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EU-wide Stress Test 2016

Draft Methodological Note

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Abbreviations

A-IRB	Advanced Internal Ratings Based (approach)
AFS	Available-For-Sale – as defined in International Accounting Standard 39
ALM	Assets Liability Management
APR	All price risks
Art.	Article
CA	Comprehensive Approach
CCR	Counterparty Credit Risk
CET1	Common Equity Tier 1
COREP	Common Reporting Requirements
CRD	Capital Requirements Directive 2013/36/EU
CRR	Capital Requirements Regulation (EU) No 575/2013
CSV	Calculation Support and Validation
CVA	Credit Valuation Adjustment
DTA	Deferred Tax Assets
DVA	Debt Valuation Adjustment
EaR	Earnings at Risk
EBA	European Banking Authority
ECB	European Central Bank
EIR	effective interest rate
ESRB	European Systemic Risk Board
EU	European Union
FINREP	Financial Reporting Framework
FVO	Fair Value Option -designated at fair value through profit or loss (fair value option) – as defined in International Accounting Standard 39
HFT	Held-For-Trading – as defined in International Accounting Standard 39
HTM	Held-To-Maturity – as defined in International Accounting Standard 39
IFRS	International Financial Reporting Standards
IRB	Internal Ratings Based (approach)
IRC	Incremental risk charge
NII	Net interest income

NTI	Net Trading Income
OCI	Other Comprehensive Income
P&L	Profit and Loss (account)
REA	Risk Exposure Amount
SA	Simplified Approach
SRT	Significant Risk Transfer
SSM	Single Supervisory Mechanism
STA	Standardised Approach
SVaR	Stressed Value-at-Risk
TR	Transparency
VaR	Value-at-Risk

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1. Introduction

1.1 Background

1. The EBA is required, in cooperation with the ESRB, to initiate and coordinate Union-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 to 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 supervisory review and evaluation process 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 at providing 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 to 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 and scenarios.
6. The note also lists components of banks' projections for which banks are required to provide additional qualitative information in accompanying documents, e.g. on the methods applied, as input to the quality assurance of the projections by competent authorities.

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 national banking sector in the Eurozone, each EU Member State and Norway, as expressed

in terms of total consolidated assets as of end of 2014. 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.

1.3.2 Scope of consolidation

12. 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. Insurance activities are therefore excluded both from the balance sheet and the revenues and costs side of the P&L. Institutions may be permitted not to deduct the holdings of own funds instruments of an insurance if this has been previously agreed with their competent authorities – however, not solely for the purpose of the EU-wide stress test.

1.3.3 Macroeconomic scenarios and risk-type specific shocks

13. The exercise assesses the resilience of EU-banks under a common macroeconomic baseline and adverse scenario. The scenarios cover the period of 2015 to 2018.
14. The application of the market risk methodology is based on a common set of stressed market parameters, calibrated from the macroeconomic scenario as well from historical experience, including haircuts for sovereign exposures.
15. The credit risk methodology includes a prescribed increase in risk exposure amount for securitisation exposures as well as prescribed shocks to credit risk losses for sovereign exposures.

1.3.4 Time horizon and reference date

16. The exercise is carried out on the basis of year-end 2015 figures and the scenarios will be applied over a period of three years from end-2015 to end-2018.

1.3.5 Definition of capital

17. The impact of the EU-wide stress test will be reported in terms of Common Equity Tier 1 capital. The Tier 1 capital ratio and the total capital ratio will also be reported.
18. Additional Tier 1 and Tier 2 instruments eligible as regulatory capital under the CRR/CRD provisions that convert into Common Equity Tier 1 or that are written down upon a trigger event are reported as a separate memorandum item if the conversion trigger is above the bank's Common Equity Tier 1 ratio in the adverse scenario. However, the resulting impact in Common Equity Tier 1 capital is not taken into account for the computation of capital ratios.
19. The definitions of Common Equity Tier 1, Tier 1 and total capital that are valid during every year of the time horizon of the stress test should be applied (i.e. CRR/CRD definition of capital with transitional arrangements as per December 2015, December 2016, December 2017 and December 2018). Capital components subject to transitional arrangements (for instance, deferred tax assets, AFS gains and losses) are reported separately and publicly disclosed. The regulatory framework regarding capital requirements should also be applied as of these dates.
20. The applicable regulatory framework includes decisions by competent authorities regarding the application of the CRR/CRD that were taken before the reference date. These should be applied as of their entry into force.
21. 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 publically announced by the relevant authority. Banks are not required to anticipate other changes to the regulatory framework.
22. In addition, the fully loaded CRR/CRD Common Equity Tier 1 ratio, Tier 1 capital ratio and total capital ratio, as well as a leverage ratio will be reported for every year of the exercise. Banks may assume that the exposure for the computation of the leverage ratio remains constant.
23. The leverage ratio will be reported following Art. 429 of the CRR as per Delegated Regulation (EU) 2015/62 of 10 October 2014 amending Regulation (EU) No 575/2013 on a transitional and a fully loaded basis for every year of the exercise.
24. For the purpose of the EU-wide stress test a common approach for the application of prudential filters for gains and losses arising from sovereign assets in the AFS portfolio is required across all EU-countries. 'Minimum' transitional requirements, as set out in Art. 467 and 468 of the CRR, apply to all EU countries independent of national derogations, e.g. including 60% of unrealised gains/losses in 2016, 80% in 2017 and 100% in 2018. The impact on the stress test results will be publicly disclosed. For non-sovereign assets in the AFS portfolio, national rules apply. In order to achieve a consistent and common definition, the fully loaded capital ratios reported in the context of the EU-wide stress test are based on the same phase-in schedule for sovereign gains/losses from the AFS portfolio.

25. Neither the roll-out of new internal models nor modifications of existing internal models or transitions between different regulatory treatments during the stress horizon are to be considered for the calculation of the risk exposure amount.

1.3.6 Hurdle rates

26. 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 supervisory review and evaluation process.

1.3.7 Accounting and tax regime

27. For the purposes of the 2016 EU-wide stress test, banks are not required to anticipate changes to the accounting and tax regimes that come into effect after the launch of the exercise, e.g. the potential introduction of IFRS 9 in 2018. 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 2015 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

28. The EU-wide stress test is conducted on the assumption of a static balance sheet. This assumption applies on a solo, sub-consolidated and consolidated basis for both the baseline as well as the adverse scenario. Assets and liabilities that mature within the time horizon of the exercise should be replaced with similar financial instruments in terms of type, credit quality at date of maturity and original maturity as at the start of the exercise. No workout or cure of defaulted assets is assumed in the exercise. In particular, no capital measures taken after the reference date 31 December 2015 are to be assumed.

29. Furthermore, in the exercise it is assumed that banks maintain the same business mix and model (geographical, product strategies and operations) throughout the time horizon. With respect to the P&L, revenue and costs, assumptions made by banks should be in line with the constraints of zero growth and a stable business mix.

30. 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. In case the euro is not the reporting currency, all stock projections should be translated by applying the exchange rate as of 31 December 2015.

31. 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).

1.3.9 Approach

32. The approach of the exercise is that of 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 as well as to a thorough review by competent authorities.

1.3.10 Risk coverage

33. 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 test the following common set of risks:

- Credit risk, including securitisations;
- Market risk and counterparty credit risk (CCR);
- Operational risk, including conduct risk.

34. In addition to the risks listed above, banks are requested to project the effect of the scenarios on net interest income and to stress P&L and capital items not covered by other risk types.

35. The risks arising from sovereign exposures are covered in credit risk as well as in market risk depending on their accounting treatment.

1.3.11 Process

36. 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 and the European Commission. Agreement on the scenarios, methodology, minimum quality assurance guidance and templates is to be followed by a direct engagement with participating banks by competent authorities:

- The macroeconomic adverse scenario and any risk type specific shocks linked to the scenario are developed by the ESRB/ECB in close cooperation with competent authorities, the EBA and the European Commission. In particular, the European Commission supplies the macroeconomic baseline scenario;
- The EBA coordinates the exercise in cooperation with the ECB (in case of SSM countries) 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 EU-benchmarks to competent authorities for the purposes of consistency checks;
- 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, stress test results based on the bottom-up calculations as well as for reviewing the models applied by banks for this purpose. Competent authorities, under their responsibility, may also run the EU-wide stress test on extended samples beyond the sample 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.

37. The results of the EU-wide stress on a bank-by-bank basis and in form of aggregated analyses and reports are published by the EBA using common disclosure templates. Competent authorities are responsible for communicating the stress test results to those banks that are not in the EU-wide sample as well as any results from additional national stress tests.

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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	Constraints
Credit risk	<p>P&L: LAR, HTM; sovereign positions included; CCR and fair value positions excluded</p> <p>REA: CRR scope for credit risk including securitisations; CCR and fair value positions included</p>	<p>Banks' internal models based on stressed point-in-time PD and LGD parameters and grade migration</p> <p>Additional impact for old defaulted assets based on worsening LGD</p> <p>Explicit projections for FX loans</p> <p>Prescribed loss parameters for sovereign exposures</p>	<p>CRR requirements based on stressed PD and LGD parameters</p>	<p>No negative impairments permitted</p> <p>The coverage ratio for non-defaulted assets cannot decrease</p> <p>REA floored by 2015 value (separately by regulatory approach and defaulted, non-defaulted exposures)</p> <p>Prescribed increase for securitisations and REA for securitisations floored separately for aggregate STA and IRB portfolios.</p>
Market risk, counterparty credit risk and CVA	<p>P&L: HFT, AFS, FVO, hedge accounting portfolios; sovereign positions included; CCR exposures, positions subject to CVA accounting</p> <p>REA: CRR scope for market risk and CVA</p>	<p>Banks own projections for Net Trading Income (NTI) before the impact of the market risk shock under the comprehensive approach for HFT</p> <p>Full revaluation of the HFT portfolio for comprehensive approach NTI; worst estimate across three market risk scenarios (macroeconomic adverse, two historical scenarios)</p> <p>Revaluation of AFS/FVO positions; macroeconomic adverse scenario only</p> <p>Consistent valuation of hedging positions for AFS/FVO</p> <p>Maximum CVA across the three market risk scenarios</p> <p>Default of the most vulnerable of the ten largest stressed CCR exposures; highest impact across the three scenarios</p>	<p>Constant for STD approaches</p> <p>VaR constant in the baseline and replaced by SVaR in the adverse</p> <p>Stressed IRC and CVA capital requirements</p> <p>APR constant in the baseline and scaled in the adverse</p>	<p>Prescribed simplified approach (SA) based on historical NTI volatility for HFT</p> <p>NTI starting values prescribed as the minimum of the averages across the last 2,3, and 5 years (the two-year average floored at 0)</p> <p>NTI projections before loss impact capped by 0.75% of the starting value</p> <p>Simplified approach serves as floor for the impact of the comprehensive approach</p> <p>Prescribed haircuts for AFS/FVO sovereign positions</p> <p>REA for IRC and CVA floored by the increase for IRB REA</p>

Section	Scope	Impact on P&L and OCI	Impact on REA	Constraints
NII	P&L: All interest-earning or interest-paying positions across all accounting categories	<p>Banks' own methodology to project NII based on the re-pricing of their portfolio</p> <p>Separate projections for margin and reference rate</p>	N/A	<p>Interest expenses cannot decline under the adverse scenario</p> <p>Neither the net interest margin nor NII can increase under the baseline or the adverse scenario</p> <p>No income on defaulted assets under the adverse scenario, except income from discount unwinding (capped by the 2015 value and a constraint depending on the changes in provisions and defaulted exposure)</p> <p>The margin paid cannot increase less than the highest amount between a proportion of the increase in the sovereign spread and that of an idiosyncratic component</p> <p>The interest expenses of re-priced liabilities cannot decline under the adverse scenario</p> <p>The margin on re-priced assets is capped by the starting value</p>

Section	Scope	Impact on P&L and OCI	Impact on REA	Constraints
Conduct risk and other operational risk	<p>P&L: Impact of potential future losses arising from conduct risk and other operational risk</p> <p>REA: CRR scope for operational risk</p>	<p>Banks own estimations</p> <p>Specific approach based on qualitative guidance and additional reporting requirements for material conduct events</p> <p>Losses calculated as a function of gross earnings (the relevant indicator) as fall back approach in case banks are unable to provide historical data</p>	<p>Banks own projections for AMA, basic approach and standard approach</p>	<p>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 2011-2015 period for non-material events only – more conservative floor in the adverse scenario by applying a stress multiplier to the average</p> <p>Other operational risk losses are subject to a floor computed in the baseline scenario as the average of the historical losses 2011-2015 period – more conservative floor in the adverse scenario by applying a stress multiplier to the average</p> <p>Losses for other operational risk in the adverse scenario cannot be less than the greatest annual loss in 2011-2015</p> <p>Capital requirements for operational risk cannot fall below the 2015 value</p>

Section	Scope	Impact on P&L and OCI	Impact on REA	Constraints
Non-interest income and expenses	P&L and capital items not in scope for risk types or NII	<p>Banks own estimates but subject to constraints for specific P&L items</p> <p>Market risk methodology and macroeconomic shocks applied for real estate assets and defined benefit pension plans</p>	N/A	<p>Dividend, fees and commission: Ratio to total assets constant in the baseline, minimum of this ratio of 2015 and the average of the two years with the smallest value that occurred 2011-2015 in the adverse</p> <p>Administrative expenses and other operating expenses cannot fall below the 2015 value – unless an adjustment for one-offs is permitted</p> <p>Common tax rate of 30% applied</p> <p>No impact for realised gains or losses, negative goodwill, foreign exchange effects</p> <p>Other operating income capped at the 2015 value</p> <p>For dividends paid: Pay-out ratio based on publically 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 2011-2015; in the adverse the same amount of dividends is assumed (0 accepted for loss making banks)</p>

2. Credit risk

2.1 Overview

38. Banks are required to translate the macroeconomic scenarios into the corresponding credit risk impact on both the capital available, i.e. via impairments and thus the P&L, and the risk exposure amount for positions exposed to risks stemming from the default of counterparties. Banks are requested to make use of their models but subject to a number of conservative constraints.
39. These projections will be based on default and loss parameters (both point-in-time and regulatory) that will depend amongst other factors on the banks' business models, asset portfolio distribution and internal models.
40. The estimation of impairments and translation to available capital requires the use of statistical methods and will include 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 impairment flows as the basis for provisions that affect the P&L.
41. For the estimation of risk exposure amount, banks should adhere to regulatory requirements based on stressed regulatory risk parameters.
42. For securitisation exposures, banks are requested to project impairments based on the risk parameters of the underlying pool. For the estimation of risk exposures amount, a fixed risk weight increase will be applied to the different credit quality steps.
43. Box 1 describes the main general constraints embedded in the credit risk methodology.

Box 1: Summary of the constraints on banks's projections of credit risk

- No negative impairments for any given exposure are permitted for any year or scenario (Box 3, Box 5).
- The coverage ratio for non-defaulted assets (i.e., ratio of provisions to exposure) cannot decrease over the time horizon of the exercise (Box 3).
- The end of 2015 level of risk exposures amount serves as a floor for the total risk exposures amount for non-defaulted and defaulted exposures in the baseline and the adverse scenarios. This floor must be applied separately to overall aggregate IRB and STA portfolios (paragraph 105).

- For securitisation exposures, the end of 2015 level of risk exposures amount serves as a floor for the total risk exposures separately for aggregate IRB and STA portfolios (paragraph 128)

2.2 Scope

44. 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 and off-balance positions) exposed to risks stemming from the default of a counterparty except for exposures subject to counterparty credit risk and fair value positions (HFT, AFS and FVO), which are subject to the market risk approach for the estimation of the P&L effect (or through capital, via OCI, for AFS) as stated in section 3.
45. Conversely, the estimation of the risk exposure amount follows the CRR/CRD definition of credit risk. Therefore, exposures subject to counterparty credit risk and fair value positions (AFS and FVO) are to be included.
46. Specific requirements for securitisation positions are separately covered in section 2.7.
47. The methodology described in this section also applies to the capital charge for IRC (see paragraph 248).

2.3 High level assumptions and definitions

2.3.1 Static balance sheet assumption

48. The balance sheet is held static as of end 2015, in line with section 1.3.8.
49. According to the static balance sheet assumption, banks are not permitted to replace defaulted assets. Defaulted assets are moved into the defaulted assets stock, reducing non-defaulted assets and keeping the total exposure at a constant level. Furthermore, for the purpose of calculating exposures, it is assumed that no cures, charge-offs or write-offs should take place within the three year horizon of the exercise¹.
50. Within the credit risk framework, the initial residual maturity is kept constant for all assets. This means that assets do not mature. 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. It should be noted that the constant residual maturity applies, in particular, to the calculation of the credit risk exposure amount (especially the maturity factor used in A-IRB but also to some provisions in STA which allow for favourable risk weights for short-term exposures).

¹ 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.

2.3.2 Asset classes

51. For the purpose of this stress test, banks are required to report their exposures using the asset classes specified below, which are based on the exposure classes for IRB and STA exposures in the CRR (see Art. 112, 147 of the CRR). Competent authorities can require participating banks to report additional optional breakdowns for exposures where they see significant risks. The additional breakdowns are marked as optional in Table 2 and Table 3.
52. The original exposure at the start for each of the defined asset classes should match the exposure reported for each corresponding COREP exposure class.
53. Where exposures are transferred to other classes through credit risk mitigation techniques (substitution approach), this transfer has to be performed in line with the asset classes given in Table 2 and Table 3 and should be reported in asset classes after substitution. For the remainder of this section, any definitions and calculations must be consistent with this approach. For instance, default and loss rates, PDs and LGD estimations must be calculated and estimated for portfolios after substitution.
54. The following tables contain the asset classes including the additional optional asset classes that should be used for both credit risk impairments and capital requirements.

