Consultation paper on draft guidelines on stress testing

European Banking Authority (EBA)

Index

Introduction

Executive summary

CP GL on stress testing

Next steps

Annex

Introduction

In December 2015, the EBA published a consultation on guidelines to be complied with by institutions when designing and conducting a stress testing programme and also to ensure convergence for supervisory stress testing in the context of the SREP[1]

Introduction

- The EBA is mandated to foster sound and effective supervision across the EU arising from the requirements specified in the CRD IV. In this regard, it aims at achieving **convergence of practices** followed by institutions and competent authorities (CAs) **for stress testing across the EU**.

- The EBA published in December 2015 a consultation paper on draft guidelines on stress testing with the aim of providing detailed guidance to be complied with by institutions when **designing and conducting a stress test (ST) programme** , Providing guidance with a view to ensuring **convergence for supervisory stress testing** in the context of the SREP performed by competent authorities.
- This consultation paper intends to provide:
  - Common **organisational requirements**, **methodologies** and **processes** for the performance of stress testing by institutions as part of their risk management processes.
  - **Supervisory assessment** of the institution's stress testing.
  - Common **methodologies** to be used by competent authorities when conducting **supervisory stress test** in the context of their SREP.
- These guidelines **do not set methodologies** for the stress tests conducted by the EBA in cooperation with other competent authorities. However, they do **describe the range of stress test** help to set the appropriate context for the consideration of future EBA stress tests as one part of the suite supervisory stress tests.

This document **summarises** the proposed guidelines and **analyses their main implications** to institutions and competent authorities.

1. Supervisory Review and Evaluation Process

Index

Introduction

Executive summary

CP GL on stress testing

Next steps

Annex

Executive summary

The proposed guidelines cover stress testing conducted by institutions, supervisory assessment of the institution's stress testing and supervisory stress testing

Executive summary

Scope of application

- For **systemically-important institutions** these GL are applicable in their entirety.
- For **other institutions** the GL are calibrated in accordance with their size and complexity of their activities.

Regulatory context

- CEBS guidelines on institutions' stress testing (Aug. 2010)
- CRD IV (Jun. 2013)
- EBA Guidelines on common procedures and methodologies for SREP (Dec. 2014)

Next steps

- Comments to this CP shall be submitted by **18 March 2016**.
- The EBA aims to issue the final guidelines in **Q2 2016**.
- The application date will be the **last quarter of 2016**.

Main content

Stress testing by institutions

- **Main features of the stress testing programme**: content (e.g. types of stress testing, data infrastructure, etc.), documentation and assessment (effectiveness, identified risk factors, etc.) of the stress testing programme.
- **Governance structures of the stress testing programme**: responsibilities of the management body.
- **Data infrastructure**: data aggregation capabilities and reporting practices.
- **Application of the stress testing programme**: interaction between outputs of stress test and management actions.
- **Main features**: coverage, scope, methodology, model risk, analysis of sensitivity and scenarios, and assessment of the stress test.
- **Reverse stress testing**: requirements, use and application of recovery actions and plans as an input.
- **Supervisory assessment**: guidance to supervisors on the scenario selection and the use of stress testing outcomes.

Supervisory stress testing

- Different forms of supervisory stress testing and objectives; the **use for SREP** purposes; organization, resources and communication aspects, and possible methodologies.

Outcomes of the stress test

- These outcomes provide a **forward-looking assessment** of projected stressed capital needs to the competent authorities.

Index

Introduction

Executive summary

CP GL on stress testing

Next steps

Annex

CP GL on stress testing

Stress testing by institutions

The guidelines set out requirements regarding the main features, governance, data infrastructure and application of the stress testing programme, as well as the main features, reverse stress testing and supervisory assessment of the stress test exercise of institutions

Summary of requirements

Stress testing programme

Main features

- **Content**: types of stress testing, frequency, assumptions, etc.
- **Documentation**: approach, roles, etc.
- **Assessment**: effectiveness, improvements, etc.

Governance

- **Management body**: approval of stress testing programme, etc.
- **Risk management framework**: business decisions and strategic planning

Data infrastr.

- **Data aggregation capabilities**: on time, consistently and on-demand request.
- **Reporting practices**: reflecting risk.

Application of ST.

- **Stress testing ICAAP/ILAAP**: comprehensive institutions-wide ST, etc.
- **Management actions**: ensuring ongoing solvency, etc.

