EBA Report
Review Panel
12 November 2013

Report on the peer review of the EBA Stress Testing Guidelines (GL 32)

Report on the peer review of the EBA Stress Testing Guidelines (GL 32)

Table of contents

Abbreviations

BCBS	Basel Committee on Banking Supervision
BoS	Board of Supervisors
CEBS	Committee of European Banking Supervisors
CRD	Capital Requirements Directive
EBA	European Banking Authority
EEA	European Economic Area
FA	Fully applied
FTE	Full-time equivalent
GDP	Gross Domestic Product
GL	Guideline
G-SIFI	Global Systemically Important Financial Institution
ICAAP	Internal Capital Adequacy Assessment Process
JRAD	Joint Risk Assessment and Decision
LA	Largely applied
LCB	Large and Complex Banks
MS	Member State
N	Not applied
N/A	Not applicable
NCA	National Competent Authority
OB	Other Banks
PA	Partially applied
SAQ	Self-Assessment Questionnaire
SREP	Supervisory Review and Evaluation Process

Executive summary

The EBA peer review by the EBA Board of Supervisors (BoS) on the implementation of Guidelines 18-20 from the Guidelines on Stress Testing (document known as GL 32)[1] shows that NCAs largely apply these guidelines. Of these three guidelines assessed, Guideline 19 has been implemented rather more than Guidelines 18 and 20, although differences in the degree of application are fairly small.

The EBA conducted six on-site visits based on the outcomes of the desk-based peer review of GL 32 to supplement its final assessment. The interview-based visits took place at NCA premises.
The findings from the peer review and from the on-site visits are as follows:

- As far as NCAs' resource models are concerned, both centralised resources and dispersed resource models have benefits. Irrespective of the model however, dedicated stress testing technical experts should be involved.
- NCAs should clearly document their implementation policy for GL 32 in one place. It was noted that stress test instructions at a national level are generally spread over various supervisory manuals at the moment, and not located in one place.
- NCAs often focus on the (few) largest banks in their jurisdiction, and devote far less attention to other banks. Different interpretations of proportionality are applied, such as coverage of total assets rather than asset quantity or specific characteristics of banks.
- The incorporation of stress testing into the SREP and the joint decision process is handled differently across NCAs.
- Of those NCAs where an on-site visit was conducted, many did a substantial amount of work on top-down stress testing, from both a micro- and macro-prudential perspective.
- Very few NCAs require reverse stress testing, and for those that do carry it out, this is often as part of recovery and resolution planning, which, although useful, serves a different purpose.

In its peer review, the EBA assessed the resources committed by NCAs to the review of institutions' stress testing programmes. For most NCAs, the review of stress testing programmes is not done by a separate and quantifiable function but is an integrated part of their on-going supervision of credit institutions. Nonetheless, some NCAs do have dedicated specialist functions in their authorities that perform the supervisory review in collaboration with line managers. A number of NCAs perform various supervisory stress tests (both in a bottom-up or top-down fashion) in addition to the ongoing supervisory review of institutions' ICAAP.

In terms of best practice, it helped NCAs where the GL 32 were reflected in national legislation or communicated directly to banks. Various examples of best practice were identified:

[1] The Guidelines on Stress Testing were published by the CEBS on 26 August 2010 and are available at: http://www.eba.europa.eu/documents/10180/16094/ST_Guidelines.pdf.

- NCAs should have **standard procedures** and manuals in place to assess stress testing frameworks during off- and on-site supervision.

- Off-site analysis should generally be complemented by **regular on-site inspections**, where the severity, plausibility and consistency of assumptions and scenarios are reviewed, taking into account current and future market conditions and the economic situation, plus conclusions from previous inspections and from off-site supervision.

- **Follow-up processes** where deficiencies or weaknesses are detected should typically include NCAs taking effective **supervisory action**. Follow-up action should be mandatory and **monitored** in both on-going and on-site supervision.

Another example of good practice identified was that some NCAs do perform **comparisons between banks with similar characteristics** (peer group or horizontal analysis) **and historical information**. It was noted positively that some NCAs compare **banks' internal stress testing results** with supervisory projections or supervisory stress test scenarios, macroeconomic forecasts and international stress test exercises. The results of the stress test should constitute a central input to the SREP/JRAD for cross-border banking groups. Discussions about the stress test should take place in the supervisory college at least every year, and there may also be discussions with relevant members of the college during the year. All relevant information (not only the results) should be used in the joint decision process, together with documented processes, principles and methodologies.

Given the developments in this rapidly changing field, the EBA recommends a review of the guidelines. The examples of best practice contained in Section 5 should be taken into consideration in this review. The EBA should also consider what elements of the review could be picked up in the Single Supervisory Handbook.

1. Introduction

1.1 Mandate

This document presents a summary of the final results of the peer review by EBA BoS members and observers regarding implementation of the Guidelines on Stress Testing (GL 32). Peer reviews assess and compare the effectiveness of the supervisory activities and the implementation and effectiveness of the provisions of competent authorities. This includes, inter alia, regulations, procedures, enforcement powers and practices.

In June 2012, the EBA's BoS supported a peer review of how the GL 32 had been applied, with a focus on the combination of Guidelines 18, 19 and 20, which read as follows:

- Guideline 18: 'Supervisors should undertake regular reviews of institutions' stress testing programmes covering scenario selection, methodologies, infrastructure and use of stress tests.'

- Guideline 19: 'Supervisors should review stress testing outputs in order to assess the resilience of individual institutions to adverse economic conditions and whether they are able to maintain sufficient capital and liquidity. In doing this, supervisors should take into account details of movements in capital and capital needs, and liquidity and liquidity needs, under stressed conditions.'

- Guideline 20: 'Supervisors should evaluate and challenge the scope, severity, assumptions and mitigating actions of firm-wide stress tests.'

The topic of stress testing was chosen because of the special emphasis placed on it by NCAs and the EBA over the last couple of years. The BCBS has also conducted a 'Peer review of supervisory authorities' implementation of stress testing principles' (see Section 2 for more detail). Stress testing was thus deemed an appropriate topic for the peer review, focusing on methods and examples of best practice.

The guidelines in GL 32 draw on supervisors' experience from reviewing institutions' stress tests in recent years and are meant to assist institutions in understanding supervisory expectations of appropriate stress testing governance and infrastructure. They also cover the use of stress testing as a risk management tool.

These guidelines were designed to help institutions and supervisors to achieve robust, methodologically sound outputs that are effective in identifying risks and potential mitigating measures during stressed conditions as well as detecting the overall impact of risk on an institution.

The topics covered included stress testing governance structures and their use, possible methodologies, including choosing the appropriate severity of scenarios, a multi-layered approach to stress testing programmes, from simple portfolio-level to comprehensive firm-wide scenario analyses and outputs of stress testing programmes, including the interaction of these outcomes and management intervention/mitigating measures.

All 27 members of the EBA's BoS (in its composition at the end of 2012[2]) were subject to the peer review of GL 32, plus three observers (IS, LI, NO). A complete list of the NCAs that participated in the peer review can be found in Annex I.

1.2 EBA Regulation

In line with its mandate to assess to degree of convergence by EEA countries with regard to the implementation of these EBA Guidelines, the EBA and its Review Panel conduct independent peer reviews based on self-assessments provided by its members and observers. Consistent with the so-called 'comply or explain' approach, should a member not have implemented a given supervisory provision or practice, then it has to explain why.

Peer review exercises are conducted in accordance with the provisions of Article 30 of Regulation (EU) No 1093/2010 of the European Parliament and of the Council of 24 November 2010 ('the EBA Regulation') and the EBA decision establishing the Review Panel. The peer reviews relate to the following parts of the EBA Regulation:

[2] The Hrvatska Narodna Banka (Croatian National Bank) was not yet subject to this peer review exercise. Going forward, the Croatian NCA will be subject to future EBA peer review exercises.

- Article 8 (1)(e) – organising and conducting peer review analyses of competent authorities;
- Article 29 – playing an active role in building a common supervisory culture;
- Article 30(2)(a) – assessing adequacy of resources and governance arrangements of competent authorities;
- Article 30(2)(b) – assessing the degree of convergence in the application of EBA Guideline;
- Article 30(2)(c) – assessing examples of best practice developed by some competent authorities which migh of benefit for other competent authorities.