Table 2: Overview of IRB asset classes

IRB asset classes
Central governments and central banks
Institutions
Corporates
Corporates - Specialised Lending
Corporates - Specialised Lending - Real Estate Related
Corporates - Specialised Lending - Non Real Estate Related
Corporates - SME
Corporates - SME - Real Estate Related
Corporates - SME - Non Real Estate Related
Corporates - Other
Corporates - Others- Real Estate Related
Corporates - Others- Non Real Estate Related
Retail
Retail - Secured on real estate property
Retail - Secured on real estate property – SME
(OPTIONAL) of which: subject to SME-supporting factor
Retail - Secured on real estate property - Non SME
(OPTIONAL) of which: Owner Occupier
(OPTIONAL) of which: Buy to let
(OPTIONAL) of which: Other secured by real estate
Retail - Qualifying Revolving
Retail - Other Retail
Retail - Other retail – SME
(OPTIONAL) of which: subject to SME-supporting factor
Retail - Other retail - Non SME

IRB asset classes

Equity
Securitisation
Other non-credit obligation assets

Table 3: Overview of STA asset classes

STA exposure classes

Central governments or central banks
Regional governments or local authorities
Public sector entities
Multilateral Development Banks
International Organisations
Institutions
Corporates
Corporate – SME
(OPTIONAL) of which: subject to SME-supporting factor
Corporate - non-SME
Retail
Retail – SME
(OPTIONAL) of which: subject to SME-supporting factor
Retail - non-SME
Secured by mortgages on immovable property
Secured by mortgages on immovable property – SME
Secured by mortgages on immovable property - non-SME
(OPTIONAL) of which: Owner Occupier
(OPTIONAL) of which: Buy to let
(OPTIONAL) of which: Other secured by real estate
Items associated with particularly high risk
Covered bonds
Claims on institutions and corporates with ST credit assessment
Collective investment undertakings
Equity
Securitisation
Other exposures

2.3.3 Definitions

55. Banks are required to apply consistent definitions for the following items.

56. **Default:** The default definition to be used for the purpose of exposure classification (defaulted vs non-defaulted exposures), must be in line with the bank's regulatory default recognition procedures in place (Art. 178 of the CRR).

57. **Default flow (Def Flow)** measures the amount of exposures that defaulted during a given year out of those that were non-defaulted at the starting of the period. It must include all default events that occur during a year. Exposures that defaulted several times during the period must be reported once. The projected values will be computed based on the methodology stated in this section.

58. **Historical default rate (Def Rate)** is defined as the flow of newly defaulted assets (Def Flow) over exposure (Exp) at the beginning of the observation period. The default rate for 2015 would, therefore, be calculated as defaulted assets flow (in 2015) over performing exposure (end-2014) for each asset class/country of the counterparty.

59. **Exposure (Exp)** is the non-defaulted exposure after substitution effects and post CCF. Exp is the starting point for the impairment calculation. Defaulted assets are reported separately:

- For IRB portfolios, banks should use the definition of Column 110 ('exposure value') as per COREP table CR IRB 1 as a starting point and remove defaulted assets.
- For STA portfolios, banks need to calculate a post CCF equivalent of Column 110 (net exposure after CRM substitution effects pre conversion factors) as per COREP table CR SA. Since provisions have already been deducted (Column 30 in CR SA) at this point, they need to be added to the exposure. Defaulted assets must be reported in the respective column 'stock of defaulted exposures'.²

60. **Share of non-defaulted exposure of FX lending (Exp FX lending, EUR, USD, CHF)** is the percentage of non-defaulted exposure (Exp), as defined above, where the currency of the credit facility is different from the local currency of the borrower (see section 2.4.4).

61. **Stock of defaulted exposures (Def Stock)** refers to defaulted exposure according to the default definition. As cures are not to be recognised for exposure projections, this is a cumulative variable containing the initial Def Stock (end-2015) plus the sum of Def Flows of the previous projected year(s). E.g. the Def Stock in 2017 will be the sum of Def Stock in 2015 plus Def Flow in 2016 plus Def Flow in 2017.

62. **Stock of provisions (Prov Stock):** The starting values must be the accounting figures as of end-2015 in accordance with the accounting framework to which the reporting entity is subject and with Art. 34 and Art. 110 of the CRR, as listed in columns 8, 9 and 10 of FINREP Table 7 ('financial assets subject to impairment that are past due or impaired'). It is split by stock of provisions for defaulted assets (Prov Stock Old) and stock of provisions for non-defaulted assets (Prov Stock non-defaulted). The projected values will be computed based on the methodology stated in this section.

63. **Gross Impairment loss (Gross Imp Flow New):** The starting values must be the accounting flow figures as of end-2015 defined on the basis of 'impairment on (non-)financial assets' (FINREP, table 16.7, column 010; reported year-to-date, i.e. for the starting value provisions that have been set aside in 2015). However, there are two important adjustments to the FINREP figure: (i) the flow should be reported for newly defaulted assets only, (ii) the flow figures should also include direct write-offs / charge-offs of securities or other assets whose book value is reduced without creating a provision. The guiding principle for this figure is a point-in-time impairment

² Defaulted assets are to be reported according to the nature of the counterparty.

flow, capturing all credit risk related adjustments, regardless if those take the form of provisions or not. The impairment loss should correspond to total impairments of newly defaulted assets and not only to the additional ones accumulated during the period 2015, i.e. the stock of impairments that existed at the beginning of the period for these newly defaulted assets should be included. The projected values will be computed based on the methodology stated in this section.

64. **Net Impairment loss (Net Imp Flow New)** is the **Gross Imp Flow New** net of the release of provisions from non-defaulted assets caused by the new default flows. The projected values will be computed based on the methodology stated in this section.

65. **Cure rates:** While the impact of cures reducing projected exposures in the default state should not be considered for the purpose of this exercise, assumed cure rates are an important component of the LGD estimations. Therefore, they must be reported according to the following definitions in a manner which is consistent with the prescribed definition of default and LGD:

- Cure_{NEW}(t) is the component of the LGD_{NEW}(t) calculation that corresponds to the assumptions made for the cumulative proportion of newly defaulted exposures that cure (through repayments) with zero loss in all years following year t;
- Cure_{OLD}(t) is the component of the LGD_{OLD}(t) calculation that corresponds to the assumptions made for the cumulative proportion of existing defaulted exposures that cure (through repayments) with zero loss in all years following year t. This naturally depends on the characteristics of the loans that are already in default at time t.

66. **Impairment loss for defaulted assets (Imp Flow Old)** is a flow variable analogue to Gross Imp Flow New but defined for defaulted assets at the beginning of each period. In addition to assumed cure rates, Imp Flow Old can be explained by the components defined below. Competent authorities can require banks to report them separately. In case banks are not able to calculate these components, they will be required to outline their calculations of the Imp Flow Old in more detail. These components, included on the templates CSV_CR_T0 and CSV_CR_SCEN as optional information are the following:

- Impairment flow on old defaulted assets due to assumed changes in the loss given loss (LGL), which corresponds to the change in future losses on those old defaulted assets that will never cure;
- Impairment flow on old defaults due to subsequent defaults on the exposure assumed to cure as implicit within the LGDpitOLD parameter.

67. **Marginal impairment flow from FX lending (Imp Flow FX)** refers to the aggregate marginal contribution to the impairment flow from all FX exposures that meet the threshold as defined in paragraph 99. The projected values will be computed based on the methodology stated in this section.

68. **Historical loss rate (Loss Rate)** is defined as impairment loss (Imp Flow New) over newly defaulted assets (Def Flow).

69. **Point-in-time risk parameters (PDpit, LGDpit^{NEW} and LGDpit^{OLD})** are the forward looking projections of default rates and loss rates. The following requirements apply:

- PDpit and LGDpit should be used for all credit risk related calculations except risk exposure amount under both the baseline and the adverse scenario;
- Since they are reported at a portfolio level, PDs must be exposure weighted averages, and LGDs must be PD*exposure weighted averages;
- PDpit and LGDpit must capture current trends in the business cycle. In contrast to through-the-cycle parameters they should not be business cycle neutral;
- Contrary to regulatory parameters, PDpit and LGDpit are required for all portfolios, including STA and F-IRB.
- LGDpit must take into account collateral. Its evolution is affected by PD/LGD grades migrations and such effect must be addressed in the estimation.
- PDpit and LGDpit from FX lending for currencies as defined under Exposure (Exp) must be computed accordingly for the relevant asset classes in the respective currency subject to the threshold as defined in paragraph 99.

70. **Grade Migration** refers to the change in the distribution of credit quality within a portfolio over time. This includes both PD grades (corresponding to different probabilities of default) and LGD grades (corresponding to LTVs, probabilities of curing or other factors affecting the ultimate loss estimation for that exposure).

71. **Migration contribution PDpit** refers to the marginal contribution of rating migration is defined as the impact of PD grade migration, i.e. difference in percentage points between the exposure-weighted PD average of the non-defaulted stock (Exp) pre migration versus post migration under the same scenario. Banks that calculate risk parameters not on portfolio level or based on ECB benchmark parameters will also be asked to report this marginal contribution on an annual basis as a memo item in the templates.

72. **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.

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

2.4 Impact on P&L

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

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

- For IRB portfolios, banks are required to base their estimation of starting level point-in-time values on their approved internal parameter estimation models (refer to the definitions of PD_{pit} and LGD_{pit} above);
- For STA banks or IRB banks which cannot extract starting level point-in-time parameters from their internal models for portfolios where there are no approved models in place, banks should use non-approved models to extract point-in-time parameters provided those models are regularly used in internal risk management and stress testing and the competent authority is satisfied 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 level PD_{pit} or LGD_{pit}, banks are expected to approximate point-in-time PD and LGD starting values via Default and Loss rates (historically observed). While banks are expected to present parameters reflective of both, 2015 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 give consideration to factors which may lead to observed performance for 2015 being unrepresentative or unsuitable for a sufficiently conservative projection or for small portfolios for which no default has been observed. Only adjustments of the historical values that result in a more conservative starting point are permitted.

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

76. 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 deemed not suitable for projections.

77. Historical values and starting-point risk parameters shall be reported on the starting point credit risk template (CSV_CR_T0).

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

78. Likewise, for the estimation of starting point parameters, as a general principle, banks should use models rather than resort to benchmarks to determine stressed PD_{pit} and LGD_{pit} parameters (under both the baseline and the adverse scenario). However, banks' models will be assessed by competent authorities against minimum standards in terms of econometric soundness and responsiveness of risk parameters to ensure a model specification results in a prudent outcome. Competent authorities will consider rejecting the outputs from models in case that minimum criteria are not satisfied.
79. For portfolios where no appropriate satellite models are available for estimating the stressed PD_{pit} or LGD_{pit}, banks are expected to base their evolution on the benchmark parameters provided by the ECB.
80. Irrespective of the approach, the ECB benchmark parameters will serve as an important benchmark to gauge internal PD_{pit} and LGD_{pit} parameter estimates under the baseline as well as 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 deemed overly optimistic.
81. Point-in-time parameters (PD and LGD) are portfolio level estimations, thus affected by PD/LGD grade migrations. Banks' methodologies must address this migration effect, taking into account the macroeconomic scenarios. When using benchmarks, they must be applied at portfolio level, as the migration effect is already included.
82. In the case of estimating a relationship between point-in-time parameters and the macroeconomic variables at the PD/LGD grade level and, consequently, obtaining parameters for each grade within a portfolio, the aggregate parameters are obtained directly as the weighted average of the respective buckets. In such case, the exposure distribution among buckets must incorporate rating migrations linked to the macroeconomic scenario and as a consequence, in this case, it would require banks to calculate point-in-time migration matrices.
83. Banks using their own models are expected to estimate stressed rating transition matrices and to document the approach followed for the estimation. Transition matrices must satisfy the following minimum criteria:
- The PD/LGD for each grade is adjusted appropriately to reflect the scenario;
 - This probability of moving from one grade to another is appropriately adjusted according to the scenario.
84. The distribution of exposures across buckets (which is used to calculate the corresponding aggregate parameters) would be the result of multiplying the distribution of exposures at the

end of the previous year by the point-in-time migration matrix. Box 2 provides an example of the effect of a migration matrix.

Box 2: Example for the outcome of applying point-in-time migration matrices on different portfolio structures

In this example of a migration matrix, 2015 data shows the expected transition to 2016 before the application of the scenario. Its application to two different portfolios (a balanced portfolio A and an extreme portfolio B) results in different portfolio PDs over time due to the heterogeneity of both distributions.

Point in time migration matrices (identical for both examples)

2015		A	B	C	D
Good rating	A	97.0%	2.0%	1.0%	0.0%
Medium Rating	B	2.0%	91.0%	4.0%	3.0%
Bad rating	C	0.0%	1.0%	84.0%	15.0%
Default	D	0.0%	0.0%	0.0%	100.0%

2016		A	B	C	D
Good rating	A	96.9%	2.1%	1.0%	0.0%
Medium Rating	B	1.9%	90.9%	4.1%	3.1%
Bad rating	C	0.0%	1.0%	83.7%	15.3%
Default	D	0.0%	0.0%	0.0%	100.0%

2017		A	B	C	D
Good rating	A	96.8%	2.1%	1.1%	0.0%
Medium Rating	B	1.9%	90.7%	4.2%	3.2%
Bad rating	C	0.0%	0.9%	83.4%	15.7%
Default	D	0.0%	0.0%	0.0%	100.0%

2018		A	B	C	D
Good rating	A	96.6%	2.2%	1.2%	0.0%
Medium Rating	B	1.7%	90.5%	4.4%	3.4%
Bad rating	C	0.0%	0.9%	82.8%	16.3%
Default	D	0.0%	0.0%	0.0%	100.0%

Portfolio exposure distribution and portfolio level PD evolution

Portfolio A: Balanced portfolio distribution

		2015	2016	2017	2018
Good rating	A	40.0%	39.7%	39.3%	38.7%
Medium Rating	B	50.0%	46.4%	43.0%	39.9%
Bad rating	C	10.0%	10.8%	11.4%	11.8%
Default	D	0.0%	3.1%	6.3%	9.6%
Total		100%	100%	100%	100%
PD portfolio level		3.0%	3.1%	3.3%	3.5%

Portfolio B: Extreme portfolio distribution

		2015	2016	2017	2018
Good rating	A	80.0%	77.5%	75.1%	72.6%
Medium Rating	B	0.0%	1.8%	3.5%	5.0%
Bad rating	C	20.0%	17.6%	15.6%	13.9%
Default	D	0.0%	3.1%	5.9%	8.5%
Total		100%	100%	100%	100%
PD portfolio level		3.0%	3.1%	2.9%	2.8%

85.If the estimation of the relationship between point-in-time parameters and the macroeconomic variables is done at a portfolio level and, consequently, a single aggregate PDpit/LGDpit for each portfolio is obtained, banks are required to explain how they have accounted for the effects of grade migration on the level of default and impairments projected in the stress test horizon for the given scenarios.

86.In the projection of both LGD_{pit}^{OLD} and LGD_{pit}^{NEW} , banks must 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 impact real estate collateral).

87.The LGDpit parameters need to be estimated by taking into account both the characteristics of the exposures in default and the given scenario. Prudent assumptions are required on the implicit cure rate, costs associated with the liquidation of collateral and any other factor affecting the level of impairment. The evolution of these assumptions across the time horizon for the given scenarios will need to be justified including the impact of migrations between relevant categories of default.

88.For LGD estimations, the macroeconomic scenarios should be seen to evolve incrementally so that only the information up to the given year is used for that year's LGD estimation. In particular, banks shall assume that future property prices for realising collateral will remain constant for each future year after the year for which the LGD is estimated.

89. In order to compare the projected LGD parameters with the historical LGD parameters for 2015, a memorandum item is requested that shows the LGD_{new} and LGD_{old} parameters for 2015 that would be produced under the above assumption of holding the 2015 macroeconomic conditions constant.

90. Projected risk parameters shall be reported on the credit risk scenario template (CSV_CR_SCEN).

2.4.3 Calculation of defaulted assets and impairments

91. The evolution of the PD_{pit} and LGD_{pit} as described in the previous section must be applied to the computation of the defaulted asset flow and the impairment flow on defaulted assets.

92. Consistent with the static balance sheet assumption (see section 1.3.8) non-defaulted credit exposure only changes due to the yearly default flows. Market value fluctuations have no impact on the exposure and in particular cannot decrease the exposure. This includes changes in the FX rate, as stated in section 2.4.4.

93. The impairment losses for new and old defaulted assets 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.

94. Projected defaulted assets and impairment flows shall be reported on the credit risk scenario template (CSV_CR_SCEN).

a. Impairment losses on new defaulted assets

95. As stated in Box 3 below, provisions for non-defaulted assets can be used for new defaults given a static balance sheet. However, a decrease in the coverage ratio for the remaining non-defaulted assets is not permitted. Provisions for assets that remain as non-defaulted at the end of the horizon should be recomputed in line with the accounting systems in each national jurisdiction (taking into account the effects of the scenario including the impact of grade migration).

