised in profit or loss:** No impact should be assumed for the baseline or adverse scenarios, i.e. the P&L item should be set to zero.

498. **Profit or loss from non-current assets and disposal groups classified as held for sale not qualifying as discontinued operations:** In accordance with the static balance sheet assumption, non-current assets and disposal groups classified as held for sale shall remain on the balance sheet in the exercise and shall be stressed by the application of the relevant shocks given in the macroeconomic and market risk scenarios. The impact will be reported in line with the accounting treatment of the banks in the P&L account or as OCI.

499. **Profit or loss from discontinued operations** shall be zero for the stress test time horizon.

500. **Deductions of intangible assets (including goodwill) from CET1 capital:** In line with the static balance sheet assumption, banks are required to assume that the value of this deduction remains constant at the level reported for year-end 2019 for both baseline and adverse scenarios. The deduction amounts shall not be netted or compensated with annual depreciation and amortisation amounts.

501. **Expenses and provisions or reversal of provision for conduct risk and other operational risk:** Banks are required to report expenses and provisions for conduct risk and other operational risk for historical data in line with their accounting practice. Projected losses shall be reported on the P&L template (CSV_P&L) under 'gains or losses arising from operational risk'. In order to

avoid double-counting of projected losses, banks are required to separate these projections from the relevant P&L item according to their accounting practice, while historical data shall be reported on the P&L template in line with paragraph 449. For example, while historical data might be reported in the P&L template under 'impairment of non-financial assets', 'administrative expenses' or 'provisions or reversal of provisions', in line with the relevant accounting practice, projections of conduct and other operational risk losses will only be included under 'gains or losses arising from operational risk', consistently with figures reported on the general operational risk template (CSV_OR_GEN template).

502. **AT1 and Tier 2 coupons**: These items shall be reported in CSV_P&L according to supervisory reporting requirements and their contractual obligations. Background on the reporting shall be given in the explanatory note.

6.4.6 Impact on capital

503. Banks are required to follow section 1.3.5 for the definitions of capital instrument to be reported in CSV_CAP. The impact of the EU-wide stress test will be reported in terms of CET1 ratio, but information on the impact of the stress test on each type of capital ratios will be disclosed.

504. The amount of each capital instrument is expected to stay constant at the end-2019 level, in line with the static balance sheet assumption, which applies on a solo, sub-consolidated and consolidated basis. Capital instruments are not expected to increase also in case they are issued in favour of internal stakeholders (e.g. as part of a variable compensation scheme). However, minority interests or other qualifying own fund instruments according to Article 81 and 82 of the CRR may affect the capital position of a bank in case of changes in the amount calculated according to articles from 84 to 88 of the CRR.

505. Instruments recognised as AT1 on a transitional basis that may be treated as Tier 2 on a fully-loaded basis because of their eligibility (according to Article 63 CRR) shall be reported under item A.5 of the template CSV_CAP and will hence be included in the calculation of the fully loaded total capital.

506. Capital ratios are reported on a transitional basis and on a fully loaded basis. For the purpose of showing fully loaded capital ratios, an approximate calculation of fully loaded capital ratios is implemented in the capital template (CSV_CAP).[40]

507. Banks making use of IFRS 9 transitional arrangements are required to report the adjustments due to this transition in accordance with Article 473a of the CRR and the relative factors for each year of the scenario. The first-time implementation impact of IFRS 9 being subject to transitional arrangements is reported in the first column of the template CSV_CAP. For each year of the scenario, these banks are required to also report the capital impact subject to transitional arrangements since the IFRS 9 implementation.

508. Memorandum items in the capital templates include information on other types of capital ratios and requirements, as well as more granular information on other types of impact on capital, including DTAs (which follow the treatment of section 6.4.4) and defined benefit pension schemes.

509. The leverage ratio will be reported following Article 429 of the CRR as per Delegated Regulation (EU) 2015/62 of 10 October 2014, which amends Regulation (EU) No 575/2013 on a transitional and a fully loaded basis for every year of the exercise. Banks should assume that the exposure for the computation of the leverage ratio remains constant.

510. Defined benefit pension schemes: In accordance with the static balance sheet assumption, banks shall disregard the cash flows into and out of the scheme (regardless of whether or not these are contractually agreed), disregard changes to the liability profile (such as any additional accrual or the maturing of the scheme) and disregard any asset rebalancing or planned changes to the asset allocation. This allows the market risk stresses related to the macroeconomic scenarios to be applied to the assets and liabilities on 31 December 2019 as if they were an instantaneous shock. As specified in paragraph 200, this needs to be applied only for the adverse macroeconomic scenario (including the market risk factors). The actuarial gain/loss shall then be apportioned to the first year, as described in the market risk methodology. The projected impact on OCI and pension assets shall be reported by all banks as a memorandum item on the market risk summary template (CSV_MR_SUM) and shall be included in the stress test projections in the following way:

- No impact is assumed under the baseline scenario.

[40] This approximation is solely based on the effect of the transitional provisions, which may also affect the AT1 and the T2 shortfall. It does not take into account potential implications from the dynamic computation of the threshold for deductions or other minor effects.

- For the adverse scenario, the projected OCI impact before tax shall be reported on the market risk summary template (CSV_MR_SUM). A positive value corresponds to a net gain arising from defined benefit pension assets and liabilities, while a negative value corresponds to a loss. Banks are required to describe in the explanatory note the approach followed to obtain the gain/loss on defined benefit pension assets and liabilities.

- In addition, banks are required to provide the net defined benefit pension assets as per Article 4(109) of the CRR at the reference date and the projected change of this item under the adverse scenario.

- No netting between the OCI impact and the change in pension assets shall be assumed in the reporting of the impact on CSV_MR_SUM. Effects arising, e.g. from offsetting OCI gains by increases in deductions, are calculated in CSV_CAP.

- Tax assumptions are applied on the capital template CSV_CAP in line with section 6.4.4.

511. AT1 and Tier 2 instruments eligible as regulatory capital under the CRR/CRD provisions and that convert into CET1 or are written down upon a trigger event are reported as a separate memorandum item if the conversion trigger is above the bank's CET1 ratio in the adverse scenario. However, the resulting impact in CET1 capital is not taken into account for the computation of capital ratios.

512. Banks are required to deduct to CET1 capital the expected impact of the application of Regulation (EU) No 2019/630 amending Regulation (EU) No 575/2013 as regards minimum loss coverage for non-performing exposures ("NPL calendar"). Upon request from the competent authority, the table in Annex VIII shall be filled in and included in the explanatory note.