At the end of each peer review the EBA expects to:

- issue a report with a description and comparison of supervisory approaches and compliance of the same regards to the guidelines;
- identify examples of best practice for supervisors;
- express an opinion on the adequacy of the current guidelines; and
- express an opinion on the need for further guidance.

1.3 Methodology

The peer review followed the EBA Review Panel methodology for the conduct of peer reviews (EBA BoS 2012 107) approved in June 2012.[3] In line with the methodology, the review had four phases:

- **Phase 1 – preparatory**
  - August 2012-November 2012: preparation and finalisation of the self-assessment questionnaire.
- **Phase 2 – self-assessment**
  - November 2012-January 2013: the self-assessment questionnaire was rolled out to NCAs. NCAs were asked to submit their initial self-assessments.
  - February-May 2013: the EBA developed further benchmarking criteria in order to provide more independent, objective and clear criteria to judge the degree of observance by NCAs of the guidelines.
  - April-May 2013: NCAs were asked to react to follow-up questions and to consider their self-assessments in light of benchmarks and revise if necessary.
- **Phase 3 – review by peers**

[3] The methodology is available at: http://www.eba.europa.eu/documents/10180/15911/EBA-BS-2012-107--Proposed-Methodology-for-EBA-Review-Panel-.pdf/4e757eb2-9cc9-4283-be48-eb535486a6e7.

- February-August 2013: reviewers then considered the questions, self-assessments and benchmarks revising them as necessary in order to promote consistency of responses across NCAs. The EBA considered proposed assessments of observance (e.g. from 'fully applied' to 'not applied').

- **Phase 4 – on-site visits**

  - August 2013-September 2013: small teams, typically two NCA experts in stress testing and a member of EBA staff, visited a number of NCAs. The visits served one of two purposes: (i) to investigate further the responses from the NCA where they lacked detail; or (ii) to gather further information on examples of good/best practice at the NCA.

In the initial self-assessment phase of the peer review, a self-assessment questionnaire of 34 questions was issued to EBA BoS members and observers on 21 November 2012 and completed self-assessments were due by 11 January 2013. NCAs were asked to differentiate between LCBs and OBs[4], thus taking account of proportionality. The proportionality principle lays down that the degree of supervision should be based on the nature, scale and complexity of the supervised institution. For each question in the self-assessment questionnaire there were two sets of different self-assessments for LCBs and OBs. The EBA and the Review Panel followed-up the first set of self-assessment questions with additional questions in May 2013 to clarify NCAs' approaches further. A few NCAs also used that opportunity to revise their initial self-assessment.

In the second phase of the peer review, the answers provided by NCAs to the SAQ were scrutinised further and subjected to challenge by the Review Panel. For each supervisory provision or practice subject to peer review, 'assessment criteria' or 'benchmarking criteria' were devised. These criteria consist of the essential elements and intended outcome of the supervisory provision or practice. Assessments for LCBs and OBs were combined to produce an overall final assessment for each of the 34 questions based on the three individual guidelines in GL 32 and the 'benchmarking criteria'. The period between 1 January 2012 and the date of the self-assessment was chosen as the reference period.

For benchmarking purposes, the following grade-scales were used:

- ***Fully applied****:* A provision is considered to be 'fully applied' when all assessment criteria as specified in the benchmarks are met without any significant deficiencies.

- ***Largely applied****:* A provision is considered to be 'largely applied' when some of the assessment criteria are met with some deficiencies, which do not raise any concerns about the overall effectiveness of the competent authority, and no material risks are left unaddressed.

- ***Partially applied****:* A provision is considered to be 'partially applied' when some of the assessment criteria are met with deficiencies affecting the overall effectiveness of the competent authority, resulting in a situation where some material risks are left unaddressed.

[4] The following definition was applied for these two groups: The ECB's Financial Stability Review of December 2010 considers large and complex banking groups (LCBGs) as groups 'whose size and nature of business is such that its failure or inability to operate would most likely have adverse implications for financial intermediation, the smooth functioning of financial markets or other financial institutions operating within the financial system.' In the context of the SAQ, this definition relates first of all to the significance of the bank in connection with the domestic market of the particular Member State.

- ***Not applied**:* A provision is considered to be 'not applied' when the assessment criteria are not met at all or to an important degree, resulting in a significant deficiency in the application of the provision.

- ***Not applicable***: A provision under review is to be considered 'not applicable' when it does not apply given the nature of a competent authority's market.

- ***Non-contributing**:* A competent authority shall be classified as 'non-contributing' if it has not provided its contribution within the prescribed deadline.

The EBA assessed how each of the Guidelines 18-20 was applied. Each of the 34 SAQ questions was weighted by importance in relation to implementation of GL 32. This was to ensure that NCAs fulfilled the most important requirements of GL 32 and demonstrated the degree of application of the EBA Guidelines. Only if a minimum degree of application was given for specific questions, could an assessment at a higher level be assigned overall. Overall assessments on the application of requirements were given for Guidelines 18-20 using a flow approach (also referred to as 'waterfall approach'), which first assessed the questions of 'low' importance, and then the ones of 'medium', and finally those of 'high' importance.

A more quantitative scoring approach was applied as a cross-check. This approach complemented and back-tested the waterfall approach and produced useful insights for the final scoring.

2. Key findings of the peer review

Overall, the final peer review results indicate that NCAs largely apply the three individual Guidelines 18-20 assessed from the EBA GL 32. Based upon the EBA Review Panel Methodology, about two thirds of NCAs apply all three guidelines either fully or largely; the majority falling into the latter category. The other third of NCAs applies the guidelines partially, although in a few cases not at all. The methodology uses a stricter assessment for assessing the level of application at the aggregate guideline level compared with the number of individual assessments of specific aspects that were deemed to be fully or largely applied. On the basis of the individual assessments, 47.84% of all assessments would be considered 'fully applied', 34.51% as 'largely applied', 12.45% as 'partially applied' and 2.75% as 'not applied'.

Guideline 19 is applied to a higher degree than the other two guidelines. The application of Guideline 18 is slightly better than Guideline 20 although the differences are relatively small. Considering the individual assessments, Guideline 19 is fully or largely applied by 88.67% of NCAs, while Guideline 18 is fully or largely applied by 84.77% and Guideline 20 by 78%. A more detailed breakdown by guideline, including by particular paragraphs can be seen in Section 2.1-2.3. This also includes specific observations.

The BCBS also conducted a 'Peer review of supervisory authorities' implementation of stress testing principles' during 2011, which was published in April 2012.[5] The BCBS reviewed the implementation of

[5] See http://www.bis.org/publ/bcbs218.pdf.

its 'Principles for sound stress testing practices and supervision'[6] from May 2009. The BCBS peer review focused primarily on the implementation of its principles 16-21 for supervisors. While the subject matter and scope are broadly similar to the EBA's peer review, the two studies do not overlap fully.

The BCBS found that 'in the period since the principles were issued, stress testing has become a key component of the supervisory assessment process as well as a tool for contingency planning and communication.' It was noted that the national authorities that are also members of the BCBS were at varying stages in their approach to stress testing[7]. Around half of the countries subject to the BCBS peer review were considered to be in the early stages of implementation and only a few countries were advanced in their implementation. The rest were at an intermediate stage of implementation. Generally, the BCBS found its principles to be effective but signalled that it would continue to monitor how they were implemented.

The BCBS's 2012 findings seem comparable with those of the EBA overall. However, although both reviews covered 29 or 30 NCAs, the overlap of participating NCAs is somewhat limited as only nine of the NCAs subject to the EBA's peer review exercise on GL 32 are also members of the BCBS. Furthermore, the EBA and the BCBS applied their own methodologies which do differ in some aspects. For example, the BCBS peer review was based solely on an off-site survey to members of the BCBS unlike the EBA's peer review on its GL 32.