Box 3: Impairment losses on new defaulted assets

The flow of impairments on new defaulted assets at time t+1, is given by:

$$\text{Gross Imp Flow New (t+1)} = \text{EL}_{\text{pit}}(\text{t+1}) = \text{Exp}(\text{t}) * \text{PD}_{\text{pit}}(\text{t+1}) * \text{LGD}_{\text{pit}}^{\text{NEW}}(\text{t+1});$$

$$\text{Net Imp Flow New (t+1)} = \text{MAX}\{0; \text{EL}_{\text{pit}}(\text{t+1}) - \alpha * \text{Prov Stock non-defaulted}(\text{t})\}$$

$$= \text{MAX}\{0; \text{Exp}(\text{t}) * \text{PD}_{\text{pit}}(\text{t+1}) * \text{LGD}_{\text{pit}}^{\text{NEW}}(\text{t+1}) - \alpha * \text{Prov Stock non-defaulted}(\text{t})\}.$$

Where:

- $\alpha \leq \text{PDpit}(t+1)$;
- α is the share of Prov Stock non-defaulted (t) which is linked to initially non-defaulted assets at t which enter into default status at t+1. At a maximum α can be equal to the share of non-defaulted assets at t which enter into default at t+1, i.e. $\text{PDpit}(t+1)$;
- Prov Stock non-defaulted (t) is the stock of provisions against non-defaulted assets at t;
- $\text{PDpit}(t+1)$ and $\text{LGDpit}(t+1)$ both refer to the period from t to t+1 (year t+1).

This then leads to the following non-defaulted exposure at time t+1:

$$\text{Exp}(t+1) = \text{Exp}(t) - [\text{Exp}(t) * \text{PDpit}(t+1)].$$

b. Impairment losses on old defaulted assets

96.Box 4 below describes the approach to derive the impairment flow on old defaulted assets. $\text{LGDpit}^{\text{OLD}}$ may be estimated by banks' own internal models. The projection should reflect the evolution of old and new defaulted stock and macroeconomic conditions. $\text{LGDpit}^{\text{OLD}}$ can always be expressed (independently of the projection methodology) as weighted average of previous year's LGD parameters: $\text{LGDpit}^{\text{OLD}}$, weighted by old defaulted stock, and $\text{LGDpit}^{\text{NEW}}$ weighted by new defaulted stock – both multiplied with a stress factor. The stress factor for $\text{LGDpit}^{\text{OLD}}$ is expected not to diverge substantially from the stress factor of $\text{LGDpit}^{\text{NEW}}$ (ratio of $\text{LGDpit}^{\text{NEW}}(t)$ and $\text{LGDpit}^{\text{NEW}}(t_0)$). Furthermore, this stress factor may be subject to restrictions in relation to $\text{LGDpit}^{\text{NEW}}(t)$. The stress factor may be adjusted when the evolution of new and old LGD are inconsistent with each other under the macroeconomic scenario.

Box 4: Impairment losses on old defaulted assets

To take into account the deterioration of asset quality, particularly under the stress scenario, additional impairments must be made on old defaulted assets. The impairment loss on old defaulted exposure is given by:

$$\text{Imp Flow Old}(t+1) = \text{MAX} \{ 0; [\text{LGDpit}^{\text{OLD}}(t)(t+1) * \text{Def Stock}(t)] - \text{Prov Stock Old}(t) \}.$$

Where:

- Prov Stock Old (t) is the stock of impairments for old defaulted assets at t; only existing specific provisions in excess of the Expected Loss can be used to cover the impairment loss;
- $\text{LGDpit}^{\text{OLD}}(t)(t+1)$ is the LGD estimated in t+1 for the stock (at t) of old defaulted assets.

c. Impairment losses on sovereign exposures

97. Banks are requested to estimate default and impairment flows for sovereign positions recorded as loans and receivables or HTM investments according to the macroeconomic scenarios. This covers the categories ‘central banks and central governments’ for IRB portfolios as well as ‘central governments or central banks’ and ‘regional governments or local authorities’ for STA portfolios and will be reported accordingly. Fair value positions (i.e., AFS and FVO) will be subject to the market risk approach.

98. In order to compute these impairment flows, banks will be provided with a set of stressed default and loss rates for each scenario developed by the ECB/ESRB.

2.4.4 FX lending

99. Banks with a significant foreign currency exposure are requested to take into account the altered creditworthiness of their respective obligors, given the FX evolution under the baseline and adverse scenario. In particular, banks are requested 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 4 and Table 6 below.

100. This effect should be accounted for in case of any depreciation of the local currency vis-à-vis foreign currency debt (obligor perspective) included in the macroeconomic scenarios. Whilst all banks have to report the share of FX lending according to the requested FX breakdown on the starting point credit risk template (CSV_CR_T0), only the latter (i.e., those that meet the threshold as indicated in Table 4 and Table 6) have to calculate the additional impact on the credit risk scenario template (CSV_CR_SCEN). It should be noted that exposures in euros are only to be reported in case the euro is not the local currency (e.g. an exposure in euros in the Czech Republic has to be reported, while exposures in euros in Slovakia do not have to be reported).

101. The marginal impact from the risk emanating from FX lending exposure has to cover both PDs and LGDs. For PDs, the impact should be based on satellite models that link the macro scenario to the PDpit. For LGDs, the impact should be based on an add-on for the LTV ratio.

Table 4: 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 on real estate property	5%
Retail - Qualifying Revolving	5%
Retail - Other Retail	5%

Table 5: 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 risk exposure amount and IRB regulatory expected losses

102. Banks shall simulate the impact caused on risk exposure amount and IRB regulatory expected losses for credit risk by the application of the macroeconomic scenarios (baseline and adverse). This applies to all approaches, all exposures (both non-defaulted and defaulted) and credit risk mitigation techniques.
103. The exposure amount of exposures included in AFS and FVO portfolio, whose P&L impact is assessed under the market risk framework, will remain constant for the purpose of the risk exposure amount estimation.
104. As stated in paragraph 25, neither the roll-out of new internal models nor modifications of existing internal models during the stress horizon are to be considered for calculating the risk exposure amount. 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, must be considered. The projections should 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.
105. For both STA and IRB portfolios, the end of 2015 level of risk exposure amounts serves as a floor for the total risk exposure amounts for non-defaulted and defaulted assets calculated using stressed regulatory risk parameters in the baseline and the adverse scenarios. This floor must be applied separately for the aggregate IRB and STA portfolio.
106. The exposure composition with respect to rating classes is expected to change due to defaulted asset flows and credit deterioration. Both for STA and IRB portfolios, the exposure distribution among risk grades and defaulted exposures must be adjusted assuming rating migration, based on the banks' own methodology as appropriate and consistent with the estimated default flows and migrations for impairment purposes. Accordingly, exposures which are downgraded or which are defaulted must be risk weighted at the appropriate risk weights (e.g. in the case of a STA defaulted unsecured exposures at 100% or 150%).
107. The impact of the defined scenarios on collateral values and eligibility must be also considered for risk exposure amount and IRB EL projections.

108. For A-IRB banks, the risk exposure amount for defaulted asset exposures is calculated as in the box below in accordance with Art 153 of the CRR.

Box 5: Risk exposure amount estimation for defaulted assets

$$\text{REA Def}(t) = \text{MAX} \{ 0; [\text{LGDreg}(t) - \text{LGDpit}^{\text{OLD}(t)}(t)] * 12.5 * \text{Def Stock}(t) \}.$$

Where:

- It is assumed that ELBE(t), i.e. the expected loss best estimate is equal to $\text{LGDpit}^{\text{OLD}(t)}(t)$.

109. IRB excess or shortfall for defaulted and non-defaulted assets shall be calculated separately according to the CRR/CRD. Provisions related to exposures shall be determined as described for the estimation of impairments in 2.4.

110. Relevant positions and the impact on the risk exposure amount shall be reported in the credit risk exposure amount template (CSV_CR_REA).

2.6 Risk exposure amount for counterparty credit risk

111. The previous section 2.5 regarding the risk exposure amount and IRB regulatory expected losses applies to the exposures subject to counterparty credit risk (both banking and trading book).

112. For the purpose of calculating the risk exposure amounts for counterparty credit risk, regulatory exposures relating to counterparty credit risk will be reported using the appropriate template (CSV_CR_REA) and asset classes listed in Table 2 and Table 3 only for this purpose.

113. Counterparty credit risk regulatory exposure will remain constant and will not be affected by the impact of baseline and adverse market risk scenarios nor by any offset for increased accounting CVA in the scenarios (as set out in Article 273(6) of the CRR). In particular, as set out in section 2.5, stressed credit parameters (i.e. PDreg and LGDreg) will be applied to these constant counterparty credit risk regulatory exposures for the calculation of stressed risk exposure amounts for counterparty credit risk.

2.7 Securitisation exposures

114. All exposures subject to Chapter 5 of the CRR (traditional and synthetic, re-securitisations, as well as liquidity lines on securitisation transactions) are included in the scope of this section.

115. Originator positions where no significant risk transfer has taken place are to be treated under the credit risk methodology and should be reported accordingly in the credit risk templates. In particular, this holds for 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. Securitisation exposures within correlation trading portfolios are covered by the market risk methodology and must be reported within the market risk templates.

116. In line with overall assumption as stated in section 1.3.8, the static balance sheet assumption should be applied by keeping the outstanding balance of all securitisation exposures unchanged throughout the time horizon of the stress test.
117. For the computation of the P&L impact, banks are required to estimate the amount of impairments for securitisation exposures that are not subject to mark-to-market valuation, taking into account the features of the baseline and adverse macroeconomic scenarios. Banks should estimate the amount of impairments before the risk weighted assets calculation for securitisation positions. The forecasted impairments should take into consideration impairments already considered in prior periods and incremental impairments for each period must be added in the securitisation templates. For each individual security, the underlying pool's credit and prepayment models must be stressed under the different scenarios to produce consistent impairment estimates. Estimated impairments should take into consideration the impact of credit enhancement and other structural features when applying the credit risk methodology.
118. For securitisation exposures subject to mark-to-market valuation (i.e., AFS, FVO, HFT), 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).
119. For the estimation of the risk exposures amount, the stress is applied to the securitisation positions both in banking and trading book in the scope of this section according to their regulatory treatment.
120. For regulatory approaches based on risk weights (i.e., STA and IRB method – except exposures under Supervisory Formula) a fixed risk weight increase will be applied to the different credit quality steps as of 31 December 2015 by substituting the original risk weights by pre-defined increased ones. The increased risk weights reflect the effect on risk exposures amount due to the potential rating migration of the positions. The impact will be shown on the securitisation templates separately by regulatory approach (CSV_CR_SEC_STA, CSV_CR_SEC_IRB).
121. For this purpose, the securitisation positions will be allocated to an adequate number of securitisation categories. 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. In particular, securitisation exposures will be categorized into different risk buckets for which the increase in the risk exposure amount will be prescribed.

122. Impairments estimated for the computation of the P&L impact will be taken into account in accordance with CRR Art. 246 (1) and Art. 266 (2). Therefore, for exposures under the STA approach, impairments will be subtracted from the exposure to be risk weighted. For exposures under the IRB approach, risk weights must be applied on the full exposure gross of impairments and then subtract 12.5 times the impairment provisions.
123. Exposures and impairment estimates for securitisations shall be reported under the securitisation summary template (CSV_CR_SEC_SUM).
124. When external ratings are not available and the banks use the Internal Assessment Approach (IAA) for risk exposure amount calculation purposes, these securitisation positions should be stressed according to what is stated in the previous paragraphs. Each securitisation position should be assigned the respective credit quality step whose average risk weight is the closest to the one of the considered securitisation contract.
125. Banks are asked to supply information on the IRB and STA exposure per defined risk buckets. For this purpose, the securitisation positions should be reported in the securitisation templates by credit quality step, securitisation vs. re-securitisation, risk exposure amount calculation approach, seniority and granularity based on corresponding CRR definitions (e.g. Art. 255, 251, 259, 261, 262 of the CRR).
126. When the banks use the Supervisory Formula Approach (SFA) for risk exposure amount calculation purposes, the banks shall apply the stress factors for un-securitised corporate or retail exposures to the risk components (PD, LGD) of the asset pool in the respective exposure class. In this case, as a precondition, the IRB banks will have to demonstrate to the respective competent authority that the internal methods can be adjusted in a way that is consistent with the scenarios. Beyond the requested data in the relevant template, banks are required to outline their calculations in the accompanying document reporting all their driving parameters.
127. The securitisation positions under the IRB Supervisory Formula approach and other positions (look through) shall be reported separately (CSV_CR_SEC_IRB_SF, CSV_CR_SEC_Other).
128. For both the STA and IRB portfolios, end of 2015 level of risk exposure amount serves as a floor for the total risk exposure amounts calculated under the baseline and the adverse scenarios. This floor must be applied separately for aggregate IRB and STA portfolios.

3. Market risk, counterparty credit risk losses and CVA

3.1 Overview

129. The impact of market risk on AFS and FVO positions is to be assessed via full revaluation, after applying a common set of stressed market parameters consistent with the macroeconomic adverse scenario. Prescribed haircuts have to be applied for sovereign positions in these portfolios.
130. Regarding the HFT category, two different approaches shall be distinguished:
- The comprehensive approach relies on a full revaluation for the macroeconomic adverse and two historical scenarios, and is to be used by banks with internal models or a large share of market risk exposure amount. The overall impact is then given by the worst loss across the three scenarios. The banks' estimation is subject to a number of constraints;
 - The simplified approach estimates the impact of market risk as a function of the variation of net trading income (NTI) over the last 5 years and is to be used by other banks as well as serving as a floor for the comprehensive approach.
131. Hedged positions and corresponding hedges are treated consistently and all hedge accounting portfolios assessed at fair value are subject to the market risk methodology. As a consequence, banks shall account for hedging effects on positions within hedge accounting portfolios. They may also opt, or be required by their competent authority, to recognise the offsetting effects from economic hedges on positions in AFS and FVO.
132. For counterparty credit risk, it is assumed that the two most vulnerable of the largest ten counterparties default. For CVA, banks have to recalculate the CVA based on the market risk scenario. Both effects need to be projected for the macroeconomic adverse and the two historical scenarios while the total impact is again given by the worst loss.
133. In addition, banks are required to determine the impact of the scenarios on risk exposure amount, however, these are largely based on prescribed assumptions.

Box 6: Summary of the constraints on banks' projections of market risk

- No change is assumed under the baseline scenario (paragraphs 191, 207, 221 and 226).
- The starting 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 two year average is floored at 0 (paragraph 203).
- A simplified approach for banks without a validated model based on historical NTI volatility is applied as a floor to banks' own estimates of the NTI impact (paragraph 161).
- A haircut of 25% is applied to the starting NTI in the adverse scenario before the impact of the market risk shock – as a fixed impact for the simplified approach and as a cap for banks' own estimations of NTI for 2016-2018 (paragraphs 208 and 222).
- Prescribed haircuts are to be used for AFS/FVO sovereign positions (paragraph 199).
- Risk exposure amount stays constant for standardised banks (paragraphs 244 and 250) using the simplified approach while for banks under the comprehensive approach the risk exposure amount is assumed to be a multiple of the risk measures for VaR and APR (paragraphs 246 and 249).
- Risk exposure amount cannot decrease below the starting value in the baseline and the adverse scenario (paragraphs 244 and 245).
- The impact on risk exposure amount for IRC and CVA is floored by the increase for IRB risk exposure amount (paragraphs 248 and 251)

3.2 Scope

134. The scope of the market risk stress is defined to cover all positions exposed to risks stemming from changes of market prices, i.e. positions in HFT, AFS and FVO including sovereign exposures in these portfolios.

135. The scope of the market risk stress includes hedge accounting portfolios designated to hedge positions assessed at fair value. This includes fair value hedges and cash flow hedges. Hedge accounting portfolios designated to hedge positions measured at cost (i.e. loans and receivables and HTM) are covered by the credit risk methodology.

136. Also in scope are all positions for which banks calculate CVA as well as all positions subject to counterparty credit risk.

137. Securitisation positions held at fair value are also covered in this section. However, the stressed risk exposure amount for securitisation positions 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.

138. 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 should be taken into account for the purpose of computing the change in the actuarial discount rate and should be consistent with the evolution of long-term interest rates as defined in the macroeconomic scenarios. The asset and liability position shall be stressed in line with the requirements for AFS and FVO positions. As outlined in 6.4.4, 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..

3.3 High-level assumptions and definitions

3.3.1 Definitions

139. Banks are required to apply consistent definitions for the following items.
140. **Comprehensive Approach (CA):** Approach for computing the P&L impact of the stress scenarios on HFT positions, based on full revaluation given the ESRB/ECB shocks to the market risk factors.
141. **CA banks:** Banks applying the CA.
142. **Simplified Approach (SA):** Approach for calculating the P&L impact of the stress scenarios on HFT positions, based on NTI volatility as a proxy of banks' sensitivity with respect to adverse market risk conditions.
143. **SA banks:** Banks applying the SA.
144. **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) as of year-end 2015 are recognised as hedging effects from hedge accounting instruments.
145. **Economic hedges** are financial instruments which do not meet the requirements of IAS 39 to qualify as hedging instruments, but which 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 Art. 4(1)(86) of the CRR. The term economic hedges does not include derivatives for proprietary trading. For this exercise, the term economic hedges refers only to economic hedges related to AFS and FVO assets. Economic hedges covering others assets should be treated as all other HFT assets.
146. **Market risk factors** refer to a set of factors identified by ESRB/ECB as the main drivers of market risk that were used to calibrate the impact of the macroeconomic adverse and

historical scenarios on fair value positions. They include interest rates and volatilities for currencies, exchange rates and volatilities for currency pairs, haircuts and changes in volatility for equity, commodity and debt instruments, changes in credit spreads for debt instruments, parameters relevant for the correlation trading portfolios and bid/ask spreads to be used for the assessment of the impact on market liquidity.