Stress test exercise

Main features

- **Coverage**: all the material risk types
- **Scope**: regarding the portfolio and individual risk level ST and the institution-wide stress testing.
- **Methodology**: mechanisms risk factors.
- **Model risk**: conservative review.
- **Sensitivity analysis**: degrees of severity.
- **Scenario analysis**: relevant risk factors.
- **Assessment**: changes of risk factors.

Reverse stress testing

- **Requirements**: taking into account the nature, size, scale and complexity.
- **Use**: for ICAAP/ILAAP stress test, etc.
- **Recovery actions and recovery planning**: regarding near-default scenarios.

Supervisory assessment

- **Qualitative assessment**: organisation, independent control functions, etc.
- **Quantitative assessment**: choice, use and scenario assumptions.
- **Application to cross-border groups**.

1. A description of the aspects covered in the stress testing programme and the stress test exercise is set below.

CP GL on stress testing
Stress testing by institutions

Institutions should have in place a stress testing programme that is appropriately documented (following the content requirements proposed by the EBA) and assessed on an annual basis

Stress testing programme: main features

Content

The EBA includes in its stress testing programme the following aspects:

- The **types of stress testing** and their main **objectives** and **application**
- The **frequency** of the different stress testing exercises
- The internal governance regime with clear **responsibilities** and **procedures**
- In case of a banking group, the **scope of the entities** included and the **coverage** of the stress tests
- The **methodological details**, including models used
- The range of **assumptions**, including business and managerial, and **remedial actions** envisaged for each stress test
- The relevant **data infrastructure**

Documentation

The documentation should cover at least:

- The **stress testing approach**
- The **roles and responsibilities** for the performance of the stress testing programme
- A description of the entire process of **designing**, **approving**, **performing**, **monitoring** the stress testing programme
- A description of the processes for evaluating the **outcomes**
- A description and inventory of the relevant **IT applications**

Assessment

- Institutions should assess, on an **annual basis**, their stress testing programme to determine its effectiveness, robustness and should update it as appropriate. In particular, they should consider:
  - The **effectiveness** of the stress testing programme
  - The need for **improvements**
  - The identified **risk factors**
  - The adequacy of the **data infrastructure** (system implementation and data quality), etc.

CP GL on stress testing
Stress testing by institutions

The management body should approve the stress testing programme of the institution, which should be an integral part of its risk management framework

Stress testing programme: governance structures

Management body

- **Stress testing programme approval**: the management body has the ultimate responsibility for approving the stress testing programme of the institution and monitoring its performance by the institution. Therefore, the institution should ensure that it:
  - Actively engage in **discussions** with stress testing **committees** of the institutions.
  - Challenge key modelling **assumptions**, the scenario selection and the assumptions underlying the stress test in general.
  - Decide on the necessary **management actions** and discuss them with the competent authorities.
- **Internal policies and procedures**: the management body should assure that the execution of stress testing programme should be made in accordance with the relevant internal policies and procedures of the institution.
- **Risk appetite**: the management body should evaluate the outcomes of the stress test and should use them as an input to the process of establishing an institution's risk appetite and limits. For that purpose, these outcomes should be implied losses, capital and liquidity requirements as well as available capital and liquidity.

Risk management framework

- **Integral part of the management framework**: it should include the stress testing programme as an integral part of the framework (included in the context of ICAAP and ILAAP).
- **Business decisions and strategic planning**: the stress tests should support different business decisions and processes as well as strategic planning, including capital and liquidity planning. These decisions should take into account the shortcomings, limitations and vulnerabilities during stress testing.

CP GL on stress testing
Stress testing by institutions

Institutions should ensure that they have a process for aggregating and producing accurate and reliable risk data as well as reporting practices that reflect risk in an exact manner

Stress testing programme: data infrastructure

Data aggregation capabilities[1]

- Institutions should have in place a dedicated **process for aggregating and producing** accurate and reliable risk data, proportionate to their size, complexity, risk and business profile.
- Institutions should be able to produce **aggregate risk information on a timely manner** to meet all reporting requirements, and to generate aggregate data to meet a broad range of **on-demand requests** from internal needs in the institution and externally from supervisory queries.

Reporting practices

- Completely supported by **data aggregation capabilities**.
- Accurately and precisely convey aggregated risk data and **reflect risk** in an exact manner.
- Cover all **material risks**.
- Allow the identification of **emerging vulnerabilities** that could be potentially further assessed even in the same stress testing exercise.
- **Offer additional information** regarding main assumptions, tolerance levels, or caveats.
- **Communicate** information in a clear and concise manner.

1. Also referred to the extent appropriate Basel Committee on Banking Supervision principles for effective risk data aggregation and risk reporting.