2.1 Guideline 18

Guideline 18 lays down general requirements for NCAs to review credit institutions' stress testing programmes and reads:

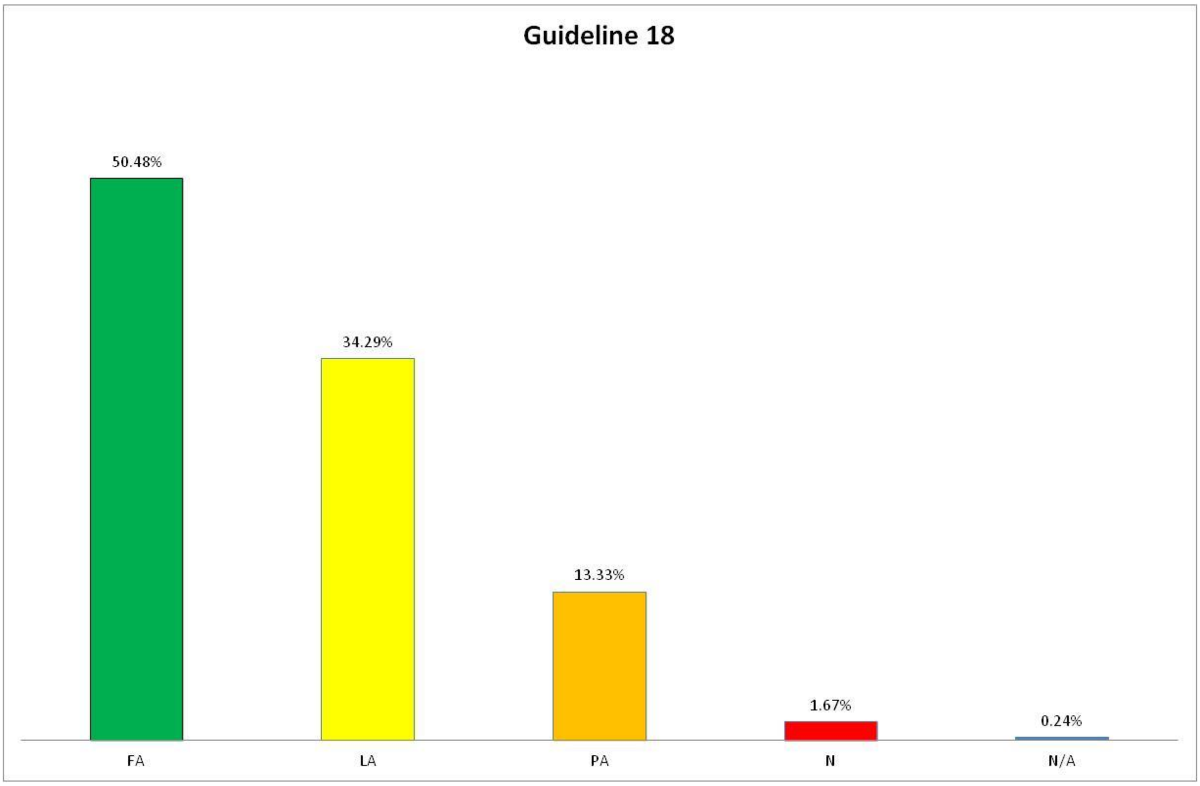
> 'Supervisors should undertake regular reviews of institutions' stress testing programmes covering scenario selection, methodologies, infrastructure and use of stress tests.'

The chart below breaks down the final assessment of questions 1-14 used for the assessment and relevant for Guideline 18.

Figure 1: Summary chart of NCA peer reviewed assessments – Guideline 18

[6] See http://www.bis.org/publ/bcbs155.pdf.

[7] Only BE, DE, ES, FR, IT, LU, NL, SE and UK participated in both the EBA and the BCBS peer review exercises regarding stress testing.



Legend: FA: "fully applied", LA: "largely applied", PA: "partially applied", N: "not applied" or "non-contributing", N/A: "not applicable".

Questions 1 and 2 addressed the very core of the review of stress testing programmes – whether NCAs generally adhere to the GL 32 and whether they apply the principle of proportionality in so doing. These questions also relate to the relevance of stress testing and how it is integrated into the supervisory framework. The main idea behind the two questions is to find out how the GL 32 is implemented in national legislation – whether there is a procedure/tool for carrying out assessments and whether there is an explicit follow-up procedure for the cases where supervised entities do not comply or only partly comply with GL 32.

The NCAs' responses to the self-assessment questionnaire, including to the follow-up questions, showed how variations in market size and the legislative background result in different levels of guideline application. At the same time, the EBA noted that all NCAs are convinced of the importance of complying with the underlying basis of GL 32 as almost all NCAs at least 'largely apply' GL 32. Almost all NCAs have transposed GL 32 into national supervisory guidelines and reflected these in national manuals/handbooks. Some NCAs, while not necessarily directly transposing GL 32 into national supervisory guidelines, have nonetheless reflected GL 32 in the national manuals/handbooks, where applicable.

Question 3 related to Guideline 18, paragraph 93 of GL 32 and asked whether an assessment of an institution's resource commitment formed part of the NCA's supervisory review. Most NCAs are deemed to fully or largely apply the requirements set out in GL 32. In fact, half of all participating NCAs largely comply with GL 32. The main reason for a 'largely applied' compared to a 'fully applied' assessment is that most of the largely complying NCAs regularly assess an institution's resource commitment overall, rather than doing this in detail.

Question 4 was in regard to Guideline 18 paragraph 93 of GL 32 and asked whether the NCA's supervisory review included an assessment of the adequacy of the procedures in place at institutions for rigorous forward-looking stress testing. Almost all participating NCAs at least largely comply with GL 32 in this respect. There is an even distribution between fully and largely complying NCAs (14 of each. The decisive point between 'largely applied' versus 'fully applied' is that most of the largely complying NCAs regularly assess the adequacy of an institution's procedures overall, rather than in detail.

Question 5 was in regard to Guideline 18 paragraph 94 of GL 32 and asked whether the supervisory review also covered the assessment of an institution's senior management involvement in stress testing. NCAs largely comply with GL 32 when assessing the involvement of senior management in the stress testing of credit institutions. The main reason for a 'largely applied' compared to a 'fully applied' assessment is whether NCAs regularly assess overall, rather than in detail, an institution's senior management involvement in stress testing programmes.

Question 6 was in regard to Guideline 18 paragraph 94 of GL 32 and asked whether the supervisory review also covered the assessment of whether the management body[8] is sufficiently informed about the institution's stress testing programmes and their implementation. NCAs largely comply with GL 32 when assessing the information of the institution's management body about the stress testing programmes and their implementation with regard to large and complex institutions. The main reason for a 'largely applied' compared to a 'fully applied' assessment was whether NCAs regularly assess overall, rather than in detail, an institution's senior management involvement in stress testing programmes, e.g. the supervisory assessment should cover all aspects of whether institution's management body is sufficiently informed about the development and implementation of the stress testing programme.

Question 7 was in regard to Guideline 18, paragraph 94 of GL 32 and asked whether the supervisory review also assessed an institution's integration of stress testing outputs into its decision-making processes throughout the institution, including the strategic business decisions of the management body and senior management. A majority of NCAs fully comply with GL 32 in this respect but a third largely apply GL 32 when assessing the information of the institution's integration of stress testing outputs into its decision-making throughout large and complex institutions.

Question 8 evaluated the submission of firm-wide stress testing results, focusing on transmission channels, frequency and initiation. The overall picture is that most countries perform top-down stress tests, annually at least and in many cases this is done on the whole sample of OBs. All countries require the submission of stress test results or the like through the ICAAP. A few countries conduct

[8] According to GL 32, the term 'Management body' as defined in Article 11 of the CRD should be understood to embrace different structures, such as unitary and dual board structures and not any particular board structure. The management body represents the top management level of an institution, and senior management (which is not defined in the CRD) should be understood to represent the level of management below the management body (see also CEBS Guidelines on the Application of the Supervisory Review Process under Pillar 2, GL 03).

also bottom-up stress tests at least ad-hoc. The difference between this situation and the overall picture represents the expected level of application for ‘fully applied’.

Regarding question 9 on whether NCAs require remedial action from credit institutions if material deficiencies are observed, a number of NCAs assessments were driven by a lack of evidence of the approach taken by the NCA. The best responses and evidence showed a clear linkage between the issue identified and a risk mitigating measure taken.

