



Commission de Surveillance  
du Secteur Financier

# Circular CSSF 11/506

AS AMENDED BY CIRCULAR  
CSSF 20/753

PRINCIPLES OF A SOUND STRESS  
TESTING PROGRAMME

## Circular CSSF 11/506 as amended by Circular CSSF 20/753

Re: Principles of a sound stress testing programme

Luxembourg, 21 October 2020

**To all credit institutions and CRR investment firms incorporated under Luxembourg law and to the Luxembourg branches of credit institutions and investment firms having their registered office in a third country**

Ladies and Gentlemen,

In accordance with requirements specified in Directive 2013/36/EU<sup>1</sup>, as transposed by Article 6 of CSSF Regulation N° 15-02 ("RCSSF 15-02"), CRR institutions (as defined in Article 1(1) of RCSSF 15-02 and hereafter referred to as "institutions") shall have in place effective processes to identify, manage, monitor and report the risks they are or might be exposed to.

The purpose of this circular is to further specify the implementation of this article in the field of stress testing which represents a key practice for sound risk management and capital and liquidity planning. The requirements hereunder are aligned with the EBA "Guidelines on institutions' stress testing" of 19 July 2018 (EBA/GL/2018/04)<sup>2</sup>.

### Chapter I. Introduction

1. Stress testing forms a set of practices the objective of which is to regularly assess whether adverse events would jeopardise the adequacy between an institutions' business model, its risk appetite and its existing capacity to manage and bear risks. Its outcome should enable the management body to decide whether corrective measures are required in order to ensure the viability of the institution and its resilience in times of stress. Stress testing is a key risk management practice which complements the ongoing, daily, sound and prudent management of risk.
2. Institutions may use inputs and expertise not owned by them (e.g. intragroup). Stress tests conducted with such support shall be fit for local purpose: their results shall fully reflect the financial and operational situation of the Luxembourg institution and allow local management to take well informed risk mitigating measures, as required. The detail of such stress tests shall be available to the CSSF at its request.
3. The stress testing programme includes notably the stress tests carried out pursuant to Pillar 2 and documented through the ICAAP/ILAAP information that the authorised management submits to the management body in its supervisory function.

<sup>1</sup> Directive 2013/36/EU of the European Parliament and of the Council of 26 June 2013 on access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms, amending Directive 2002/87/EC and repealing Directives 2006/48/EC and 2006/49/EC

<sup>2</sup> Available on the website <https://www.eba.europa.eu>

## Chapter II. Scope

4. All institutions<sup>3</sup> are required to have in place a sound and proportionate stress testing programme. The requirements of this circular apply to the institutions based on their individual and consolidated situation.
5. The circular applies to all the internal ("Pillar 2") as well as the regulatory ("Pillar 1") stress tests, notwithstanding specific stress testing requirements contained in other regulation.

## Chapter III. Principle of proportionality

6. The requirements of this circular shall be implemented proportionally to the nature, scale and complexity of the institution's activities and organisation. Proportionality applies to all aspects of the stress testing framework, including methodology and design, technical infrastructure, resources and processes.

Institutions that are designated as other systemically important institutions pursuant to article 59-3 of the law of 5 April 1993 on the financial sector are expected to benchmark their stress testing framework against the more granular requirements of the EBA/GL/2018/04.

7. All institutions shall implement a qualitative stress testing programme which shall allow them to assess whether the business model, risk appetite (defined for all the risks inherent to their activities and organisation) and their existing capacity to manage and bear risks (capital, liquidity buffers and tools for risk management and control) continue to form a coherent and robust system when confronted to adverse internal and external developments.
8. The *quantitative* approaches used for stress testing purposes ideally combine (simple) analyses of sensitivity to individual risks with integrated analyses allowing the assessment of the impact of (complex) macroeconomic scenarios on the institution's financial and operational situation. The institutions shall choose the combination of those quantitative analyses that best suits their needs as regards the sound and prudent management of their business. Having regard to the principle of proportionality, this choice may be limited to sensitivity analyses only for institutions whose low and non-complex risk profile is fully analysed in terms of sensitivity analysis.