147. **Additional risk factors** are factors other than the ESRB/ECB market risk factors that are identified by the CA banks as being relevant in the calculation of the VaR as of 31 December 2015. That is, all factors that are not included in the scenario but have a material contribution, explaining – together with the ones included in the scenario – at least 95% of the actual VaR.
148. **Direct sovereign positions:** Exposures to be reported include the positions towards sovereign counterparts. These exposures arise from an immediate borrower basis (e.g. an exposure of 100 towards Country A, collateralised with bonds issued by Country B, is reported on Country A but not on Country B) and do not include exposures to other counterparts with full or partial government guarantees.
149. **Net direct sovereign positions** are direct long sovereign HFT positions after offsetting the cash short positions having the same maturities.
150. **Indirect sovereign positions** are positions towards other counterparts (other than sovereign) with sovereign credit risk (e.g. CDS). This item does not include exposures to counterparts (other than sovereign) with a full or partial government guarantees by central, regional and local governments.
151. **Net Trading Income (NTI)** is defined as in FINREP ('gains or losses on financial assets and liabilities HFT, net').³ In particular, no one-off effects should be deducted or accounted for in the calculation of the NTI, i.e. historical data for NTI may not be adjusted unless the bank officially restated its accounts (e.g. for miss-valuing derivative positions) over the years in question. In the context of the stress test, both for calculation and reporting purposes, the NTI shall always be expressed in currency units (not as a ratio)⁴.
152. **Basis risks** arise when hedging an exposure to one market rate with exposure to another similar market rate that nevertheless reprices under different conditions, i.e. there can be a difference between the change in the price of the asset being hedged and the change in the price of the underlying derivative being used for hedging.
153. **Counterparty credit risk 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 counterparty credit risk as defined in Art. 272 of the CRR and to regulatory exposure for capital requirements as calculated according to Art. 273. Exposure for P&L effects as set out in section 223 refers to the stressed current exposure of the bank, i.e. current exposure

³ FINREP template 2, row 280.

⁴ With negative sign in case of losses.

following the application of the stress. The relevant exposure measure to use is current exposure, taking into account legally enforceable counterparty netting and collateral received or posted to the counterparty. Exposure for the calculation of capital requirements as set out in section 2.6 refers to regulatory exposure as defined in the CRR, i.e. covering 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 counterparty credit risk at the level of specific counterparties.

154. **Credit valuation adjustment (CVA):** An adjustment to the mid-market valuation of the portfolio of transactions with a counterparty, as per Art. 381 of the CRR. That 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.
155. **Debt valuation adjustment (DVA):** An adjustment to the measurement of derivative liabilities to reflect the own credit risk of the entity.
156. **Incremental risk charge (IRC):** Approach to capture, in the calculation of capital requirements, the default and migration risks of trading book positions that are incremental to the risks captured by the value-at-risk measure as specified in Art. 365(1) of the CRR.
157. **Correlation trading portfolio and all price risks (APR):** Institutions shall use this internal model to calculate a number which adequately measures all price risks at the 99.9% confidence interval over a time horizon of one year under the assumption of a constant level of risk, and adjusted where appropriate to reflect the impact of liquidity, concentrations, hedging and optionality (Art. 377 of the CRR).
158. **Securitisation positions** include both, positions where the securitisation has achieved significant risk transfer (SRT) and the originator institution has decided to apply Art. 245(1) of the CRR and securitisations without SRT.

3.3.2 Application of simplified and comprehensive approach

159. Institutions will be classified as CA banks if they fulfil at least one of the following criteria:
- Banks with at least one VaR model in place, approved by the competent authority under the CRR;
 - Banks whose total market risk capital requirement is greater than 5% of the total capital requirement;
 - Banks that recognize economic hedges;
 - Banks that opt for applying the CA;
 - Banks that are required to apply the CA by the competent authority.

160. All remaining banks will be treated as banks with less significant trading activities and shall apply the SA.

161. CA banks must run both the SA and the CA. For these banks, the overall reduction in NTI resulting from the application of the CA to HFT positions should not be less than the reduction of NTI estimated using the SA.

3.3.3 Static balance sheet assumption

162. The market risk shock is applied as an instantaneous shock to all the positions in the scope of the market risk methodology with the exception of HFT positions when applying the SA.

163. 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).

3.3.4 Reference date and time horizon

164. The reference date for applying the market risk shocks is 31 December 2015.

165. The overall impact on P&L (or capital, in the case of AFS positions) of the market risk shocks should be fully recognised in the first year of the stress test horizon (i.e. in 2016). For HFT positions a fixed haircut is also applied to the NTI for the following years in the SA that takes into account eventual turmoil that may arise as consequence of the shock or a reduction in NTI not solely due to the fair value of the banks' positions (e.g. due to reduced client trading). The same haircut defines a cap for banks' internal estimations in the CA.

166. 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.

3.3.5 Treatment of hedging

167. For positions in hedge accounting portfolios designated to hedge positions assessed at fair value, banks have to conduct full revaluations of the hedged positions and the hedging instruments separately (cash flow hedges and fair value hedges). In line with the treatment of other AFS/FVO positions, banks are requested to conduct full revaluations of their positions for the adverse macroeconomic scenario; no changes for the baseline scenario are required. Gains and losses are fully attributed to the first year. The stress effects of the full revaluation are to be reported in the hedge accounting template and accounted according to the relevant accounting rules. As a general principle, even within hedge accounting portfolios any ex ante netting of the stress effects from hedged items and hedging instruments is not

permitted, i.e. banks are required to report the impact on hedges and hedged positions separately.

168. As a general rule, derivatives other than those used in hedge accounting are stressed on a stand-alone basis according to the treatment of the accounting category. This includes HFT derivatives used for hedging other positions in HFT.
169. Banks can, however, be required by their competent authority or opt, subject to the approval by the competent authority, to report the offsetting impact from derivatives classified as economic hedges on related positions in AFS or FVO. Economic hedges covering other items should be treated as all other HFT assets.
170. Banks that recognize the offsetting effects from economic hedges on non-sovereign and sovereign positions in AFS and FVO will be considered CA banks, as defined in paragraph 159. To avoid a double counting of stress test impacts, the effects of the revaluation of economic hedges reported together with related positions in AFS or FVO are excluded from the change in NTI resulting from the CA. The approach for market risk exposure amount is not affected by the treatment of economic hedges.
171. For banks that recognise economic hedges on AFS/FVO sovereign and non-sovereign positions the calculation of the gains and losses from economic hedges is aligned with the treatment of the related AFS/FVO positions. Banks are requested to conduct full revaluations of all AFS/FVO positions and related hedges, separately, for the adverse macroeconomic scenario and recognise the full impact in the first year. No changes for the baseline scenario are required. To be consistent with accounting treatment, the offsetting effects from economic hedges are captured in the stressed P&L (via gains or losses on financial assets and liabilities held for trading) even if they relate to positions categorised as AFS.
172. Banks that recognise the effect of economic hedges shall do so for all economic hedges in scope of the FINREP definition and that are related to AFS and FVO positions.
173. For banks recognising the offsetting effects from economic hedges the historical NTI is modified via a scaling factor to compensate for the impact of fair value changes of non-trading book positions on NTI. The historical end of year NTI values for 2011-2015 are subject to a scaling factor according to the ratio of economic hedges (notional) to the total derivative HFT positions (notional) and the relative proportion of derivatives (carrying amount) in HFT as reported in FINREP (see Box 7). The scaling factor is calculated as of 31 December 2015 and held constant over the period 2011-2015.

Box 7: Definition of the scaling factor to account for economic hedges

$$\text{Scaling factor } x = \max\left[0.25; 1 - \left(\frac{\text{economic hedges}}{\text{derivatives trading}} * \frac{\text{derivatives}}{\text{financial assets held for trading}}\right)\right].$$

Where:

- economic hedges = (F10.00 row 020 column 030 + F10.00 row 080 column 030 + F10.00 row 140 column 030 + F10.00 row 200 column 030 + F10.00 row 260 column 030 + F10.00 row 280 column 030);
- derivatives trading = F10.00 row 290 column 030;
- derivatives = F01.01 row 060 column 010;
- financial assets held for trading = F01.01 row 050 column 010; and
- all values are calculated as of 31 December/2015.

174. The use of the scaling factor affects the NTI before stress used as a starting point for both the SA and the CA, and the baseline and adverse loss from the SA.
175. The scaling factor is calculated on the template for the simplified approach (CSV_MR_SA).
176. The impact of the hedges related to AFS non-sovereign positions in hedge accounting portfolios shall be reported on CSV_MR_AFS_HEDG. The impact of economic hedges for non-sovereign AFS and FVO positions shall be reported on CSV_MR_AFS_FVO_OTHER. The hedging impact for sovereign positions shall be reported on the sovereign template (CSV_MR_SOV).
177. Banks are requested to provide a narrative with additional information on the accounting framework applied and details on the hedging relationships.
178. An example for the application of the scaling factor to account for economic hedges is given in Box 8.

Box 8: Example for the application of the scaling factor to account for economic hedges

Assumptions					
Historical NTI is given in the following table:					
Year	2011	2012	2013	2014	2015
NTI	300	-200	150	-100	115
The calculated parameters for the starting point and the loss are:					
<ul style="list-style-type: none"> ▪ 5-year average: 53; ▪ 3-year average: 55; ▪ 2-year average: 8; ▪ 5-year standard deviation: 201; ▪ 3-year standard deviation: 135. 					
The proportion of economic hedges in HFT (= scaling factor) is assumed to be 0.5. Economic hedges are used to hedge interest rate risk of FVO positions and have the following impact:					
<ul style="list-style-type: none"> ▪ Adverse losses CA: -200; ▪ Of which economic hedges for FVO positions: 100; ▪ Adverse mark-to-market losses FVO: -150; ▪ Offsetting effect from economic hedges: 100. 					
The starting value					
The starting value is given by:					
<ul style="list-style-type: none"> ▪ NTI starting value with no recognition of economic hedges: 8; ▪ NTI starting value with recognition of economic hedges: 4. 					
The simplified approach					
The impact of the SA with and without applying the scaling factor for economic hedges on the NTI 2016 is:					

- NTI with no recognition of economic hedges: -397;
- NTI with recognition of economic hedges: -198.

The comprehensive approach

The impact of the CA with and without applying the scaling factor for economic hedges on the NTI 2016 is:

- NTI with no recognition of economic hedges: -192;
- NTI with recognition of economic hedges: -296.

The SA with an impact of -397 respectively -198 is therefore binding if economic hedges are not recognised and not binding if they are recognised.

Total impact with and without recognising economic hedges

The total impact from HFT and FVO 2016 without recognising economic hedges becomes:

- Before the application of the SA floor: $-192 - 150 = -342$;
- After the application of the SA floor: $-397 - 150 = -547$;

However, recognising economic hedges, the impact from HFT and FVO 2016 becomes (SA floor is not binding):

- Before and after the application of the SA floor: $-296 - 50 = -346$.

The recognition of economic hedges via the scaling factor accounts for offsetting effects across accounting categories that would otherwise not be recognised due to the fact that the SA acts as a floor for trading losses in HFT.

3.4 Market risk factors

3.4.1 ESRB/ECB market risk factors and additional risk factors

179. Scenarios have been defined in terms of shocks to market risk factors in order to project gains and losses on all fair value positions (AFS, FVO and HFT), with the exception of sovereign positions in the AFS and FVO accounting categories (for which haircuts are provided), and all HFT positions under the SA (for which NTI is stressed directly, based on its historical variation).

180. Not all risk factors provided in the market risk scenarios are explicitly captured in the CA template (CSV_MR_CA). Banks' impact projection should take into account all market risk factors provided in the scenario, e.g. the impact for equity instruments will not only depend on the shocks provided for equity indices but also on the volatility assumptions in the scenario.

181. The stressed market risk factors have been estimated for the adverse scenario by the ESRB/ECB. In addition, for the HFT accounting category banks using the CA are provided with two historical scenarios consistent with past stress events related to the global financial crisis and the sovereign debt crisis.
182. As the risk factors provided may not necessarily capture banks' structural market risk, CA banks are required to report additional risk factors which are not included in the scenario but have a material contribution, i.e. on a cumulative basis, the additional risk factors show a relevant impact, and, along with the contemplated factors, already considered, explain at least 95% of the actual VaR. In addition, banks need to report the calibration of these risk factors and their impact in an accompanying document. 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.
183. CA banks should define their own approach to translate the scenarios to shocks to the additional risk factors 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 over- rather than underestimate its impact); and reviewed and governed (i.e. the process and result have been checked and challenged by appropriate officers of the bank).
184. The treatment of additional risk factors, as well as optional additional information to be required by competent authorities, is specified in Box 9. 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.
185. Banks are required to report an additional measure as defined in section 3.4.2, in order to quality assure the differences between the stress impact based on the EBA list of factors and the ones relevant for the bank.,.

Box 9: Treatment of additional risk factors

Banks should distinguish between additional risk factors that cannot be derived from the risk factors provided by the EBA and the ones that can be directly derived from these risk factors as well as between the historical scenarios and the macroeconomic scenario.

In all the cases where supporting information is required, competent authorities will assess the reliability of the shocks applied as a part of the quality assurance process.

Approaches for the calibration of the shocks to additional risk factors directly derived from the risk factors provided in the scenario.

- Most of the banks risk factors should be derived directly from the risk factors provided by the scenario and reported in the associated rows in the comprehensive approach template (CSV_MR_CA).
- Where good quality data is available, then one of the following approaches should be adopted:
 - Similar scenario – if good quality data from a historical scenario that is ‘similar’ to the particular scenario is available, this should be used to calibrate the shift in the additional risk factor. The corresponding evidence should be provided, including reasons for deeming the alternative historical scenario to be similar (especially with regard to the risk factor considered).
 - Calibrated statistical relationship between risk factors and additional risk factors – if good quality data is available in sufficient quantity to support a statistical relationship between the additional risk factor and one (or more) of the risk factors in the scenario provided, this relationship should be used to calibrate the shock to the additional risk factor, and the statistical evidence to support this relationship should be provided, including evidence to indicate how this relationship holds up in stressed market conditions.
- Where good quality data is unavailable (for example, for a newly issued corporate bond), so that the variable itself is unobservable over the reference period and its relationship with other variables cannot be statistically determined, theoretical reasons to support the calibration of the risk factor shift should be provided. For example, there may be arbitrage reasons to support the calibration. In particular, the value of certain illiquid and/or complex trading book positions depends upon unobservable, or difficult to observe parameters. Such parameters (and the valuation methods in which they are used as inputs) should be adjusted to reflect the severity of the market shock associated with the scenario. For example, if the severity of the market shock might lead to circumstances that would require a re-mark of the equity correlation book, correlations, illiquid parameters, associated basis factors and the valuation methodology should be adjusted accordingly.

Approaches for the calibration of the shocks to additional risk factors that cannot be derived from the risk factors provided in the scenario.

- Some banks may have to add risk factors that are not correlated to the risk factors provided in the scenario. The impact of these additional risk factors should be reported under the rows for other risk factors on the comprehensive approach template (CSV_MR_CA).
- If good quality data is available in sufficient quantity to support a statistical relationship

between the risk factor and the macro variables for which projections are provided in the macroeconomic scenario, this relationship should be used to calibrate the risk factor, and the statistical evidence to support this relationship should be provided, including evidence to indicate how this relationship holds up in stressed market conditions.

- Where good quality data is unavailable so that the variable itself is unobservable over the reference period or its relationship with other variables cannot be statistically determined, theoretical reasons to support the calibration of the risk factor shift should be provided.

Per historical scenario

- Banks have to project market risk losses under two different historical scenarios. The historical periods that were considered when calibrating the scenarios are:
 - Historical Scenario 1: Subprime Crisis (Jun 2007 – Oct 2009)
 - Historical Scenario 2: European Sovereign Debt Crisis (Apr 2010 – Sep 2012)
- Banks can estimate the shocks to be applied to the additional risk factors in different ways, in any case the estimated impact of the shock to a given risk factor under a specific scenario cannot be lower than the impact obtained assuming a shock equal to the change in the risk factor between the initial and the final dates indicated in the corresponding reference period above. Where good quality data from the period referenced by the particular historical scenario is available, banks shall use these data to calibrate the shift in the risk factor and the corresponding evidence provided.
- Where good quality data from the period referenced by the particular historical scenario is unavailable (and only in this case), then one of the approaches for the calibration of the shocks to additional risk factors presented above should be considered.

Macroeconomic adverse scenario

- Macroeconomic adverse scenarios are hypothetical and if no historical data specific for the given scenario are available, then for the calibration of the shocks to additional risk factors, the approaches listed above should be considered.

3.4.2 Measure to quality assure additional risk factors

186. In the context of quality assurance of the market risk stress test on HFT positions, competent authorities will take into account the extent to which the market risk factors provided in the scenarios reflect the risk factors affecting the portfolios of CA banks. The difference in stress test results stemming from the application of the ESRB/ECB market risk factors instead of the factors that are actually driving gains and losses on HFT positions will be quality assured by means of a metric computed as illustrated in this section. This measure has to be reported by all CA banks.