Questions 10, 11 and 12 covered whether an NCA’s supervisory review includes an ongoing dialogue[9] with an institution at a technical level, senior management level or with the management body (top management level) and whether this dialogue covers stress testing programmes and methodologies, including institutions’ own internal assessments and validation, and reviews undertaken by independent control functions. No NCA is considered to not conduct any ongoing dialogue at a technical level at all; hence a ‘not applied’ assessment is not assigned. Various NCAs need to increase the frequency of the dialogue to ensure that it is ongoing. Others should broaden the content and complexity of their dialogue so that this form of cooperation between an NCA and a bank can become mutually beneficial. Finally, some NCAs also need to cover OBs more rigorously. One NCA states that its limited resources do not allow it to conduct ongoing dialogue at a technical level with smaller banks. Three NCAs were assessed as not fully applying the criteria in question 12 because they do not cover OBs for the dialogue with the management body in accordance with the principle of proportionality. The overall distribution of the assessment regarding questions 10-12 results is almost balanced. One-third of the NCAs are assessed as ‘fully applied’, the next third as ‘largely applied’ and the last third as ‘partially applied’.

As to question 13, for the majority of NCAs it was found that the review of credit institutions’ stress testing programmes in their entirety is an integral part of the SREP on a regular (preferably annual) basis and takes due consideration of the institutions’ organisation and business model.

Nonetheless, the review of an institution’s stress testing programme by only a third of NCAs takes full account of the reverse stress testing performed by the credit institutions, and is an integral part of SREP on an regular (preferably annual) basis (question 14). It was found that reverse stress testing does not play a major role in a number of MS. NCAs in some MS were found not to take into account the extent of reverse stress testing at all. Sometimes, reverse stress testing was also included into recovery and resolution planning. In one case, although national regulations did not require reverse stress testing, where a CI had conducted reverse stress tests, an assessment of reverse stress testing was done in the SREP. Another 9 NCAs were deemed to be only partially compliant.

[9] Ongoing dialogue was considered to take place regularly (preferably annually) in a formalised off- or on-site supervision context (e.g. stress testing dialogue foreseen in the regular (preferably annual) formalised SREP or obligatory regular (preferably annual) on-site inspection covering stress testing).

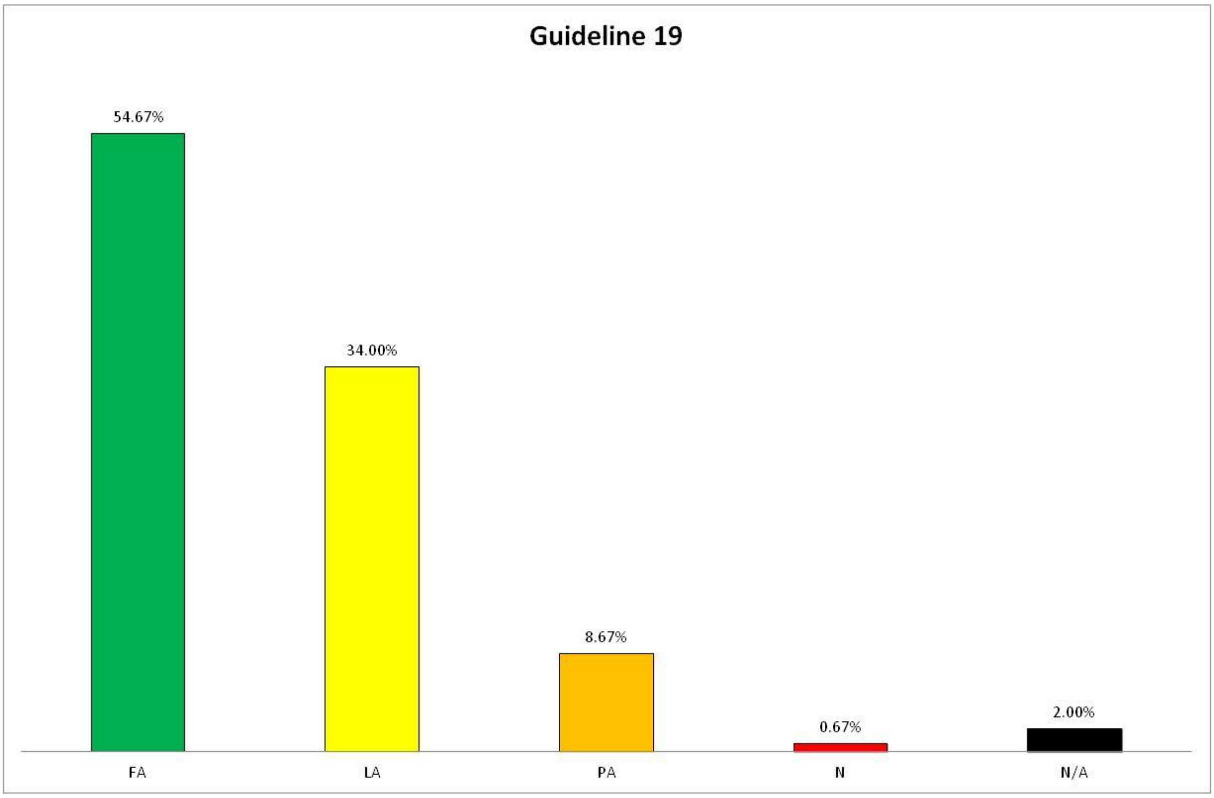
2.2 Guideline 19

Guideline 19 lays down requirements that NCAs should review credit institutions' stress testing programme outputs by assessing credit institutions' resilience. It reads:

'Supervisors should review stress testing outputs in order to assess the resilience of individual institutions to adverse economic conditions and whether they are able to maintain sufficient capital and liquidity. In doing this, supervisors should take into account details of movements in capital and capital needs, and liquidity and liquidity needs, under stressed conditions.'

The chart below breaks down the final assessment of questions 15-19 used for the assessment and relevant for Guideline 19. Question 18 was not taken into account in the overall assessment as it related to an optional aspect of GL 32 (whether NCAs should consider the quality of capital when reviewing the results of CI stress tests).

Figure 2: Summary chart of NCA peer reviewed assessments – Guideline 19



Legend: FA: "fully applied", LA: "largely applied", PA: "partially applied", N: "not applied" or "non-contributing", N/A: "not applicable".

Regarding question 15, two thirds of NCAs review firm-wide stress scenarios for capital planning and cover the impact on total capital and capital needs, including the main assumptions and drivers of movements in capital and capital needs.

On the impact on capital of stress testing (questions 16-18) a number of examples of good practice were identified (see below). The level of observance of the guidelines falls into two distinct groups: questions 17 and 18 appear to show a much greater degree of observance by supervisors of their parts underpinning the guidelines than question 16. This may be explained, at least in part, by the existence of minimum, objective regulatory capital ratios established by the current CRD above which all credit institutions must remain (question 17) and that the primary focus of supervisors is on capital adequacy (question 18). For question 16, however, the existence of 'integrated' capital and liquidity stress tests is not required by the guidelines (although it may be required by local jurisdictions), and NCAs may only be in the early stages of developing stress testing regimes for liquidity, which would necessarily result in a smaller degree of observance of that part of the guidelines.

Regarding question 16 the guideline implies an interaction of the capital and liquidity stress testing programs, whereas the question implies 'integration', so judgement of the level of application did not require a single, integrated stress test for both capital and liquidity, i.e. it is possible for a supervisor to be 'fully applied' if it requires separate stress tests for capital and liquidity. In one case, it was noted that the combined impact of changes in capital and in liquidity under stressed conditions are not included in the NCA's stress testing assessment process, the capital needs are combined in the supervisory review (SREP). Regarding question 17, the supplementary paragraph implies that minimum required regulatory capital ratios are the benchmark against which the impact of stress testing is measured.

Regarding whether the supervisory assessment includes a review of the transferability of capital and liquidity in financial groups during stressed conditions (question 19), including potential funding difficulties that may be expected in stressed conditions, half of the NCAs largely comply with GL 32. The main reason for a 'largely applied' compared to a 'fully applied' assessment is the benchmark criterion requiring that the assessment should occur not only through the regular (preferably annual) SREP review but also through other reviews/implementation studies.