## Chapter IV. Internal governance

9. The management body shall regularly ensure that the institution has a sound stress testing programme the results of which allow the management body to identify and understand the (extreme) adverse events for the institution and to assess whether these events could jeopardise the

<sup>3</sup> « Significant supervised entities » as defined in Article 2, point 16 of Regulation (EU) No 468/2014 of the European Central Bank (ECB) of 16 April 2014 (SSM Framework Regulation) shall refer to the relevant ECB rules (if any).

adequacy between the business model, the risk appetite and the existing capacity to manage and bear risks. The management body in its supervisory function appoints the authorised management to implement a stress testing programme fulfilling this objective.

10. The authorised management is in charge of the implementation of a stress testing programme tailored to the institution's needs and compliant with the requirements set out in this circular. It lays down in writing and formally adopts the annual plan of stress tests which determines the tests to be performed during the year, including their main characteristics (scenario, granularity, scope, frequency, calibration). The authorised management informs the management body in its supervisory function, on a regular basis and in case of need, of the state of the stress testing programme and of the results of this programme.
11. The stress testing programme, as implemented by the authorised management shall:
  - have competent and sufficient executing personnel as well as a technically adequate infrastructure;
  - be subject to written internal procedures which determine the objectives, the processes as well as methods for stress tests, including working hypotheses and the selection of the relevant scenarios/sensitivities. These procedures identify in particular the responsibilities of the main contributors to the stress testing programme and ensure that these responsibilities are clearly allocated, executed and controlled;
  - allows all the stakeholders within the institution (at the level of business lines or (internal) control functions) and the relevant hierarchical levels to contribute to the effectiveness of the stress testing programme through their expertise and to take responsibility in this respect.
12. The authorised management critically assesses and approves the main methodological choices and hypotheses as well as the scenarios of the stress testing programme on a regular basis. This assessment shall allow the authorised management to know and understand the scope and the limits inherent to the stress testing programme. It shall cover the application of the principle of proportionality.
13. The management body shall demonstrate appropriate commitment to and knowledge of the stress testing programme and its outcomes. It should regularly analyse the results of the stress tests, use these results as input to the process of establishing, challenging and validating the business model, the risk appetite (including risk limits), the risk policy as well as the policies of internal capital and liquidity planning of the institution and decide on corrective measures, if needed.

#### **Chapter V. Characteristics of a sound stress testing programme**

14. The stress tests shall comply with the following conceptual requirements, in line with the general principles in chapter 3 of part II of circular CSSF 12/552:
  - exhaustively and adequately cover any material risk factor to which the institution is or might be exposed to and any material activity carried out by the institution;

- allow identifying and analysing all material risk concentrations;
- take into account the relations (e.g. correlations) which exist between the different activities and the different risk factors considering the changing nature of these relations particularly in a crisis situation;
- be performed at least once a year or more frequently if required by proportionality;
- be submitted to a regular and independent review aiming to guarantee that the stress testing programme remains effective, sound and robust especially in a changing environment;
- be documented (as regards policy, procedures, results as well as the ensuing conclusions and actions).

15. The results of the stress testing programme shall:

- highlight the possible inconsistencies between the business model, risk appetite and existing capacity to manage and bear current and future risks;
- permit the allocation of adequate capital and liquidity through the economic cycle;
- be sufficiently granular, so as to allow a breakdown of the overall stress test results to material or relevant entities or business lines in order to permit dedicated risk management and decision taking at the level of these entities or business lines, in line with the organisational setup of the institution. The stress tests covering the institution as a whole may be obtained through aggregation of the stress tests of the different constituent parts provided that the methods used are consistent and that the simple aggregation is representative of the (linear) aggregate risk profile of the institution as a whole;
- give rise to credible corrective measures in terms of business model, incurred risks or tools for risk management and control. These measures shall be reflected particularly at the level of the crisis management and recovery processes described in the policies regarding risks, capital or liquidity which are required in order to maintain the financial stability of the institution and to guarantee its viability.

## Chapter VI. Methodologies

16. The use of appropriate methodologies is a key element in order to reach the goal set in point 1. Generally, any effective stress testing programme combines sensitivity analyses and scenario analyses with so-called reverse stress tests as defined under Chapter VI.5. The institutions shall identify the best combination of these methods taking into account the application of the principle of proportionality and the objective described in point 1. The scope of stress testing may vary from simple portfolio level sensitivity or individual risk level analyses to comprehensive institution-wide scenario stress testing.