CP GL on stress testing

Stress testing by institutions

According to the ICAAP/ILAAP, the stress test programme should ensure that institutions have enough capital and liquidity resources over the economic cycle. To this extent, institutions might use management actions to address the outputs of these stress tests

Stress testing programme: application

ICAAP/ILAAP

- The ICAAP/ILAAP assessment should be performed through a **comprehensive institution-wide stress testing** which is subject to the following requirements:
  - Cover **all material risk categories** (and sub-categories) that the institutions are exposed with regard to both on- and off-balance sheet assets and liabilities in relation to all material portfolios or sectors/geographies, including relevant structured entities.
  - Consider a **range of scenarios**, including at least an adverse economic scenario that is severe but plausible (e.g. severe economic downturn).
  - It should cover the same **forward-looking period** as the institution's ICAAP and ILAAP (at least two years).

Management actions

- Institutions should identify credible management actions addressing the outputs of stress tests and aimed at ensuring their **ongoing solvency** through the stressed scenario.
- These actions might include:
  - A review of the **internal risk limits**
  - The review of the use of **risk mitigation techniques**
  - The **revision of policies** (e.g. related to liquidity and funding or capital adequacy)
  - The reduction of **distributions to shareholders**
  - The changes in the overall **strategy** and **business plan** and **risk appetite**
  - Raising of **capital** and **funding**

CP GL on stress testing
Stress testing by institutions

Institutions should perform stress tests that capture all the material risk types, risk at various levels and changes in correlations on individual portfolio and institution-wide basis

Stress testing exercise: main features (1/3)

Coverage

- **All the material risk types** and both **on-and off- balance sheet assets and liabilities**.
- **Risks** at various levels in an institution according to the **proportionality principle** which discusses the level of sophistication of the stress testing methodologies, practices and infrastructures required in relation to the size, structure and internal organization of an institution.
- **Changes in correlations** between risk types and risk factors, at individual entity and at a group-wide level.

Scope

Regarding the **portfolio and individual risk level ST**:

- Institutions should perform stress tests on **individual portfolio basis**, covering all risk types that affect these portfolios, using both sensitivity and scenario analysis.
- Institutions should ensure that they stress test portfolios and business lines or units to **identify intra- and inter-risk concentrations**.
- When considering inter-risk concentrations, institutions should aggregate across risk types notably market and credit risk, to gain a better understanding of their potential risk concentrations in a stress.

Regarding the **institution-wide stress testing**:

- To deliver a complete and holistic view of the institution's risk, the stress test should be conducted on a **group level and across portfolios** and individual risk types. However, it should be taken into account some shortcomings (e.g. risk not well reflected, double counting of risks or underestimation of stressed risk factors and specific group risks).

CP GL on stress testing
Stress testing by institutions

The stress test methodologies should be designed by taking into account the institutions size, complexity, strategy and business model

Stress testing exercise: main features (2/3)

Methodology

- The specific design, complexity and level of detail of the **stress test methodologies** should be appropriate to the institutions size, complexity, the strategy and business model as well as models and portfolio characteristics of the institution.
- Institutions should identify appropriate, meaningful and robust **mechanisms for translating risk factors** into relevant internal risk parameters (e.g. PD, LGD, write-offs, fair value haircuts etc.).
- Moreover, institutions should assess possible non-linear interactions between risk factors and stressed risk parameters.

Model risk

- Due to the complexity, institutions should be aware of the model risk and ensure that these factors have been performed:
  - A regular and sufficiently **conservative expert review** of the model's assumptions.
  - A sufficient degree of **conservatism** has been applied when making assumptions are hard to measure in a quantitative way.
  - The dependencies of the results on the assumptions have been acknowledged and their **impact is assessed** on a regular basis.

Sensitivity analysis

- Institutions should conduct sensitivity analyses at the level of individual exposures, portfolios or business units, institution-wide, and for specific risk-types.
- Institutions should identify **relevant risk factors** at various levels of application of prudential requirements and across different portfolios, business units and geographical location.
- They should also stress the identified risk factors using different **degrees of severity**.

