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2011 EU-Wide Stress Test:

Methodological Note

Version 1.1

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1. Background and introduction

1. The European Banking Authority (EBA) was established on 1 January 2011 with a broad remit including safeguarding the stability of the financial system. One tool that the EBA is required to use in this respect is to undertake European Union (EU) wide stress tests. Building on the experience of the two previous EU-wide stress tests undertaken by the EBA's predecessor, the Committee of European Banking Supervisors (CEBS), the EBA is conducting, in coordination with national supervisory authorities, the European Systemic Risk Board (ESRB), the European Central Bank (ECB) and the European Commission, a stress test on a wide sample of banks in the first half of 2011. This stress test is part of the framework for the assessment of the resilience of the financial sector being built by the European System of Financial Supervision (ESFS) and will be carried out in parallel with stress tests undertaken by the European Insurance and Occupational Pensions Authority (EIOPA).
2. The stress test is one of a range of supervisory tools used for assessing the strength of individual institutions as well as the overall resilience of the system.
3. In the design and conduct of the 2011 exercise, the EBA took into account areas where improvements from the 2010 exercise were deemed necessary as a result of a "lessons learnt" analysis conducted by the EBA and the authorities which participated in the definition of the exercise. The EBA also took account of requests received by various EU bodies such as the Economic and Financial Affairs Council (ECOFIN) and the Economic and Financial Committee (EFC).
4. The exercise is conducted on a bank-by-bank basis, at the highest level of consolidation, at the level of each participating Member State. Banks' calculations will be rigorously reviewed and challenged by the respective national supervisors before being analysed, discussed and aggregated by the EBA, which will conduct in-depth consistency checks and challenge the results with national supervisors.
5. This document has been prepared with the intention to provide the banks with adequate support in performing the 2011 EU-wide stress by the illustration of the objective, scope, scenarios, common definitions and assumptions. The exercise templates used for collecting data and results from the banks are an important part of this document, integrating this note when appropriate.
6. This note covers the scope, timeline and objectives of the exercise and then provides detailed information on the scenarios and methodologies. The structure of the note largely follows the structure of the balance sheet and P&L and therefore a number of headings are included for completeness but simply cross refer to other points. A list of acronyms is included at the end of the note.

2. Objectives of the exercise and relation with other stress tests

2.1 Objectives

7. The objective of the stress test is to assess the resilience of the EU banking system, and the specific solvency of individual institutions assessed, to hypothetical stress events under certain restrictive conditions.
8. This is a micro-prudential stress test focused primarily on assessing banks in a bottom-up manner in a way which is conservative and consistent across the EU.
9. The increasing level of aggregate information among policy makers on the European financial system as a whole will provide relevant input to the ESRB and the EBA for the definition of warnings and recommendations as well as promoting, in cooperation with the national supervisors, the adoption by the single institutions of appropriate measures and action plans where necessary.
10. In order to increase the transparency of the exercise and to provide more granular information to the markets and wider audience, and given the specific market circumstances under which banks currently operate, the bank-specific outcomes of the exercise will be publicly disclosed and, where appropriate, they will be supported by individual follow-up actions.

2.2 Relation of the EU-wide stress test with the results of the ICAAP assessment, national stress test and supervisor review process

11. Banks are required to undertake a wide range of stress tests with a wide variety of objectives, for example, stress testing specific portfolios may be undertaken to assess risk management systems and the adequacy of limits, or stressing certain business lines to assess the appropriateness of a particular business strategy within an institutions' stated risk appetite. Under existing EU-wide guidelines for stress testing, institutions are also required to submit a firm wide stress test as part of their ICAAP under the Pillar 2 supervisory review of the bank to assess their solvency in adverse economic conditions. This is done on an idiosyncratic basis using scenarios, definitions, assumptions and methodologies that are specifically tailored for the institution in question and the results are used as part of the broader supervisory review.
12. Similarly, some national supervisors undertake stress tests of individual banks and national banking systems, or subsets thereof, for their own purposes.

13. Whilst institutions and supervisors may make use of the outcomes of the ICAAP stress test or national supervisory reviews when performing the EU-wide stress test, the stress tests should not be confused. They are likely to have different objectives and will certainly employ different scenarios, assumptions and methodologies.
14. Furthermore, ordinary forecasts of the banks should not be confused with the baseline scenario.

3. Overview and main features of the exercise

3.1 Timeline

15. The preparatory phase of the exercise started in the last quarter of 2010 with the analysis and the consideration of the "lessons learnt" from the 2010 exercise. At the beginning of March 2011, an agreement between all involved parties including the EBA, the national supervisory authorities (NSAs), the ECB and the EU Commission was reached on the main features of the macro-economic scenarios.
16. The exercise was launched on 4 March 2011.
17. The banks will submit their results to their respective NSA at a time to be agreed upon on a national level but well in advance of the deadline for NSAs to submit the results to the EBA on 29 April 2011. NSAs are expected to have conducted reviews and quality assessment checks of the results before their submission to the EBA.
18. The EBA will then lead a period of quality assurance based on expert review of the results and methodologies used. This will cover assessment of the results against historical experience, assessment against peers and against top-down benchmarks provided by the ESRB/ECB. Appropriate peer review will be based on different geographic diversification, business and dimensions. This period will involve further interaction with NSAs and relevant banks as appropriate.
19. The period of review will be completed by end May 2011.
20. Endorsement of the aggregate results is expected by the EBA Board of Supervisors in June 2011.
21. Publication of the results can be expected during June 2011, together with the disclosure of back-stop measures to support banks identified as having specific vulnerabilities in the test.

3.2 Scope of the exercise

3.2.1 Sample of banks subject to the exercise

22. The 2011 EU-wide stress test exercise is carried out on a broadly similar group of banks as the 2010 exercise covering over 65% of the EU banking system total assets, and at least 50% of the national banking sectors in each EU Member State, as expressed in terms of total consolidated assets as of end of 2010.
23. Banks have been included in the exercise in descending order of their market shares by total assets in each Member State, without any omissions. As the exercise is conducted at the highest level of consolidation, covering all subsidiaries and branches operating in foreign countries, this effectively means that if the market share in terms of total assets of EU banks' subsidiaries and branches in any given Member State was more than 50%, no other bank has to be included from that Member State, unless they wish to do so on a voluntary basis.
24. The sample of institutions is diverse in terms of size, business models and risk profiles of institutions, allowing the EBA to assess impacts caused by the macro-economic scenario on specific portfolios located in the same country.

3.2.2 Risk factors tested

25. The focus of the 2011 exercise, as in 2010, is primarily on assessing credit and market risks to understand specific weaknesses in the solvency of banks. Both trading and banking book assets (including off-balance sheet exposures) are subject to stress at the highest level of consolidation of the banking group (or banking arm of a financial conglomerate).
26. The focus on credit risk is fully in line with the outcomes of the regular EBA micro-prudential risk assessments, which highlighted the credit risk and associated losses as a top source of concern for major cross-border banking groups.
27. There is also a specific focus on the exposure to sovereign risk by the application of a country specific shock on the sovereign spread.
28. Although the focus of the exercise remains on credit and market risks, capital requirements for operational risk are also taken into account in the exercise by computing a proxy of year-on-year changes in operating profit of the participating institutions, with the actual capital charge as of year-end of 2010 acting as a floor.
29. Liquidity risk is not specifically assessed as part of this stress testing exercise. As publicly announced by the EBA in January, the liquidity profile of relevant institutions is being assessed by a specific thematic review which is for supervisory purposes.

30. Nevertheless, the 2011 EU-wide stress test does assess the evolution of the cost of funding connected to the specific financial structure of the banks in question and, in particular, assesses the impact of sovereign stress on funding costs of relevant institutions.

3.2.3 Scope of consolidation

31. The scope of consolidation (for risk weighted assets (RWA) and own funds, profit and loss (P&L) and Balance Sheet (BS)) is the perimeter of the banking group as defined by the CRD¹. The elimination of insurance activities² is to be done both from the balance sheet and the revenues and costs side of the P&L.

3.3 Time horizon and reference date

32. The exercise will be carried out on the basis of the consolidated year-end 2010 figures (both for banking and trading book) and the scenarios will be applied over a period of two years – 2011 and 2012.
33. The time horizon of two years is consistent with the approach used in the 2009 and 2010 exercise and most current stress testing practices of institutions and national authorities, as well as in line with the principles set forward in the CEBS/EBA Guidelines for stress testing³.

3.4 Conduct of the exercise by institutions and national supervisors

34. The exercise will be conducted on a bank-by-bank basis as a centrally coordinated process, where the responsibility for the actual conduct of the stress tests lies with NSA of the banks subject to the guidelines provided by the EBA and the ECB and as agreed by all participants.
35. Given the relatively diverse sample of banks covered by the exercise both in terms of their size and complexity, but also sophistication of risk management techniques, the actual conduct of the exercise will vary. Most of the cross-border banking groups in the sample are going to be tested in a bottom-up fashion, using internal models and granular portfolio data. Less complex institutions will be subject to a simplified stress test, based on national supervisors and reference parameters provided by the ECB.

¹ Bank employees' defined-benefit pension funds shall be taken into account.

² Material insurance holdings should be deducted for the calculation of the capital in accordance with the CRD rules.

³ See: http://www.eba.europa.eu/documents/Publications/Standards---Guidelines/2010/Stress-testing-guidelines/ST_Guidelines.aspx

36. Regardless of the way the exercise will be conducted, the supervisory authorities will discuss the results of the exercise with the banks involved and, where appropriate, challenge the results, data, parameters, business and other key assumptions used in the exercise, before submitting them to the EBA.
37. Although some differences are expected in the way the macro-economic scenarios will be translated into the relevant risk parameters and the impacts on the P&L, Capital and RWA of the different banks, the results are expected to be substantially consistent for comparable portfolios/ institutions and recent historical trends.
38. Parameters and overall results will be analysed and submitted to the EBA for a challenging process with each of the participating authorities. In order to further increase the overall consistency of the approaches and methodologies used, especially for the exercises run directly by the banks, the EBA will carry out, in May 2011, a special peer review exercise with the participation of representatives of different NSAs, ESRB and ECB. At this meeting parameters used in the exercise will be discussed and commonly analysed in a way that will not compromise the confidentiality of individual parameters and proprietary information.
39. A Questions and Answers mechanisms (Q&A) will be set up by the EBA to support the banks and the NSAs in the implementation of the stress test.