Annex I: Sample of banks

Table 14: Sample of banks[41]

Country	Bank name
AT	Erste Group Bank AG
AT	Raiffeisen Bank International AG
BE	Belfius Banque SA
BE	KBC Group NV
DE	Bayerische Landesbank
DE	Commerzbank Aktiengesellschaft
DE	Deutsche Bank AG
DE	DZ BANK AG Deutsche Zentral-Genossenschaftsbank
DE	Landesbank Baden-Württemberg
DE	Landesbank Hessen-Thüringen Girozentrale
DE	Norddeutsche Landesbank - Girozentrale -

[41] The final sample of banks excludes the following banks which according to their total assets would have been included (the reasons are specified in brackets): Dexia (BE; the bank is in wind-down process), Banca Monte dei Paschi di Siena S.p.A. (IT; the bank is subject to a restructuring plan approved by the European Commission and is not near completion), NRW Bank and Landwirtschaftliche Rentenbank (both DE; these banks do not qualify anymore as credit institutions under CRD V/CRR 2), DekaBank Deutsche Girozentrale and Kommuninvest – group (DE and SE, respectively; these two banks have specific business models).

Country	Bank name
DE	Volkswagen Bank
DK	Danske Bank
DK	Jyske Bank
DK	Nykredit Realkredit
ES	Banco Bilbao Vizcaya Argentaria S.A.
ES	Banco de Sabadell S.A.
ES	Banco Santander S.A.
ES	BFA Tenedora De Acciones S.A.U.
ES	CaixaBank, S.A.
FI	Nordea Bank Abp
FI	OP Osuuskunta
FR	BNP Paribas
FR	Confédération Nationale du Crédit Mutuel
FR	Groupe BPCE
FR	Groupe Crédit Agricole

Country	Bank name
FR	HSBC France[42]
FR	La Banque Postale
FR	Société Générale S.A.
HU	OTP Bank Nyrt.
IE	AIB Group plc
IE	Bank of Ireland Group plc
IT	Banco BPM S.p.A.
IT	Intesa Sanpaolo S.p.A.
IT	UniCredit S.p.a.
IT	Unione di Banche Italiane Società Per Azioni
NL	ABN AMRO Group N.V.
NL	BNG Bank N.V.
NL	Coöperatieve Rabobank U.A.
NL	ING Groep N.V.

[42] UK banks have tentatively been excluded from the sample under the assumption that, barring any transitional arrangements that might be specified in the withdrawal agreement, the UK will leave the EU by 31 October 2019 and, therefore, UK banks will not participate in the 2020 EU-wide stress test. Under the same assumption, HSBC France has been included in the sample.

Country	Bank name
NL	Nederlandse Waterschapsbank N.V.
NO	DNB Bank Group
PL	Bank Polska Kasa Opieki SA
PL	Powszechna Kasa Oszczednosci Bank Polski SA
PT	Caixa Geral de Depósitos, SA
SE	Länförsäkringar Bank AB (publ)
SE	SBAB Bank AB - group
SE	Skandinaviska Enskilda Banken — group
SE	Svenska Handelsbanken — group
SE	Swedbank — group

Annex II: Template overview

Table 15: Overview of CSV templates

Section or topic	Template name	Description
N/A	Instructions	Summary of templates and colour code applied
N/A	Input	Input of bank name and relevant countries for credit risk and country/currency pairs for NII
Credit risk	CSV_CR_SUM	Credit risk — Summary
Credit risk	CSV_CR_SCEN	Credit risk — Scenarios (projection for credit risk losses)
Credit risk	CSV_CR_REA	Credit risk — REA
Credit risk	CSV_CR_REA_IRB	REA — IRB approach floor
Credit risk	CSV_CR_REA_STA	REA — STA floor
Credit risk	CSV_CR_SEC_SUM	Securitisations — Summary
Credit risk	CSV_CR_SEC	Securitisations
Market risk, CCR losses and CVA	CSV_MR_SUM	Market risk — Summary
Market risk, CCR losses and CVA	CSV_MR_FULL_REVAL	Market risk — Full revaluation template
Market risk, CCR losses and CVA	CSV_MR_RESERVE	Market risk — Revaluation of reserves
Market risk, CCR losses and CVA	CSV_MR_PROJ	Market risk — Projection of client revenues of items held with a trading intent and their related hedges
Market risk, CCR losses and CVA	CSV_MR_CCR	Market risk — Counterparty defaults
Market risk, CCR losses and CVA	CSV_ MR_REA	REA — Market risk
NII	CSV_NII_SUM	NII — Summary
NII	CSV_NII_CALC	NII — Calculation
Conduct risk and other operational risks	CSV_OR_GEN	Conduct and other operational risk losses
Conduct risk and other operational risks	CSV_OR_CON	Material conduct risk losses
Non-interest income, expenses and capital	CSV_REA_SUM	REA — Summary
Non-interest income, expenses and capital	CSV_NFCI_DIV	Development of NFCI, dividend income
Non-interest income, expenses and capital	CSV_ONEOFF	Adjustments for non-recurring events (one-offs)
Non-interest income, expenses and capital	CSV_MDA	Calculation of potential distribution restriction

Section or topic	Template name	Description
		following breach of the MDA trigger level
Non-interest income, expenses and capital	CSV_CAPMEAS	Major capital measures and material losses
Non-interest income, expenses and capital	CSV_P&L	Development of P&L
Non-interest income, expenses and capital	CSV_CAP	Capital

Table 16: Overview of TRA templates

Section or topic	Template name	Description
N/A	TRA_SUM	Summary adverse or baseline scenario (stress test results)
Credit risk	TRA_CR_STA	Credit risk (loss projection) STA
Credit risk	TRA_CR_IRB	Credit risk (loss projection) IRB
Credit risk	TRA_CR_SEC	Credit risk — Securitisations (REA projection)
Non-interest income, expenses and capital	TRA_REA	REA (projection)
Non-interest income, expenses and capital	TRA_P&L	P&L (projection)
Non-interest income, expenses and capital	TRA_CAP	Capital (projection)
Non-interest income, expenses and capital	TRA_CAPMEAS	Major capital measures and material losses

Annex III: Summary of information to be provided by banks

513. This annex summarises the requirements given across all sections of the methodological note for information to be provided by banks to their competent authorities as input to the quality assurance process. It differentiates information that is required for all banks and information that are subject to the discretion of the competent authority.

Table 17: Credit risk (excluding securitisations) — information to be provided by banks

Description	Requirement	Reference
Impact assessment of the new definition of default when compared to the previously implemented	Banks with a new definition of default; subject to the discretion of the competent authority	Paragraph 29
Description of the S2 definition applied and of how the low credit risk exemption was implemented. Banks should also comment on how the definitions applied for the stress test differ from internally used criteria for the SICR and in particular the low credit risk exemption	For all banks	Paragraph 57
Description of the internally applied S3 definition and of how this definition differs from the definitions applied in the stress test	For all banks	Paragraph 57
Explanation of possible differences in exposure values when compared to COREP figures	For all banks	Paragraph 58
Detailed information on funded collateral values linked to exposures, including how collateral values have been determined and how often appraisals are refreshed	Subject to the discretion of the competent authority	Paragraph 67
Methodology applied to estimate LGDs in case cure rates are not explicitly calculated	Banks that do not explicitly calculate cure rates	Paragraph 83