CP GL on stress testing
Stress testing by institutions

Institutions should design stress tests taking into account non-historical events and some requirements related to the risk factors and institution-specific vulnerabilities, among others

Stress testing exercise: main features (3/3)

Scenario analysis

- **Design of scenarios**: the design of the stress test scenarios should not only be based on historical events, but should also consider **hypothetical scenarios**, also based on non-historical events.
- **Scenario requirements**: institutions should ensure that their stress test scenario meet at least the following requirements:
  - Address the main **risk factors** which the institution may be exposed to.
  - Address major **institutions-specific vulnerabilities**, deriving from the regional and sectoral characteristics of an institution, its specific product or business line exposures and funding policies.
  - Include a coherent narrative for the scenario, covering **all relevant risk factors** as well as their forward-looking development on the basis of multiple trigger events.
  - Are **internally coherent**, so as to ensure that the identified risk factors behave consistently with other risks factors in a stress.
  - Take into account innovation and more specifically **technological developments** or sophisticated financial products.
  - Ensure the **stressed risk factors** translated into internally consistent risk parameters.
- **Degrees of severity of the scenarios**: institutions should ensure that stress testing is based on exceptional but plausible events with adequate degree of severity. They should ensure that various degrees of severity are considered for both sensitivity analysis and that severity is set taking into account the specific vulnerabilities of each institution to a given scenario on the basis of the business model.

Assessment

- Institutions should ensure that their scenarios assess **absolute or relative changes** of risk factors.
- For assessing the appropriate **degree of severity** of scenarios, institutions should also compare them with the scenarios outlined in their reserve stress testing.

CP GL on stress testing
Stress testing by institutions

Institutions should perform adequate reverse stress tests as part of the stress testing programme, taking into account the nature, size, scale, and complexity of their business activities and risks

Stress testing exercise: reverse stress testing

Use of reverse stress testing

- The reverse stress testing should be useful to set the severity of scenarios for **ICAAP and ILAAP stress tests**.
- To understand the **viability and sustainability of their business model** and strategies
- To identify situations as **failing or likely to fail**.
- To plan measures to mitigate the risk of business model failure, when this risk is high and inconsistent with the risk appetite (e.g. any change to the institution's business plan).
- To perform a **quantitative and more sophisticated analysis** in setting out specific loss levels or other negative impacts on their capital, liquidity (e.g. the access to funding) or overall financial position.

Recovery actions and recovery planning

- Institutions will use specific reverse stress testing to develop 'near-default' scenarios and as an input to inform and test the effectiveness of their recovery actions and recovery planning.
  - **Near-default scenarios** should identify the point that would lead to an institution's business model becoming non-viable unless the recovery actions were successfully implemented.
- Reserve stress testing should determine:
  - The **recovery triggers**
  - The required **recovery actions** and their expected effectiveness
  - The appropriate **timing and process** required for those recovery actions.

CP GL on stress testing
Stress testing by institutions

Competent authorities should perform a qualitative assessment of the stress testing programmes as well as a quantitative assessment of the stress test results

Stress testing exercise: supervisory assessment

Qualitative assessment

- CAs should require institutions to submit information regarding the **organisation of their stress testing programme**: data architecture and IT infrastructure, governance arrangements, methodologies, scenarios, key assumptions, results and planned management actions.
- Furthermore, the CAs should consider the institution's own **internal assessments** and **validation** or reviews undertaken by **independent control functions**, as well as information and estimations provided by third parties, where available.
- Based on the **outcomes** of this assessment, CAs should require the institution:
  - To develop a **plan of remedial actions** aimed at improving the stress testing programmes and practices.
  - To require institutions to run specific prescribed **scenarios** or specific **assumptions**.

Quantitative assessment

- **Choice and use of scenarios** and **assumptions**
- **Severity**, **relevance** and **business model** of an institution
- **Results** of such stress test for ICAAP/ILAAP purposes.
- Institution's capacity to maintain, at all times in an adverse scenario:
  - The applicable total **SREP capital requirement** (TSCR)
  - The impact of stress test on the institution's **leverage ratio**
  - The eligible liabilities held for the purposes of **minimum requirements for eligible liabilities** (MREL)

Application to cross-border groups

- Competent authorities should consider the **transferability of capital and liquidity** between the legal entities or business units during the stressed conditions, as well as the functioning of any established intra-group financial support arrangements, taking into account funding difficulties expected in stressed conditions.

CP GL on stress testing
Supervisory stress testing

Competent authorities should assess the possible vulnerabilities of the information reported by institutions under the SREP taking into account some key elements and forms

Supervisory stress testing (1/2)

Use

- Assist in the identification of possible **vulnerabilities or weaknesses** in risk management and controls of individual risk areas;
- Assist in the identification of possible deficiencies in the overall **governance arrangements** or institution-wide controls;
- Assess the relevance, severity and plausibility of **scenarios** for institution's own stress tests used for ICAAP and ILAAP purposes;
- Assess the institution's ability to meet the respective **total SREP capital requirement** (TSCR) and **overall capital requirement** (OCR) in the context of the assessment of capital adequacy;
- Quantify specific **quantitative liquidity requirements** in the context of the assessment of liquidity adequacy, especially in the case when a competent authority has not developed specific supervisory benchmarks for liquidity requirements.