3.5 Treatment of future regulatory changes

40. The general principle applied in the conduct of this exercise is that future regulatory changes will only be captured if they actually come into force during the period of the assessment (2011 and 2012) and then only to reflect the reality of meeting regulatory solvency requirements at that time. Therefore, all the new rules that will enter into force in 2011-2012 will be appropriately taken into consideration.
41. Regulatory changes introduced in the revisions of the CRD (i.e. CRD III⁴ for market risk requirements; ending period for the application of the transitional provisions in CRD regarding past-due and collateral) agreed before the end of December 2010 and entering into force in the time horizon of the exercise will be taken into account following the implementation schedule of the CRD. Any practical issues regarding the implementation of specific points and provisions may be addressed, if necessary, during the conduct of the exercise by means of Q&As.
42. Given the time horizon of the exercise there is no intention to front-run the implementation of Basel III and CRD IV provisions, therefore the regulatory changes affecting primarily capital are not considered in the exercise.

⁴ Directive 2010/76/EC.

4. General features of the exercise and scenarios

43. The stress test uses a set of baseline and adverse macro-economic scenarios developed in close cooperation with the EU Commission and the ESRB/ECB. The scenarios cover the period of 2011 - 2012. Both macro-economic scenarios have been commonly agreed by participating authorities.
44. For the purposes of the trading book stress test as well as to address the sovereign risk component of the exercise, a set of stressed market parameters will be directly applied on the trading book positions (see Section 4.2). The parameters developed for the market risk stress test are broadly consistent with the macro-economic scenarios, and therefore could be considered as directional, meaning that depending upon the size and direction of their exposures, banks may make gains on certain portfolios, reducing the overall amount of stress coming from the market risk parameters.
45. The exercise also uses a number of stringent assumptions aimed at ensuring overall consistency of the exercise as well as common definitions based on the common EU regulatory and reporting frameworks.

4.1 General features of the macro-economic scenarios

46. The baseline scenario is mainly based on the Autumn 2010 European Commission forecast⁵. The baseline scenario foresees a continuation of the economic recovery currently underway in the EU. GDP is projected to grow by around 1.7% in 2010-11 and by around 2% in 2012 (1.5% and 1.8% respectively for the euro area countries). A better than expected performance so far underpins the significant upward revision to annual growth compared to the spring 2010 forecast. While the recovery is becoming increasingly self-sustaining at the aggregate level, progress across Member States remains uneven, with the recovery set to continue, advancing at a relatively fast pace in some, but to lag behind in others. This reflects differences in the scale of adjustment, challenges across economies and ongoing rebalancing within the EU and euro area (see Annex 1 for more details on the baseline macro-economic scenario).
47. The adverse scenario developed by the ECB is composed of three elements:
 - (i) a set of EU shocks – mostly tied to the persistence of the ongoing sovereign debt crisis;
 - (ii) a global negative demand shock originating in the US; and
 - (iii) a USD depreciation vis-à-vis all currencies.
48. Combining the effects of the EU-specific shocks and results for the external environment, the overall effect of the scenario is a reduction of both EU and

⁵ See http://ec.europa.eu/economy_finance/eu/forecasts/2010_autumn_forecast_en.htm

euro area real GDP growth by around 2 percentage points in both 2011 and 2012. EU Harmonised Index of Consumer Prices (HICP) inflation would also be lower, albeit to a lesser degree, by 0.6 percentage points in 2011 and by 1.3 percentage points in 2012 (0.5 and 1.1 percentage points for the euro area respectively).

49. In order to derive the resulting adverse scenario path, the deviations above are applied to the baseline scenario produced by the EU Commission in its Autumn 2010 forecast. This would lead to a fall in EU real GDP by 0.4% in 2011, with zero growth in 2012. In the euro area, real GDP growth would be negative, at -0.5% in 2011 and at -0.2% in 2012. Annual average HICP inflation would be in the EU at 1.5% in 2011 and 0.5% in 2012, with 1.3% and 0.6% in the euro area respectively for the two years (see Annex 2 for more details on the adverse macro-economic scenario).
50. Table 1 below provides the brief overview of the major scenario elements for the EU and euro area in comparison to historical development and macro-economic scenarios used in the 2010 EU-wide stress test, whilst Chart 1 puts the stress scenarios into a historical perspective.

Table 1. Evolution of aggregate key macro-economic variables in the scenarios

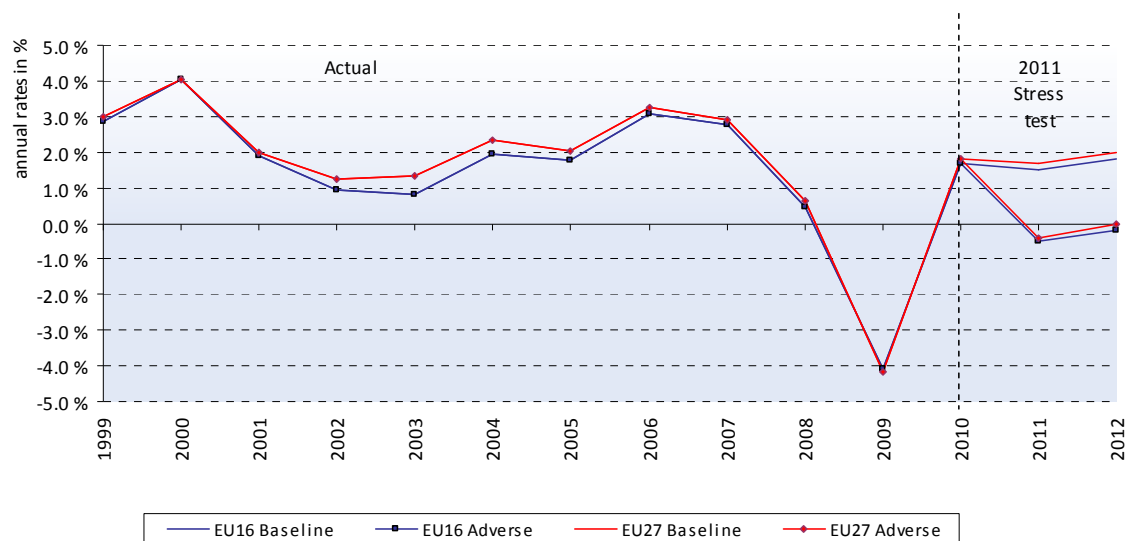
| | Realised | | | 2010 Exercise | | | | 2011 Exercise | | | |
|----------------------------------|----------|-------|-------|---------------|-------|---------|-------|---------------|------|---------|-------|
| | | | | Baseline | | Adverse | | Baseline | | Adverse | |
| | 2008 | 2009 | 2010 | 2010 | 2011 | 2010 | 2011 | 2011 | 2012 | 2011 | 2012 |
| EU27 | | | | | | | | | | | |
| GDP (y-o-y) | 0.7% | -4.2% | 1.8% | 1.0% | 1.7% | 0.0% | -0.4% | 1.7% | 2.0% | -0.4% | 0.0% |
| Unemployment (% of labour force) | 7.0% | 8.9% | 9.6% | 9.8% | 9.7% | 10.5% | 11.0% | 9.5% | 9.1% | 10.0% | 10.5% |
| Euro area | | | | | | | | | | | |
| GDP (y-o-y) | 0.6% | -4.1% | 1.7% | 0.7% | 1.5% | -0.2% | -0.6% | 1.5% | 1.8% | -0.5% | -0.2% |
| Unemployment (% of labour force) | 7.5% | 9.4% | 10.0% | 10.7% | 10.9% | 10.8% | 11.5% | 10.0% | 9.6% | 10.3% | 10.8% |

Notes: GDP changes for realised is real GDP growth rate

Source: Eurostat for realised figures, stress test scenarios

51. Comparing the macro-economic scenarios to the 2010 stress test, it should be noted that in the 2011 scenario the GDP shock for the EU has a cumulative deviation from the baseline over two years of 4 percentage points. This compares to 3 percentage points in the 2010 scenario. The probability that the scenario proposed this year will occur is materially lower than last year, in part because of the current economic situation and because the forecasts are more favourable.

Chart 1. Real GDP growth for EU27 and euro area under the baseline and adverse scenarios in comparison to historical developments



Source: Eurostat up to 2010, 2011-2012 stress test scenarios

4.2 General features of the trading book stress test

52. Apart from the sovereign risk shock modelled via the valuation haircuts, the exercise employs a detailed and granular set of market risk parameters provided by the EBA and ECB (see Annex 4).
53. The set of parameters, consistent with the general direction of the macro-economic scenarios, includes assumptions on interest rates and volatilities for major currencies (EUR, GBP, USD); exchange rates and volatilities for the aforementioned currency pairs; haircuts and changes in volatility for major equity commodity and debt instrument indices; changes in credit spreads for debt instruments; as well as bid/ask spreads to be used for the assessment of the impact on the market liquidity.
54. To highlight some of the key features, the baseline scenario assumes invariance in the equity prices, while the adverse scenario envisages a differentiated drop of between -10% up to -20% (-15% in Europe)⁶. For AFS and other exposures subject to fair value (specifically equity⁷) these assumptions are translated into analogous haircuts in the baseline and adverse scenarios during the two years.

⁶ See Table 2 in Annex 4.

⁷ Funds exposures are subject to the haircuts defined in Table 2 of Annex 4.

55. For the computation of the impact from the market risk shocks, the assumption will be that instantaneous shocks⁸ (both baseline and adverse) are applied to trading book positions as of 31 December 2010. The different portfolios and books will be stressed using the most appropriate parameters from the set provided. For presentation purposes, the impact of the resulting shock will be distributed equally between 2011 and 2012 results.
56. It should be noted that the parameters are in line with the macro-economic scenarios and therefore could be considered as directional, allowing for compensation between gains and losses on different portfolios.
57. The results (losses) of the shocks (sovereign + others) will be used to adjust the net trading income forecasts of the banks.
58. The market risk parameters depend on the scenario assumptions for the evolution of some macro-financial variables: short- and long-term interest rates; exchange rates; and stock prices. In terms of deviations from the baseline scenario, European stock prices are assumed to be 15% lower, the USD to be 11% weaker against all major (non-pegged) currencies, short-term interest rates to be higher by 125 basis points and long-term euro area sovereign bond yields to be higher on average by 75 basis points. Commodity prices remain unchanged.
59. Those assumptions are translated, via a satellite multi-equation market risk model, to an internally consistent set of stressed market risk parameters. The model specification is selected on the basis of standard information criteria combined with sign restrictions on coefficients set up to ensure that the response to the shock is broadly in line with economic theory. This modelling framework covers non-European stock prices, credit spreads, swap rates, volatility parameters, and macro-financial variables in the emerging markets. The satellite model does not cover dividends, Asset Backed Securities (ABS), Residential or Commercial Mortgage Backed Securities (RMBS or CMBS) credit spreads, market liquidity and counterparty credit risk adjustments, which are all calibrated separately on the basis of expert judgment, under the lead of EBA.
60. The stressed market risk parameters are constructed as the 25th/ 75th percentile from the density forecast generated by the model, conditional on the adverse macro-economic scenario. The choice of the specific percentile has been motivated by the need to take into account a possible overshooting of market risk parameters as well as to mitigate the impact of model uncertainty on the results. As the forecast covers a horizon of two years and the trading book stress is envisaged as an instantaneous shock, the stressed risk parameters are fixed at the minimum/ maximum value over the forecast horizon (2011-2012).
61. The parameters for emerging market country groupings were proxied by a sample of countries that are considered to be representative for each grouping and for which sufficiently long time series are available (dating back at least to 2002/03). The shocks affecting the group of "other

⁸ No guidance is provided on the rollover of the trading book assets because the shock is applied instantaneously.

developed countries” were calibrated as the average of shocks hitting the euro area, the US, the UK, and Japan.