Description	Requirement	Reference
Methodology applied to estimate LGDs for guaranteed exposures	Banks with loans under large-scale or nationwide guarantee schemes where the indirect exposure on the guarantor is significant	Paragraph 105
Methodology employed for deriving point-in-time parameters for all portfolios (both starting values and projections)	For all banks	Paragraph 114
If projections substantially deviate from benchmark figures and/or where deviations are implausible, provide more detailed information on banks' models to estimate credit risk losses including: portfolios to which models apply (mapping to assets classes), approval by supervisors, assumptions made to account for PD and LGD parameter estimation (e.g. cure rates, etc.), technical information on econometric soundness and responsiveness of risk parameters to ensure that a model specification results in a prudent outcome	Subject to the discretion of the competent authority	Paragraph 116
Detailed information on the use of a mix between internal models and benchmark parameters	For banks that use a mix between internal models and benchmark parameters	Paragraph 119
Methodology applied to estimate the migration effect on point-in-time PD and LGD	For all banks	Paragraph 122
Exposure value by LTV buckets for portfolios under the standardised approach	Subject to the discretion of the competent authority	Paragraph 161

Table 18: Credit risk (securitisations) — qualitative information to be provided by banks

Description	Requirement	Reference
Outline of specific credit risk adjustments' calculation for securitisations	For all banks	Paragraph 170
Information about the impact on the SRT derived from the application of the new regulation as of 1 January 2020 (Regulation (EU) 2017/2401)	For all banks	Paragraph 174
Description of the mapping of exposures to credit quality steps	For all banks	Paragraph 175, 176, 180

Table 19: Market risk, CCR losses and CVA — qualitative information to be provided by banks

Description	Requirement	Reference
Instruments, portfolio share and approach used for positions for which a full revaluation could not be performed	For all banks	Paragraph 250
Description of major hedging strategies at portfolio level	For all banks	Paragraph 266
Calibration and impact of additional risk factors used for the application of the market risk approach	For all banks	Paragraphs 241, 244
Explanation of the impact of the shock on correlation trading portfolios	Subject to the discretion of the competent authority	Paragraph 264
Description of assumptions used for the projection of client revenues for CA banks	For all banks	Paragraph 288
Description of removal of NII from NTI	For all banks	Paragraph 220
Description of the computation of client revenues	For all banks	Paragraph 222
Description of the CDS exposures that part of an hedge accounting or are used for credit mitigation purposes on CCR exposures	For all banks	Paragraph 299

Description	Requirement	Reference
Description and justification of actions which have been carried out to appropriately identify and include basis risk for the application of the market risk approach	For all banks	Paragraph 262

Table 20: NII — qualitative information to be provided by banks

Description	Requirement	Reference
Explanation of legally mandated restrictions to pass through mechanisms	For all banks that report legally mandated restrictions	Paragraphs 385, 382
Description of the methodology applied to project NII	For all banks	Paragraph 314
Information on the accounting framework applied to hedging and details of the hedging relationships	For all banks	Chapter 4.3.6
Evidence on the income on non-performing exposures reported in 2019, which will be the basis for the calculation of the cap to interest income from NPEs	For all banks	Paragraph 363
Description of the methodology employed for splitting margin and reference rate component	Subject to the discretion of the competent authority	Paragraphs 345
Information on the calibration of the idiosyncratic component	Subject to the discretion of the competent authority	Paragraph 381
Information on the standing accounting practice applicable to the interest accrued on non-performing exposures	Subject to the discretion of the competent authority	Paragraph 364

Table 21: Conduct risk and other operational risk — qualitative information to be provided by banks

Description	Requirement	Reference
Qualitative and quantitative information that supports banks' projections of losses arising from each material conduct risk event reported individually including the identification of a range of outcomes and assigned probabilities	For all banks	Paragraphs 413, 424
Information on the internal models used for projecting losses and REA including the scope of application	Subject to the discretion of the competent authority	Paragraph 435

Table 22: Non-interest income, expenses and capital — qualitative information to be provided by banks

Description	Requirement	Reference
Mapping of national accounting framework to IFRS	For all banks applying nGAAP	Paragraph 442
Additional information on the approach followed/internal models used when projecting P&L items	For all banks	Paragraph 444
P&L items affected by mergers and acquisitions	For all banks	Paragraph 448
Description of the model used to project NFCI and mapping to FINREP 22.1	For banks projecting NFCI	Paragraph 457
List and background information on non-recurring events ('one-off events')	For all banks requesting one-off adjustments	Paragraph 462
References to publicly declared dividend policies	For all banks	Paragraph 474
Evidence that the bank can deviate from applying the same pay-out ratio as reported in the baseline scenario for the respective profit-making year	When no dividend policy is available or documented	Paragraph 475
Documentation underlying the distribution reductions under Article 141(3) of the CRD	For banks failing to meet or exceed their	Paragraph 477

Description	Requirement	Reference
	combined buffer requirement	
Explanation of approach followed when calculating tax expenses	For all banks	Paragraph 485
Evidence of the possibility to use loss carryforwards to offset taxable amount without the creation of DTAs	For banks using loss carryforwards without creation or use of DTAs	Paragraph 485
Details on deferred tax arising from temporary differences	For all banks	Paragraph 486
Information on the reporting of AT1 and T2 coupons in P&L (following FINREP)	For all banks	Paragraph 502
Explanation on the approach followed to obtain the gain/loss on defined benefit pension assets and liabilities (OCI impact)	For all banks	Paragraph 510
Detailed information on the NPL calendar	Subject to the discretion of the competent authority	Paragraph 512

Annex IV: Summary of key constraints and other quantitative requirements

514. This annex provides a summary of key constraints, i.e. caps and floors, and other quantitative requirements that need to be met by banks as a minimum for the correct application of the common methodology, and that will be assessed by competent authorities. In addition, the tables indicate which constraints are already implemented in the common templates. The annex solely serves as a summary of information elsewhere in the methodological note and does not constitute additional requirements for banks.

Table 23: Credit risk (excluding securitisations) — key constraints and quantitative requirements

Description	Implementation in templates	Reference
No release of accumulated provisions for any given S3 exposure for any year of the scenario	No	Paragraph 143
No reduction in the Stock of Provisions for S3 exposure existing as of 31 December 2019 (old S3)	CSV_CR_SCEN	Box 9
No workout or cure of S3 assets is assumed	No	Paragraph 34
At the exposure level, funded collateral cannot be higher than the respective exposure	No	Paragraph 67
The coverage ratio for S1 assets cannot decrease over the time horizon for both scenarios	CSV_CR_SUM	Paragraph 138
Total IRB risk exposure amount cannot decrease over the time horizon for both scenarios	CSV_REA_IRB	Paragraph 154
Total STA risk exposure amount cannot decrease over the time horizon for both scenarios	CSV_REA_STA	Paragraph 154
Exposure value for the calculation of risk exposure amounts is not affected by market value fluctuations	No	Paragraph 94
Prescribed formula to calculate provisions for existing S1 exposures	CSV_CR_SCEN	Box 5