Key elements and forms

- **Coverage**: certain risk factors (sub-categories) or multiple risk factors, certain individual portfolio or sectors/geographies, all or several portfolios.
- **Design**: takes into account the sensitivity analysis, the scenario analysis or the reserve stress testing.
- **Scope**: the perimeter of cross-border groups.
- **Sample of institutions**: it should be applied to the appropriate sample for the purpose of the exercise.
- **Approach**: top-down stress test, bottom-up stress test or combination of both.

CP GL on stress testing
Supervisory stress testing

CAs should define the governance, organisation and IT arrangements supporting the supervisory stress testing as well as its process and methodology

Supervisory stress testing (2/2)

Organisation and governance

- Human and material resources, **data and IT infrastructure** to design and run supervisory stress test;
- **Quality assurance process** covering stress testing design, development and execution and consistency of the results across institutions; and
- **Integration** of supervisory stress testing into other relevant supervisory processes.

Process and methodology

- **Assessment of capital adequacy**: CAs should consider the impact of the stress test on the institution's profit and loss, balance sheet, risk exposure amount, leverage ratio, and analyse the impact of the stress test capital ratios of institutions covered in the exercise.
- **Bottom-up stress test**: CAs should considered the extent to which they prescribe the methodologies for modeling institutions‘ balance sheets and profit and loss.
- **Second round effects**: CAs should consider how to take into account of systemic feedback in the stress test recognising the limitation of providing ex ante assumptions in the case of bottom-up stress test.
- **Consistent and fair assessment**: CAs should model the impact of the stress test exercises across the institutions covered by supervisory stress test.

CP GL on stress testing
Outcomes of the stress test

The outcomes of ICAAP stress tests and supervisory stress tests provide a forward-looking assessment of projected stressed capital needs to the competent authorities

Outcomes

Quantitative outcomes

- Competent authorities should assess as appropriate the impact of the these results on the adequacy and quality of the institution's own funds and whether they are sufficient to cover applicable capital requirements:
  - **Overall capital requirement** (OCR) including its combined buffer requirements under the baseline scenario over a forward looking time horizon of at least two years;
  - **Total SREP capital requirement** (TSCR) under the adverse scenarios over a forward looking time horizon of at least two years; or
  - Where relevant, any **other pre-defined target ratio** set by the competent authority in the context of a system-wide stress test under the adverse scenarios over a forward looking time horizon of at least two years.

Assessment criteria

- If an institution is not able to meet its combined **buffer requirements**, competent authorities should:
  - Estimate the magnitude of the impact;
  - Set out the extent to which buffers could be used to absorb losses under the assumed scenarios;
  - Determine an adequate response to ensure that an institution would be able to meet its OCR within a reasonable timeframe.

Supervisory measures

- If an institution is not able to meet its **TSCR and/or target ratio**, competent authorities should:
  - Ensure that an institution has submitted a credible **capital plan** that address the risk of not meeting its TSCR as identified. For this purpose, the CA should determine whether the capital plan covers the assumed time horizon; whether it puts forward a set of credible mitigating actions, among others.
  - Review the revised capital plan with a view of assessing its credibility and determine whether and which **supervisory measures** are appropriate or necessary. In this regard, CAs should consider the types of scenarios included, including their severity, plausibility and probability of materialization, the quality of the institution's available own funds, among others.