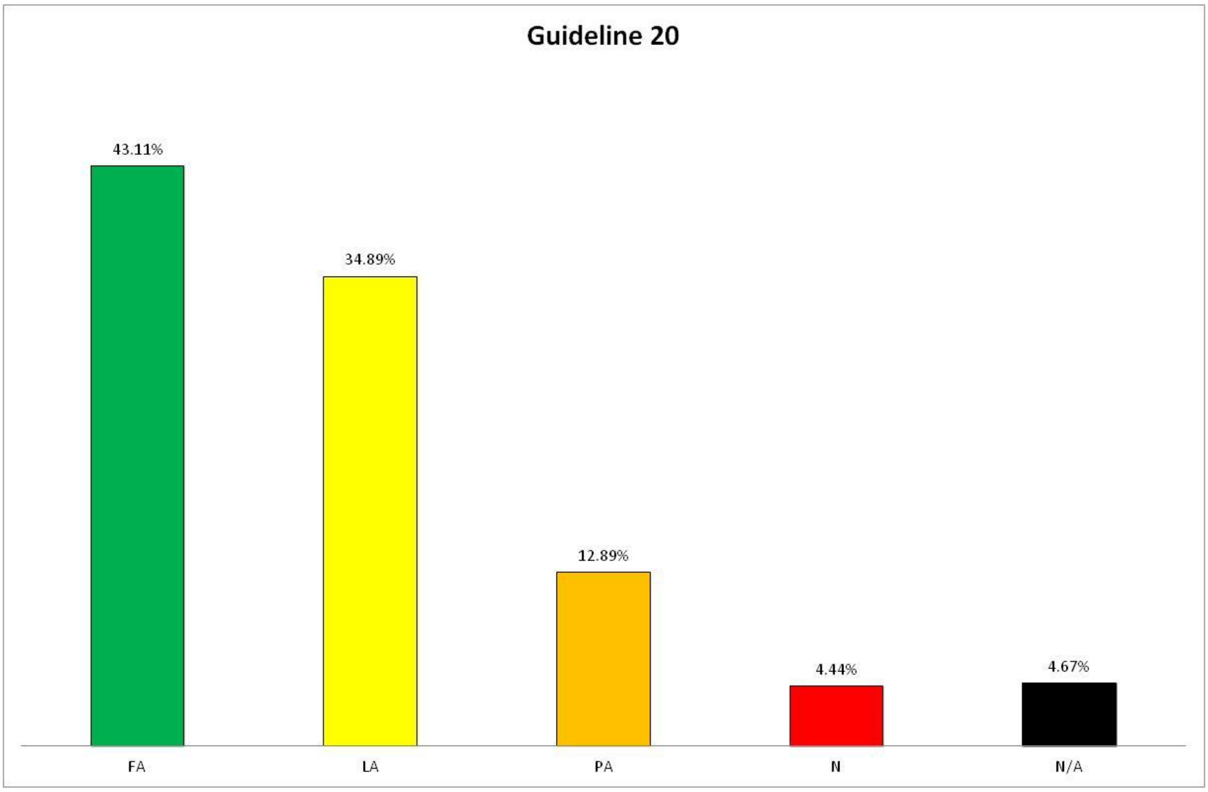
2.3 Guideline 20

Guideline 20 lays down general requirements for NCAs to evaluate and challenge credit institutions' assumptions and mitigating actions and reads:

> 'Supervisors should evaluate and challenge the scope, severity, assumptions and mitigating actions of firm-wide stress tests.'

The chart below breaks down the final assessment of questions 20-34 used for the assessment and relevant for Guideline 20. Questions 24 and 32 were not taken into account in the overall assessment as these relate to optional aspects of GL 32.

Figure 3: Summary chart of NCA peer reviewed assessments – Guideline 20



Legend: FA: "fully applied", LA: "largely applied", PA: "partially applied", N: "not applied" or "non-contributing", N/A: "not applicable".

Regarding whether the supervisory review of an institution's stress tests ensures that the institution conducts stress tests at multiple levels in its organisation (question 20), around two thirds of the NCAs fully or largely comply with GL 32. The main reason for a 'largely applied' compared to a 'fully applied' assessment is the benchmark criterion requiring that the different types of stress tests also be performed at sub-consolidated level when the institutions' structure so requires it.

Whether the supervisory review of an institution's stress tests ensures that the institution conducts different type of stress tests, e.g. sensitivity analysis, scenario analysis, portfolio level stress tests, firm-wide stress tests and reverse stress tests, and individual risk level stress tests (question 21), slightly more than two thirds of NCAs largely or fully comply with GL 32. The main reason for a 'largely applied' compared to a 'fully applied' assessment is the benchmark criterion requiring that institutions should perform different types of stress test at various levels of its organisation, including at a sub-consolidated level where necessary.

Regarding whether NCAs review the range of scenarios (mild to severe) applied to different types of stress tests (question 22), more than one third are assessed as 'fully applied', almost two thirds as 'largely applied' and only two authorities are deemed 'partially applied'.

Regarding whether their review of an institution's range of scenarios (mild to severe), for its stress tests, checks of consistency with the institution's risk appetite, overall risk profile and business plan (question 23), more than one third of NCAs are ‘fully applied’, more than half assessed as ‘largely applied’, two as ‘partially applied’ and one as ‘not applied’.

Regarding whether these do apply benchmark criteria for their assessment of an institution's stress test to compare the severity of scenarios (question 24), one third score ‘fully applied’, one third ‘largely applied’, five ‘partially applied’, three ‘not applied’ and two NCAs ‘not applicable’.

Regarding stress tests and business vulnerabilities (question 25), for two NCAs, stress tests only cover a majority (but not all) of the banking sector. In other countries, stress tests are done by all banks. Nonetheless, all countries apply the principle of proportionality. At the same time, some countries emphasised that this principle is applied as a common approach. All NCAs detect business vulnerabilities by analysis and stress tests focusing on material risks, i.e. Pillar I risks (credit risk, market risk, operational risk) and other material risks (e.g. liquidity risk, concentration risk, risk of material losses). Some NCAs explicitly mentioned the importance of evaluation of interconnection of risks.

On the NCAs’ assessment of the revision of the key assumptions used in stress tests (question 26), it was found that three NCAs have no comprehensive benchmark for their assessment. There was another element that contributed to the assessment of question 26 that was the qualitative analysis of ‘other banks’ performed taking into consideration the NCAs’ application of proportionality and the contribution of those institutions to the NCAs’ banking system assets. One NCA had weaknesses in the treatment of ‘other banks’.

Regarding the assessment of the feasibility of the proposed management actions (question 27) there was analysis of whether this formed part of the NCAs’ supervisory review. Slightly more than half of the NCAs fully apply GL 32 in this area and 20% largely apply it. One of the key reasons behind this restrained assessment seems to be the absence of a systematic, specific, dedicated and documented assessment of management actions, which may seem intrusive, or require extra capacity and resource on the part of the NCA to question the feasibility of such measures under historical and/or hypothetical stressed market conditions, especially for bank-wide stress tests. In addition, for three NCAs, the stress tests are, by their construction, supposed to exclude any management actions, so that this part of GL 32 is not applicable to them. For two NCAs, there is no visibility at all of the rules and practices.

On whether challenging of the credibility of an institution’s management actions formed part of the NCA’s supervisory review (question 28), slightly more than a third of NCAs were considered as applying this fully and another third doing so on the whole. The underlying reasons for not many NCAs applying this fully are of course similar to those mentioned for question 27 (i.e. this practice is not systematically part of the review), but the lower score may be explained by two further points:

- it is difficult enough to assess the feasibility of management actions, and it is more difficult to challenge the credibility of these actions;
- the NCAs seem less advanced in this challenging work towards the ‘other banks’, compared to what they do in terms of feasibility assessment.

Regarding whether during a stress-test exercise, where necessary, as a result of the challenge on the credibility of the management action(s), a re-run with a range of different mitigating management measures is required (questions 29 and 30), for a number of NCAs, stress test results do not incorporate ex ante managerial assumptions, which thus mitigate the results. The constant balance sheet assumption is a central assumption in the stress test programmes in those countries. Accordingly, such NCAs were either assessed with lower grades or it was deemed that the questions were not applicable in such cases, depending on the exact setup in each MS.

Regarding whether NCAs apply any supervisory measures, including institution specific (idiosyncratic) capital buffers and/or liquidity buffers, if necessary (question 31), the overall picture was quite positive. However, in certain cases, the background documentation was not detailed enough to support a 'fully applied' assessment.