Description	Implementation in templates	Reference
Prescribed formula to calculate provisions for new S1 exposures	CSV_CR_SCEN	Box 4
Prescribed formula to calculate provisions for new S2 exposures	CSV_CR_SCEN	Box 6
Prescribed formula to calculate provisions for existing S2 exposures	CSV_CR_SCEN	Box 7
Prescribed formula to calculate provisions for new S3 exposures	CSV_CR_SCEN	Box 8
Prescribed formula to calculate provisions for existing S3 exposures	CSV_CR_SCEN	Box 9
Prescribed formula to calculate the development of the stock of provisions of S1, S2 and S3 assets	CSV_CR_SCEN	Box 3
Prescribed formula to calculate REA on defaulted assets	No	Box 10

Table 24: Credit risk (securitisations) — key constraints and quantitative requirements

Description	Implementation in templates	Reference
Specific credit risk adjustments will be subtracted from the exposure to be risk-weighted	CSV_CR_SEC	Paragraph 169, 183
Total SEC-IRBA risk exposure amount cannot decrease compared with the starting point over the time horizon for both scenarios	CSV_CR_SEC_SUM	Paragraph 186
Total SEC-SA risk exposure amount cannot decrease compared with the starting point over the time horizon for both scenarios	CSV_CR_SEC_SUM	Paragraph 186

Description	Implementation in templates	Reference
Total SEC-ERBA risk exposure amount cannot decrease compared with the starting point over the time horizon for both scenarios	CSV_CR_SEC_SUM	Paragraph 186
Total SEC-IAA risk exposure amount cannot decrease compared with the starting point over the time horizon for both scenarios	CSV_CR_SEC_SUM	Paragraph 186

Table 25: Market risk, counterparty credit risk losses and CVA — key constraints and quantitative requirements

Description	Implementation in templates	Reference
No impact under the baseline scenario	All market risk templates	Paragraph 252
Computation of baseline NTI	CSV_MR_PROJ	Paragraph 286
TE banks haircut for items held with a trading intent and their related economic hedges	CSV_MR_SUM	Paragraph 259
Adverse scenario client revenues floored at 75% of NTI starting point and 75% of client revenues starting point	CSV_MR_PROJ	Paragraph 289
NII to be excluded from NTI	No	Paragraph 220
NTI in the adverse 2019 and 2020 equal to capped client revenues	CSV_MR_SUM	Paragraph 291
Prescribed REA increase for VaR, APR	CSV_MR_REA	Paragraph 306
Floor for REA increase for CVA, IRC (floored at the relative increase of REA in the IRB portfolio in the adverse scenario)	CSV_MR_REA	Paragraphs 307,310
Identification of the two most vulnerable counterparties based on the max between the internal and external PD. Setting of stressed LGD and the use of stressed exposure without additional collateral for the calculation of counterparty credit losses and	No	Paragraph 296

Description	Implementation in templates	Reference
the cross default to all exposures for these two counterparties		

Table 26: NII — key constraints and quantitative requirements

Description	Implementation in templates	Reference
Nominal net interest income cannot increase over the stress test time horizon under the adverse scenario relative to 2019	CSV_NII_SUM	Paragraph 362
Under the adverse scenario, assumptions cannot lead (at group level) to an increase in the bank's NII compared with the 2019 value before considering the impact of the increase of provisions for non-performing exposures on interest income	CSV_NII_SUM	Paragraph 363
Under the baseline scenario, banks are required to project the interest accrued on non-performing exposures in line with the standing accounting practice. The interest revenue is calculated on the amortised cost (gross carrying amount less credit allowance)	CSV_NII_SUM	Paragraph 365
Banks are required to project income on non-performing exposures on a net basis, i.e. on the value of the exposure net of provisions	CSV_NII and CSV_NII_SUM	Paragraph 365
Under the baseline scenario, the margin component of the EIR of repriced liabilities will increase at a minimum by a proportion of the increase in the sovereign bond spread of the country of exposure	No	Paragraph 381

Description	Implementation in templates	Reference
Under the adverse scenario, the margin component of the EIR of repriced liabilities will increase at a minimum by a proportion of the higher of the increase in the sovereign spreads of the country of exposure and the impact of the idiosyncratic component shock	No	Paragraph 381
The margin component of the EIR on repriced assets will be capped at the sum of the margin starting value and a proportion of the change in the sovereign bond spread in the country of exposure	No	Paragraph 384
Changes in reference rates projected by banks shall be consistent with the macro-financial scenarios for risk-free yield curves	No	Paragraph 320
Under the static balance sheet assumption non-performing exposures will increase at the expense of performing exposures along the time horizon of the exercise	CSV_NII	Paragraphs 334
Increase of non-performing exposures and provisions in NII is aligned with the development of non-performing exposures assets in the credit risk templates	CSV_NII_SUM, CSV_NII_CALC and CSV_CR_SCEN	Chapter 4.3.4
Reported EIRs for existing and maturing portfolios have to fulfil the requirements of intertemporal consistency	CSV_NII_CALC	Chapter 4.4.2

Table 27: Conduct risk and other operational risk — key constraints and quantitative requirements

Description	Implementation in templates	Reference
Projections of losses from new non-material conduct risk events are subject to a minimum overall 3-year floor, computed in the baseline scenario as 3 times the average of the historical conduct risk losses reported by the bank during the 2015-2019 period for non-material events only. Under the adverse scenario the floor is 2 times the floor for the baseline	CSV_OR_GEN	Paragraphs 426, 427
Projections of conduct losses connected to material conduct risk events are subject to a floor in the quality assurance process, i.e. banks that submit projections which are lower than the floor are required to justify their projections to their competent authority	CSV_OR_GEN	Paragraph 428
Projections of losses due to other operational risks are subject to a minimum overall 3-year floor, computed in the baseline scenario as 3 times the average of the other historical operational risk losses reported by the bank during the 2015-2019 period; the average is multiplied by 0.8 under the baseline scenario and by 1.5 under the adverse	CSV_OR_GEN	Paragraph 432
Total capital requirements for operational risk in each year of the projection horizon shall not fall below the actual minimum capital requirements for operational risk reported by the bank 31 December 2019	CSV_OR_GEN	Paragraph 434
In the absence of relevant historical losses and/or projections, overall operational risk loss projections, aggregate for the 3 years of the exercise, will be calculated as a function of the relevant indicator (6% of the RI and 15% respectively in the baseline and adverse scenarios)	CSV_OR_GEN	Paragraph 433

Description	Implementation in templates	Reference
For operational risk categories where capital requirements are calculated using basic and standard approaches, capital requirements shall stay constant and equal to capital requirements reported by the bank for the starting point (31 December 2019)	CSV_OR_GEN	Paragraph 436

Table 28: Non-interest income, expenses and capital — key constraints and quantitative requirements