Index

Introduction

Executive summary

CP GL on stress testing

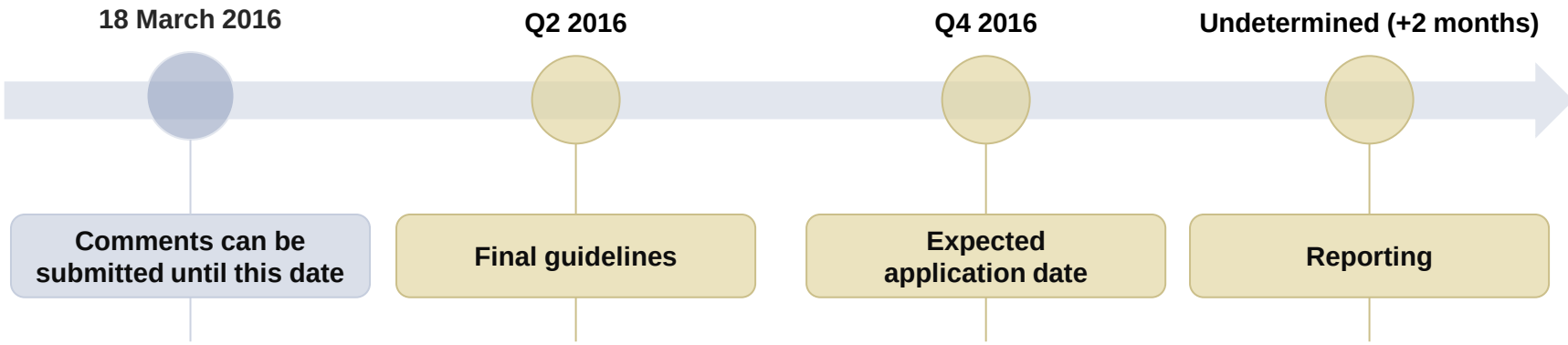
Next steps

Annex

Next steps

The final version of these guidelines will be published in Q2 2016 and the application date is expected to be the last quarter of 2016

Next steps



- The guidelines are published for a three-month public consultation until **18 March 2016**.
- The EBA aims to issue the final guidelines in **Q2 2016**.
- It is expected that the application date will be in the **last quarter of 2016**.
- Competent authorities must report whether they comply with the guidelines in **two months after the publication of the translations** into the official EU languages.

Index

Introduction

Executive summary

CP GL on stress testing

Next steps

Annex

Annex

Stress testing of individual risk categories

The guidelines assess a range of categories, i.e. credit and counterparty risk, securitisation, market risk, conduct risk, interest rate risk from non-trading, concentration risk and FX lending

Stress testing of individual risk categories

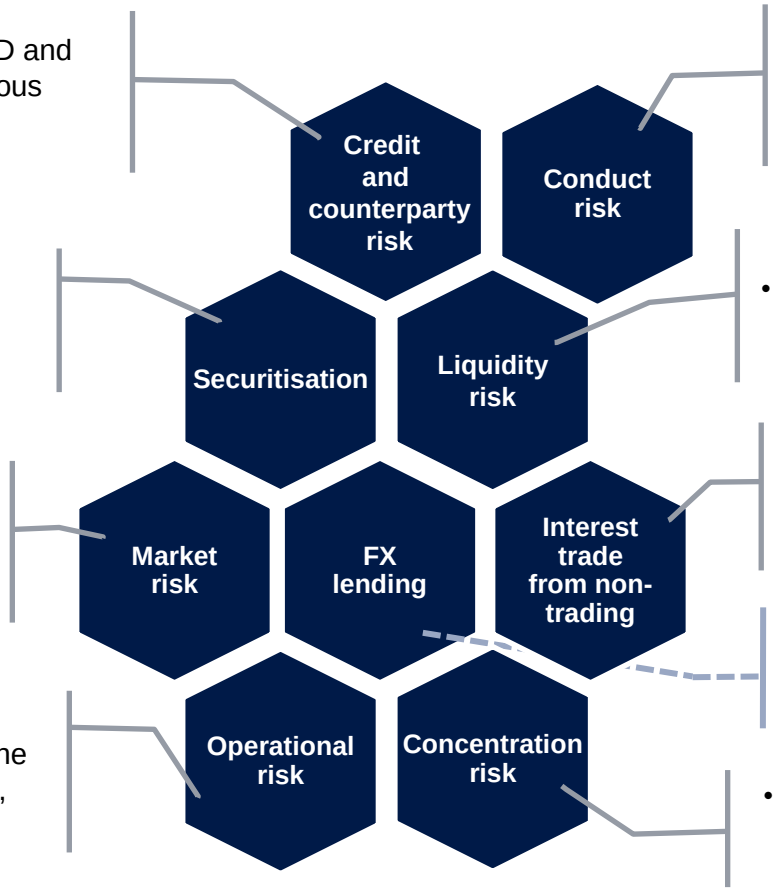
- Stress testing using PD, LGD and EAD parameters and at various levels of shock scenarios.

- Analysis of the business environment, among others.

- Analysis of the VaR models.

4. Operational risk:

- Stress testing: analyses the vulnerability to model risk, among others.



- Assessment of the exposures of miss-selling products, among others.

- Assessment of the short term liquidity risk and funding risk.

- Coverage of the spread risk and the early termination risk.

- Takes into account the type of exchange rate regime.

- Assessment of part of the single-name concentrations, among others.