62. Although the macro-economic scenario does not involve a shock to commodity prices, a small and transitory shock of 5% was assumed for all commodities which subsides immediately after the end of the holding period for the trading book. Due to its transitory character, this shock does not need to be fed back into the adverse macro-economic scenario, as in particular its potential impact on the macro-economic outlook would have been negligible.
63. The baseline market risk parameters are calibrated by the ECB, using the median of the density forecast conditional on the macro-financial variables taking values prescribed in the macro-economic baseline scenario. Relevant adjustments were applied to some parameters where the raw output of the satellite model suggested a substantial improvement compared to the current market outlook.
64. Banks are requested to apply market risk parameters under the baseline and adverse scenarios according to Tables 1 and 2 of Annex 4 (Trading book stress test and sovereign haircuts). As the shocks to the market risk parameters are directional, banks may record gains on a specific asset class in their trading books, and are allowed to book those gains.
65. Over the time horizon the notional value of the trading book portfolios is expected to be stable. The fair value of the assets will reflect the profits or losses (see Section 5.4.11) resulting from the application of the market risk shocks.

4.3 Treatment of securitisation transactions

66. For capital requirement purposes, a specific approach is applied in the exercise on the securitisation exposures in the banking book (securitisation exposures in the trading book are stressed along with the rest of the trading exposures).
67. All exposures (traditional and synthetic, re-securitisations, as well as liquidity lines on securitisation transactions) for which there is a significant risk transfer (as in the meaning of the CRD⁹) are included in the scope of the exercise.
68. The exercise takes into account the forthcoming changes in the CRD (see Section 5.5.3), notably proposals included in CRD III. A specific treatment is also defined for the computation of RWA on the securitisation positions in the trading book.
69. The stress is applied to the securitisation positions (Standard and IRB portfolios) in the different credit quality step at December 2010 of direct increased risk weighted in substitution of the original ones. The increased

⁹ See 2006/48/EC Annex IX, Part 2

RW reflects the effect on RWA due to the potential rating migration of the positions in the baseline and in the adverse scenario.

70. For this purpose, the securitisation positions have been allocated to two different classes of securitisations, high risk and medium risk assets, whereas the differentiation is based on the credit quality of the position, the structure or asset class respectively of the transaction and regional differentiation. The classification is based on an analysis of the historical migration volatility of different products and their origin, where a higher migration probability indicates higher risk. In particular:

- US ABS, EMEA ABS, US CMBS, EMEA RMBS and positions in Asset Backed Commercial Paper (ABCP) programs are classified as medium risk assets;
- All the other asset classes (i.e. EMEA CMBS, US RMBS, EMEA and US Collateralised Debt Obligations (CDO) as well as re-securitisations) are considered as high risk assets.

71. When external ratings are not available and the banks use internal methods (Supervisory Formula Approach and Internal Assessment Approach (SFA and IAA)), for RWA-calculation purposes, the banks shall apply the stress factors for unsecuritised corporate or retail exposures to the risk components (PD, LGD) of the asset pool in the respective segment. In this case, as a precondition, the IRB banks will have to demonstrate to the respective National Supervisors that the internal methods can be adjusted in a way that is consistent with the scenarios.

4.4 Static balance sheet, zero growth and constant business mix assumption

72. For simplicity and consistency, the EBA stress test will be conducted on the assumption of a static balance sheet. The zero growth 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 the similar financial instruments in terms of type, credit quality at date of maturity and residual maturity as at the start of the exercise (e.g. 10-year bond with residual maturity of one year is to be replaced with the same 10-year bond with one year remaining maturity, with yield determined by the macro-economic scenario)¹⁰. Defaulted assets will not be replaced, effectively meaning that the balance sheet would reduce due to impairments. The static balance sheet assumption should also be assumed for assets and liabilities denominated in currencies other than Euro, hence the effect of currency fluctuations should not affect the enforcement of this assumption.

73. Furthermore, it is assumed in the exercise that institutions maintain the same business mix and model (geographical and product strategies and operations) throughout the time horizon. With respect to the P&L, revenue

¹⁰ It should be noted that the treatment of the trading book assets is different (see Section 4.2)

and cost assumptions should be in line with the constraints of zero growth and a stable business mix.

74. No workout of defaulted assets is assumed in the exercise, so the entire portfolio will stay constant, although the proportion of defaulted assets in the total portfolio will increase at the expense of the proportion of non-defaulted assets.

4.4.1 Exemptions

75. Any regulatory imposed decisions, including restructuring plans agreed with the EU Commission or other legally binding agreements or plans publicly disclosed before 30 April 2011 and taking place within the time horizon of the exercise (2011-2012), will be incorporated in the assessment.

76. For such decisions, banks will be requested to provide:

- a. calculations of impact of the stress, with and without the effects of such restructuring plans, which will be separately requested in the exercise templates;
- b. specific evidence on the impacts of such restructuring plans on the forecast evolution with the balance sheet, profit and loss, RWA and capital;
- c. a description of the arrangements (de-leveraging/ restructuring/ asset protection etc.),
- d. information on business line(s) affected;
- e. legal nature of the arrangements (i.e. legally binding element of the agreement or contract e.g. EU State Aid agreement or published Board agreement etc.);
- f. external actors involved (e.g. national governments, EU Commission or IMF); and
- g. information on the timelines, including the start date of the legally binding agreement and timeline for the action (i.e. dates when transaction will be completed in 2011-2012).

4.5 Reporting definitions

77. Balance Sheet and Profit & Loss figures should be reported according to definitions in the FINREP reporting framework and IFRS Accounting Standards¹¹.
78. RWA, EAD, PD, LGD should be reported according to the definitions in the COREP reporting framework and the CRD. For the purposes of the exercise the mapping of the respective values is done based on the regulatory portfolios as defined in the CRD. Impairments should also be mapped to regulatory portfolios and as defined in the exercise templates.
79. For the purposes of the exercise, the definition of default should be based on the CRD definition and the appropriate transitional arrangements as specified in the CRD.

5. Application of the macro-economic scenarios

5.1 General principles

80. The banks must translate the macro-economic scenarios provided into income, expenses, loan losses (disaggregated into Forecast Default Rates (FDR) and Loss Given Default (LGD)) and capital requirements (disaggregated into Regulatory probability of default (PD) and Downturn LGD) forecasts. These forecasts will differ according to the bank's business model, loan portfolio and internal models.
81. The national supervisors and EBA will critically assess the results, all forecasts, the basis of all of their assumptions and will at all times reserve the right to overrule and challenge any bank's assumptions and outputs and can require adaptations.

5.1.1 Data sources

82. The banks are encouraged to make use, where appropriate, of all the available time series on credit risk parameters and P&L figures. In any case, the use of historical data shall be done ensuring adequate consistency between the characteristic of the sample and the portfolios (countries/ sectors) on which they are applied.
83. In the exercise templates, banks should fill in the parameters used for computing expected losses on different portfolios. The banks will be requested to provide information on the characteristic of the data set (length, sample and different perimeter of application).

¹¹ In exceptional circumstances, it is possible that local GAAP may be allowed when permitted by national regulations.

84. In the iteration with the banks, national supervisors will reserve the right to address specific requests regarding the collection of historical figures and more granular data (compared with the breakdown in the exercise templates) and also regarding the parameters used on the different portfolios for the computation of the expected losses. In particular, specific requests to the banks may be addressed when the relevant risk parameters used by the banks differ substantially from historical observations and recent trends of the banks, and from benchmarks of peers.

5.1.2 Use of internal models and simulation techniques

85. Banks are expected to translate the key macro-economic variables on their balance sheet by the estimation of the expected evolution in the value of the assets and future profitability of the business (P&L). This generally requires the use of statistical methodologies (satellite models) and simulation techniques ('what-if' analysis) that estimate the link between macro-economic variables and banking variables (default rates, losses).
86. The evolution of the PDs (PIT) and LGDs (PIT) forecasted by the application of the satellite models must be used for the computation of the defaulted asset flow and the impairment flow on defaulted assets.

5.1.3 Benchmark parameters

87. The conduct of the exercise will also be supported by a set of benchmark risk parameters. These benchmark parameters will be computed by the ECB on a country and sector basis (not institution specific). These benchmarks are intended as a reference point and larger and complex institutions will be expected to use their own internal models and risk parameters.
88. The benchmark parameters will represent the translation of the macro-economic scenarios for the banking book exposures (except for securitisation exposures, which are tested with a separate methodology), into a set of risk parameters. Benchmark risk parameters are projected over the time horizon of 2011 to 2012, consistently with both the baseline and adverse macro-economic scenarios.
89. The use of benchmark risk parameters will depend on the approach chosen by institutions and supervisors to run the stress test. Larger cross-border institutions in the sample with access to better modelling and risk quantification techniques will be expected to follow predominantly bottom-up approaches and the macro-economic scenarios should be translated using institutions' models and impact on the institutions' own risk parameters.
90. In the case of top-down approaches, largely used for a smaller and less complex banks in the sample, NSAs will use their or banks' best estimates for PD (PIT) and LGD (PIT). If projections under the macro-economic scenarios are not available, levels for 2010 will come from the banks or from

the national supervisors, and relative changes of the parameters provided by the ECB in 2011 and 2012 will be applied. In any case, it is expected that the ECB benchmark parameters are considered and challenged.

5.2 Assets and liabilities

91. Table 2 below provides an overview of the assets and liabilities subject to the application of the baseline and adverse scenarios (macro-economic and market risk factors).

5.2.1 Loans (all IFRS/FINREP portfolios named loans and receivables in the banking book)¹²

Substitution of defaulted and due assets in the time horizon

92. Banks are not allowed to replace defaulted assets. Furthermore, it is assumed that no charge-offs or write-offs take place within the two year horizon.
93. It is prescribed that the maturing assets must be replaced with assets having the same quality and risk characteristics at the maturing date in under each the relevant (stress) scenario or rolled over on the same conditions (for revolving exposures). See also Section 4.4 for maturing assets.

¹² The majority of the loans and receivables will clearly be allocated in the "Loans and receivables (including finance leases)" portfolio but, for reasons of completeness, all the loans and receivables in the banking book shall be included.