Description	Implementation in templates	Reference
Prescribed caps for dividend income, NFCI and share of the profit of investments in subsidiaries, joint ventures and associates outside the scope of consolidation	CSV_NFCI_DIV	Paragraphs 455, 456, 453
Floor/cap for other remaining administrative expenses, remaining other operating expenses, depreciation and other provisions or reversal of provisions, other operating income (excluding leasing income) and expenses	No	Paragraphs 459, 493
Limitation of the number of one-off adjustments and permitted as well as excluded cases	CSV_ONEOFF	Paragraphs 462, 468
Prescribed threshold for recognition of submitted one-off adjustments	CSV_ONEOFF	Paragraph 464
Prescribed floor for dividend payments and link between the baseline and adverse scenario	No	Paragraphs 475, 474
Prescribed approach for distribution restrictions under Article 141(3) of the CRD	CSV_MDA	Paragraph 476
Application of the common tax rate	CSV_CAP	Paragraph 481
Previous stocks of DTAs and DTLs is not recalculated with the common tax rate	No	Paragraph 481

Description	Implementation in templates	Reference
Prescribed floor for DTAs that do not rely on future profitability	CSV_CAP	Paragraph 484
The creation of DTAs that rely on future profitability and do not arise from temporary differences is limited to the offsetting of negative pre-tax profits	No	Paragraph 485
Prescribed floor for DTLs	CSV_CAP	Paragraph 487
No impact for realised gains or losses, gains or losses on derecognition of non-financial assets, modification gains or losses, negative goodwill, impairments on goodwill, foreign exchange effects	CSV_P&L	Paragraphs 447, 490, 491, 492, 428, 494, 497
Prescribed cap for operating leasing income	No	Paragraph 493
Prescribed approach for gains and losses on defined benefit pension schemes	No	Paragraph 510

Annex V: Overview of the differences between CA banks and trading exemption banks

Box 36: Overview of the differences between CA banks and trading exemption banks for the full revaluation on all assets and liabilities at partial or full fair value

The only differences between CA banks and trading exemption banks are (i) the exemption from the full revaluation for items held with a trading intent and their related hedges; (ii) the setting to 75% of baseline NTI of client revenues for trading exemption banks if the baseline NTI is positive; and (iii) that trading exemption banks should not provide any data on client revenues.

Full revaluation on all assets and liabilities at partial or full fair value

Category of bank	Baseline	Adverse
Comprehensive approach banks (CA)	No impact	Revaluation of all assets and liabilities with a full or partial fair value For items held with a trading intent and their related hedges, impact is capped at -0.20% of the sum of the fair value of assets and liabilities (net of economic hedges) Losses are scaled by the ratio between the 75th percentile of the daily VaR figures for the full year 2019, and the daily VaR reported for the reference date 31 December 2019
Trading exemption banks (TE)	No impact	Revaluation of all assets and liabilities with a full or partial fair value behaviour except items held with a trading intent and their related hedges Impact for items held with a trading intent and their related hedges is -0.20% of the sum of the fair value of assets and liabilities

Projection of client revenues for items held with a trading intent

Category of bank	Baseline	Adverse	
		If baseline NTI < 0	Baseline NTI

Comprehensive approach banks (CA)	Min {Average (NTI) 2017-2019, Average (NTI) 2015-2019, Max (0, Average (NTI) 2018-2019)}	If baseline NTI > 0	If client revenue data available	min(baseline_NTI * 75%, CRev * 75%, Projected CRev)
			If client revenue data not available	0
Trading exemption banks (TE)	Min {Average (NTI) 2017-2019, Average (NTI) 2015-2019, Max (0, Average (NTI) 2018-2019)}	If baseline NTI < 0		Baseline NTI
		If baseline NTI > 0		Baseline NTI * 0.75

Annex VI: Requirements for banks applying nGAAP

516. This annex contains additional instructions for banks whose stress test projections are not subject to IFRS 9 assumptions as per paragraph 32. Competent authorities can provide further guidance on country-specific issues.

Credit risk

517. Banks which are subject to nGAAP are expected to comply with the requirements of this methodological note as it applies to S1 and S3 exposures. All performing exposures and associated provisions should be mapped to S1 equivalent fields, and all non-performing exposures and associated provisions should be mapped to S3. Thus, no stocks and flows of S2 exposures have to be reported by nGAAP banks.

518. Provisions for equivalent stages should be calculated using forward-looking information to ensure comparability and consistence among banks. Notwithstanding this, parameters in combination to the respective formulas prescribed by the methodological note and the templates should lead to accurate stocks of provisions given this information.

519. A precise listing of the fields to be populated in the template is provided in Table 29 below.

Table 29: Fields in credit risk templates to be populated by banks applying nGAAPs

	Fields to be populated by nGAAP banks for 2018, 2019 and 2020
Beginning-of-year stocks	Performing exposure (Exp) Of which: S1 (Exp S1)
	Non-performing exposure (Exp S3)
	LTV – S1
	Funded Collateral (capped) — S1
	LTV – Non-performing exposure
	Funded Collateral (capped) — Non-performing exposure
	Stock of provisions (Prov Stock) Of which: S1 (Prov Stock S1)
	Stock of provisions (Prov Stock) Of which: non-performing assets (Prov Stock S3)
Within year — flows and parameters	TR1-3
	S3 flow (S3 flow)
	LGD1-3
	Cure rate stage 1 to stage 3 assets (Cure1-3)
	LR3-3
End-of-year stocks	Performing exposure (Exp) of which: S1 (Exp S1)
	Non-performing exposure (Exp S3)

Market risk

520. The scope of market risk includes all financial instruments for which the scenario would, based on the applicable accounting regulation, result in a value adjustment (except assets valued by the moderate LOCOM categories). Amortised cost items being part of a hedge-accounting relationship are also recognised in the market risk methodology. Financial instruments shall be mapped for reporting purposes to IFRS categories that imply a comparable accounting treatment as under nGAAP. The mapping procedure shall ensure that the balance sheet impact of a financial item under nGAAP is equal to the impact implied by the IFRS classification it is mapped to.

521. To calculate CCR losses as described in section 3.6, the largest counterparty exposure must be taken into account irrespective of its accounting treatment as pointed out in paragraph 295.

522. Banks shall provide in the accompanying explanatory note a detailed description of the mapping procedure applied to translate nGAAP accounting positions to the IFRS classifications used in the market risk template.

NII

523. The definition and the respective mapping of performing and non-performing exposures should be aligned with that in place for credit risk.

524. The effective interest rate should be reported by analogy to the approach outlined in section 4. This applies to performing exposures (S1 and S2 exposures) and non-performing (S3) exposures.