### **Sub-chapter VI.1. Sensitivity analyses**

17. Sensitivity analyses aim to assess the effect of an adverse development of one or several risk factors on the institution's situation. They allow the institutions to better understand the impact of an adverse development of their main risk factors.
18. Any institution shall carry out sensitivity analyses of all its main risk factors. The implementation of these analyses requires an exhaustive identification of the main risk factors inherent to the institution's activities and organisation.
19. In sensitivity analyses, the risk factors identified as the main ones shall be subject to adverse developments characterised by different degrees of severity matching past stress episodes as well as hypothetical and prospective adverse developments.

### **Sub-chapter VI.2. Scenario analyses**

20. Scenario analyses may be compared to multi-factorial sensitivity analyses in which the selection of risk factors included in the analysis as well as the severity of their adverse development depend on a hypothetical state of the world ("scenario"). The scenarios may be historical (state of the world observed in the past) or hypothetical.
21. Having regard to the principle of proportionality, the institutions carry out scenario analyses. The scenarios shall be representative of the incurred risks (cover all the main risk factors) and of the environment in which the institution, with its activities and organisation, evolves (prospective scenarios which avoid in particular repeating the historical scenarios which ceased to be representative) and shall refer to adverse developments characterised by different degrees of severity. In addition, the chosen scenarios should take into account systemic interactions (in particular contagion effects and correlated behaviour) and feedback effects.
22. The translation of the scenarios into risk parameters being a difficult task, the institution shall ensure that the ensuing risk parameters are consistent and that the model risk is limited *via* critical expert judgement and through an adequate degree of conservatism.

### **Sub-chapter VI.3. Time horizon and severity of the stress tests**

23. Institutions should ensure that stress testing is based on severe but plausible scenarios and the degree of severity should reflect the purpose of the stress test. To that end, stress tests should be:
  - meaningful in terms of addressing relevant risks to the institution with a view to promoting the stability of the institution under severely adverse conditions, being mindful of potential systemic implications; and
  - consistently applied across the institution, recognizing that the impact of identical scenarios is not necessarily severe for all business lines.
24. The institution chooses the time horizon of the stress tests (assumed duration of the effects of adverse developments for the institution) according to the characteristics of its activities and risks (liquidity and

maturity of the exposures), the underlying hypotheses of the stress tests and, where applicable, the dynamics of the chosen scenario. The time horizon takes into account the execution deadlines necessary in order to implement, where applicable, the required corrective measures. Institutions shall also have a clear understanding how successive stress tests link up to provide time consistent management of risks and capital/liquidity over the long run. This is particularly relevant for longer term risks, where the materialization of risks spans longer time horizons.

#### **Sub-chapter VI.4 Individual risk areas**

25. Individual risk areas may require special attention and all material risks should be covered in proportion to the nature, scale, size and complexity of the institution's activities and risks. Institutions should incorporate into their stress testing relevant longer term risks such as climate-related risks.

#### **Sub-chapter VI.5. Reverse stress testing**

26. Reverse stress testing starts from the assumption of a severely impaired situation (e.g. a situation in which capital and/or liquidity buffers become insufficient or the institution's business model fails) and aims to build adverse scenarios which may trigger such situation. This approach, the purpose of which is to identify the developments with a strong negative impact for the institution, is particularly suitable for the assessment of choices and hypotheses regarding the business model, the risk appetite and the institution's capacity to manage and bear risks.
27. The institutions shall implement *qualitative* reverse stress tests which allow them to identify the nature and characteristics of adverse scenarios which may jeopardise the adequacy between their business model, their risk appetite and their existing capacity to manage and bear their current and future risks. Having regard to the principle of proportionality, the institutions should complement this qualitative approach with quantitative reverse stress tests.
28. As part of their business planning and risk management, institutions should use reverse stress testing to understand the viability and sustainability of their business model and organisational setup.
29. Reverse stress testing should be used as an input to inform and test the efficiency and effectiveness of recovery actions and recovery planning.

### **Chapter VII. Data infrastructure**

30. Institutions shall ensure that the stress testing programme is supported by a data (management) infrastructure that permits the timely production of all required data points and their processing (including aggregation) so as



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to ensure the integrity, comprehensiveness and accuracy of the stress test results<sup>4</sup>.

Yours faithfully,

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Director

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Director

**Jean-Pierre FABER**  
Director

**Françoise KAUTHEN**  
Director

**Claude MARX**  
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<sup>4</sup> *Data and data aggregation requirements should be in line with the “Principles for effective risk data aggregation and risk reporting” published by the Basel Committee of Banking Supervision (BCBS 239)*





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