Table 2. Overview of the assets and liabilities subject to the application of the baseline and adverse scenarios

| Items | Scenarios/shocks | Items | Scenarios/shocks |
|---|--|---|------------------------------|
| 1.1 Assets (*) | | 1.2 Liabilities (*) | |
| Cash and cash balances with central banks | = | Deposits from central banks | = |
| Financial assets held for trading | Market risk parameters | Financial liabilities held for trading | Market risk parameters |
| Financial assets designated at fair value through profit or loss (equity, funds) | Market risk parameters | Financial liabilities designated at fair value through profit or loss | = |
| Available for sale financial assets (equity, funds) | Market risk parameters | Financial liabilities measured at amortised cost (deposits, debt certificates, subordinated liabilities, other financial liabilities) | Macro-economic scenario |
| Loans and receivables (including financial leases), debt instruments and loans and advances | Macro-economic scenario (PDs and LGDs) | Financial liabilities associated with transferred financial assets | Only for restructuring plans |
| Held to maturity investments (debt instruments, loans and advances) | Macro-economic scenario (PDs and LGDs) | Derivatives - Hedge accounting | Market risk parameters |
| Derivatives - Hedge accounting | Market risk parameters | Fair value changes of the hedged items in portfolio hedge of interest rate risk | Market risk parameters |
| Fair value changes of the hedged items in portfolio of hedge of interest rate risk | Market risk parameters | Provisions (restructuring, pending legal issues, pensions and other post retirement obligations, loan commitments and guarantees, other provisions) | Macro-economic scenario |
| Tangible assets | | Tax liabilities (current and deferred tax liabilities) | Macro-economic scenario |
| Property, plant and equipments | = | Other liabilities | Macro-economic scenario |
| Investment property | Macro-economic scenario (real estate prices) | Share capital repayable on demand (e.g. cooperative shares) | = |
| Intangible assets | | Liabilities included in disposal groups classified as held for sale | = |
| Goodwill | Macro-economic scenario | 1.3 Equity (*) | |
| Other intangible assets | Macro-economic scenario | Issued capital, share premium and other equity | = |
| Investment in associates [subsidiaries] and joint ventures (accounted for using the equity method - including goodwill) | Macro-economic scenario | Revaluation reserves and other valuation differences on tangible and intangible assets, hedge, foreign currency translations, AFS, non-current assets held for sale, other items) | Macro-economic scenario |
| Tax assets (current and deferred tax assets) | Macro-economic scenario | Reserves (including retained earnings) | Macro-economic scenario |
| Other assets | Macro-economic scenario | Income from current year (interim dividends) | Macro-economic scenario |
| Non-current assets and disposal groups classified as held for sale | Only for restructuring plans | Minority interest | = |
| (*) FINREP templates | | | |

5.2.1.1 Defaulted assets flow (Standardised and (A)IRB portfolios)

94. The new defaulted assets (flows) will be estimated by the banks multiplying the expected default rates at the end of the year (PD'pit)¹³ and the EAD at the beginning of each year (EADt), gross of funded credit risk mitigation factors^{14,15}. See Box 1 below.

Where:

- The expected default rate at the end of the year (PD'pit) should be equal to the individual/asset class probability of default (PD'pit) after the application of the stress;
- The EAD at the beginning of each year (1 and 2) should be equal to the exposure value, as defined by the CRD, of the non defaulted assets, but gross of funded credit risk mitigation factors. The maturing assets in each year (1 and 2) are assumed to be immediately replaced in the same year by assets with the same risk and maturity profile.

95. In the estimation of the expected default rates (PD'pit) the banks are invited to explicitly take into consideration the possible impact caused by the envisaged decrease in the fair value of credit mitigants (i.e. shock on real estate prices) as well as the most recent events and trends observed by the banks on their loan portfolios before submitting the results to EBA (i.e. worsening of PIT indicators used by the banks for intercepting at an early stage signals of deterioration in the quality of their portfolios or relevant default on large counterparties).

96. For simplicity and consistency the stock of defaulted assets at the end of each year (year 1 and year 2) should be equal to the sum of the amount of defaulted assets at the end of the previous year (year 0 and year 1 respectively) and the expected defaulted flows in the year (year 1 and year 2 respectively).

Box 1. The estimation of the defaulted assets flows should be based on the expected default rate at the end of the year = PD'pit

At the end of year (1) the defaulted assets flows in year 1 should be equal to:

$$\text{Exp (0)} * \text{PD'pit (0)} = \text{Default Flows (1)}$$

¹³ The PD'pit should be normally different to the PD applied for the calculation of the RWA but either will incorporate in their evolution, according with the different sensitivities, the effect due to the macroeconomic scenario.

¹⁴ The CRM unfunded effect (counterparty substitution) is taken into account for the estimation of the PD'pit. The CRM funded instruments are not considered in the estimation of the default flows but are taken into account for the identification of the appropriate LGD'pit to be used for the estimation of the impairment.

¹⁵ The netting agreement will be recognised where it complies with the CRD for computation at the EAD.

Where:

$\text{Exp}(0) = \text{EAD}(0)$ (gross of funded CRM);

$\text{PD}'\text{pit}(0)$ = default rate expected at the end of year 0 for year 1 before the application of the scenario in year 1

$\text{PD}'\text{pit}(0)$ = default rate expected at the end of year 0 for year 1 after the application of the scenario in year 1

At the end of year 2 the defaulted assets flows in year 2 should be equal to:

$\text{Exp}(1) * \text{PD}'\text{pit}(1)$

Where:

$\text{Exp}(1) = \text{Exp}(0) - \text{Default Flows}(1)$;

$\text{PD}'\text{pit}(1)$ = default rate expected at the end of year 1 for year 2 after the application of the scenario in year 2.

(A)IRB portfolios

97. For the (A)IRB portfolios the default flows to the different rating asset classes should be done at the end of each year but avoiding releasing only the worst asset classes.
98. For this purpose, in each portfolio the total flow of defaulted assets of each year, calculated following the above mentioned procedure, should be assigned to the different rating classes in proportion to the mean EAD-weighted $\text{PD}'\text{pit}$ of the class. For instance, if the $\text{PD}'\text{pit}(0)$ after the application of the scenario is 10%, the $\text{Exp}(0)$ is 100 and the portfolio has two rating asset classes, Class 1(CL1) with a $\text{PD}'\text{pit}(0)$ of 7.5% and an $\text{Exp}(0)$ of 80 and Class 2 (CL2) with a $\text{PD}'\text{pit}(0)$ of 20% and an $\text{Exp}(0)$ of 20, the flow of defaulted assets at the end of the first year will be equal to 10. Of the total defaulted assets, six will be assigned to CL1 and four to CL2. As result, the average $\text{PD}'\text{pit}$ of the portfolio before the application of the scenario in year 2 will be 9.72% and the exposure will be 90.
99. Any deviation from this approach should be clearly justified. In any case, after the application of the scenario and the allocation of the default flow, the distribution of the assets across the different rating classes should reflect the recent historical rating migrations observed on the (A)IRB portfolios.
100. When the recent performance of the internal models in use (level of PD and LGD compared with recent historical observations of default and loss rates) by the banks is inadequate, or the satellite models have proved not to be accurate enough to estimate the evolution of the expected losses, the banks are invited, when more conservative, to make use of the ECB

parameters as a benchmark to adjust their internal estimations in the same way as for the standard portfolios.

Standardised portfolios

101. For the purpose of estimating the evolution of the defaulted assets flow after the application of the scenarios, national supervisors may allow banks to use internal models which have not been recognised for capital requirements computation, if their use is considered appropriate. This applies only if national supervisors give a positive evaluation of the use of parameters in their respective ICAAP.
102. When there are no appropriate internal models in use for estimating the PDs'pit, it is expected that banks approximate PDpit (before the application of the scenarios) using the last observation(s) of default rates at end December 2010 (or the average default rates observed in the last three years). The expected default at the end of 2011 and 2012 (baseline and adverse) will then be computed by applying the expected increase in the risk parameters to the (approximated) initial default rates (expected losses) inferred from the ECB benchmark parameters.
103. Where appropriate, for the stress testing exercise the (A)IRB banks are encouraged to extend the application of the forecast regarding the evolution of the default rates after the application of the scenario on the (A)IRB portfolios (see above) to similar portfolios (country/sector).

5.2.2 HTM, AFS portfolio and participations (other than loans and receivables)¹⁶

104. The fair value of equity assets allocated to both the "available for sale" (AFS) and those designated at fair value through profit and loss" portfolios are expected to change according to relevant shocks as applied to the trading book assets. In particular, those positions will be subjected to the application of the same haircuts as those in the trading book. All other assets will be treated as "hold to maturity" (HTM) assets.
105. All the participations, in line with the IFRS principles, shall be subject to the test of impairment in the baseline and adverse scenario. In any case, consistency shall be assured regarding the relevant parameters used in the test with the ones used in the evaluation of similar assets in the other accounting portfolios (i.e. participation in real estate holdings shall be treated as the real estate assets).

5.2.3 Trading book portfolio

106. See Section 4.2.

¹⁶ See Section 5.2.1.

5.2.4 Hedging positions

107. The hedging positions are expected to be rolled-over, i.e. no change in the hedging strategy of the banks is allowed. The fair value of the hedging positions, subject to the application of the market risk parameters must reflect the evolution of the fair-value of the assets on the balance sheets. An estimation of the increased cost for the roll-over of the hedging positions shall be reflected in the P&L.

5.2.5 Other tangible assets

108. Real estate assets (for investment purposes and not assets that are strictly functional to the business of the bank) in the bank's balance sheet will be subject to the same shock as the real estate funds in the trading book.

109. Other properties, plants and equipment are kept constant at the value of December 2010.

5.2.6 Assets and Liabilities subject to FVA (other than loans and receivables)

110. Equity, hedge funds and equity funds positions will be subject to the application of the market risk parameters.

111. Unless in the trading book, the value of the liabilities subject to fair value adjustment (FVA) shall be kept constant, not reflecting any change in the interest rates and in the credit quality (rating of the bank).

5.2.7 Funding (Wholesale and Retail)

112. Funding needs of the banks are considered stable and no change in the composition of the funding structure is allowed, including to the proportion of wholesale and retail fundings, characteristics of the instruments or the proportion of collateralised and uncollateralised funding.

113. See also Section 5.4.4.

5.2.8 Defined Benefit Pension Funds

114. Under a defined benefit pension plan, the employer (bank) makes a promise as to the post-retirement benefits the employee will receive. The bank may, and usually do, put aside assets in a separate fund that will be

used later to meet the obligations that arise from pension payments. IAS 19 requires banks to compare the value of the plan assets and the present value of the defined benefit obligations. Differences between the present value of the obligations and the value of assets should be recognised on the balance sheet.