Annex VII: Exposure by LTV bucket for STA portfolios

Table 33: Treatment of exposures secured by mortgages on immovable property

Type of collateral	LTV	Exposure value	
		SME	Non-SME
Residential	<70%		
	70% ≤ LTV < 80%		
	80% ≤ LTV < 100%		
Commercial	< 40%		
	40% ≤ LTV < 50%		
	50% ≤ LTV < 100%		
No longer secured by immovable property	-		

Annex VIII: NPL calendar

Unsecured Exposures	Exposure Value*	(A) Amount to be covered	for info: LRLT S3-S3	(B) specific credit risk adjustments;	(C) additional value adjustments in accordance with Articles 34 and 105	(D) other own funds reductions	(E) for AIRB banks, the absolute value of the amounts deducted pursuant to point (d) of Article 36(1) which relate to non-performing exposures	(F) the difference between the purchase price and the amount owed by the debtor (where a non-performing exposure is purchased at a price lower than the amount owed by the debtor)	(G) amounts written-off by the institution since the exposure was classified as non-performing
Exposures originated after (CRR2 entry into force) and before 1 Jan 2020									
of which turned into default before 1 Jan 2020									
of which turned into default during the Stress Test Horizon									
Eligible for Calendar Application 35% unsecured									
Eligible for Calendar Application 100% unsecured									
Exposures renewed during the Stress Test Horizon									
of which turned into default during the Stress Test Horizon									
Eligible for Calendar Application 35% unsecured									
Eligible for Calendar Application 100% unsecured									

•

exposure value of a debt instrument shall be its accounting value measured without taking into account any specific credit risk adjustments, additional value adjustments, amounts deducted, other own funds reductions related to the exposure or partial write-offs made by the institution since the last time the exposure was classified as non-performing. The exposure value of a debt instrument that was purchased at a price lower than the amount owed by the debtor shall include the difference between the purchase price and the amount owed by the debtor.
exposure value of a loan commitment given, a financial guarantee given or any other commitment shall be its nominal value, which shall represent the institution's maximum exposure to credit risk without taking account of any funded or unfunded credit protection. In particular,
(a) the nominal value of financial guarantees given shall be the maximum amount the entity could have to pay if the guarantee is called on;
(b) the nominal value of loan commitments shall be the undrawn amount that the institution has committed to lend.

Secured Exposures		Exposure Value*	(A) Amount to be covered	for info: LRLT S3-S3	(B) specific credit risk adjustments;	(C) additional value adjustments in accordance with Articles 34 and 105	(D) other own funds reductions	(E) for AIRB banks, the absolute value of the amounts deducted pursuant to point (d) of Article 36(1) which relate to non-performing exposures	(F) the difference between the purchase price and the amount owed by the debtor (where a non-performing exposure is purchased at a price	(G) amounts written-off by the institution since the exposure was classified as non-performing
Exposures originated after (CRR2 entry into force) and before 1 Jan 2020										
of which turned into default before 1 Jan 2020										
of which turned into default during the Stress Test Horizon										
	Eligible for Calendar Application 25% secured									
	Eligible for Calendar Application 35% secured	**n/a for the 2020 ST**								
	Eligible for Calendar Application 55% secured	**n/a for the 2020 ST**								
	Eligible for Calendar Application 70% secured	**n/a for the 2020 ST**								
	Eligible for Calendar Application 80% - secured by other funded or unfunded credit	**n/a for the 2020 ST**								
	Eligible for Calendar Application 80% - secured by immovable property	**n/a for the 2020 ST**								
	Eligible for Calendar Application 100% - secured by other funded or unfunded credit	**n/a for the 2020 ST**								
	Eligible for Calendar Application 80% - secured by immovable property	**n/a for the 2020 ST**								
	Eligible for Calendar Application 100% - secured by immovable property	**n/a for the 2020 ST**								
Exposures renewed during the Stress Test Horizon										
of which turned into default during the Stress Test Horizon										
	Eligible for Calendar Application 25% secured									
	Eligible for Calendar Application 35% secured	**n/a for the 2020 ST**								
	Eligible for Calendar Application 55% secured	**n/a for the 2020 ST**								
	Eligible for Calendar Application 70% secured	**n/a for the 2020 ST**								
	Eligible for Calendar Application 80% - secured by other funded or unfunded credit	**n/a for the 2020 ST**								
	Eligible for Calendar Application 80% - secured by immovable property	**n/a for the 2020 ST**								
	Eligible for Calendar Application 100% - secured by other funded or unfunded credit	**n/a for the 2020 ST**								
	Eligible for Calendar Application 80% - secured by immovable property	**n/a for the 2020 ST**								
	Eligible for Calendar Application 100% - secured by immovable property	**n/a for the 2020 ST**								

*

exposure value of a debt instrument shall be its accounting value measured without taking into account any specific credit risk adjustments, additional value adjustments, amounts deducted, other own funds reductions related to the exposure or partial write-offs made by the institution since the last time the exposure was classified as non-performing. The exposure value of a debt instrument that was purchased at a price lower than the amount owed by the debtor shall include the difference between the purchase price and the amount owed by the debtor.

exposure value of a loan commitment given, a financial guarantee given or any other commitment shall be its nominal value, which shall represent the institution's maximum exposure to credit risk without taking account of any funded or unfunded credit protection. In particular,

(a) the nominal value of financial guarantees given shall be the maximum amount the entity could have to pay if the guarantee is called on;

(b) the nominal value of loan commitments shall be the undrawn amount that the institution has committed to lend.

Annex IX: Consistent reporting of NII variables on portfolio level

Initial State Data:

The following initial state variables are to be reported in the template by the bank:

$\boldsymbol{Vol^{end-2019}_{Total,j,p}}$; $\boldsymbol{Vol^{end-2019}_{Maturing\ 2020,j,p}}$; $\boldsymbol{Vol^{end-2019}_{Maturing\ 2020,OM\leq 1Y,j,p}}$; $\boldsymbol{Vol^{end-2019}_{Maturing\ 2020,1Y<OM\leq 2Y,j,p}}$; $\boldsymbol{Vol^{end-2019}_{Maturing\ 2021,j,p}}$; $\boldsymbol{Vol^{end-2019}_{Maturing\ 2022,j,p}}$,

$\boldsymbol{EIR^{end-2019}_{Total,j,p}}$; $\boldsymbol{EIR^{end-2019}_{Maturing\ 2020,j,p}}$; $\boldsymbol{EIR^{end-2019}_{Maturing\ 2020,OM\leq 1Y,j,p}}$; $\boldsymbol{EIR^{end-2019}_{Maturing\ 2020,1Y<OM\leq 2Y,j,p}}$; $\boldsymbol{EIR^{end-2019}_{Maturing\ 2021,j,p}}$; $\boldsymbol{EIR^{end-2019}_{Maturing\ 2022,j,p}}$

where $j \in \{RefRate_{fixed}, RefRate_{floating}, Margin_{fixed}, Margin_{floating}\}$ and p represents a specific country-currency asset-class portfolio.