Annex

Stress testing of individual risk categories

Institutions should analyse, at least, the parameters PD, LGD and EAD in their credit risk stress test. However, wherever possible, they should consider expected losses (EL), the risk amount and the impact on credit losses and on own funds requirements

Credit and counterparty risk

- An institution-wide credit risk stress test shall cover all positions in the **banking and trading book**, including hedging positions.

Parameters

- Institutions should analyse at least the **PD**, the **LGD** and the **EAD**.
- In addition to these parameters, institutions should consider, whether possible, **expected losses (EL)** and the **risk exposure** amount and the impact on credit losses and on own funds requirements.
  - For the estimation of future losses in stress tests, institutions should rely on credit risk parameters different from the ones applied in the calculation of capital requirements, which are usually through-the-cycle for PD and under downturn conditions for LGD.

Scenarios

- **Market wide shock** scenarios
- **Counterparty** specific and **idiosyncratic shock** scenarios
- **Sector specific** and **region specific shock** scenarios and a combination of the above

Institutions should apply different **time horizons.**

1. Credit conversion factor (CCF).

Annex
Stress testing of individual risk categories

Institutions should consider securitisation risk arising from structured credit products when they act as originator, sponsor or investor

Securitisation risk

Stress testing

- Institutions should take into account securitisation risk that arises from **structured credit products**. In this regard, institutions should ensure that stress testing of securitised assets addresses the **credit risk of the underlying pool of assets**, taking into account all **relevant information** with regard to the specific structure of each securitisation (e.g. seniority of the tranche, the thickness of the tranche, etc.).
- The **sensitivity to systemic market effects** on all levels of the structured product and the effect of **reputational risks** should be carefully taken into account.
- Stress tests should address all relevant **contractual arrangements**, the potential impact of **embedded triggers** (e.g. early amortisation provisions), the **leverage** of the securitisation structure and the **liquidity/funding risks** arising from the structure.
- **Scenarios** should consider also the **default** of one or more of the **contractual counterparties** involved in the securitisation structure.
- If the institution relies on external ratings to assess the risk of securitised products, the **external ratings** should be **critically reviewed**.
- When designing the stress testing approach, institutions should consider the following:
    - The **impacts** of stress tests for structured credit products will materialise on the level of the asset pool in **increased PDs and LGDs** and hence increased expected loss/impairment rates and regulatory capital should be expected during shocks.
    - That further impact may arise from **decreases in the net-cash flow**, increases in **trading losses** and **value adjustments** or from the deterioration of regulatory metrics.

Annex

Stress testing of individual risk categories

The risks derived from losses resulting from adverse changes in the value of positions arising from movements in market prices should be consider in the stress test for market risk

Market risk

Stress testing

- **Covered positions**: it should be conducted for positions in financial instruments in the trading and available-for-sale portfolios, including securitisation instruments/positions and covered bonds.
- **Calibration**: institutions should at least take into account the nature of their portfolios, their trading strategies, the possibility and time that could take to hedge out or manage risks under severe market conditions.
- **Weakness of the Value at Risk (VaR)**: institutions should take into account the models related to the non-capturing or the underestimation of tail risk by historical data. To capture fat tails, institutions should apply severe hypothetical scenarios.
- **Assessment**: institutions should assess the consequences of major market disturbances and should identify plausible situations which could entail extraordinarily high losses.
- **List of measures**: institutions should have in place a list of the measures containing limits and other possible actions taken to reduce risks and preserve own funds.

Scenarios

- Institutions should apply a range of severe but plausible scenarios for all positions (e.g. exceptional changes in market price, shortages of liquidity in the markets or defaults of large market participants).

Annex

Stress testing of individual risk categories

The institutions should assess those risks derived from deficiencies and failures of internal processes, people, systems or external events

Operational risk

Stress testing

Institutions should analyse at least:

- The exposure of the institution to activities and their associated **risk culture** and **past record** of operational losses
- The **business environment**, including geographical locations where the institution operates
- The **evolution in headcount** and in balance sheet **size** and **complexity** over the past few years, including structural changes (e.g. mergers and acquisitions)
- Changes to significant elements of the **IT infrastructure**
- The degree and orientation of incentivising in **compensation schemes**
- The **complexity** of processes and procedures, products and IT systems
- The extent of **outsourcing**, with a view of the concentration risk;
- The **vulnerability** to model risk.

Scenarios

- **Idiosyncratic risk factors** should be explored and used as an input for scenario design. Indicatively, institutions under the advanced measurement approach should stress their business environment and internal control factors (BEICF).