115. Defined benefit pension funds shall be subject to the application of relevant macro-economic variables (inflation, real estate prices, stock price indexes and interest rates) as defined in the annexes on the adverse scenario and market shocks. 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 macro-economic scenario. Sovereign exposures should be subject to the haircuts defined in the macro-economic scenario.
116. The eventual shortfall of assets versus liabilities in defined benefit pension funds resulting by the application of the scenario will have an impact in the P&L and also in banks' capital. The bank is not required to recognise all actuarial gains and losses in profit or loss immediately. It should be recognised in P&L the excess over the corridor foreseen in IAS 19, divided by the expected average remaining working lives of the participating employees. The impact on bank's capital should follow national practices.

5.3 Capital

117. Capital is expected to change for the impact due to the capitalisation of profit or loss after tax and/ or for the amortisation of Tier 2 instruments in the last five years.
118. Other potential changes in the capital amount must be detailed by the banks in the "capital" of the exercise templates. See Sections 5.3.2 and 5.6.1.
119. In the time horizon, substitutions of capital instruments (step-up clause) by issuances that have the same quality (core, tier 1, tier 2, tier 3) and amount are allowed but the correct estimation of the cost of capital of the new instruments, reflecting the scenarios, must be reflected in the P&L.

5.3.1 Definition and components

120. As mentioned in Section 3.5, the exercise is based on the current regulatory regime and is not front-running regulatory changes proposed in Basel III capital accord. However, the exercise will assume a more stringent approach to the definition of capital and benchmark compared to the 2010 exercise.
121. The exact definition of capital and the threshold set up for the purposes of the exercise will be provided at a later date.

5.3.2 Government support measures

122. The public support measures introduced in the course of the financial crisis to support banks in difficulties as well as to maintain funding to the real economy can be divided into four broad categories:
- a. capital increases, through equity shares or hybrid instruments provided by governments;
 - b. guarantees of banks' assets provided by governments;
 - c. guarantees of liabilities or funding guarantees as well as liquidity provided by governments; and
 - d. liquidity support measures introduced by central banks.
123. From the above, the exercise directly takes into consideration only the capital support measures and asset guarantees received by the institutions in the sample by 30 April 2011. Government support measures publicly announced and fully committed by 30 April 2011 and not yet fully paid into the banks' capital may also be included, with sufficient supporting information on the nature of transactions and their effects (see Section 4.4.1 for full details on exemptions).
124. In any event banks will be expected to provide information with and without the effects of the government support measures, which will be separately requested in the exercise templates. Banks will also be expected to provide information on the costs paid for the capital support measures and asset guarantee received.
125. It should be noted that historical (pre-2008) participations of governments and/ or of other public bodies on banks' capital is not considered as government support. However, any subsequent increases of the government participations falling under the EU State Aid rules are considered as support measures for the purposes of this exercise.

5.3.3 Pay out

126. In the baseline scenario the estimate pay-out ratio calculated by the banks is challenged by the EBA and national supervisors taking into consideration the eventual declaration of dividend policies in the annual reports.
127. In the adverse scenario, the pay-out ratio is expected to be in line with the median of the last three years unless there is clear and compelling pre-agreed evidence that the bank will alter this behaviour.
128. For this purpose the banks shall provide the historical figures necessary for the computation (by filling in the appropriate section of the exercise templates). See the example below.

Table 3. Example of pay-out in the adverse scenario

| Year | Net income after taxes (parent company) | Dividends | Pay-out | Median |
|------|---|-----------|---------|--------|
| 2008 | 100 | 50 | 50% | 50% |
| 2009 | -50 | - | 0% | |
| 2010 | 300 | 180 | 60% | |
| 2011 | 100 | 50 | 50 | |
| 2012 | -50 | 0 | 0% | |

5.3.4 Tax effect and evolution of Deferred Tax Assets

129. The tax regimes will be treated like regulatory changes. That is as they are at present moment (December 2010) with changes only, if agreed by law and definitely coming in. Deferred tax credits, where applicable, may be recognised.

5.4 Profits and losses

5.4.1 Definitions

130. In forecasting the P&L in 2011 and 2012, banks shall make use of the definitions of profit and losses contained in the "Consolidated income statement" of the FINREP reporting. When circumstances do not allow the FINREP reporting format, the closest available equivalent of the respective national accounting standard is suggested to be used. In any case differences have to be explained and justified, providing an illustration of the differences and relative impacts.
131. The P&L base to which the evolution has to be applied is last year 2010. An exception is Section 5.4.11.1 "Ordinary net trading income before market risk shocks" where the net trading income should be in line with the average profitability of the Held for Trading (HFT) portfolio in the last five years up to 2010.
132. The P&L base should be determined in a conservative way and shall directly reflect the translation of the macro-economic scenarios, avoiding reflecting non recurrent income and expenses. Volatility of the respective P&L category is not allowed. In any case, the evolution of the P&L shall reflect the general assumption of the static balance sheet and no change in the business mix. See Section 4.4.1 for the treatment of exemptions.

5.4.2 Interest rates shocks (impact on the net interest income and timing for the application of the shock)

133. For the computation of the impact on the net interest income due to the translation of the macro-economic scenarios, banks are expected to apply the shocks (increase of the interest rates via-a-vis December 2010) on the swap curves presented in Tables 4 and 5 below on the remuneration of their assets and liabilities. For all other¹⁷ (non eurozone) emerging and non-emerging countries the banks will apply the swap curve contained in the Table 1 of Annex 4 of this document (overnight interest rates will be subject to the same shock as 3M interest rates)
134. In the time horizon of the exercise no intragroup transfers are allowed.
135. The estimation of the impact will be done by the banks using their internal procedures (e.g. Asset liability management (ALM) tools used on a regular basis) respecting the general assumptions contained in the methodological note. For example, in the static balance sheet, it means that new liabilities and new assets are allowed only for the purpose of substituting assets and liabilities due in the time horizon of the exercise. Banks also have to adapt the specific prescriptions contained in the following Sections (see Sections 5.4.3 and 5.4.4).
136. In the baseline scenario the increase in the interest rates in 2011 and 2012 will be applied linearly.
137. In the adverse scenario interest rates are applied linearly until December 2011 and then are assumed to stay constant in 2012. In 2011 the shock applied on the bank specific overnight interest rates (Euro and GBP)¹⁸ will be equal to 100 bps. To which the above mentioned linear increase applied in the baseline scenario in 2011 is added, but with a cap equal to 170 bps. In 2012 overnight interest rates are assumed to be constant and equal to 170 bps.

¹⁷ When currencies are closely pegged to the euro and interest rates are highly correlated with euro interest rates the banks should, in any case, apply the euro interest rates swap shock (Table 4).

¹⁸ For all the other emerging and non-emerging currencies the overnight interest rates will not be subject to any cap, reflecting the same shock applied on 3M interest rates.

Table 4. Shocks on Euro Interest Yield (collateralised and uncollateralised transactions)

| Short/Long Term | Baseline (shocks vis-a-vis Dec. 2010) | | Adverse (shocks vis-a-vis Dec. 2010) | |
|---|--|-----------|--|---|
| | Dec. 2011 | Dec. 2012 | Dec. 2011 | Dec. 2012 |
| Overnight | + 40 bps | + 70 bps | + 100 bps + baseline shock (40 bps at Dec. 2011); cap = 170 bps. | ON level = 170 bps (from 1st Jan. 2012) |
| Euribor 3M | + 40 bps | + 70 bps | + 195 bps | + 195 bps |
| Eur 2 Yrs | + 31 bps | + 55 bps | + 160 bps | + 160 bps |
| Eur 10 Y | + 20 bps | + 43 bps | + 125 bps | + 125 bps |
| Shocks on the yield curve to be interpolated linearly up to 10Y, constant at the level of the 10Y from that point on. | | | | |

Table 5. Shocks on GBP Libor Interest Yield (collateralised and uncollateralised transactions)

| Short/Long Term | Baseline (shocks vis-a-vis Dec. 2010) | | Adverse (shocks vis-a-vis Dec. 2010) | |
|---|--|-----------|--|---|
| | Dec. 2011 | Dec. 2012 | Dec. 2011 | Dec. 2012 |
| Overnight | + 50 bps | + 120 bps | + 100 bps + baseline shock (50 bps at Dec. 2011); cap = 170 bps. | ON level = 170 bps (from 1st Jan. 2012) |
| UK 3M | + 50 bps | + 120 bps | + 245 bps | + 245 bps |
| UK 2 Yrs | + 46 bps | + 100 bps | + 185 bps | + 185 bps |
| UK 10 Y | + 40 bps | + 70 bps | + 125 bps | + 125 bps |
| Shocks on the yield curve to be interpolated linearly up to 10Y, constant at the level of the 10Y from that point on. | | | | |

138. Regarding the application of the interest rates shocks, there is no differentiation between collateralised and uncollateralised assets and liabilities positions.

139. The evolution in the net interest income after the application of the scenarios will reflect the impact on the interest income and interest expenses (cost of funding) as detailed below.

140. No cap is applied to the interest rate shock's effect (positive or negative) on net interest income. Positive effects, however, will be stringently scrutinised and challenged in the peer review process.

5.4.3 Interest income

5.4.3.1 Interest on loans and receivables

141. The evolution in the aggregate interest income must reflect:

- a. the expected evolution in interest rates (short- and long-term) envisaged in the macro-economic scenario (see Tables 4 and 5 above) with the shocks on interest rates). In particular, an increase in the interest income is expected which is generated by loans with variable interest rates for the portion not subject to any hedging and, by loans with fixed interest rates for the portion subject to hedging;
- b. the reduction in the performing loans as a result of defaulted assets (no substitution). The reduction is assumed to be uniformly distributed, approximated by a linear distribution over the year.
- c. the substitution of loans with new loans granted due at exactly the same conditions in terms of risk, residual maturity and hedging effects, but at different interest rates in line with the change in the swap rate curve.
- d. the 50% pass-through of the change (not the level) in the banks' credit spreads (two year maturity, as presented in Table 4 of Annex 4) to the new loans granted¹⁹ (e.g. if a bank's credit spread increases by 100 bps, it is assumed that it can pass through 50bps to the interest rate charged on new loans granted).

5.4.3.2 Interest on assets held to maturity investments, available for sale or designated at fair value

142. The evolution in the interest income will reflect the rise in the interest rates, the characteristics of the assets (floating/fixed interest rates) and the prescribed substitution of the assets due with assets having the same characteristics (in terms of floating/fixed rate, issuer, typology, residual maturity).

143. For example, if a bank holds a bond having an original maturity of 10 years and a residual maturity of one year as of December 2010 it is assumed that at the beginning of 2012 the bank will substitute the bond due with another one having the same original maturity of 10 years and a residual maturity of one year.

5.4.3.3 Interest on assets held for trading

144. The forecast must be consistent with the volume and characteristic (typologies, yields) of the invested assets at the end of 2010 and changes in the macro-economic scenario.