NCAs also reported that the results of stress tests were an input to the SREP/JRAD and that, therefore, they were discussed in the college of supervisors (question 33). Nonetheless, processes, principles and methodologies were not always fully documented and it was not always clear if both capital and liquidity buffers were considered. In addition, the treatment of consolidated and solo levels (distribution of capital) was not always based on specified methodology.

NCAs reported that decisions on buffers were taken in the college of supervisors during the joint decision process, where applicable (question 34). However, several NCAs did not explain how the results of stress tests impacted on the buffer level and how buffers were allocated within the banking group.

3. Key findings of the assessment by each NCA (incl. country-specific recommendations)

3.1 NCA by NCA analysis

The EBA undertook an additional assessment on a NCA by NCA basis, which was shared internally among the EBA members and observers in order to strengthen supervisory practices further.

3.2 Analysis of resource and governance arrangements

The EBA also assessed the resources committed by NCAs to the review of institutions' stress testing programmes. For most NCAs, the review of stress testing programmes is not a separate function but an integrated part of on-going supervision of credit institutions. Thus, most NCAs have not been able to quantify, for instance, the number of FTEs committed to the review of stress testing programmes.

Some NCAs do, however, have dedicated specialist functions in their authorities that perform the supervisory review working with line supervisors. These NCAs operate with specialist supervisory resources and have experts in place, e.g. for risk modelling, risk assessment and basic issues of risk management.

In terms of other programmes performed by NCAs in addition to the ongoing supervisory review of institutions' ICAAP, a number of NCAs perform various supervisory stress tests (both in a bottom-up or top-down fashion). Most NCAs also have to participate in the EBA's EU-wide stress testing exercise.

Regarding assessments of institutions' stress testing programmes in 2011 or 2012, most NCAs aimed to have reviewed all institutions using desk-based approach at least, and to have assessed LCBs in a more detailed manner.

One country did not undertake any reviews in 2012 due to the Troika's visit. Another MS did not undertake any detailed reviews of OBs stress testing. One NCA has no formal supervisory processes in place to assess stress testing programmes of institutions.

The number of LCBs seems to vary significantly between NCAs as does the total number of banks. In some cases, a limited number of LCBs makes up almost the entire domestic banking system in terms of total assets. In other MSs, the number of LCBs is quite limited.

4. Specific findings from on-site visits

The EBA conducted six on-site visits in connection with the peer review of GL 32. These took place between August and September 2013. The visiting teams consisted mostly of one EBA staff member and two representatives of Review Panel member NCAs (either Review Panel members themselves or experts nominated by their NCA). Each visit lasted one day.

The visits took place on the premises of the NCAs and each visit was based on interviews. The interviewed staff at the NCAs were identified before the visit, and included a mixture of senior management and stress test specialists/line supervisors. NCAs were asked to provide the visiting teams with relevant documentation on the application of GL 32. Confidentiality was guaranteed either by a 'dark room' environment or by redaction (striking out certain passages) of documents.

The EBA reviewed six NCAs through on-site visits to understand their supervisory approaches better, confirm the EBA's previous desk-based analysis, identify examples of best practice, and obtain missing information.

The EBA noted that the evaluation of evidence on the ground helped to understand the individual situation better (including the lack of action in some cases) and highlighted several issues for the GL 32 in particular:

- The visiting teams and NCAs had useful discussions on the benefits of centralised resources versus dispersed resources. It was concluded that generally both would seem to be useful (i.e. a central stress testing team at the NCA plus some specific expertise in the supervisory teams of at least each 'large and complex bank'). For 'other banks', a central team could generally provide assistance.

- It was noted that stress test instructions at a national level are generally spread over various supervisory manuals, whereas a single document on NCAs' implementation policy for GL 32 would provide greater clarity about these requirements.

- NCAs often focus on the (few) largest banks in their jurisdiction, but seem to reduce their efforts significantly for banks other than the largest. Proportionality could be interpreted in terms of coverage of total assets rather than asset quantity or specific characteristics of banks. More guidance may be needed.

- The incorporation of stress testing into the SREP and the joint decision process was handled differently across NCAs and clarification is advisable. For example, local stress tests in one subsidiary could provide further insight about the diversity of risks and this should be taken up in a joint decision.

- There was substantial amount of work on top-down stress testing from a micro- and macro-prudential perspective by many of the NCAs visited. The EBA could exploit this work and share examples of best practice more widely.

- Very few authorities require reverse stress testing, or sometimes this is included in recovery and resolution planning, which, although useful, serves a different purpose.

Further information about the specific on-site visits is expressed in the examples of good and best practice below.

5. Examples of good and best practice

Below is an overview of examples of good and best practice identified in the peer review of the EBA's GL 32. Special consideration should be given to the requirements in GL 32 that were assessed as 'may' requirements (as in review questions 18, 24 and 32), as these relate to optional aspects of GL 32.

5.1 Practice identified across NCAs

Generally, it helped NCAs where the GL 32 were reflected in national legislation or communicated directly to banks.

Examples of best practice identified

Standard procedures to assess stress testing frameworks during off- and on-site supervision: the GL 32 should be reflected in the internal processes of NCAs, e.g. laid down in the supervisory manual. With regard to the scope of supervision, good practice is to cover at least all the LCBs and then cover OBs in accordance with the principle of proportionality.

Good practice is to request institutions on a bank-by-bank basis formally to assess their compliance with the GL 32's requirements and provide an action plan to address any gaps. NCAs should approve the action plans and monitor their implementation. The banks' self-assessments should be challenged whenever necessary, which implies an exchange of information in written form, in actual meetings with the institutions in question, or even on-site assessments. For OBs in particular, NCAs should invite board members to those meetings, for the NCA to point out to the OBs the importance of developing a solid stress test framework.

As an example of **good practice**, off-site analysis should generally be complemented by regular on-site inspections, where the severity, plausibility and consistency of assumptions and scenarios are reviewed, taking into account current and future market conditions and the economic background, plus conclusions from previous inspections and from off-site supervision. These reviews should be performed under the ICAAP and the SREP. There should also be regular discussions and meetings with bank management (including staff from the technical area). Thematic reviews should be undertaken, focusing specifically on banks' internal stress testing programmes.

As an example of **best practice,** the quality of stress testing programs should be assessed in the SREP at least, and results taken into account as part of overall assessment of adequacy of capital and liquidity buffers. NCAs should employ standard procedures and methodologies for assessing stress testing frameworks in banks during on-site assessments across all banks. The impact of the results of stress testing on the capital buffer requirement should be assessed and discussed with banks.

There should be a clear link between the shortcomings identified in the assessments of banks' practices and risk mitigating measures taken. For example, for liquidity risk, comprehensive procedures of NCAs showed that weaknesses in stress testing (and the outcome of it) could result in banks being required to diversify funding sources, change their risk profile, increase their liquid assets or optimise their maturity structure. Further examples of good practice were identified where not only the type of measure that may be required where deficiencies became apparent was outlined (e.g. bank-led or NCA-led measures), but this supervisory knowledge was also employed in the assessment of banks' capital plans for example, and the overall outcome of the SREP.

Another example of good practice identified was performing comparisons between banks with similar characteristics (peer group or horizontal analysis) and historical information. NCAs should also compare banks internal stress testing results with the NCAs' internal projections/own stress tests scenarios, macroeconomic forecasts (from the IMF, OECD, central banks, etc.) and international stress test exercises (e.g. EBA stress tests).

Examples of good practice regarding clear follow-up procedures where deficiencies/weaknesses were detected typically included supervisory authorities taking effective supervisory action if deficiencies were identified in stress testing programmes or their results. Follow-up measures were then required and monitored in on- and off-site supervision.

Good examples of follow-up measures identified were on-going supervisory dialogue, formal supervisory decisions and sanctions. Supervisory action may be both qualitative (requirements to make changes in stress testing programmes) and/or quantitative (capital or liquidity buffer requirements), depending on the problem identified (measures are tailored to it and are not simply an automatic requirement to hold more capital). Quantitative requirements should include not only capital buffers but also liquidity buffers. Other measures could relate to the replacement of (management) staff or a requirement to improve organisational arrangements. Action should be required via recommendations, capital add-ons, and binding written instructions (depending on severity). Significant deficiencies should be raised formally with the management and the board.