The following additional initial state variables can be directly derived from the reported template variables:

$$\boldsymbol{Vol^{end-2019}_{Not-Maturing\ 2020-2021,j,p}} = Vol^{end-2019}_{Total,j,p} - Vol^{end-2019}_{Maturing\ 2020,j,p} - Vol^{end-2019}_{Maturing\ 2021,j,p};$$

$$\boldsymbol{Vol^{end-2019}_{Not-Maturing\ 2020-2022,j,p}} = Vol^{end-2019}_{Total,j,p} - Vol^{end-2019}_{Maturing\ 2020,j,p} - Vol^{end-2019}_{Maturing\ 2021,j,p} - Vol^{end-2019}_{Maturing\ 2022,j,p}$$

$$\boldsymbol{Vol^{end-2019}_{Maturing\ 2020,OM>1Y,j,p}} = Vol^{end-2019}_{Maturing\ 2020,j,p} - Vol^{end-2019}_{Maturing\ 2020,OM\leq 1Y,j,p};$$

$$\boldsymbol{Vol^{end-2019}_{Maturing\ 2020,OM>2Y,j,p}} = Vol^{end-2019}_{Maturing\ 2020,j,p} - Vol^{end-2019}_{Maturing\ 2020,OM\leq 1Y,j,p} - Vol^{end-2019}_{Maturing\ 2020,1Y<OM\leq 2Y,j,p};$$

$$\boldsymbol{EIR^{end-2019}_{Not-Maturing\ 2020,j,p}} = \left(EIR^{end-2019}_{Total,j,p} - \frac{Vol^{end-2019}_{Maturing\ 2020,j,p}}{Vol^{end-2019}_{Total,j,p}} x EIR^{end-2019}_{Maturing\ 2020,j,p}\right) x \frac{Vol^{end-2019}_{Total,j,p}}{(Vol^{end-2019}_{Total,j,p} - Vol^{end-2019}_{Maturing\ 2020,j,p})}$$

$$\boldsymbol{EIR^{end-2019}_{Maturing\ 2020,OM>1Y,j,p}} = \left(EIR^{end-2019}_{Maturing\ 2020,j,p} - EIR^{end-2019}_{Maturing\ 2020,OM\leq 1Y,j,p} x \frac{Vol^{end-2019}_{Maturing\ 2020,OM\leq 1Y,j,p}}{Vol^{end-2019}_{Maturing\ 2020,j,p}}\right) x \frac{Vol^{end-2019}_{Maturing\ 2020,j,p}}{Vol^{end-2019}_{Maturing\ 2020,j,p} - Vol^{end-2019}_{Maturing\ 2020,OM\leq 1Y,j,p}};$$

$$EIR^{end-2019}_{Maturing\ 2020,OM>2Y,j,p} = \left(EIR^{end-2019}_{Maturing\ 2020,j,p} - EIR^{end-2019}_{Maturing\ 2020,OM\leq 1Y,j,p} x \frac{Vol^{end-2019}_{Maturing\ 2020,OM\leq 1Y,j,p}}{Vol^{end-2019}_{Maturing\ 2020,j,p}} - EIR^{end-2019}_{Maturing\ 2020,1Y<OM\leq 2Y,j,p} x \frac{Vol^{end-2019}_{Maturing\ 2020,1Y<OM\leq 2Y,j,p}}{Vol^{end-2019}_{Maturing\ 2020,j,p}}\right) x \frac{Vol^{end-2019}_{Maturing\ 2020,j,p}}{Vol^{end-2019}_{Maturing\ 2020,j,p} - Vol^{end-2019}_{Maturing\ 2020,OM\leq 1Y,j,p} - Vol^{end-2019}_{Maturing\ 2020,1Y<OM\leq 2Y,j,p}};$$

$$EIR^{end-2019}_{Not-Maturing\ 2020-2021,j,p} = \left(EIR^{end-2019}_{Maturing\ 2020,j,p} - EIR^{end-2019}_{Maturing\ 2020,j,p} x \frac{Vol^{end-2019}_{Maturing\ 2020,j,p}}{Vol^{end-2019}_{Total,j,p}} - EIR^{end-2019}_{Maturing\ 2021,j,p} x \frac{Vol^{end-2019}_{Maturing\ 2021,j,p}}{Vol^{end-2019}_{Total,j,p}}\right) x \frac{Vol^{end-2019}_{Total,j,p}}{Vol^{end-2019}_{Total,j,p} - Vol^{end-2019}_{Maturing\ 2020,j,p} - Vol^{end-2019}_{Maturing\ 2021,j,p}};$$

$$EIR^{end-2019}_{Not-Maturing\ 2020-2022,j,p} = \left(EIR^{end-2019}_{Maturing\ 2020,j,p} - EIR^{end-2019}_{Maturing\ 2020,j,p} x \frac{Vol^{end-2019}_{Maturing\ 2020,j,p}}{Vol^{end-2019}_{Total,j,p}} - EIR^{end-2019}_{Maturing\ 2021,j,p} x \frac{Vol^{end-2019}_{Maturing\ 2021,j,p}}{Vol^{end-2019}_{Total,j,p}} - EIR^{end-2019}_{Maturing\ 2022,j,p} x \frac{Vol^{end-2019}_{Maturing\ 2022,j,p}}{Vol^{end-2019}_{Total,j,p}}\right) x \frac{Vol^{end-2019}_{Total,j,p}}{Vol^{end-2019}_{Total,j,p} - Vol^{end-2019}_{Maturing\ 2020,j,p} - Vol^{end-2019}_{Maturing\ 2021,j,p} - Vol^{end-2019}_{Maturing\ 2022,j,p}}$$

Scenario evolution of volumes

$$Vol^{2020}_{Existing,j,p} = Vol^{end-2019}_{Total,j,p} - Vol^{end-2019}_{Maturing\ 2020,j,p}$$

$$Vol^{2020}_{Maturing,j,p} = Vol^{end-2019}_{Maturing\ 2020,j,p} x\ APM_p$$

$$Vol^{2020}_{New,j,p} = Vol^{end-2019}_{Maturing\ 2020,j,p} x\ (1 - APM_p)$$

$$Vol^{2021}_{Existing,j,p} = Vol^{end-2019}_{Total,j,p} - Vol^{end-2019}_{Maturing\ 2020,j,p} - Vol^{end-2019}_{Maturing\ 2020,OM\leq 1Y,j,p}$$ -

$$Vol^{2021}_{Maturing,j,p} = (Vol^{end-2019}_{Maturing\ 2021,j,p} + Vol^{end-2019}_{Maturing\ 2020,OM\leq 1Y,j,p}) x\ APM_p$$

$$Vol^{2021}_{New,j,p} = (Vol^{end-2019}_{Maturing\ 2021,j,p} + Vol^{end-2019}_{Maturing\ 2020,OM\leq 1Y,j,p}) x\ (1 - APM_p)$$

$$Vol^{2022}_{Existing,j,p} = Vol^{end-2019}_{Total,j,p} - Vol^{end-2019}_{Maturing\ 2022,j,p} - Vol^{end-2019}_{Maturing\ 2020,OM\leq 1Y,j,p} - Vol^{end-2019}_{Maturing\ 2020,1Y<OM\leq 2Y,j,p}$$

$$\boldsymbol{Vol^{2022}_{Maturing,j,p}} = (Vol^{end-2019}_{Maturing\ 2022,j,p} + Vol^{end-2019}_{Maturing\ 2020,OM\leq 1Y,j,p} + Vol^{end-2019}_{Maturing\ 2020,1Y<OM\leq 2Y,j,p})x\ APM_p$$

$$\boldsymbol{Vol^{2022}_{Maturing,j,p}} = (Vol^{end-2019}_{Maturing\ 2022,j,p} + Vol^{end-2019}_{Maturing\ 2020,OM\leq 1Y,j,p} + Vol^{end-2019}_{Maturing\ 2020,1Y\leq OM<2Y,j,p})x\ (1 - APM_p)$$

Note:

- All original maturities (OM) of instruments must be rounded to next integer after they mature for the first time (see paragraph 337).
- Average Point of Maturity (APM) must be equal the methodologically prescribed values. The internal systems must be adjusted accordingly.