¹⁹ Loans include all loans and receivables.

5.4.3.4 Interest on other assets

145. The income generated by the other assets must be consistent with the amount of assets at December 2010 and changes in the macro economic scenario, except where assets substitute for maturing assets (see Section 5.4.3.2).

5.4.4 Interest expenses and cost of funding

146. In implementing the static balance sheet assumption for the cost of funding, the funding structure of the banks (wholesale, deposits, short and long term, official financing) and the hedging strategy should not change over the time horizon of the exercise. Maturing liabilities are expected to be substituted with liabilities having the same residual maturity as the liabilities due. For example, if a bank has an issued bond with an original maturity of five years as of 31 December 2010, but with a residual maturity of 1 year, it is assumed that the bank shall replace the bond due at the beginning of 2012 with another bond having the residual maturity of one year.
147. The evolution of the economy envisaged in the scenarios (baseline and adverse) is expected to cause an increase in the cost of funding of the banks due to four main drivers:
- a. the increase in the short term and long interest rates (wholesale);
 - b. the rise in the banks' credit spreads;
 - c. the drop in the value of the sovereign assets used as collateral in the funding transactions (central banks, wholesale funding);
 - d. deposits (retail).

5.4.4.1 Wholesale funding (short-term and long-term)

148. Interest rates paid on funding (short-term and long-term) will increase according to the evolution envisaged in the macro-economic scenarios (see above tables on interest yields shocks).
149. The interest rates paid on the new issuances (limited to roll-over of issuances due) shall reflect the expected increase in interest rates. For example see Tables 4 and 5 above.
150. Interest rates paid on existing issuances shall reflect the expected increase in interest rates (only floating rate debt will be affected) and the eventual step-up applicable in the time horizon of the exercise (floating or fixed rate debts will be affected).

151. Wholesale funding does not include funding through institutional networks (defined according to CRD Article 80(8)).

5.4.4.2 Evolution in the bank's credit spread (perfect correlation with sovereign credit spreads)

152. In the adverse scenario, the banks' credit spreads shall be subject to the same negative evolution as sovereign credit spreads (for simplicity and consistency banks should consider the 2-year maturity as the spread to use²⁰). The increase in the banks' credit spreads will be applied on a one for one basis (i.e. 100%) on top of the above mentioned increase in the short and long-term interest rates to all the collateralised and uncollateralised wholesale funding positions maturing within the two year time horizon of the exercise.
153. For banking groups with subsidiaries in many jurisdictions, banks are permitted to use the sovereign spread of the relevant subsidiary for elements of the existing funding structure that are funded in that jurisdiction. Banks will be expected to provide evidence that this reflects their existing funding structure and no intra-group transfers are permitted.
154. On the asset side, a 50% pass-through of the change (not the level) in the two years sovereign credit spreads to the new loans granted (allowed only to substitute maturing loans in the time horizon of the exercise) is assumed (e.g. if a bank's credit spread increases by 100 bps, it is assumed that it can pass through 50bps to the interest rate charged on new loans granted (see Section 5.4.3.1)).

5.4.4.3 Interest rates increase (step-up) on existing issuances (debt or capital instruments)

155. The increase in interest rates and sovereign spreads will have an impact on the fair value of the sovereign assets (ECB haircuts) used as collateral in funding transactions (Central Banks and Wholesale). The drop in the fair value of sovereign exposures will be computed by the application of the haircuts to the assets allocated in the trading and banking books.
156. The cost of central bank (official) funding is as in the macro-economic scenario but the decrease in the fair value of the assets will make it necessary to shift collateral from wholesale funding to central bank funding. The Eurosystem (Central Bank²¹) requires the haircut-adjusted market value of the underlying assets used in its liquidity-providing reverse transactions to be maintained over time. This implies that if the value of the underlying assets falls below a certain level, the national central bank will require the counterparty to supply additional assets or cash (i.e. it will make a margin call).

²⁰ For non EEA countries see Table 2 of Annex 4.

²¹ The provision is applied taking in consideration the specificities of each central bank

157. The reduction in the fair value of sovereign debt and the need to adjust the value of collateral supporting the central bank transactions will increase the portion of uncollateralised funding of banks, causing an increase in the funding cost due to the difference between the interest rates paid for the same maturity on the collateralised and uncollateralised funding transactions (a proxy is based on the difference between Euribor and Eurepo).

5.4.4.4 Deposits from clients (retail and corporate)

158. Increased competition for funding via sight and term customer deposits is expected, especially under the adverse scenario, due to increased demand for this type of funding in the context of general increases in interest rates and increased sensitivity to interest rate shifts. Stability of average funding cost on deposits for the different typologies (sight and term deposit) and customers (retail) will be assessed during the peer review process based on the realised figures of last three years up to 2010.
159. Deposits from customers are excluded from a direct translation on the interest rates of the rise in the bank's credit spread.

5.4.4.5 Interest expenses on financial liabilities held for trading or designated at fair value

160. The forecast must be consistent with the volume and characteristics of the financial liabilities at the end of 2010.

5.4.5 Re-hedging costs

161. Banks shall estimate the cost of roll-over hedging positions at higher costs (i.e. increase in CDS premium) in a stressed market.

5.4.6 Commissions

Commissions on loan commitments

162. Commissions should be kept generally in line with the 2010 levels but the forecast may reflect the limited amount of new granted loans (substitution of maturing assets).

Commissions on trust and fiduciary activities (AUM, Custody)

163. Deviations in the amount of the commissions from last year's result should be adequately explained. The volumes of assets under management and of securities for which the banks provide custodian services are not expected to change in the time horizon of the exercise.

Commissions (others)

164. Deviations in the amount of commissions from the 2010 amount are not permitted.

5.4.7 Dividend income

165. Dividends from financial assets (participation and other equity positions, either in the trading or in the banking book) should be based on levels as at 2010 subject to the macro-economic shock.

5.4.8 Administrative costs

166. Administrative costs are expected to be stable over the time horizon of the exercise.

5.4.9 Loan losses

5.4.9.1 Stressed PDs (PIT) and stressed LGDs (PIT)

167. The impairment flows will be estimated by the banks both on defaulted and non-defaulted assets by applying expected loss impairment rates (LGDpit) to exposures.

168. The new defaulted assets will be computed by applying the expected stressed default rates (PDspit) on the initial EAD (gross of funded CRM) of the standardised and (A)IRB portfolios. For an overview on the computation of defaulted asset flow see Section 5.2.1.1.

169. The LGDpit used for the estimation of the impairments should usually be different from the LGD downturn parameter used for the calculation of the RWAs for the AIRB portfolios. For simplicity and consistency:

- on defaulted (A)IRB assets the best estimate of LGD is assumed to be equal to the LGDpit;
- write-off and positive assumptions regarding increasing recovery flows on defaulted assets are not be allowed.

170. The impairment flows on defaulted assets in year 1 should be equal to the sum of:

- the impairments on new defaulted assets in year 1;
- the increase in the impairments of the existing defaulted assets in year 0.

Box 2. Impairment Flows on new defaulted assets

The estimation of the impairment flows should be based on the expected loss impairment rate on defaulted assets at the end of the year = LGD_{pit}

At the end of year 1 the impairment flows on defaulted assets flows (Specific prov (1)) should be equal to:

$$\text{Default Flows (1)} * \text{LGD}_{\text{pit}} (0)$$

Where:

LGD_{pit} (0) = loss impairment rate expected at the end of year 0 for year 1 after the application of the scenario in year 1

Default Flows (1) has the meaning as defined in Box 1

At the end of year 2 the impairment flows on defaulted assets flows (Specific prov (2)) should be equal to:

$$\text{Default Flows (2)} * \text{LGD}_{\text{pit}} (1)$$

Where: LGD_{pit} (1) = loss impairment rate expected at the end of year 1 for year 2 after the application of the scenario in year 2

Impairment Flows on old defaulted assets

The estimation of the impairment flows should be based on the expected loss impairment rate on defaulted assets at the end of the year = LGD_{pit}

At the end of year 1 the impairment flows on defaulted assets stocks should be equal to:

$$[\text{Def Stock (0)} * \text{LGD}_{\text{pit}} (1)] - \text{Stock Specific Prov (0)}$$

Where:

Def Stock (0) is the stock of defaulted assets at the beginning of year 1 gross of impairments (Stock Specific Prov (0))

Stock Specific Prov (0) = Stock of Impairments on defaulted assets at the beginning of year 0 = Def Stock (0) * LGD_{pit} (0)

At the end of the second year the impairment flows on defaulted assets stocks should be equal to:

$$[\text{Def Stock (1)} * \text{LGD}_{\text{pit}} (2)] - \text{Stock Specific Prov (1)}$$

Where:

$$\text{Def Stock (1)} = \text{Def Stock (0)} + \text{Default Flow (1)}$$

$$\text{Stock Specific Prov (1)} = \text{Stock Specific Prov (0)} + \text{Specific Prov (1)}$$

171. Regarding the accounting systems in each national jurisdiction, the stock of impairments on non defaulted assets at the end of each year (1 and 2) should be recomputed, reflecting the potential increase in the expected losses and the need for additional impairments.
172. Against this background, banks shall demonstrate to the respective national supervisors that in consideration of the recent dynamic of expected losses observed in the last years and expected in the next years, there is no need for increasing the stock of provisions on non defaulted assets.

5.4.9.1.1 Overview (application to Standardised and (A) IRB banks)

(A)IRB Portfolios

173. For the computation of the losses on the new defaulted assets it is expected that the AIRB banks will make impairments equal to the best estimate of LGD. The best estimate of LGD will reflect the analytical evaluation of the single defaulted exposures (updated value of collaterals) and the more recent trends observed in the workout of defaulted assets during the recent crisis. The long term average downturn LGD will be in any case used as appropriate benchmark.

FIRB and standardised portfolios

174. For the stress testing exercise the AIRB banks, when appropriate, are encouraged to extend the application of the forecast regarding the average evolution of the loss rates (best estimate of LGD_{pit}) after the application of the scenario on SA and FIRB portfolios (country/sector).
175. At time banks will be permitted, if judged appropriate by National Supervisors to make use of non supervisory approved models (for capital requirements computation) internal average LGD downturn only for the purpose of estimating the evolution of the losses after the application of the scenarios.
176. If no appropriate internal models for the estimation of LGDs_{PIT}, it is expected that the banks approximate LGD_{pit} (before the application of the scenarios) via the last observation of loss rates (2010 yearly impairment flow on new defaulted assets/total new defaulted assets in 2010). The expected loss rates at the end of 2011 and 2012 (baseline and adverse) will be than computed by the application to the initial loss rates of the expected increase in the risk parameters (expected losses) inferable by the ECB benchmark parameters.