Follow-up action by banks should be tracked (and documented) at or until an agreed date. During the year, NCAs should check changes made in relation to deficiencies identified and monitor management decisions closely. Banks should report to the NCA to prove that measures have been taken to eliminate deficiencies detected.

5.2 Specific practice per topic

Institutions' procedures

Examples of best practice regarding the assessment of the adequacy of an institution's procedures (to undertake rigorous forward-looking stress testing) include the regular assessment of the completeness, relevance, scope, timeframe, assumptions, methodology, severity, data and robustness of all these aspects. Internal policy, procedures, reporting, committee reports, audit reports, validation reports should be assessed by NCAs. Examples of best practice include the review of internal handbooks/guidelines (including amendments reported in a regular update to the NCA) and interviews with institutions.

Involvement of the management body and senior management

NCAs should apply the same requirements at all entity levels (following the principle of proportionality) with regard to the assessment of the involvement of the management body and the senior management in the stress test framework, as well as the assessment of the institution's integration of stress testing outputs into its decision-making throughout the institution. The stress test framework developed at group level and applied at entity level should be sufficiently understood by the entity's management body and senior management. The NCA should ensure that the framework is adequately used and put into place at each entity level. If the entity's management body and the senior management consider the groups' stress test framework as not sufficiently adequate for practical use at entity level, they should put into place additional stress tests. The group level stress test should (as a minimum) be filled in with the entity level's outputs to provide a complete stress test framework.

NCAs define in their regulation that management boards are fully responsible for ensuring that the institution has a proper business organisation including an adequate stress test framework in place. This implies that the stress testing outputs are an integral part of the decision-making processes throughout the institution. Banks' management boards should also be responsible for compliance with the GL 32's stress testing requirements

Although NCAs apply stress testing requirements at bank level (and apply them to 'other banks' following the proportionality principle), it could be recommended that specific reviews/inspections be carried out across all banks.

One NCA's capital management technical risk review (CMTRR) has been identified as an example of good practice for the integration of stress testing into institutions' risk management frameworks. This NCA assesses key factors of stress testing including:

- reviewing and assessing the adequacy of senior management and the board involvement and ownership of stress testing policies, processes, scenarios results;
- assessing the use of the stress test outputs;
- reviewing (inter alia) resources and infrastructure within the bank to support stress testing.

Resource commitment

Examples of best practice regarding the assessment of an institution's resource commitments include regular (at least annual) assessments of this commitment including the involvement of experienced staff with the necessary decision-making authority. Staff should be assessed on their experience, professional profile, position, role in the process, and there should be an assessment of the number of staff involved. The organisation, reporting lines, governance and related processes, and IT infrastructure/technical facilities should also be taken into account.

On-going dialogue, including with management

NCAs should undertake regular, at least annual, discussions in the form of a 'structured dialogue' at a technical level, (in the context of SREP/ICAAP) as an example of good practice. On-going dialogue should be duly formalised in internal NCA on- or off-site supervision procedures. Where NCAs have permanent supervision teams at LCBs, the on-going dialogue at a technical level is particularly detailed and useful. For the largest banks, regular meetings should take place between the NCA and the bank's chief risk management officer.

All divisions of a bank that are involved in stress testing should participate in the dialogue (i.e.. finance, asset and liability management, and the various risk management divisions such as enterprise, credit, market, operational, business and capital planning, etc.). On the NCA's side, line supervisors, general risk management specialists and dedicated quantitative (stress testing) specialists should be included in the dialogue to ensure that the content and complexity are appropriate.

Institutions should be challenged on many issues linked to data, model and estimation risks, as discussions at the technical level are most helpful in identifying flaws in the stress testing models. The dialogue should cover the relevant parameters of the stress testing programme, including methods.

Results and action to be taken, including risk mitigation measures, should also be discussed. Important information and justifications discussed must be checked with documentation and reports.

On-going discussions between NCAs, senior management and the management body should also be conducted in the form of 'structured dialogue', on-site visits and in ad-hoc or NCA-driven stress tests. The dialogue should be in the form of bilateral formalised discussions and should take place regularly, and with the management body at least annually. The discussions should cover the relevant parameters of the stress testing programme, including methods, results, and action to be taken. Risk mitigation measures should also be covered. The discussions should ensure that senior management have an appropriate level of understanding of the stress testing programmes, the methodologies employed, the inputs and outputs, and the sensitivities of the outputs to different inputs and assumptions. Discussions with top management should be done in such way that the NCA can see whether these managers understand the principle and importance of stress testing and can use the results for decision-making. NCAs should request reviews performed by independent control functions and analyse these.

Submission of stress results and supervisory stress tests

An identified example of best practice was the submission of the results of LCBs risk-bearing ability results on a quarterly basis. The results should be submitted more frequently in a stressed environment. The use of a probability, risk and impact system to determine the level and frequency of interactions with the institutions was noted as an example of best practice.

There have been several developments since the development of GL 32. Particularly important is the designation of G-SIFIs. G-SIFIs often have requirements that go beyond those identified for 'large and complex banks' as defined by the peer review exercise. For example, from 2013, one NCA requires all institutions to submit details of their risk-bearing ability to the supervisory authority (including stress test) at least annually, and for SIFIs, quarterly. Another NCA requires that in a stressed environment and for critical activities, stress scenarios should be updated quarterly. In 2011, when funding conditions had a negative effect on liquidity, for large banking groups ran stress testing and presented it to management on a weekly basis.

Scope of the review of stress testing programmes

Examples of best practice constitute regular, and at least annual, assessment of the institutions' stress testing programmes in their entirety as an integral part of SREP. This is to assess the viability and vulnerability of the business models in changing circumstances by taking into account the institutions' organisation, strategy and business models and by simulating different exceptional situations (e.g. interest rate shifts, increase of counterparty risk due to GDP decline, etc.).

The effect of stress tests on risk-bearing ability and the impact on total capital and - if necessary - capital needs should be assessed. NCAs should therefore consider the stress tests, the results, the conclusions, and, if necessary, the capital measures decided upon, as provided by the institutions. Modified calculations with different assumptions may be required from the institutions if applicable. NCAs' assessments should also include the methodology, parameters, assumptions and risk drivers of an institution, and should require institutions to implement a robust capital planning process, both for regulatory capital and ICCAP adequacy, that covers at least two to three years over and above the current risk horizon.

Another practice that may be considered useful is if NCAs use same stress scenario for all risk categories and where the regulatory criteria for banks' ICAAPs also explicitly requires liquidity to be considered. The severity and appropriateness of the stress scenarios used may sometimes be assessed by the supervisor itself.

Capital adequacy and quality of capital

Regarding whether the review of stress testing programmes takes into account whether institutions stay above the minimum required regulatory capital requirements (MRRCR), a particular example of good practice noted was if banks themselves are required to identify explicitly the business line that results in a breach of the MRRCR. In other cases, the MRRCR is set by supervisors on a bank-by-bank basis and known by banks, or a judgement is made whether management measures are feasible, and there is an explicit requirement on the bank itself to identify appropriate action to rectify the situation where it falls below relevant regulatory capital ratios.

Examples of good practice regarding the assessment of the quality of capital[10] should include the review of the maintenance of capital adequacy and should consider a forward-looking period of sufficient duration, as specified by the NCA; it should exclude low quality capital that does not have real loss-bearing capacity, and increases in capital resources in ways that are dependent in any way on external parties. Future changes to the regulatory environment should be considered by the banks and reviewed by the NCA. There should be historical data on funding and capital plans in addition to forward-looking projections and stress tests produced by NCAs to focus on specific risk factors should be given to banks.

Reverse stress testing

Examples of best practice for reverse stress testing consider this as an additional element of stress testing and an integral part of SREP which should take place on a regular basis, at least annually. Both qualitative and quantitative aspects are assessed within a reverse stress test review, and since stress testing programmes (including reverse stress test) as risk management tools are legally binding they are therefore assessed by NCAs in the context of the risk-bearing ability of the credit institution and by identifying action required if necessary.