187. In order to compute the measure, banks are required to calculate the regulatory VaR of their trading book as of 31 December 2015, considering the scenario risk factors which are included in the scenarios but calculated over the same time period (250 days) used for the VaR calculated by the bank as of 31 December 2015. Therefore, the VaR for a bank at 31 December 2015 that is a function of its risk factors:

$$\text{VaR}_B = f(X_1; X_2; \dots; X_n);$$

and the VaR for a bank at 31 December 2015 calculated from scenario risk factors is equal to:

$$\text{VaR}_{\text{EBA}} = f(X_i; X_{i+1}; \dots; X_m).$$

Where $1 < i < n < m$ and X_1 to X_{i-1} are relevant risk factors for the bank but not provided in the ECB/ESRB list; and X_i to X_n are common, while X_{n+1} to X_m are not used by the bank but included in the scenario. The ratio of the two VaR metrics represents a measure of the impact of the deviations of the two different set of risk factors to be applied by competent authorities during the quality assurance process and shall be reported on the comprehensive market risk template (CSV_MR_CA).

188. When a regulatory approved VaR model is not available for this calculation, banks shall apply internally used VaR models.

3.5 Impact on P&L and OCI – AFS and FVO positions

189. Gains and losses on FVO positions shall be reported in the P&L template (CSV_P&L), separately for sovereign and non-sovereign positions.

190. Gains and losses on AFS positions due to market price movements impact directly the OCI and shall be reported in the capital template (CSV_CAP), separately for sovereign and non-sovereign positions.

191. In the baseline scenario no impact is assumed.

192. Prudential filters will be treated as prescribed in paragraph 24.

3.5.1 Non-sovereign

193. Banks are requested to conduct full revaluations of their positions for the adverse macroeconomic scenario (see section 3.4) and recognize the impact on P&L or OCI, in line with accounting standards.

194. In line with paragraph 165, gains and losses on AFS and FVO non-sovereign positions shall be fully recognized in the first year of the stress test.

195. For the purpose of the stress test, banks shall not take into account possible valuation adjustments on debt securities and gains resulting from credit spread widening of own

liabilities under any circumstances. Hence, following a deterioration of own creditworthiness, the bank is not allowed to book a gain on those debt securities (or any other fair valued liability) that represent a net liability to the bank.

196. The relevant positions and projections including the impact of hedging shall be reported on CSV_MR_AFS_HEDG and CSV_MR_AFS_FVO_OTHER depending on whether an AFS positions is within hedge accounting portfolios or not.

197. If an AFS position is within a hedge accounting portfolio but also hedged with an economic hedge and the bank recognises economic hedges the position shall be reported on CSV_MR_AFS_HEDG but the economic hedge on CSV_AFS_FVO_OTHER.

3.5.2 Sovereign

198. Banks are required to report and stress both, direct sovereign exposure by country and residual maturity and related hedges for the adverse scenario. Exposures are reported gross of hedging. The hedging effect is reported separately.

199. Sovereign positions in AFS and FVO are subject to the market risk parameters (mark-to-market) and haircuts corresponding to the year 2016 as provided by the ESRB/ECB. The haircuts separate the (general) interest rate impact and the credit spread impact for a specific sovereign and residual maturity. The shock is allocated to the first year of the scenario (i.e. 2016). No shock or recovery is foreseen for the subsequent years of the scenario. Haircuts are applied to direct exposures only (see definition in section 3.3.1). Corresponding hedging positions should be stressed based on the market risk factors provided.

200. The impact of the stress test on the positions valued at fair value will be reflected in the sovereign template (CSV_MR_SOV). Additionally, exposures covered in the credit risk section (i.e. loans and receivables and HTM positions), HFT positions as well as direct sovereign exposures in derivatives and indirect sovereign exposures are also disclosed in the template as memo items.

3.6 Impact on P&L – HFT positions

3.6.1 Starting value of the NTI

201. Gains and losses on HFT positions shall be reported in the P&L template (CSV_P&L), separately for the SA and CA. In line with paragraph 161, for CA banks the P&L impact will be equal to the minimum between the impact of the SA and the impact of the CA (i.e. impact that is less beneficial to the bank).

202. For both CA and SA banks, the net P&L impact in each year of the stress test horizon will be added to the starting value of NTI assumed for the purpose of the stress test.

203. The starting value of the NTI is defined as the minimum between: the average of the 2014 to 2015 NTI (floored at 0), the average of 2013 to 2015 NTI and the average of 2011 to 2015 NTI (see Box 10) and will be calculated on the simplified market risk template (CSV_MR_SA).

Box 10: Definition of the starting NTI value

$$NTI_{\text{Starting Value}} = \text{Min}\{\text{Average}(NTI)_{2013-2015}, \text{Average}(NTI)_{2011-2015}, \text{Max}(0, \text{Average}(NTI)_{2014-2015})\}.$$

Where:

- $\text{Average}(NTI)_{2014-2015}$ is the simple average NTI over 2014-2015;
- $\text{Average}(NTI)_{2013-2015}$ is the simple average NTI over 2013-2015;
- $\text{Average}(NTI)_{2011-2015}$ is the simple average NTI over 2011-2015.

204. In line with this definition, regardless of the approach used in the market risk stress test, all banks have to report their NTI of the years 2011 to 2015. The latest 2016 year-to-date trading P&L available at the point when the results will be collected separately.

3.6.2 Comprehensive approach

205. For the market risk stress test of HFT positions, the same requirements laid down in section 3.5.1 for FVO positions applies.

206. For banks that fail to perform a full revaluation, a prudential add-on may be applied by the competent authority to the overall impact of the market risk stress test, in order to account for possible non-linearities and for the limited accuracy of the projections. For this purpose positions for which the banks can only deliver full or partial sensitivity results have to be reported separately.

207. In the baseline scenario NTI (before the application of market risk losses) should be kept constant at the starting NTI computed as per paragraph 203.

208. In the adverse scenario, banks should project NTI for the years 2016-2018 (before the application of market risk losses due to the revaluation of the portfolio) taking into consideration how the macroeconomic scenarios provided would impact trading revenues. Banks' projections will be subject to cap, which will be defined as the starting point NTI as used for the baseline scenario, multiplied by a haircut as specified in Box 11.

209. In order to account for the possible lack of representativeness of end-of-year HFT positions, the total loss projected by banks in each scenario computed shall be multiplied by a portfolio scaling factor computed as follows:

- Calculate the ratio between (i) the 75th percentile of daily VaR figures for the full year 2015, and (ii) the daily VaR reported for the reference date 31 December 2015;
- Floor this ratio at 1 and cap the ratio at 1.5;
- When a regulatory approved VaR model is not available, for the calculation in paragraph 209, banks shall apply internally used VaR models.

210. The full calculation of NTI is illustrated in Box 11.

Box 11: Formalised description of the comprehensive market risk stress approach

$$NTI_{2016,2017,2018 \text{ (baseline)}} = NTI_{\text{Starting Value}};$$

$$NTI_{2016 \text{ (adverse)}} = NTI_{2016 \text{ projected}} + Loss_{CA} * \text{portfolio scaling factor};$$

$$NTI_{2017 \text{ (adverse)}} = NTI_{2017 \text{ projected}};$$

$$NTI_{2018 \text{ (adverse)}} = NTI_{2018 \text{ projected}}.$$

Where:

- $NTI_{2016,2017,2018 \text{ projected}} \leq NTI_{\text{Starting Value}} * \beta$ is the NTI projected for each year by the bank;
- $\beta=0.75$ if $NTI_{\text{Starting Value}} > 0$ and $\beta=1$ otherwise;
- $Loss_{CA}$ is the market risk loss due to the revaluation of the portfolio;
- the portfolio scaling factor is defined in paragraph 209.

211. In the adverse scenario the overall impact on P&L will be the minimum between the impacts of the adverse and the two historical scenarios.

212. The loss calculation for HFT positions, including sovereign positions in this accounting category, shall be shown in the comprehensive market risk template (CSV_MR_CA). The final impact for these positions shall be reported in the market risk summary template (CSV_MR_SUM).

213. To allow a comparison, assessment and monitoring of the changes in market risk due to the stressed risk factors but also to account for the influence of hedging strategies on risks and P&L sensitivity of trading book, banks are required to report:

- The breakdown of the full revaluation P&L effect of the shocks to individual risk factor categories in each scenario, independent of all of the other market risk factors; the cross risk factor categories P&L effects of the shocks in each scenario; and the delta, gamma

and vega contribution to the P&L effect based on sensitivities as of the reference date (31 December 2015);

- In the case banks are not able to carry out a full revaluation, they are required to report positions for which they can only deliver the P&L effect of full or partial sensitivities and the corresponding impact of individual risk factors;
- Positions (fair value) with positive or negative gamma at the reference date for the different risk factors related to the dynamic hedged positions of the HFT portfolio subject to the full revaluation;
- The stand-alone regulatory VaR per risk factor category.

214. CA banks shall also compute the market liquidity shock due to an exogenous widening in the bid-ask spread for the whole HFT portfolio.

215. Banks should report the impact of all their basis risks, and use their own methodology to stress basis risk. Key basis risks are expected to cover inter alia interest rates, credit spreads and commodity prices. In all cases, banks should assume relative changes in the bases (compared to the values observed as of 31 December 2015) which are consistent with the scenario. For each basis risk factor, a positive impact from the change in the basis shall be set to zero, allowing only for a negative impact of the full revaluation. Competent authorities can ask banks to provide more granular information on the impact of basis risk.

216. CA banks holding a correlation trading portfolio in excess of 1% of total risk exposure amount are deemed to hold a significant correlation trading portfolio. These banks shall compute and report the impact of the shock on the correlation trading portfolio separately on the CA market risk template (CSV_MR_CA). Other banks may do so at their discretion.

217. When reporting results for the HFT positions, multivariate effects as well as scenario correlation assumptions deriving from the application of the market risk parameter shocks shall be taken into account and cumulatively shown in the template (CSV_MR_CA) for each major class of risk factors, separately from the one-factor P&L effects. For the macroeconomic scenarios and each of the two historical scenarios, the total P&L effect stemming from the application of the market risk shocks to HFT positions will be the sum of linear and non-linear profits and losses, rescaled according to paragraph 209.

218. The projection of losses for the sovereign positions in HFT should be consistent with other positions. As a memo item the fair value loss on all sovereign HFT positions, direct positions and derivatives, shall be reported separately.

3.6.3 Simplified approach

219. Banks classified as SA banks according to the criteria set out in paragraph 159 shall estimate the market risk stress test impact on HFT positions only based on the SA described in this

section. CA banks will also compute the impact according to the SA and will use it as a cap to the NTI obtained from the CA presented in section 204.

220. The rationale underpinning the SA is to apply the variation in NTI as a proxy of banks' sensitivity with respect to adverse market risk conditions. The approach is calibrated in such a way that a higher variation in banks' NTI results in higher losses under stress conditions.
221. In the baseline scenario NTI (before the application of market risk losses) should be kept constant at the starting NTI computed as per paragraph 203.
222. Under the adverse scenario, the overall adverse loss is estimated as 2 times the maximum between the standard deviation with respect to the previous three years (2013-2015) and the standard deviation with respect to the previous five years (2011-2015). This loss is assumed to be the overall stress impact on the P&L (to be subtracted from the starting NTI value defined in paragraph 203) for the first year of the stress test after applying a haircut to the starting value (see Box 12). To take into account post crisis spill-over effects mentioned in paragraph 165 banks should also apply this haircut to the 2017 and 2018 NTI respectively.

Box 12: Formalised description of a simplified market risk stress approach

$$NTI_{2016-2018 \text{ (baseline)}} = NTI_{\text{Starting Value}};$$

$$NTI_{2016 \text{ (adverse)}} = NTI_{\text{Starting Value}} \cdot \beta - 2 * \max\{\text{StDev}(NTI)_{2013-2015}, \text{StDev}(NTI)_{2011-2015}\};$$

$$NTI_{2017 \text{ (adverse)}} = NTI_{\text{Starting Value}} * \beta;$$

$$NTI_{2018 \text{ (adverse)}} = NTI_{\text{Starting Value}} * \beta.$$

Where:

- $NTI_{\text{Starting Value}}$ is defined in Box 10;
- $\text{StDev}(NTI)_{\text{years}}$ is the standard deviation of the NTI over the years indicated;
- $NTI_{\text{year (baseline, adverse)}}$ is the NTI per year of exercise and scenario;
- $\beta=0.75$ if $NTI_{\text{Starting Value}} > 0$ and $\beta=1$ otherwise.

223. The calculations referred to in paragraph 222 shall be conducted in currency units (not in terms of any NTI ratio) and will be calculated on the simplified market risk template (CSV_MR SA).

3.7 Counterparty credit risk losses and CVA losses

224. Counterparty credit risk losses arising from the stress test have two components: mark-to-market losses arising from changes in CVA for counterparties that do not default and losses upon the default of counterparties.
225. For the purpose of the counterparty credit risk losses and CVA 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 3.4. This does not affect regulatory counterparty credit risk exposure as reported in the credit risk templates for the calculation of counterparty credit risk exposure amount for which the credit risk methodology set out in section 2.6 applies.
226. No additional counterparty credit risk losses or CVA losses are assumed for the baseline scenario.
227. In considering counterparty defaults in conjunction with market risk stresses, market risk factor shocks should be applied to the exposure, whether uncollateralised or collateralised. In the case of collateralised exposures, banks should also stress the collateral in line with the market risk shocks without assuming any additional collateral is provided beyond what is currently held. Exposures should be stressed based on the scenarios as defined in section 3.4.

3.7.1 CVA impact on P&L and exclusion of DVA impact

228. The negative P&L adjustments arising from CVA changes will reflect deteriorating credit quality for some counterparties under the market risk stress, and, in calculating the adjustments, banks should maintain consistency with the calculation of CVA in their accounts. Banks should calculate CVA losses as the CVA at the reference date less the CVA under the market risk stress, with the latter derived from the application of the prescribed market risk shocks for the macroeconomic adverse and the two historical scenarios.
229. The projection of CVA losses covers all portfolios for which CVA losses can occur according to the accounting treatment of the bank. All losses will be captured in the P&L.
230. In deriving the CVA under the market risk stress, banks should pay particular attention to material counterparties whose credit spread is significantly and adversely correlated with the risk factors that drive the CVA with those counterparties or the collateral posted by those counterparties. The P&L impact of CVA hedges in place at the reference date should be recognised, but no adjustment to those hedges should be assumed.
231. For the purposes of the stress test, the banks shall not take into account possible DVA. Hence, following a deterioration of own creditworthiness, the bank is not allowed to book a P&L profit on those OTC derivatives (or any other fair valued liability) that present a net liability to the bank.

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

233. The resulting CVA impact shall be reported on the CVA template (CSV_MR_CVA).

3.7.2 Counterparty defaults

234. 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 counterparty credit risk template (CSV_MR_CCR). To gauge the possible impact of this source of P&L, competent authorities will require banks to calculate and report exposure as at the reference date, stressed exposure, and appropriate stressed LGD for their top ten largest counterparties, as described below.

235. To identify their top ten 'largest counterparties', banks should rank their counterparties in all accounting portfolios subject to counterparty credit risk (i.e. including HTM) by stressed current exposure after netting (if contractually permitted) for the macroeconomic adverse and the two historical scenarios. Exposure shall be reported net of stressed collateral. No collateral to be called beyond what is held at the reference date may be assumed.

236. For each of the three scenarios, banks are required to assume the default of the two most vulnerable counterparties within their top ten largest counterparties.

237. CCPs, other market infrastructures, central governments and central banks should not be included in the set of counterparties and names to identify the largest exposure.

238. The selection of the two most vulnerable counterparties involves judgement on the part of the bank of the creditworthiness of these counterparties, in the light of the size of the exposures. In making this judgement, banks should consider both the current creditworthiness of these counterparties, and how that creditworthiness might deteriorate under the scenario in question. The judgement of the bank should not be based on a simple application of measures such as banking book PDs and external credit ratings, but should also take into account idiosyncratic credit factors that would not necessarily be captured in such measures, again with particular reference to the scenario in question.

239. The overall counterparty credit risk loss will be calculated as the default exposure of the counterparty identified in paragraph 238 times the appropriate stressed LGD, minus the 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 parameters estimates carried out by the bank. This loss will be added to the total losses resulting from the market risk scenario.

240. The final loss stemming from the default of the two most vulnerable counterparties that will impact the P&L is the highest counterparty credit risk loss among the three scenarios.

241. The default of the two most vulnerable counterparties covers the effect the whole counterparty credit risk exposure assigned to this counterparty has on the P&L in case the counterparty defaults. In addition to the counterparty credit risk exposure, banks are asked to calculate losses from the jump-to-default of the direct credit exposure to this counterparty in all accounting portfolios (i.e. including HTM and loans and receivables). Here jump-to-default is the net profit/loss resulting from an issuer's instantaneous default. Indirect exposures to the issuer (i.e. CDS) should be included, as this corresponds to the default of the reference entity.

242. The algorithm for identifying and defaulting counterparty credit risk exposures is summarised in Box 13. The resulting losses will be captured as impairments in the P&L.

Box 13: Algorithm for identifying and defaulting counterparty credit risk exposures

- Exclude exposures not within the scope of the largest counterparty default, i.e. central government, central banks, market infrastructures, counterparties explicitly guaranteed by the central government and intragroup exposures.
- Apply stress factors defined in the market risk scenario to all traded positions for each of the three scenarios.
- Calculate stressed current exposure without assuming any collateral to be called beyond what is currently held considering only positive exposures.
- Rank counterparties by stressed current exposure for each of the three scenarios. 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 ten largest counterparties in terms of stressed exposures for each scenario.
- Calculate the impact of the default for each of the largest counterparties that is equal to the stressed current exposure multiplied by the respective stressed LGD netting the CVA impact on the P&L before application of the stress. The impact is prudentially floored to zero.
- Calculate the overall impact of default in each scenario by summing up the impact of the two most vulnerable counterparties that default for each particular scenario.
- The final P&L impact will be the maximum between the overall impact across the three scenarios.