5.4.9.1.2 Impact of the macro-economic scenario on the fair value of credit risk mitigants and shock on real estate prices

177. The fair value of the credit risk mitigants (i.e. financial collateral) shall be affected by the macro-economic scenario (market risk factors, i.e. haircuts on equity, bonds, sovereign debts). The reduction in the fair-value of these instruments shall have a potential impact on the LGD pit of the exposures.
178. The shock on real estate prices (as envisaged in the macro-economic scenario) shall have, due to the increase in the loan to value ratios of the exposures, an impact on the residential and commercial mortgages with a potential additional increase (other than the impact due the translation on the expected losses of the other relevant macro-variables in the scenario) on the expected default rates and loss.
179. Those impacts shall be reflected in the estimation of the loan losses.

5.4.10 Losses on securitisations

180. For capital requirement purposes, a specific approach is applied to the securitisation exposures in the banking book (securitisation exposures in the trading book are generally stressed along with the rest of trading exposures).
181. Banks are required to estimate the amount of impairment at the end of each period, for each scenario.

5.4.11 Net trading income

182. The definition of net trading income is based on the aggregate "Gains (losses) on financial assets and liabilities held for trading, net" (IFRS 7.20(a)(i); IAS 39.55(a)) defined in the FINREP²² consolidated income statement. It includes the gains (losses) on the following assets:
- Equity instruments and related derivatives
 - Interest rate instruments and related derivatives
 - Foreign exchange trading
 - Credit risk instruments and related derivatives
 - Commodities and related derivatives
 - Other (including hybrid derivatives).

²² When circumstances do not grant FINREP reporting format, the closest available equivalent of the respective national accounting standard should be used.

183. The net trading income shall be the sum of the result of an “ordinary net trading income before market risk shock” and the losses/profits deriving from the application of the market risk shocks.

5.4.11.1 Ordinary net trading income before market risk shocks

184. The net trading income before market risk shocks should reflect the average profitability of trading activities in the last five years (2006 - 2010). Forecasts provided by banks will be challenged by the supervisors and subject to a bank specific “cap” based on a historical average.
185. For such a purpose, banks shall provide the historical figures necessary for the computation filling in the appropriate section of the exercise templates.

5.4.11.2 Losses/profits on trading book (sovereign + other) after the application of shocks

5.4.11.2.1 Decomposition effects by single risk factor shock

186. The banks are requested to apply the list of market risk shocks contained in Annex 4 (Trading book stress test and sovereign haircuts) to all exposures allocated in the trading book under the baseline and the adverse scenarios. When it is not differently requested in the note, banks will use the market risk factors for revaluating their assets in respect of IFRS rules and according to the pricing techniques and internal models in use in the banks.
187. Profit and losses will be computed by the comparison of the fair value of the trading book portfolio before and after the application of all the shocks. Banks shall provide a detailed breakdown of P&L effects by risk factor in the appropriate section of the exercise templates. When justified by technical difficulties, non cross-border banks are allowed to provide a less granular breakdown. In the computation of the overall P&L effect, profit and losses related to different risk factors will be fully offset. In particular:

Interest rates (3M, 2Y, 10Y)

- a) non emerging markets (bp)
- b) emerging markets (%)
- c) volatility (%)

188. In the baseline and in the adverse scenario it is envisaged an evolution in the swap curve (risk-free).
189. For each currency (Euro, USD, GBP) a shock (bps) is defined parallel shocks (bps) at 3 months, 2 years and 10 years maturity. For the other maturities the yield curve will be interpolated linearly up to 10Y, while remaining constant at the 10Y level from that point on.

190. Different yield curve shocks (bps) are provided for 'other non emerging countries' and for 'emerging countries'. Shocks over non defined maturities are to be interpolated as above.
191. An overall increase in the volatility of the interest rates is envisaged.
192. Positions sensitive to IR risk positions (bonds, plain vanilla derivatives, options embedded or not in other financial instruments) will be subjected to the application of the different shocks taking into consideration the different maturities.
193. The "direct" and "indirect" sovereign exposures²³ (EEA and non EEA) will be subject to the application of the interest rate shocks and to a government swap shock in both the baseline and in the adverse scenario. The latter is computed taking into account shocks detailed in Annex 4.
194. Taking into consideration the specific nature of the shock defined in the macro-economic scenario, EEA sovereign exposures will be subject, in the adverse scenario, to the same shock as in the baseline scenario.

FX

- a) exchange rate (%)
 - b) volatility (%)
195. FX positions (cash, plain vanilla, options) will be subject to an evolution of exchange rates which is directionally consistent with the macro-economic scenario, while an increase in volatility is assumed.

Equity

- a) Stock indexes
 - b) Dividends
196. The banks shall re-price equity positions (cash, plain vanilla, options) taking into consideration their correlation with the set of stock indices provided and a supposed increased volatility.

Funds

197. The fair value of investment funds allocated in the trading book at December 2010 will be subject to the application of specific haircuts differentiated according to the risk profile of each fund ("look through" approach). In particular:
- funds investing primarily in shares or other equity will be subject to the "hedge and equity funds" haircut;
 - funds investing primarily in securities other than shares (bonds), will be subject to the application of the "mutual funds" haircut;

²³ For the definition of "direct" and "indirect" sovereign exposures see paragraphs from 199 to 204.

- funds investing primarily in real estate, will be subject to the application of a minimum “real estate haircut” equal to 10%;
- money market funds, reflecting the short term nature of the investments and the exposure to interest rate risk, will be subject to the application of the “monetary funds” haircut;
- all other funds such as mixed funds, funds of funds or hedge funds, will be subject to the application of the “hedge and equity” haircut.

198. When the banks are unable to differentiate among the different types of investments, funds shall be treated as hedge funds.

Definition of sovereign exposures and application of the stress

199. In the baseline scenario all²⁴ direct and indirect²⁵ sovereign exposures in the trading book will be subject to a general “interest rate” stress, representing an upward movement in the swap curve. This general interest rate stress will affect non-sovereign exposures the same way as sovereign exposures.

200. In addition, under the adverse scenario direct EEA sovereign exposures registered in a trading book will be subject to further valuation shock based on specific sovereign rate shocks (see Annex 4). The haircuts are differentiated by the residual maturity of the assets at end December 2010. Non-EEA sovereign exposures (direct and indirect) will be subject to another general interest rate stress representing a more severe upward movement in the swap curve than in the baseline scenario.

201. Sovereign Debt exposures are the “direct” debt exposures to central and local governments. The exposures to be considered are the on-balance sheet exposures (accounting information) and should be identified on 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).

202. For stress testing purposes, the exposures to be stressed should be gross exposures (long) net of cash short position²⁶ of sovereign debt to other counterparties only where there is maturity matching. This will be referred to as the net direct position. The stress will therefore be applied to direct positions net of cash short positions and net of provisions. This is the sovereign debt that will be published and should be stressed with the ECB haircuts.

203. Direct derivatives positions should be subject to fair value adjustments based on the relevant shock (e.g. for an interest rate derivative, use the shock on interest rates) and the relevant CVA adjustments provided, in Annex 4.

²⁴ EEA exposures , non EEA non-emerging country exposures (e.g. US, Japan) and emerging country exposures (e.g. Brazil, India)

²⁵ Derivatives on sovereign risk even if the counter party is not the sovereign.

²⁶ For example short selling as market maker.

204. Indirect exposures should be treated in a similar way, subject to fair value adjustments of the relevant shock and the CVA adjustment. That is Indirect sovereign exposures (those with counterparties other than the sovereign itself, i.e. CDS) shall be subject to the application of the same credit sovereign spread shock (a parallel increase for EEA countries and a percentage one for non EEA countries) as the direct sovereign exposures. The banks will provide separate evidence of the impacts caused by the application of the credit sovereign credit spreads between direct and indirect positions.
205. Banks will also be expected to disclose their exposures to sovereigns broken down by accounting portfolios (AFS, HTM, HFT), maturities and countries.

CVA on derivatives

206. In order to calculate expected credit value adjustments (CVA) losses associated with counterparty credit risk in the trading book the banks shall apply some haircuts to the mark-to-market values (after the application of the market risk shocks) of derivatives.
207. The haircuts would not apply to derivatives covered by collateral support annex (CSA) and to derivatives that are cleared through central counterparties (CCPs).
208. In case a netting agreement exists, the firm may take the net value of the derivatives under the netting agreement (netting set). If there is no netting agreement, the bank should apply the haircut to the gross mark-to-market value of the derivatives that have a positive replacement value.
209. The haircuts are differentiated between investment grade and non investment grade counterparties. For reasons of simplicity there is no distinction between type and maturity of the derivatives.
210. For the purposes of the stress test, the banks shall not take into account possible debt valuation adjustments (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.

Market liquidity

211. In the 2011 EU-wide ST, the banks shall compute the market liquidity shock due to an exogenous widening in the bid-ask spread by taking into account the impact caused on the market "liquidity reserve" (valuation adjustment) as set out in the Educational guidance on the application of fair value measurement when markets become inactive by the IASB in October 2008²⁷.

²⁷ See <http://www.ifrs.org/News/Press+Releases/IASB+publishes+educational+guidance+on+the+ap+lication+of+fair+value+measurement+when+markets+become.htm>

5.4.11.2.2 Non linear effects

212. The non linear effects (gamma, vega) deriving from the application of the market risk parameters shock shall be taken into account and cumulatively shown (see Annex 4).

5.4.11.2.3 Application of market risk parameters (assets, exposures at fair-value or notional)

213. Annex 4 provides some examples regarding the application of the market risk parameters.

5.4.11.2.4 Computation of the losses

214. The total losses/profits on the trading book portfolio deriving by the application of the shocks will be the sum-up of linear and non linear losses/profits derived from the application of the market risk parameters shocks on all the assets allocated in the trading book (including the sovereign exposures). The total effect will be split in half and reported in 2011 and in 2012.

5.4.12 Realised gains (losses) on financial assets and liabilities not measured at fair value through profit or loss

215. No gains or losses are expected from the sale of assets.

5.4.13 Gains (losses) on financial assets and liabilities designated at fair value through profit or loss and from hedge accounting

216. Equity, hedge funds and equity funds designated at fair value as well as hedging positions will generate gains and losses, according to the expected evolution in their fair value. Liabilities designated at fair value shall not generate any gains or losses.

5.4.14 Exchange differences from banking book (the impact on trading book is already computed in the net trading income)

217. The eventual impact in the P&L due to exchange rates (taking into consideration, where appropriate, the effect of hedging strategies) must be in line with the expected evolution of the exchange rate in the macro-economic scenario.

5.4.15 Impairment on financial assets

218. Equity, hedge funds and equity funds positions allocated in the AFS portfolio are subject to the application of the same haircuts applied on the trading book positions.