Annex
Stress testing of individual risk categories

Institutions should consider those risks arising from the current or prospective risk of losses from inappropriate supply of financial services

Conduct risk

Stress testing

Institutions should assess the following exposures:

- **Miss-selling of products**, in both retail and wholesale markets
- **Pushed cross-selling** of products to retail customers
- **Conflict of interest** in conducting business
- **Manipulation of benchmark** interest rates, foreign exchange rates or any other financial instrument
- **Barriers to switching financial products** during their lifetime
- **Poorly designed distribution channels** that may enable conflicts of interest with false incentives
- **Automatic renewals of products** or exit penalties
- **Unfair processing** of customer complaints

Institutions will measure conduct-related risk by taking into account the uncertainty around **provisions or expected losses** originating from conduct related events and extreme losses associated with tail risks (unexpected losses).

In order to capture the risk that the provisions are insufficient or timely inconsistent, institutions should assess expected losses from **conduct risk in excess** of existing **accounting provisions** and factor these in their projections.

Annex

Stress testing of individual risk categories

Institutions should assess those risks arised when they are not able to meet efficiently current and future cash flows by considering three scenarios i.e. idiosyncratic, market-wide and a combination of these two

Liquidity risk

Stress testing

- Institutions should take into account that **liquidity or funding risks** encompass short to medium term liquidity risk and funding risk.
- Institutions should analyse **risk factors** relating to both asset and liability side items, as well as to off-balance sheet commitments and that comprise, but are not limited to:
  - Retail deposits run-off
  - Secured and unsecured wholesale funding
  - Contingent cash flows/off-balance sheet items
  - Encumbrance and marketability of assets
  - Credit pipelines

Scenarios

- **Idiosyncratic stress**: should assume institutional specific events (e.g. rating downgrade, default of the largest counterparty, etc.).
- **Market-wide stress**: should assume an impact on a group of institutions or the financial sector at all (e.g. deterioration in funding market conditions, rating downgrades of countries, etc.).
- **A combination of these two**.

For each scenario, at each stress level, the institution identifies **cash inflows** and **outflows** that are projected for each future time period and the resulting net cash flows.

Annex
Stress testing of individual risk categories

Institutions should assess all material interest rate risks, such as the yield curve risk, spread risk and option risk

Interest rate risk from non-trading activities

Stress testing

- Institutions should consider the following **elements**:
  - The **spread risk**, which arises from reference rates mismatching between time-matched funding and investments; and
  - **Early termination risks** included in contracts with an embedded option, which might the institution into a new on less favourable terms.
- Institutions should be aware of potential indirect interest effects triggering losses elsewhere (e.g. that a pass-through onto lending rates could trigger further credit risk losses).

Scenarios

- The scenarios should be adequate to identify all **material interest rate risks** (e.g. yield curve risk, spread risk and option risk).

Annex
Stress testing of individual risk categories

Institutions should take into account the risks arising from the unhedged borrower's inability to service debt denominated in other currency

FX lending

Stress testing

- Institutions should take into account at least the following aspects:
  - The **type of exchange rate regime** and how this could impact on the evolution of the FX rate between domestic and foreign currencies
  - The sensitivity impact of **exchange rate movements** on the borrowers' credit rating/scoring and debt servicing capacity
  - **Potential concentrations** of lending activity in a single foreign currency or in a limited number of highly correlated foreign currencies
  - Potential concentrations of lending activity in some specific sectors of the economy in the country currency and respective evolution of such sectors highly correlated with foreign currencies
  - The ability to **secure financing** for this type of portfolio

Scenarios

- They should be developed by changing different parameters to allow them to forecast FX credits portfolio performance in different cases, such as:
  - Assuming **exchange rate appreciation** of host currency by a predetermined percentage.
  - Assuming **shift in FX interest rate** by a predetermined percentage points.
  - **Combining both** of the above.

Annex

Stress testing of individual risk categories

Institutions should take into account the credit risk of each exposure but also additional sources of risk arising from the similar behaviour of certain exposures

Concentration risk

Stress testing

- The **source of risk** under analysis should cover, at least:
  - The **single-name** concentrations
  - The **sectoral** concentrations
  - The **geographical** concentrations
  - The **product** concentrations
  - The **collateral and guarantees** concentrations
- Institutions should assess concentration risk considering on- and off-balance sheet exposures, as well as **banking, trading and hedging positions**. Moreover, those unusual but plausible changes in correlations between various types of risk factors as well as extreme and unusual changes in risk parameters, going beyond single risk factors should be taken into account.
- In addition, it should be factored into the stress test, the **risk of short-term** large increases in losses as a result of **concentrated exposures** across the retail and corporate credit books or across different entities in a group.