3.8 Impact on risk exposure amount

243. The starting values for market risk exposure amount are the respective values reported as of 31 December 2015.

244. For the purpose of this exercise, banks that apply the SA, or 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 scenario.
245. For CA banks that have a VaR model approved by the competent authority, market risk capital requirements for each year of the stress test horizon are defined as the maximum between:
- The initial value of capital charges as of 31 December 2015;
 - Capital charges resulting from VaR and SVaR models, IRC, APR and own funds requirements for CVA, as described in paragraphs 246, 247, 248, 249, 250 and 251.
246. Under the baseline scenario, VaR and SVaR are assumed to remain constant at the level reported for the reference date 31 December 2015. Under the adverse scenario, the VaR will be replaced by the SVaR as of 31 December 2015 (see Table 6).
247. In case 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 2015. Under the adverse scenario, the new VaR and SVaR (i.e. 2xSVaR, based on paragraph 246) capital charge is added to the capital requirements computed under the standardised approach which are also assumed to remain constant.

Table 6: VaR assumptions for the calculation of the risk exposure amount

Ref Date	Baseline	Adverse
VaR	VaR	S-VaR
S-VaR	S-VaR	S-VaR

248. Banks modelling IRC must estimate the stress impact of the scenarios based on stressed parameters in accordance with section 2.5. Overall, under each scenario the relative increase in the IRC should be floored with the relative increase of risk exposure amount in the IRB portfolio in the corresponding scenario.
249. For correlation trading portfolios, the APR will be assumed constant in the baseline scenario. In the adverse scenario the following scaling is assumed to derive the stressed APR capital charge:
- 8% floor is not binding: 1.5 times the APR capital charge;
 - 8% floor is binding: 2 times the floor.

250. The capital charges for correlation trading positions under the standardised approach are assumed to remain constant at the level of 31 December 2015 under both baseline and adverse scenario.
251. 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 are requested to re-calculate the CVA charge under stress conditions, based on their regulatory approach in use for all books in scope of their regulatory approach. To this end, banks should translate the macroeconomic scenarios into underlying risk parameters and determine respective stressed capital charges. Overall, the increase in the CVA charge for the baseline and adverse scenario should be floored with the average relative increase of risk exposure amount in the IRB portfolio in the corresponding scenario. To be consistent with the approach for counterparty credit risk exposure amount, the regulatory exposure used for the calculation of the stressed CVA risk exposure amount shall be kept constant.
252. The impact on risk exposure amount shall be reported on the market risk exposure amount templates depending on the whether the SA or the CA is applied (CSV_REA_MR_CVA_SA, CSV_REA_MR_CVA_CA).
253. Risk exposure amount for the counterparty credit risk capital requirements are calculated using the approach described in section 2.6.
254. Finally, risk exposure amount for securitisation positions are expected to change in accordance with the securitisation methodology described in section 2.7 as part of the credit risk methodology.

4. Net interest income

4.1 Overview

255. Banks may use their own methodology and their existing Assets Liability Management (ALM) systems and Earnings at Risk (EaR) models to project their net interest income (NII) relying on their assumptions regarding the pace of the re-pricing of their portfolio, together with their projections for risk-free reference rates and margins both under the baseline 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' net interest income under stress:

- The risk related to a sudden change in the general 'risk-free' yield curves. This risk is aimed to be captured via the changes in the reference rate components of banks' repriced assets and liabilities and off-balance sheet short and long-term positions;
- The risk related to a sudden change in the 'premium' that the market requires for different types of instrument and counterparties, reflecting the impact on credit and other market risks (e.g. liquidity).

256. Banks' projections are subject to the constraints summarized in Box 14.

Box 14: Summary of the constraints on banks' projections of net interest income (NII)

- Assumptions underlying the scenarios cannot lead to an increase in the net interest margin of a bank's total portfolio (nor, under the static balance sheet assumption, to an increase in the bank's nominal net interest income), compared with the beginning of the exercise neither under the baseline nor the adverse scenario (paragraph 288).
- Banks' interest expenses cannot decline under the adverse scenario with respect to the cut-off date (paragraph 289).
- Under the adverse scenario, income on defaulted assets should not be recognized, with the exception of income stemming from discount unwinding. Income from discount unwinding is capped by the 2015 value and subject to a constraint depending on the changes in provisions and defaulted exposure (paragraph 290).
- 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 effective interest rate (EIR) of their re-priced liabilities (paragraph 303).

- Under the adverse scenario, the margin paid on interest-bearing liabilities cannot increase less than the higher between a proportion of the increase in the sovereign spreads of the country of exposure 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 303).
- Banks are required to cap the margin component of the EIR on their re-priced assets by the starting value, with some exceptions (paragraph 306).
- Although no methodological constraints are imposed on the reference rate of newly originated instruments, it is expected that the change in the reference rate of these instruments is consistent with the macro-financial scenarios for risk-free yield curves (paragraph 299).

4.2 Scope

257. All interest-earning or interest-paying positions across all accounting categories, including not only instruments subject to amortized cost measurement but also those subject to fair value measurement, such as HFT positions, AFS positions, FVO positions, and hedge accounting instruments, are in the scope of this section.
258. Banks which in the course of their periodic financial reporting present the interest income on assets in HFT, AFS, and FVO as a part of net trading income, should report this income as a part of net interest income, and remove it from the recurring net trading income projected in line with the provisions of section 3 of this note. Only NII is within the scope of the NII methodology, the fair value impact on these positions of the stress test macroeconomic scenarios are captured within the market risk methodology and the impact on the Economic Value of Equity, as required for Pillar II analysis, is not needed. The fair value impact on derivatives not recognised for hedge accounting should continue to be recognised in the market risk templates in addition to this NII impact.
259. Fees and commissions that are recognised as net interest income in the accounting framework are also within the scope of this section. The fees and commissions that can be directly linked to loans should be stressed through the loan's effective interest rate. All other fee and commission income are out of scope of the NII methodology.
260. Banks are also required to provide information on both their fixed as well as floating rate portfolios.
261. Banks are requested to split their derivatives positions between 'derivatives used for hedge accounting' and 'derivatives not used for hedge accounting'.
262. The definition of 'hedge accounting instruments' is in line with the FINREP definition, i.e. an instrument should be reported under 'hedge accounting instruments' if, and only if, it has

been recognized as a cash flow or fair value hedge under the relevant accounting framework (e.g. IAS 39 norm) as of year-end 2015. Other derivative instruments should be reported under 'derivatives not used for hedge accounting' throughout the stress period. Banks are requested to provide a narrative with additional information on the accounting framework applied and details on the hedging relationships.

263. Historical and projected positions as well as the NII impact based on the approach described in this section shall be report on the NII template (CSV_NII).

4.3 High-level assumptions and definitions

4.3.1 Definitions

264. Banks are required to apply consistent definitions for the following items.

265. **Reference Interest Rate (Ref Rate)** is defined as the general underlying 'risk-free' rate relevant for the given instrument, as used by banks in the management of their interest rate risk in the banking book⁵. That rate should not include instrument-specific or entity-specific credit risk spreads or liquidity risk spreads. Examples of acceptable rates are swap rates, or, for reference rate tenors below 1 year, the applicable interbank rate e.g. EURIBOR, LIBOR.

266. **Margin** is defined as the 'premium' charged/paid by banks over the instrument's/ portfolio's reference rate, and is equal to the spread between the actual rate of the instrument and the reference rate.

267. **Effective Interest Rate (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 average volume.

268. **Net Interest Margin** of the banks' total portfolio is computed as the ratio of banks' net interest income to the average volume of interest-earning assets over a given time interval.

269. **Maturity date** is defined as the contractual date on which the Margin or the Ref Rate component of the asset/liability is re-priced:

- For fixed rate instruments: 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 re-priced at the contractual maturity of the instrument, while the Ref Rate component is re-priced whenever the index rate of the floating rate instrument resets⁶. Therefore, the maturity dates for the Ref Rate

⁵ See EBA Guidelines on the management of interest rate risk arising from non-trading activities (EBA/GL/2015/08)

⁶ In this context, as mentioned above, for floating rate products, the index rate of the instrument should be used as reference interest rate.

and the Margin of floating rate instruments will in many cases be different. It is generally expected that the Ref Rate component resets prior to the Margin in most of the cases.

270. **Original maturity** is defined as the total time between the asset/liability's time of origination and the maturity date.
271. **Average point of maturing** is defined as the average fraction of a year at which the maturing positions mature (average across all maturing positions of the relevant portfolio).
272. **Existing Position (Exist)** refers to the volume, which is not re-priced within the time interval of interest.
273. **Maturing Position (Vol Mat)** refers to the average volume of instruments maturing within the time interval i.e. exiting the stock of existing positions of the previous year. The average volume is computed as the product of notional amount of maturing positions and average point of maturing of the relevant portfolio.
274. **New Position (Vol New)** refers to the average volume of instruments whose margin or reference rate are re-priced within the time interval. It should be noted that the average volumes reported in Vol Mat and Vol New sum to the total volume of maturing position within the time interval.
275. **Volume** stands for the notional amount of an instrument. In particular, projected volume should abstract from projected fair value changes both under the baseline and adverse scenarios. The average volume represents the average balance of the item over the time interval of interest. For each time interval, banks are requested to decompose the average volume of instruments between existing, maturing and newly re-priced positions⁷. For each instrument, volumes attached to the reference rate and margin components of the effective interest rate might differ as a result of the discrepancy in the respective maturity dates. All volumes should be understood as total volumes, i.e. volume including defaulted volumes, unless otherwise stated.
276. **Sovereign Spread (Sov Spread)** is the difference between the yield-to-maturity of a given sovereign's debt security and the swap rate for the same currency and maturity.

4.3.2 Static balance sheet assumption

277. The projections of net interest income are based on the assumption of a static balance sheet. Assets and liabilities that are re-priced (i.e. mature) within the time horizon of the exercise should be replaced with similar financial instruments in terms of type, credit quality at the time of re-pricing and original time to re-price of the instrument. As regards the loans and receivables portfolio, the static balance sheet assumption applies to the portfolio as a whole i.e. when considering both the performing and non-performing part. Indeed, it is expected that

under stress the total volume of performing assets will be decreasing and simultaneously, non-performing assets will be increasing.

278. In this context, banks should make a distinction between existing positions, maturing positions and new (i.e. re-priced) positions in terms of both the average volumes of each of these three components and the Margin and Ref rate.

279. Under the static balance sheet assumption, the sum of the existing, maturing and new positions' average volumes should remain constant over time.

280. The banks' interest income and expenses evolve over the stress test horizon as a result of (i) the re-pricing of maturing assets/liabilities, (ii) the change in the margin and/or reference rate components earned/paid on assets/liabilities and (iii) the migration of performing positions to default.

4.3.3 Treatment of maturing assets and liabilities

281. 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 re-priced. No additional behavioural assumption should be taken into account. Against this background:

- Banks are requested to assume that their sight deposits re-price immediately. As a result, they should always be considered as maturing position, regardless of the length of the time interval.
- 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.

282. Banks are requested to report their existing, maturing and new positions as average volume over the relevant time interval (see Box 15).

283. For the sake of simplicity, banks are required to assume that:

- The replacement of maturing positions related both to the Ref Rate and the Margin for all years is based on the average point of maturing as reported for the first year;
- The rounding of original maturity to the nearest integer above its current value (e.g. 2.4 years original maturity is rounded up to 3 years);
- Default volume is proportionally distributed across existing and maturing positions. Default events are assumed to take place at the beginning of each time interval.

284. Banks will be provided with templates that automatically determine the amount of existing, maturing and new positions, for each instrument and time interval (see Box 15).

285. 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 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 15: Calculation of volumes – Illustration

Floating rate portfolio

Product: floating product with a notional EUR 2000 M, residual maturity 0.25Y (equal to the average point of maturing for both Margin and Ref Rate) i.e. maturing on 30 March 2016 (original maturity: 1.5Y (rounded: 2Y in line with paragraph 283); index rate: EURIBOR 3M).

Initial state:

	Initial state	Maturity schedule of the total portfolio at the cut-off date, split by original maturity				
EIR component	2015	2016			2017	2018
	Volume (average over 2015, in M EUR)	Total amount (in M EUR)	With original maturity <1Y (in M EUR)	With original maturity <2Y (in M EUR)	Total amount (in M EUR)	Total amount (in M EUR)
Margin	2000	2000	0	2000	0	0
Ref Rate	2000	2000			0	0

The light shaded cells are directly reported by the bank.

Projections:

EIR component	Total volumes (in M EUR)								
	2016			2017			2018		
	Existing	Maturing	New	Existing	Maturing	New	Existing	Maturing	New
Margin	0	500	1500	2000	0	0	0	500	1500
Ref Rate	0	500	1500	0	500	1500	0	500	1500

Calculations:**Volumes related to the Ref Rate EIR component:**

For floating rate products volumes related to the Ref Rate are assumed to mature each year. Against this background, and under the assumption of re-pricing according to the average point of maturing of the instrument, total volume regarding the Ref Rate component is split between Vol Mat and Vol New each year, following the formula:

$$\text{Vol Mat} = \text{Total volume} * \text{average point of maturing} = 2000 * 0.25 = 500;$$

$$\text{Vol New} = \text{Total volume} * (1 - \text{average point of maturing}) = 2000 * 0.75 = 1500.$$

Volumes related to Margin EIR component:

As the Margin EIR component is assumed to be rolled over (and re-priced) in 2016 with new maturity of 1.5 years (rounded to 2 years), the average maturing volume is split between maturing and new positions in 2016 and 2018 according to the average point of maturing, and considered as an existing position in 2017.

In 2016:

$$\text{Vol Mat 2016} = \text{Avg. point of mat.} * (\text{position maturing 2016 according to the original maturity schedule at the cut-off date}) = 0.25 * 2000 = 500;$$

$$\text{Vol Exist 2016} = \text{Vol Exist 2015} - (\text{Vol Mat 2016} / \text{Avg. point of mat.}) = 2000 - (500 / 0.25) = 0.$$

In 2017:

$$\text{Vol Mat 2017} = \text{Avg. point of mat.} * (\text{position maturing in 2017 according to the original maturity schedule at the cut-off date} + \text{position maturing in 2016 with original maturity below 1y}) = 0.25 * (0) = 0;$$

$$\text{Vol Existing 2017} = \text{Vol Exist 2016} + (\text{Vol Mat 2016} / \text{Avg. point of mat.}) - (\text{Vol Mat 2017} / \text{Avg. point of mat.}) = 0 + 2000 - 0 / 0.25 = 2000.$$

In 2018:

$$\text{Vol Mat in 2018} = \text{Avg. point of mat.} * (\text{position maturing in initial state as of 2018} + \text{position maturing in initial state as of 2016, and hence in 2017, with original maturity below 1y} + \text{position maturing in initial state as of 2016 with original maturity below 2y}) = 0.25 * (0 + 0 + 2000) = 500;$$

$$\text{Vol Exist 2018} = \text{Vol Exist 2017} + (\text{Vol Mat 2017} / \text{Avg. point of mat.}) - (\text{Vol Mat 2018} / \text{Avg. point of mat.}) - \text{change in Vol Def between 2017 and 2018} = 2000 + (0 / 0.25) - (500 / 0.25) = 0.$$

Fixed rate portfolio

For fixed rate portfolios the calculation of existing, maturing and new volumes related to the Margin EIR component is similar to the floating rate portfolio. The mechanism for the volumes with regards to the Ref Rate EIR component, however, is different from floating rate products: as reference rate and margin are expected to re-price at the same time, volumes for reference rate are set equal to the volumes calculated for the Margin EIR component of the relevant instrument.

4.3.1 Curve and currency shocks

286. Where required, banks should only use linear interpolation to add tenors to the provided interest rate curves in the macro-financial scenario. Curves should be assumed to be flat beyond the longest tenor provided in the macro-financial scenario. 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 consistent with the macro-financial scenario and provide justification for this expansion.

4.4 Impact on P&L

4.4.1 Reporting of margins, reference rates and currency/country data

287. Banks are requested to project the interest rates of their assets and liabilities, split into margin and reference rate component, earned (or paid) as well as their volumes at both country and currency level. The number of country/currency pairs reported will be subject to materiality thresholds specified in Box 16. 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.

Box 16: Application of materiality constraint on the currency / country breakdown requested

- The following algorithm should be followed to determine the materiality of country/currency breakdown:
 - i. Banks need to compute for each couple of country/currency the maximum between total assets and total liabilities. This would define the volume associated to each country/currency couple;
 - ii. Banks need to rank the country/currency couple according to their volume;
 - iii. 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 couple.
- Domestic banks, i.e. banks whose non-domestic exposures is less than 10% of the sum of domestic and non-domestic country exposures, and whose foreign currency exposures is less than 10% of the sum of domestic and foreign currency exposures, are not requested to report any country/currency breakdown but need to only report the results at banking group level.

4.4.2 High-level constraints on net interest income

288. Assumptions underlying the scenarios cannot lead to an increase in the net interest margin of a bank's total portfolio (nor, under static balance sheet assumption, to an increase in the bank's nominal net interest income), compared with the beginning of the exercise neither under the baseline nor the adverse scenario.
289. Banks' interest expenses cannot decline under the adverse scenario with respect to the cut-off date.
290. Under the baseline scenario, banks are required to project the interest accrued on non-performing loans in line with their standing accounting practice (e.g. no recognition of unpaid income i.e. only cash interest received is treated as income). Under the adverse scenario, income on defaulted assets should not be recognised, with the exception of income from discount unwinding, whose treatment is detailed in the Box below.