Scenario evolution of EIRs:

$$\boldsymbol{EIR^{2020}_{Existing,j,p}} = EIR^{end-2019}_{Not-Maturing\ 2020,j,p};$$

$$\boldsymbol{EIR^{2020}_{Maturing,j,p}} = EIR^{end-2019}_{Maturing\ 2020,j,p};$$

$$\boldsymbol{EIR^{2020}_{New,j,p}} = EIR^{end-2019}_{Maturing\ 2020,j,p} + \Delta EIR^{2020}_{j,p};$$

$$\boldsymbol{EIR^{2021}_{Existing,j,p}} = EIR^{end-2019}_{Not-Maturing\ 2020-2021,j,p}x\ \frac{Vol^{end-2019}_{Not-Maturing\ 2020-2021,j,p}}{Vol^{2021}_{Existing,j,p}} + (\ EIR^{end-2019}_{Maturing\ 2020,OM>1Y,j,p} + \Delta EIR^{2020}_{j,p})x\frac{Vol^{end-2019}_{Maturing\ 2020,OM>1Y,j,p}}{Vol^{2021}_{Existing,j,p}};$$

$$\boldsymbol{EIR^{2021}_{Maturing,j,p}} = EIR^{end-2019}_{Maturing\ 2021,j,p}x\ \frac{Vol^{end-2019}_{Maturing\ 2021,j,p}}{Vol^{2021}_{Maturing,j,p}+Vol^{2021}_{New,j,p}} + (\ EIR^{end-2019}_{Maturing\ 2020,OM\leq 1Y,j,p} + \Delta EIR^{2020}_{j,p})x\frac{Vol^{end-2019}_{Maturing\ 2020,OM\leq 1Y,j,p}}{Vol^{2021}_{Maturing,j,p}+Vol^{2021}_{New,j,p}}$$

$$\boldsymbol{EIR^{2021}_{New,j,p}} = (EIR^{end-2019}_{Maturing\ 2021,j,p} + \Delta EIR^{2021}_{j,p})x\ \frac{Vol^{end-2019}_{Maturing\ 2021,j,p}}{Vol^{2021}_{Maturing,j,p}+Vol^{2021}_{New,j,p}} + (\ EIR^{end-2019}_{Maturing\ 2020,OM\leq 1Y,j,p} + \Delta EIR^{2021}_{j,p})x\frac{Vol^{end-2019}_{Maturing\ 2020,OM\leq 1Y,j,p}}{Vol^{2021}_{Maturing,j,p}+Vol^{2021}_{New,j,p}};$$

$$\boldsymbol{EIR^{2022}_{Existing,j,p}} = EIR^{end-2019}_{Not-Maturing\ 2020-2022,j,p}x\ \frac{Vol^{end-2019}_{Not-Maturing\ 2020-2022,j,p}}{Vol^{2022}_{Existing,j,p}} + (\ EIR^{end-2019}_{Maturing\ 2020,OM>2Y,j,p} + \Delta EIR^{2020}_{j,p})x\frac{Vol^{end-2019}_{Maturing\ 2020,OM>2Y,j,p}}{Vol^{2022}_{Existing,j,p}} + (\ EIR^{end-2019}_{Maturing\ 2021,j,p} + \Delta EIR^{2021}_{j,p})x\frac{Vol^{end-2019}_{Maturing\ 2021,j,p}}{Vol^{2022}_{Existing,j,p}};$$

$$\boldsymbol{EIR^{2022}_{Maturing,j,p}} = EIR^{end-2019}_{Maturing\ 2022,j,p} x \frac{Vol^{end-2019}_{Maturing\ 2022,j,p}}{Vol^{2022}_{Maturing,j,p}+Vol^{2022}_{New,j,p}} + (EIR^{end-2019}_{Maturing\ 2020,OM\leq 1Y,j,p} + \Delta EIR^{2021}_{j,p}) x \frac{Vol^{end-2019}_{Maturing\ 2020,OM\leq 1Y,j,p}}{Vol^{2022}_{Maturing,j,p}+Vol^{2022}_{New,j,p}} + (EIR^{end-2019}_{Maturing\ 2020,1Y<OM\leq 2Y,j,p} + \Delta EIR^{2020}_{j,p}) x \frac{Vol^{end-2019}_{Maturing\ 2020,1Y<OM\leq 2Y,j,p}}{Vol^{2022}_{Maturing,j,p}+Vol^{2022}_{New,j,p}};$$

$$\boldsymbol{EIR^{2022}_{New,j,p}} = (EIR^{end-2019}_{Maturing\ 2022,j,p} + \Delta EIR^{2022}_{j,p}) x \frac{Vol^{end-2019}_{Maturing\ 2022,j,p}}{Vol^{2022}_{Maturing,j,p}+Vol^{2022}_{New,j,p}} + (EIR^{end-2019}_{Maturing\ 2020,OM\leq 1Y,j,p} + \Delta EIR^{2022}_{j,p}) x \frac{Vol^{end-2019}_{Maturing\ 2020,OM\leq 1Y,j,p}}{Vol^{2022}_{Maturing,j,p}+Vol^{2022}_{New,j,p}} + (EIR^{end-2019}_{Maturing\ 2020,1Y<OM\leq 2Y,j,p} + \Delta EIR^{2022}_{j,p}) x \frac{Vol^{end-2019}_{Maturing\ 2020,1Y<OM\leq 2Y,j,p}}{Vol^{2022}_{Maturing,j,p}+Vol^{2022}_{New,j,p}};$$

Note:

- $\Delta EIR^{t}_{j,p}$ is the difference between the EIR in year *t* of the scenario vs. the end year EIR of 2019.
- The equations above have to hold for all portfolios p, separately for $j \in \{RefRate_{fixed\ rate}, RefRate_{floating\ rate}, Margin_{fixed\ rate,} Margin_{floating\ rate}\}$.
- $\Delta EIR^{t}_{j,p}$ in case of margins will be the same across instruments within a given portfolio p.
- $\Delta EIR^{t}_{j,p}$ in case of reference rates will depend on the original maturity of an instrument and hence usually is not uniform within a portfolio. To aggregate to portfolio level an aggregation based on the notional of each instrument has to be performed.
- If the equations above are satisfied, the Intertemporal Consistency will also be satisfied.