219. Impairments on participation will be computed in line with the result of the (IFRS) test of impairment.

5.4.16 Impairment on tangible non-financial assets

220. Impairment on Real estate exposures (see Section 5.2.5) will be computed by the application on the assets of the same haircuts applied on real estate funds.

5.4.17 Disposals and discontinued operations

221. Disposals and discontinued operations are not expected in 2011 and 2012. Allowed exemptions are the restructuring operations and the other managerial actions communicated to the market before the 30 April 2011 (see exception to the static balance sheet assumption).

5.4.18 Tax

222. See Section 5.3.4

5.5 RWA

5.5.1 Credit risk (without securitisation positions)

5.5.1.1 Standardised portfolios

223. The RWA for the Standardised portfolios should be calculated based on the scenarios assuming rating migration as appropriate. However, the RWA as at end 2010 should be considered as a floor 28 over the time horizon of the exercise.
224. The only exemption is due to the expected completion in the time horizon of the exercise of restructuring plans mandatory and publicly and announced. In this case the approach normally used for the estimation of the RWA after the restructuring operations is on the standardised portfolio the pro-rata allocation, maintaining stable RWA on EAD for the different portfolios.
225. In any case it is not allowed any rolling out in the application of the (A) IRB models in the time horizon.

5.5.1.2 (A) IRB portfolios

226. The RWA forecasts in 2011 and 2012 must reflect the estimated yearly defaulted/impairment flows and the application of the new regulatory parameters after stress (new PDs, new LGDs) as estimated by the application of the stress test models in use (CRD prescription for obtaining the authorization for the use of the internal models for capital requirements).
227. The RWA on the (A) IRB portfolio are in any case subject to a minimum floor equal to the RWA at December 2010.

5.5.1.2.1 Stressed PDs and LGDs

228. The presence of adequate stress testing methodologies is a requirement for the authorization of the use of internal rating systems for supervisory capital purposes.
229. Stress tests comprise a series of methods of varying complexity and sophistication that enable the simulation of the sensitivity of a portfolio to extreme but plausible variations in one or more risk factors scenario analyses. They involve: a) sensitivity analyses, which are used to assess capital adequacy with respect to a change in one risk factor; b) scenario analysis, which are used to simulate the impact on capital of an adverse shock leading to the simultaneous variation in a set of risk factors.

²⁸ The assumption is applicable to the Standardised Banks and to the Standardised portfolios of the IRB Banks.

230. Banks shall make use of their stress testing methodologies for simulating the impact caused on credit capital requirements (due to evolution of regulatory PDs and LGDs) by the application of the EU-wide stress test macro-economic scenario (baseline and adverse); for simplicity and consistency reasons the EAD (apart for the decrease due to defaulted asset flows) are considered invariant in the time horizon of the exercise.
231. The estimation of the credit capital requirements evolution at the end of 2011 and 2012 shall reflect the potential transition of the exposures in the different rating asset classes by the remapping each year of the individual PDs after the application of the scenario to the appropriate rating asset class.
232. Taking in consideration the different nature of the regulatory PDs and LGDs from the PDpit and LGD pit, the approach used for the computation of the expected and unexpected losses will be broadly in line with the methodology defined in the above Sections 5.2.1 and 5.4.9. The relevance of the different nature of the risk parameters (regulatory and pit) is different for the different banks included in the sample of the exercise, reflecting the different characteristic of the internal models in use (TTC or PIT).

5.5.1.2.2 Treatment of excess/shortfall (Best Estimate LGD – Impairments) and RWA on defaulted assets (LGD downturn – Best Estimate LGD)

233. For simplicity and consistency the impairments on the new defaulted assets (see Section 5.4.9) shall be equal to the best estimate of LGD. The difference between the LGD downturn and the best estimate of LGD, when the former is bigger than the latter, will be computed as RWA.
234. The excess/shortfall on old defaulted assets shall be changed according with the expected evolution in the impairment in the time horizon of the exercise (see Box 3).

Box 3. IRB excess/shortfall for old defaulted assets

At the end of year 1 the IRB excess or shortfall (1) on old defaulted assets should be equal to:

Def stock (0) * [Best estimate LGD (0) – Best estimate LGD (1)] = + excess or - shortfall

Where:

Def stock (0) = stock of defaulted exposures at the beginning of year (0), according to CRD definition gross of impairments

Best estimate LGD (0) = the best estimate of the loss given default at the end of year 0 before the application of the scenario

Best estimate LGD (1) = the best estimate of the loss given default at the end of year (1) after the application of the scenario in year 1

At the end of the year 2 the IRB excess or shortfall (2) should be equal to

$\text{Def stock (0)} * [\text{Best estimate LGD (1)} - \text{Best estimate LGD (2)}] = + \text{ excess or - shortfall}$

Where:

Def stock (0) = stock of defaulted exposures at the beginning of year 0, according to CRD definition gross of impairments

Best estimate LGD (1) = the best estimate of the loss given default at the end of year 1 after the application of the scenario in year 1

Best estimate LGD (2) = the best estimate of the loss given default at the end year 2 after the application of the scenario in year 2

5.5.2 Credit risk on securitisation positions

235. The RWA on securitisation positions (Standard, IRB) will be stressed in the baseline and adverse scenarios according with a pre-defined migration of the exposures by the end of 2012 in the different rating classes. Within the securitisation positions the rating migration is differentiated between medium and high risk positions (see Section 4.3 for an overview on the approach).

5.5.3 Market risk

236. For simplicity and consistency reasons the RWA on market risk (standard and internal models) are considered stable (confirming for each year the amount of RWA at the end of 2010) in the time horizon of the exercise and will exclude the RWA on securitisation positions in the trading book in order to exclude double counting as the additional CRD III securitisation RWA are already included in the SEC templates.

237. Concerning the CRD III requirements on Stress VAR and IRC banks are general invited to derive their own RWA forecast for 2011 and 2012.

Banks using internal models

238. In case banks do not provide their own forecast, a scaled increase is applied on the appropriate portion of RWA market risk that do not refer to securitisation positions. The minimum scaling factor takes on a value of 1.4 for banks using internal models (regardless of neither general nor specific risk models) for both years 2011 and 2012. The factor comprises the following components (Table 6).

Table 6. Scaling factor to be applied for CRD III (Internal models)

| sVaR | IRC | Sum | Scaling Factor |
|------|------|-----|----------------|
| 0.24 | 0.16 | 0.4 | 1.4 |

239. When at the discretion of the National Supervisor is justified a partial use of the CRD III change, the banks are required to use the respective internally calculated capital charge instead of the stylised one plus the remaining generic figures.

240. In any case, the additional capital requirement estimated by the banks is subject to a floor equal to the scaled up market risk capital requirement at December 2010.

Standardised banks

For banks) without internal market risk models (neither general nor specific risk) a scaling factor of 1.1 is applied on the appropriate portion of RWA market risk that do not refer to securitisation positions at end of December 2010 to express the RWA for 2011 as well as the 2012 (Table 7).

Table 7. Scaling factor to be applied for CRD III (Standardised)

| sVaR | IRC | Sum | Scaling Factor |
|------|------|-----|----------------|
| 0.06 | 0.04 | 0.1 | 1.1 |

5.5.4 Operational risk

241. Capital requirements for operational risk is taken into account in the exercise by computing a proxy of year-on-year changes in operating profit of the participating institutions (capital charge for operational risk in previous period +15% of year-on-year change in operating profit), with the actual capital charge as of year-end of 2010 acting as a floor should the calculations described above lead to a decreasing capital charge.

5.5.5 Regulatory transitional floors

242. To understand the potential impact from the application of regulatory transitional floors (transition from Basel I to Basel II), the EBA intends to collect information from banks on their capital ratios with and without the effects of such transitional floors until December 2012.

243. In the exercise templates banks will be expected to explain the way in which transitional floors have been calculated.

5.6 Exogenous impacts

5.6.1 Capital actions planned, agreed and disclosed

244. Any capital actions and issuances already launched and with funds transferred to institutions in the sample by 30 April 2011 are being considered in the exercise (see Section 4.4.1). Any capital actions and issuances publicly announced and fully committed by 30 April 2011 but not yet fully paid into the banks' will be treated on the same grounds as government support (see Section 5.3.2) and should be reported separately.

5.6.2 Restructuring plans

245. Restructuring plans agreed by 30 April 2011 are permitted. See Section 4.4.1 for full conditions of treatment of restructuring plans.

5.6.3 Securitisations

246. In the time horizon of the exercise, banks are not allowed to assume any spin-off of assets in their portfolios (i.e. securitisations or issuances of covered bonds).

5.6.4 Other business transactions

247. Apart for the operations included in the restructuring plans, for the purpose of the exercise any other business transaction is not allowed.

List of acronyms

| | |
|-----------|---|
| ABCP | Asset Backed Commercial Paper |
| ABS | Asset Backed Security (ies) |
| AFS | Available for Sale (accounting portfolio) |
| AIRB | Advanced Internal Ratings Based approach |
| ALM | Asset Liability Management |
| AUM | Assets Under Managements |
| BPS | Basis Points |
| CCPs | Central counterparty (ies) |
| CMBS | Commercial Mortgage Based Security (ies) |
| COREP | Common reporting framework for capital adequacy information developed by CEBS/EBA |
| CRD | Directive 2006/48/EC and 2006/49/EC as amended by the Directive 2009/111/EC |
| CSA | Credit Support Annex |
| CVA | Credit Value Adjustments |
| DTA | Deferred Tax Asset |
| DVA | Debt Valuation Adjustments |
| EAD | Exposure at Default |
| EBA | European Banking Authority |
| EEA | European Economic Area |
| EMEA | Europe, Middle East and Africa |
| EU | European Union |
| Euribor | Euro Interbank Offered Rate |
| FDR | Forecast Default Rates |
| FINREP | Common reporting framework for financial information developed by CEBS/EBA |
| FVA | Fair Value Adjustment |
| HFT | Held for Trading (accounting portfolio) |
| HTM | Held till Maturity (accounting portfolio) |
| IAA | Internal Assessment Approach |
| IAS | International Accounting Standard |
| ICAAP | Internal Capital Adequacy Assessment Process |
| IFRS | International Financial Reporting Standards |
| IR | Interest rate |
| IRB | Internal Ratings Based approach |
| LGD | Loss Given Default |
| LGD (PIT) | Loss Given Default - point in time |
| NSA | National Supervisory Authority (ies) |
| PD | Probability of Default |
| PD (PIT) | Probability of Default - Point in time |
| RMBS | Retail Mortgage Backed Security (ies) |
| RW | Risk Weights |
| RWA | Risk Weighted Assets |
| SFA | Supervisory Formula Approach |
| TTC | Through the Cycle |

List of annexes to the methodological note

1. General features of the baseline scenario
2. General features of the adverse scenario
3. Detailed overall scenario table
4. Trading book stress test and sovereign haircuts