Box 17: Treatment of discount unwinding

Banks are entitled to recognise the interest income arising from discount unwinding, however, taking due account of the stress applied to their credit portfolio, in particular the stress on the LGD for the stock of defaulted assets and the increase in the stock of defaulted assets. Against this background, banks are asked to provide their own projections of interest income from discount unwinding, subject, under the adverse scenario, to the simplified constraint below:

$$II \text{ unwind } (t) \leq II \text{ unwind } (t_0) \times \text{Min} (1, [\text{Def Stock } (t)/\text{Def Stock } (t_0)] * [(1 - \text{Provisions } (t) / \text{Def Stock } (t)) / (1 - \text{Provisions } (t_0) / \text{Def Stock } (t_0))]).$$

Where:

- II unwind (t) stands for the interest income from discount unwinding for a given portfolio for the time interval t;
- Provisions (t) stands for provisions for defaulted assets for the time interval t;
- t₀ stands for the year preceding the stress test horizon.

The above constraint should be applied at portfolio level. It requires banks to reduce the interest

income stemming from discount unwinding proportionally to the increase in the stock of provisions of their credit exposures, while allowing them to recognise more discount unwinding effect due to the increase in the stock of defaulted assets. In addition, income stemming from discount unwinding cannot exceed the income recognised at the cut-off date.

291. Banks will be allowed to recognise income from discount unwinding only if this source of income was clearly reported in their financial statements or, alternatively, they will need to present supporting evidence provided by their auditors.

4.4.3 Projection of the components of the effective interest rates

292. Banks will use their own methodology to project their interest expenses and interest income. In their projections they will take into account the assumptions given in the following paragraphs.

293. For fixed-rate products, the margin and reference rate are assumed to remain constant until the contractual maturity. For floating rate products, it is assumed that the margin is re-priced at the contractual maturity of the instrument, while the reference rate component is re-priced whenever the index rate of the instrument resets according to the contractual schedule.

294. For each time interval of the projections, banks are requested to provide separate projection for margin and reference rate components of the EIR. In addition, banks are requested to provide a split of EIR rates between existing, maturing and newly re-priced positions.

295. For fixed-rate instruments/portfolios, banks will project the reference rate applying the general 'risk-free' yield curve used in analysis of interest rate risk in the banking book (IRRBB). The reference rate should be calculated for the original maturity of the instrument using a yield curve taken from the time of origination for the relevant currency. Examples of acceptable reference rates are interest rate swaps, or, for reference rate tenors below 1 year, the applicable rate on unsecured interbank transactions.

296. For floating-rate products that are contractually linked to an index rate, banks will use the index rate as the reference rate, which should evolve in line with the macro-financial scenario.

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

298. The change in the margin of re-priced instruments will be subject to the so-called pass through constraints which provide floors for interest-bearing liabilities and caps for interest-earning assets. These constraints do not apply to instruments prior to the contractual maturity of the products. In particular, they are not relevant for floating rate instruments whose reference rate is adjusted before the expiration of the instrument's contract, i.e. before the re-pricing of the margin.

299. Although no methodological constraints are imposed on the reference rate of re-priced instruments, it is expected that the change in the reference rate of re-priced instruments is consistent with the macro-financial scenarios for risk-free yield curves.
300. The reference rate of sight deposits, which are not at variable or administered rate, is assumed constant over the scenario, such that any change in interest income/expenses earned/paid on this instrument should be recognised as a change in the margin of the deposits.
301. Reference rate of deposits with rates calculated using a regulatory defined formula should be calculated according to this formula.
302. The impact of interest rate derivatives used for hedging interest rate risk should be recognised in the NII templates by reporting the interest cash flow stemming for those instruments in separate lines. For example, in the case of a 3-year fixed rate loan with a matching interest rate swap, the reference rate on the loan would be recognised as the 3-year relevant risk-free rate at origination throughout the entire loan period regardless of interest rate movements; and the items in the derivative lines will represent both legs of the swap. In this example, the fixed leg would be represented within the hedging derivatives liabilities, with the floating leg within the hedging derivatives assets.

Box 18: Calculation of the NII- Illustration

The net interest income, excluding income stemming from discount unwinding, is calculated in two steps. First, the total interest income earned and interest expenses paid are computed. Then, the interest income related to the defaulted part of the line item is subtracted from the total. The illustrative example in this Box 15, presents the calculation performed for the floating rate product of Box 15.

Projections:

Projections of volumes and EIR for both components and all positions (existing, maturing and new) from the previous examples are used.

EIR component	INITIAL STATE		PROJECTIONS and CALCULATIONS								
	2015		2016			2017			2018		
	Existing	New	Existing	Maturing	New	Existing	Maturing	New	Existing	Maturing	New
Margin	1.0%	1.0%		1.0%	2.0%	2.0%	4.0%	2.5%		2.0%	3.0%
Ref Rate		1.2%	1.2%	1.2%	0.5%	0.5%	0.5%	1.5%	1.5%	1.5%	2.0%

Defaulted assets

EIR component	Volumes – DEFAULTED (Vol Def)			EIR component – DEFAULTED (EIR default)		
	2016	2017	2018	2016	2017	2018
Margin	100	110	110	1.1%	1.2%	0.5%
Ref Rate	100	110	110	0.8%	1.0%	1.2%

The light shaded cells are reported values provided by the bank.

Calculations – Step 1 Total interest income / expense:

Total Interest income/expense is computed following the relation provide below:

$$\text{Total Interest income/expense} = (\text{EIR Exist} * \text{Vol Exist} + \text{EIR Mat} * \text{Vol Mat} + \text{EIR New} * \text{Vol New}).$$

EIR component	Total interest income / expense		
	2016	2017	2018
Margin	35	40	55
Ref Rate	13.5	25	37.5

Calculations – Step 2 Impact on total interest income / expense of the defaulted assets:

Step2a – Difference between the EIR component for the defaulted and the non-defaulted asset multiply by defaulted volume (split into existing and maturing)

The cells in the table are computed in the following way:

$$\text{Diff Exist} = (\text{EIR default} - \text{EIR Exist}) * \text{Vol Def};$$

$$\text{Diff Mat} = (\text{EIR default} - \text{EIR Mat}) * \text{Vol Def}.$$

Step2b – Subtracting the difference on interest between defaulted and non-defaulted assets

The impact of defaulted assets is proportionally distributed among existing and defaulted assets following the relation provide below:

$$\text{Interest income/expense} = \text{Total Interest income/expense} - (\text{Diff Exist} * \text{Vol Exist} + \text{Diff Mat} * \text{Vol Mat} / \text{Avg. point of maturing}) / (\text{Vol Exist} + \text{Vol Mat} / \text{Avg. point of maturing}).$$

a. Constraints on the margin component of effective interest rates for liability positions

303. Under the baseline, 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 re-priced liabilities. Under the adverse scenario, the margin paid on interest-bearing liabilities cannot increase less than the higher between a proportion of the changes in the sovereign spread of the country of exposure 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 19.

Box 19: Floor on the evolution of the margin paid on new liabilities (pass-through constraint)

The Margin on banks' new liabilities at time t is floored by:

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

Where:

- Margin NewL (t) stands for the Margin EIR component on their re-priced liabilities during time interval t;
- t0 stands for the year preceding the stress test horizon;
- $\Delta \text{Sov Spread (t)}$ is the change in the relevant sovereign spread, i.e. difference between the yield-to-maturity of 10-year sovereign's debt security and the swap rate for the same currency and maturity, between t and t0;
- γ^8 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 summarized in the table below;

	Retail deposits - sight	Retail deposits - term	NFC deposits - sight	NFC deposits - term	Gov. deposits - sight	Gov. deposits - term	Deposits from credit institutions and other financial corporations	Debt securities (excluding covered bonds)	Covered bond and derivatives positions
γ	0.1	0.5	0.2	0.5	0.2	0.5	1	1	0.75

⁸The γ factor for short term liabilities was calibrated taking into account the fact that the sovereign spread considered for the margin when setting the floor corresponds to the 10-year sovereign bonds and not to short term sovereign bonds.

- 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 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 ECAI credit rating downgrade (taking as starting point the rating as of end-2015). Under the adverse scenario, Δ idiosyncratic component should 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 [subject to further recalibration]:

Credit rating 31 December 2015	Shock to the idiosyncratic component (bps)
AAA	50
AA+	60
AA	65
AA-	75
A+	90
A	100
A-	120
BBB+	130
BBB	150
BBB-	175
BB+	200
BB	250
BB-	270
B+	300
B	350
B-	400
CCC+/CCC/CCC-	575
CC+/CC/CC-	850

Example: the shock to the idiosyncratic component for a bank with a credit rating of AA- as of end-2015 will be +75 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-2015 will be 270 bps under the adverse scenario.

304. The pass-through constraint on the evolution of the effective interest rate applies to all interest expense positions except hedge accounting instruments.

305. 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 of effective interest rates for asset positions

306. Banks are required to cap both under the baseline and under the adverse scenario the margin on their re-priced assets by the starting value, with some exceptions applicable to sovereign exposures and deposits with credit institutions, explained in Box 20.

307. Exceptional cases of legally prescribed funding matches between the assets and liabilities side 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 pass-through assumption.

Box 20: Cap on the evolution of the margin earned on new assets (pass-through constraint)

The Margin EIR competent on banks' new re-priced assets at time t is capped by:

$$\text{Margin NewA}(t) \leq \text{Margin NewA}(t_0) + \lambda \Delta \text{Sov Spread}(t).$$

Where:

- Margin NewA (t) stands for the Margin on the re-priced assets in the time interval t ;
- t_0 stands for the year preceding the stress test horizon;
- $\Delta \text{Sov Spread}(t)$ is the change in the relevant sovereign spread, i.e. difference between the yield-to-maturity of 10-year sovereign's debt security and the swap rate for the same currency and maturity, between t and t_0 ;
- 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 summarized in the table below:

	Household – residential mortgage	Household – other	Financial corporations and derivatives positions	Non-Financial corporations	Central Bank
λ	0	0	0.5	0	0

- Margin on government instruments (excluding central bank deposits) should be projected in line with the macro-financial scenario for sovereign spreads of the relevant maturity.

308. These caps on pass-through rates apply to all interest income earning positions except hedge accounting instruments.

5. Conduct risk and other operational risks

5.1 Overview

309. Banks shall 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. Projections shall take into account the economic and financial environment, when feasible. Constraints will apply.

310. Banks shall also project capital requirements for operational risk within the time horizon of the exercise.

Box 21: 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 2011-2015 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 by applying a stress multiplier to the average (paragraph 334).
- 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 2011-2015 period. This floor is more conservative in the adverse scenario by applying a stress multiplier to the average (paragraph 339).
- In addition, projected losses for other operational risks in the adverse scenario, for each year of the projection horizon, cannot be less than the greatest annual loss experienced in the past five years (paragraph 340).
- 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 343).

5.2 Scope

311. 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 scope also covers the effect of the stress on operational risk capital requirements. The methodology is designed to cover every institution of the sample in a comprehensive way, regardless of its regulatory approach.

5.3 High-level assumptions and definitions

5.3.1 Definitions

312. Banks are required to apply consistent definitions for the following items.

313. **Conduct risk** is defined as the current or prospective risk of losses to an institution arising from an inappropriate supply of financial services including cases of wilful or negligent misconduct. Banks shall refer to paragraphs 253-257 of the EBA Guidelines on common procedures and methodologies for the SREP in case they experience issues captured under this heading. For the purpose of reporting historical data and projections in the stress test templates, conduct risk losses will be approximated by banks to event type 4 ('clients, products and business practices') and event type 1 ('internal fraud') of the COREP template for operational risk (C 17.00).

314. **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 proxies above.

315. A **historical material conduct risk event** is defined as any misconduct issue that has triggered aggregate losses greater than 10bps of end-2015 common equity Tier 1 capital during the period 2011-15.

316. A **new conduct risk event** is defined as a misconduct issue that as of the start of the exercise (31 December 2015) is unknown to the bank or is already known but has had no material P&L impact (below 10bps of end-2015 common equity Tier 1 capital) during the 2011-2015 period. In this context, new known conduct risk events are material if the firm expects the event to trigger losses greater than 10bps of end-2015 common equity Tier 1 capital during the three years of the exercise.

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

5.3.2 Reporting requirements

318. All banks are required to report historical data on incurred losses on conduct risk and other operational risk on a yearly basis from 2011 to 2015 in the general operational risk template (CSV_OR_GEN).
319. In those cases where capital requirements are modelled using advanced measurement or standardised approaches, banks will report historical data on incurred losses for conduct risk and other operational risk by loss-size-based buckets (minimum size is 10,000 EUR), in CSV_OR_GEN. They shall report such data under the constraint that the threshold for internal data collection is 10,000 EUR and it is homogeneous across operational risk categories (or the equivalent applying an FX rate at the time of recording the loss). Historical material conduct risk events will be reported separately in CSV_OR_CON. Banks shall group all payments relating to the same material conduct risk event together 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).
320. Banks applying the basic indicator approach are also expected to report yearly operational risk incurred losses from 2011-2015 in CSV_OR_GEN with a split between conduct risk and other operational risk, but without further details per loss-size-based buckets. Historical material conduct risk events will be reported separately in CSV_OR_CON by these banks as well when relevant.
321. 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 with all available evidence, both quantitative and qualitative. Banks may also be asked by their competent authorities to provide evidence regarding issues that are widespread in the industry, resulting in losses for other institutions, and that can be of relevance for them based on their business activities. Competent authorities will take into account when quality assuring banks projections not only their supervisory knowledge of the particular bank but also comparison to the sector and of the impact of similar issues in the bank's peers group.

5.4 Impact on P&L

5.4.1 Conduct risk treatment

322. Banks will stress their conduct risk losses applying either a qualitative or a quantitative approach according to the instructions below. In both cases a minimum floor for new non-material conduct risk losses will apply.
323. Under both approaches, the profit and loss 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.

324. Institutions will apply the qualitative approach when they report any historical material conduct risk event during the period 2011-15. Institutions reporting no historical material conduct risk event during 2011-2015 will as well apply the qualitative approach when the relevant competent authority deems it necessary based on their knowledge of the bank and on their supervisory judgment.

325. All remaining institutions will apply the quantitative approach.

a. **Qualitative approach to estimating future conduct risk losses**

326. Banks applying the qualitative approach shall:

- Report historical data on incurred losses on conduct risk in the general template (CSV_OR_GEN) as indicated in paragraphs 318 to 320 above. In the same template they will 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 2015, during the time horizon of the exercise both under the baseline and under the adverse scenario;
- Include also in the conduct risk template (CSV_OR_CON) a projection of potential losses that may arise from new material conduct risk events during time horizon of the exercise both under the baseline and under the adverse scenario.

327. 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 compared to the baseline scenario, so that banks should have a high level of confidence that under the adverse scenario, the loss 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 over the eventual cost.

328. When projecting conduct risk losses linked to historical material conduct risk events and new conduct risk events, banks will 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 prorate the projected loss over the 3 years of the exercise.

329. Table 7 below provides an illustration on the approach to follow in order to project conduct risk losses.

Table 7: Projection of conduct risk losses under the qualitative approach – 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 and targeting a high level of confidence of settling at or below their estimate.
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 case, 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 compared to 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 and targeting a high level of confidence of settling at or below the estimate.
<p>330. Banks may ignore individual risks and outcomes where the likelihood of settlement of the conduct risk event is remote. However, banks shall include the cost of these risks that are not considered individually in their projections to cover the possibility that, at the aggregate level, one or more remote cases are eventually settled.</p> <p>331. Banks shall 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.</p>	
<p>b. Quantitative approach to estimate future conduct risk losses</p>	
<p>332. Banks applying the quantitative approach shall directly in the general template (CSV_OR_GEN) project the P&L impact of conduct risk losses over the three year time horizon using banks' own methods. Projections shall take into account when appropriate the economic and financial environment depicted in the scenario.</p>	

c. Floor to conduct risk losses projections

333. 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 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. In case that the floor applies, the amount of losses will be projected pro-rata along the 3 years of the time horizon.

334. In the baseline scenario, the floor for potential losses linked to new non-material conduct risk events would be computed as the average of the historical losses reported by the banks during the 5 years prior to the beginning of the exercise (2011-2015 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 would be more conservative by applying a stress multiplier to the average. This calculation is detailed in Box 22.

Box 22: Floor for conduct risk losses

$$\text{CR floor}_{(\text{b or adv}), 3 \text{ years}} = 3 * \Omega_{(\text{b or adv})} \frac{1}{5} \sum_{y=2011}^{2015} (\text{historical conduct losses for non material events})_y.$$

Where:

- in the baseline scenario the stress multiplier $\Omega_{(\text{CR}, \text{b})} = 1$;
- in the adverse $\Omega_{(\text{CR}, \text{adv})} = 2.5$.

335. Aggregate projections of conduct risk losses arising from new non-material conduct risk events for the 3 year stress test time would be the maximum between the banks own projections of conduct risk losses corresponding to new non-material conduct risk events for the three years and the floor calculated according to the formula in paragraph 334 (3 times the average of historical losses for non-material events only, weighted according to the multiplier applicable under each scenario). Potential losses that may still arise from historical and new material conduct risk events are in any case added, according to banks' own projections after being quality assured by competent authorities.

336. 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 e.g. using uncertainty adjusted means to project potential material conduct risk losses and to challenge banks own projections.

5.4.2 Treatment of other operational risks

337. Banks shall project the P&L impact of other operational risk losses over the three 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 aggregate amount of losses under the baseline scenario and should reach the 90th percentile of the aggregate amount of losses under the adverse scenario. Projections shall take into account when appropriate the economic and financial environment depicted in the scenario.
338. The projection of losses for other operational risk 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.
339. Projected losses under the adverse and baseline scenario, for each year of the projection horizon, must be at least equal to the bank-specific floor computed as shown in Box 23.

Box 23: Floor for the projection of other operational risk losses

$$\text{OOR floor}_{(b,i) \text{ or } (adv,i)} = \Omega_{(b \text{ or } adv)} \frac{1}{5} \sum_{y=2011}^{2015} (\text{OOR losses})_y.$$

Where:

- OOR means 'other operational risk losses';
- in the baseline scenario the loss factor $\Omega_{(oOR,b)} = 1$;
- in the adverse $\Omega_{(oOR,adv)} = 2.5$.

340. In addition, projected losses in the adverse scenario, for each year of the projection horizon, cannot be less than the greatest annual loss experienced in the past five years.

5.4.3 Fall-back solution

341. In case that a bank is unable to report relevant historical losses for conduct risk and other operational risk, 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 24. In case that this method applies, the amount of losses will be projected pro-rata along the 3 years of the time horizon.

Box 24: Fall-back solution for other operational risk losses

$$L_{(b \text{ or } adv)} = \Omega_{(b \text{ or } adv)} * RI_{2015,i}$$

Where:

- RI is the relevant indicator;
- L is the loss projected in year y; and
- in the baseline scenario the scaling factor $\Omega_{(b)}=0.06$; and
- in the adverse the scaling factor $\Omega_{(adv)}=0.15$.

5.5 Impact on capital requirements

342. 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 (31 December 2015).

5.5.1 Advanced Measurement Approach

343. Banks are required to use their internal models to estimate their capital requirements for operational risk (which includes both conduct risk and other operational risk) over the time horizon of the exercise, both for the baseline and adverse scenario. For this, banks using the advanced measurement approach shall take into account the flow of all projected losses into 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

344. For operational risk categories where capital requirements are calculated using basic and standard approaches, capital requirements shall be projected according to the CRR provisions.

6. Non-interest income and expenses

6.1 Overview

345. As a general rule, a prescribed formula is applied to the main income items based on historical values relative to banks' assets. Banks shall use their own methodology to project their non-interest income and expenses items not covered by credit risk, market risk or operational risk, both for the baseline and the adverse scenario. These projections are subject to the constraints summarised in Box 25. The market risk methodology and macroeconomic shocks shall be applied for stressing real estate assets and defined benefit pension plans.

Box 25: Summary of the constraints on banks' projections of non-interest income and expenses

- For dividend and net fee and commission income, the ratio of net income from each item over total assets has to remain constant at the 2015 level in the baseline scenario. In the adverse scenario, the minimum between this ratio in 2015 and the average of the two years with the smallest ratios that occurred over the last five years should be assumed (paragraph 357).
- Administrative expenses and other operating expenses cannot fall below the value observed in 2015 – unless an adjustment of this floor for one-offs is permitted by the competent authority in situations defined in this section (section 6.4.2).
- Other operating income is capped at the 2015 value (paragraph 369).
- A common tax rate of 30% shall be applied (paragraph 373).
- No impact is assumed for realised gains or losses, negative goodwill, foreign exchange effects (paragraphs 353, 367 and 372).
- For dividends paid, under the baseline and adverse scenario banks shall 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 in the baseline should be the maximum 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 amount of dividends as in the baseline scenario shall be assumed, unless it 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 (section 6.4.3).

6.2 Scope

346. 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 net interest income.

347. The following FINREP P&L items are part of non-interest income and expenses:

- i. Expenses on share capital repayable on demand,
- ii. Dividend income;
- iii. Fee and commission income, net;
- iv. Gains (losses) on financial assets and liabilities not measured at fair value through profit and loss, net;
- v. Exchange differences, net;
- vi. Gains (losses) on de-recognition of (i) non-financial assets, net, and of (ii) investments in subsidiaries, joint ventures and associates, net;
- vii. Other operating income;
- viii. Other operating expenses;
- ix. Administrative expenses (-);
- x. Depreciation (-);
- xi. Impairment on non-financial assets (-);
- xii. Negative goodwill recognized in profit or loss (-);
- xiii. Other income and expenses from continuing operations (provisions or reversal of provisions, other impairment or reversal of impairment on non-financial assets, share of the profit or (-) loss 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);
- xiv. Extraordinary profit or loss and profit or loss from discontinued operations.

348. In addition to the P&L items listed above, this section captures the impact of taxes, defined benefit pension schemes and dividends paid on capital.

6.3 High-level assumptions and definitions

349. All items follow IFRS definitions. Banks shall align with FINREP reporting. If national accounting frameworks are used, banks shall map their accounting framework to the IFRS framework. Banks are requested to provide a mapping table in an accompanying document.
350. Net non-interest income is defined as the collection of items (ii) and (iii) mentioned in section 6.2.
351. Banks will have to use their own methodology in projecting non-interest income and expense paths for the baseline and the adverse scenario for all items not covered in sections 6.4.2, 6.4.3 and 6.4.4.
352. The projections shall incorporate both exogenous factors and bank specific characteristics. They shall also take into account the specific developments of the originating country. Given potential differences in the business cycle of these countries, the respective income and expense streams accrued by the bank in question will be affected.
353. 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 effect the P&L are indirect credit risk from foreign currency lending related to the depreciation of local currencies (see section 2.4.4) and the market risk effects due to revaluation effects 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).
354. Banks are required to provide five years of historical data together with their projections. Banks shall 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.
355. 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.
356. All historical and projected values shall be reported on template CSV_P&L. Any additional impact to capital shall be reported on the capital template (CSV_CAP).

6.4 Impact on P&L and capital

6.4.1 Net non-interest income

357. For net non-interest income its projection in the baseline and adverse scenario shall follow the following rule:

- Under the baseline scenario: For each item, the net non-interest income to total assets ratio is to be kept constant at its 2015 value.
- Under the adverse scenario: The minimum between the value of the ratio in 2015 and the average of the two years with the smallest values for the respective ratios to total assets that occurred over the last five years is to be used.

6.4.2 Administrative expenses, profit or loss from discontinued operations and other operating expenses

358. Administrative expenses, profit or loss from discontinued operations and other operating expenses shall be projected by bank-internal models, but cannot fall below the value observed in 2015 (or be higher in case of a profit from discontinued operations). Adjustment of this floor for one-off effects on the 2015 value is permitted for the following situations, but subject to a thorough quality assurance based on available uncontroversial evidence of the non-recurrence of the event and a reasonable estimate of the recurring part of the cost, based on and linked to the historical data of the bank.

359. In addition and as a necessary condition, banks shall submit a list of those one-off events for consideration to the respective competent authority ahead of the submission of the submission of the stress test results. This list of the one-off events shall distinguish between one-off events having a positive P&L impact from those having a negative impact and be limited to five items. Failure to submit the list shall lead to automatic disallowance of all one-offs, whereas submission alone constitutes no claim to eventual recognition by the competent authority. In case of a rejection of items from the list, banks are not allowed to resubmit further applications. The following instances shall be permissible for assessment by the competent authority:

- Future cost reductions are expected due to divestments of business units under the following conditions:
 - The affected business unit was fully divested during the course of 2015; and
 - Further follow-up expenses for these divestments were considered in the forecast.
- Business unit restructuring, including measures that are part of a restructuring plan approved by the European Commission, leading to increased integration one-off costs before synergies can be realised, 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, must have been completed in 2015; and

- Permissible restructuring costs are post-merger integration costs (subject to the merger having been completed by 31 December 2015) and set-up costs for a bad bank, wholly taken in 2015.
 - Employee restructuring/lay-offs and the associated severance costs, subject to the following conditions:
 - Separation must have been completed in 2015;
 - Severance costs must have been paid in full by the end of 2015; and
 - Any expected future restructuring payments and severance costs still need to be considered in the forecast.
360. 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 according to the methodology as prescribed in Section 5;
 - All actions that are not fully implemented by 31 December 2015. This includes in particular, but is not limited to mergers and run-off of businesses, which are expected, but not executed until year end 2015;
 - Changes in variable compensation;
 - Exceptional fees on professional services engagements; and
 - Changes in real estate/occupancy costs due to e.g. a move.
361. In projecting administrative and other operating expenses, banks shall factor in the phase-in of ex ante contributions to the Single Resolution Fund, as established in EU Regulation 2015/81.
362. All exceptional projected cost reductions can only be considered, if the adjustment of any corresponding income is taken into account and consistent with the remaining methodology as presented in this note (e.g. in setting any caps on income projections based on 2015 levels).

6.4.3 Dividends paid

363. The pay-out ratio referred to below is defined including all voluntary reductions in the capital base, i.e. 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.

364. Under the baseline and the adverse scenario, banks shall apply a pay-out ratio based on their publicly declared projected dividend policies. This includes legally binding contracts such as profit/loss transfer agreements and policies concerning preferred shares. If no dividend policy is available or documented, the bank shall apply the following rule:

- 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 five 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 shall pay the same amount of dividends as in the baseline scenario, 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 buy backs as well.

365. When projecting dividends paid, the banks shall observe Art. 129 of the CRD regarding the requirement to maintain a capital conservation buffer and the associated restrictions on distributions set in Art. 141.

6.4.4 Other P&L and capital items

366. **Expenses on share capital repayable on demand:** Expenses should be projected in line with contractual requirements for the banks. In the baseline scenario they cannot fall below the 2015 value. In the adverse scenario, expenses can only be lower than in the baseline if the bank can provide evidence that this reduction is in line with publically declared pay-out policies.

367. **Gains (losses) on 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.

368. **Exchange differences:** In line with paragraph 353, no impact will be assumed in the baseline and the adverse scenario.

369. **Other operating income:** Projected other operating income shall not be higher than the 2015 value.

370. **Other impairment on other financial and non-financial assets:** Impairments on participations shall be computed in line with the result of the (IFRS) test of impairment and consistent with the scenarios. This requirement extends to participations in other banks included in the sample of the EU-wide stress test.

371. **Impairment on non-financial assets:** Impairment on residential and commercial real estate will be computed by the application of the shocks on real estate prices (as envisaged in the macroeconomic scenarios). Additionally, commercial real estate shocks will be applied to the net book value of own used property.
372. **Negative goodwill recognised in profit or loss:** No impact should be assumed for the baseline or the adverse scenario.
373. **Tax effect:** Banks shall apply a common simplified tax rate of 30%. Deferred tax assets (DTA) are expected to be created as a consequence of the offsetting of negative pre-tax profits. The creation of new DTA arising from temporary differences in valuation in the tax and accounting accounts is not permitted. This only affects DTA that are created during the time horizon of the exercise, i.e. banks shall not recalculate and account for a stock of past DTA using the simplified tax rate. Banks are reminded of Section 3, Sub-section 1 of the CRR, in particular Art. 36(1)(c) and related Art. 38, 39 and 48. Full phase-out of deduction of DTA from Common Equity Tier 1 (CET1) capital as per Art. 469 and the associated schedule in Art. 472 and all ancillary rules as outlined in the CRR shall apply. Banks shall also take into account any accelerated phase-out schedule as established by national legislations and the applicable competent authority. The resulting effects shall be included in the banks' projections.
374. **Defined benefit pension schemes:** In accordance with the static balance sheet assumption, banks shall disregard the cash flows into and out of the scheme, 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 2015 as if it were an instantaneous shock. As specified in paragraph 138, this only needs to be applied for the adverse macroeconomic scenario including the market risk factors, and not for the two historical market risk scenarios. The actuarial gain/loss shall then be apportioned to the first year as described in the market risk methodology. The impact shall be reported as a memo item on the P&L template (CSV_P&L) and impact capital via OCI.

Annex I: Template overview

Table 8: Overview of calculation support and validation templates

Section or topic	Template name	Description
N/A	Summary	Summary of templates and colour code applied
Credit risk	CSV_CR_T0	Credit risk – Starting point
Credit risk	CSV_CR_SCEN	Credit risk – Scenarios (projection for credit risk losses)
Credit risk	CSV_CR_REA	Credit risk – Risk exposure amount
Credit risk	CSV_CR_SEC_SUM	Securitisations – Summary
Credit risk	CSV_CR_SEC_STA	Securitisations – Standardised approach (risk exposure amount)
Credit risk	CSV_CR_SEC_IRB	Securitisations – IRB except exposures under Supervisory Formula (risk exposure amount)
Credit risk	CSV_CR_SEC_IRB_SF	Securitisations – IRB Supervisory Formula (risk exposure amount)
Credit risk	CSV_CR_SEC_Other	Securitisations – Other positions (look through) (risk exposure amount)
Market risk, CCR losses and CVA	CSV_MR_SUM	Market risk – Summary
Market risk, CCR losses and CVA	CSV_MR_SA	Market risk – Simplified approach
Market risk, CCR losses and CVA	CSV_MR_CA	Market risk - Comprehensive approach, HFT portfolio excluding AFS and FVO economic hedging items when treated separately
Market risk, CCR losses and CVA	CSV_MR_CCR	Market risk – Counterparty defaults
Market risk, CCR losses and CVA	CSV_MR_CVA	Market risk – CVA
Market risk, CCR losses and CVA	CSV_MR_AFS_HEDG	Market risk – Non-sovereign AFS within hedge accounting portfolios
Market risk, CCR losses and CVA	CSV_MR_AFS_FVO_OTHER	Market risk – AFS / FVO non-sovereign - except hedge accounting portfolios
Market risk, CCR losses and CVA	CSV_MR_SOV	Market risk – Sovereign
NII	CSV_NII_SUM	NII summary
NII	CSV_NII_CALC	NII calculation
Conduct risk and other operational risk	CSV_OR_GEN	Conduct and other operational risk losses
Conduct risk and other operational risk	CSV_OR_CON	Material conduct risk losses
REA	CSV_REA_SUM	Risk exposure amount summary
REA	CSV_REA_STA	Risk exposure amount – standardised approach floor
REA	CSV_REA_IRB	Risk exposure amount - IRB approach floor

Section or topic	Template name	Description
REA	CSV_REA_MR_CVA_SA	Risk exposure amount market risk and CVA (Simplified Approach)
REA	CSV_REA_MR_CVA_CA	Risk exposure amount market risk and CVA (Comprehensive Approach)
Non-interest income and expenses / P&L	CSV_P&L	Evolution of P&L
Capital	CSV_CAP	Capital

Table 9: Overview of transparency templates

Section or topic	Template name	Description
N/A	TRA_SUM	Summary adverse/baseline scenario (stress test results)
Credit risk	TRA_CR	Credit risk (loss projection)
Credit risk	TRA_CR_SEC	Credit risk – Securitisations (risk exposure amount projection)
Market risk, CCR losses and CVA	TRA_MR_SOV	Market risk – Sovereign (exposures starting point)
REA	TRA_REA	Risk exposure amount (projection)
Non-interest income and expenses / P&L	TRA_P&L	P&L (projection)
Capital	TRA_CAP	Capital (projection)
N/A	TRA_NPE	Information on performing and non-performing exposures (historical)
N/A	TRA_FORB	Information on foreborne exposures (historical)

Annex II: Sample of banks

Country	Bank
AT	Erste Group Bank AG
	Raiffeisen-Landesbanken-Holding GmbH
BE	KBC Group NV
	Belfius Banque SA
DE	Deutsche Bank AG
	Commerzbank AG
	DZ Bank AG Deutsche Zentral-Genossenschaftsbank
	Landesbank Baden-Württemberg
	Bayerische Landesbank
	Norddeutsche Landesbank Girozentrale
	Landesbank Hessen-Thüringen Girozentrale
	NRW.BANK
	Volkswagen Financial Services AG
	DekaBank Deutsche Girozentrale
DK	Danske Bank
	Nykredit Realkredit
ES	Jyske Bank
	Banco Santander S.A.
	Banco Bilbao Vizcaya Argentaria S.A.
	Criteria Caixa Holding
ES	BFA Tenedora de Acciones S.A
	Banco Popular Español S.A.
	Banco de Sabadell S.A.
FI	OP-Pohjola osk
	BNP Paribas
	Crédit Agricole Group
FR	Société Générale
	BPCE
	Confédération Nationale du Crédit Mutuel
FR	La Banque Postale
GR	National Bank of Greece S.A. ⁹
HU	OTP Bank Nyrt.
IE	The Governor and Company of the Bank of Ireland
	Allied Irish Banks plc
IT	Unicredit SpA
	Intesa Sanpaolo SpA

⁹ Covered by the ECB's Comprehensive Assessment 2015 and therefore not assessed in the EU-wide stress test 2016

Country	Bank
	Banca Monte dei Paschi di Siena SpA
	Banco Popolare - Società Cooperativa
	Unione di Banche Italiane Società Cooperativa per Azioni
	ING Groep N.V.
NL	Coöperatieve Centrale Raiffeisen-Boerenleenbank B.A. (RABO)
	ABN AMRO Group N.V.
	N.V. Bank Nederlandse Gemeenten
NO	DNB Bank Group
PL	Powszechna Kasa Oszczednosci Bank Polski SA
	Nordea Bank - group
SE	Svenska Handelsbanken - group
	Skandinaviska Enskilda Banken - group
	Swedbank - group
	HSBC Holdings Plc
UK	Barclays Plc
	The Royal Bank of Scotland Group Public Limited Company
	Lloyds Banking Group Plc