Transferability of capital and liquidity in groups

With respect to the transferability of capital and liquidity in financial groups, examples of good or best practice are those that carefully consider both capital and liquidity transferability and require stress tests to be conducted outside regular SREP as well, for example, when market conditions are likely to deteriorate. The liquidity assessment should also regard the effect of the stressed scenario on funding conditions.

Stress tests at multiple levels

Regarding stress tests at multiple levels of institutions, examples of good or best practice are those where reviews of institutions' stress tests include all portfolio levels, all material risks and all group entities. Good or best practice would be that the NCAs require LCBs to conduct multiple level stress tests at solo, consolidated and sub-consolidated level.

Different types of stress tests and range of scenarios

Examples of good or best practice are those where reviews of institutions' stress tests are based on different, robust and well developed methodologies and are performed at solo, consolidated and sub-consolidated level, as appropriate. Reverse stress tests are carried out where deemed opportune.

[10] Since the publication of GL 32 progress has been made on the review of the quality of capital (Guideline 19, paragraph 99). This topic may require further consideration.

Examples of best practice regarding the assessment of range of scenarios applied to different types of stress tests include assessing why an institution decided to use certain scenario(s) in its stress testing and how these were selected; whether all relevant units were involved in the scenario selection (risk managers, business units, ALCO, etc.). An example of good practice would be to review if the scenarios used are linked to the parent institution's scenarios, if applicable, and to consider the severity of the stresses against the NCAs' published anchor scenario (supervisory recommended scenario) and against appropriate benchmarks for specific risk types. The review would also include the range of stresses considered by the institution, in particular, adherence to criteria given, to ensure that the stresses are appropriate in breadth and depth.

Examples of best practice regarding the application of benchmark criteria to assess institutions' stress tests include where NCAs use a top-down model as a benchmark, or where supervisors use the benchmarks of losses, income and RWA from their own internal stress tests.

EBA and NCAs' stress tests may also be used as benchmarks; the forthcoming CRD IV (counter cyclical) buffer of 250 basis points may be used, although stress tests may not fully overlap with this buffer.
Another example of best practice identified was where a NCA published a supervisory recommended scenario (anchor scenario) to be used by institutions to calibrate their own scenarios for capital planning tests. In the particular case, the anchor scenario was developed internally using a Bayesian VaR model and expert judgement was applied to choose the appropriate level of severity.

Management measures

Some NCAs assess the feasibility of management measures and challenge their credibility from two angles, one through line supervisors and the other on a peer to peer basis. This may mean the challenge is more robust and credible, since it exploits the knowledge of each institution by line managers plus the expertise of peer experts in stress testing.

NCAs should, as an example of best practice, assess and challenge the feasibility and scope under stressed conditions of management measures such as the issuance of additional capital, use of cut off limits, upholding of the client base, sale of assets without losses, retention of profits (retained earnings versus dividends), temporary freezing of business, and permanent rollover of short-term funding. NCAs should also assess and challenge a reduction in the risk level, increase in provisions, recourse to risk mitigation techniques, reduction in exposures to specific sectors, countries, regions or portfolios, revision of the funding policy, changes in the pricing policy, and development of a contingency plan. In addition, NCAs should assess the credit institutions' limits, strategy, business plan, and risk appetite.

Regarding the requirement to re-run stress tests, where necessary, as a result of the challenge on the credibility of the management action, an example of best practice would be that if the supervisor has any doubts that management measures do not seem credible or appropriate, institutions should always have to re-run their stress tests with changed assumptions/different mitigating management measures for the scenario analysis[11].

Regarding whether during the stress test exercise or as part of the review of stress testing outputs there is an assessment of management's mitigating measures that have been put in place to address the stress test results, an example of best practice would be that this assessment is always included in the review of stress testing output. If the results of the stress test identify deficiencies in management's mitigating measures or these measures turn out to be inappropriate, credit institutions should adopt their mitigating measures. The measures should be plausible in relation to the institution's individual situation, organisation, business activities, etc. This practice should be used for both LCBs and OBs.

Regarding whether further remedial measures are required where the credibility of mitigating management measures is challenged, an example of best practice would be that institutions are always required to take further remedial measures. These remedial measures should be plausible and appropriate to the individual risk situation and business activities of the institution. This practice should be applied both for LCBs and OBs.

Supervisory colleges

As an example of best practice in the context of cross-border banking groups, the results of stress test should be a central input to the SREP/JRAD. Discussions in the supervisory college should take place at least annually, but during the year there may also be discussions with relevant members of the college. All relevant information (not only the results) should be used in the joint decision process, together with documented processes, principles and methodologies.

[11] Possible management measures would be capital backing, closer monitoring of risks/increase in risk management capacity, modifying business policy, increasing fees/margins/provisions, cost cutting, adjusting the balance sheet (size and composition), using capital measures/share issues, selling parts of business/portfolios, calling on the parent bank, using money market lines, reducing business/asset disposal, changing the business mix, developing specific business lines, adopting deleveraging strategies, reconsidering parameters/scenarios, reconsidering risk business action plans, updating risk management limits, ring fencing assets, reducing VaR limits and risk levels, using risk mitigating measures, reducing exposures to specific sectors/countries/regions, revising funding policy, drawing up a contingency plan or increasing the level of own funds.

6. Conclusions and recommendations

The analysis of the peer review results on the Guidelines on Stress Testing (document known as GL 32) found that EBA members and observers largely apply the existing guidelines. Some NCAs have demonstrated examples of particularly good practice in a number of areas, while others are still making progress on stress testing in their jurisdiction.

Given the developments in this rapidly changing field, the EBA recommends a review of the guidelines. The examples of best practice contained in Section 5 should be taken into consideration in this review. The EBA should also consider what elements of the review could be picked up in the Single Supervisory Handbook.

This peer review exercise is the first one under the remit of the EBA; findings on process and methodology will be picked up in future peer reviews.

Annex I – Acronyms of national competent authorities

Figure 4: Table of country codes and acronyms of competent authorities

Country Code	Member State	Competent Authority
AT	Austria	Finanzmarktaufsicht (Financial Market Authority)
BE	Belgium	National Bank of Belgium
BG	Bulgaria	Българска народна банка (Bulgarian National Bank)
CY	Cyprus	Κεντρική Τράπεζα της Κύπρου (Central Bank of Cyprus)
CZ	Czech Republic	Ceska Narodni Banka (Czech National Bank)
DE	Germany	Bundesanstalt für Finanzdienstleistungsaufsicht (Federal Financial Supervisory Authority)
DK	Denmark	Finanstilsynet (Danish Financial Supervisory Authority)
EE	Estonia	Finantsinspektsioon (Financial Supervision Authority)
EL	Greece	Τράπεζα της Ελλάδος (Bank of Greece)
ES	Spain	Banco de España (Bank of Spain)
FI	Finland	Finanssivalvonta (Finnish Financial Supervisory Authority)
FR	France	Autorité de Contrôle Prudentiel et de Résolution (Prudential Control Authority)
HU	Hungary	Pénzügyi Szervezetek Állami Felügyelete (Hungarian Financial Supervisory Authority)
IE	Ireland	Central Bank of Ireland
IT	Italy	Banca d'Italia (Bank of Italy)
IS	Iceland	Fjármálaeftirlitið (Icelandic Financial Supervisory Authority - FME)
LI	Liechtenstein	Finanzmarktaufsicht - FMA (Financial Market Authority)
LT	Lithuania	Lietuvos Bankas (Bank of Lithuania)
LU	Luxembourg	Commission de Surveillance du Secteur Financier (Commission for the Supervision of Financial Sector)
LV	Latvia	Finansu un Kapitala Tirgus Komisija (Financial and Capital Market Commission)
MT	Malta	Malta Financial Services Authority
NL	Netherlands	De Nederlandsche Bank (Dutch Central Bank)
NO	Norway	Finanstilsynet (Norwegian Financial Supervisory Authority)
PL	Poland	Komisja Nadzoru Finansowego (Polish Financial Supervision Authority)
PT	Portugal	Banco de Portugal (Bank of Portugal)
RO	Romania	Banca Naţională a României (National Bank of Romania)
SE	Sweden	Finansinspektionen (Swedish Financial Supervisory Authority)
SI	Slovenia	Banka Slovenije (Bank of Slovenia)
SK	Slovakia	Narodna Banka Slovenska (National Bank of Slovakia)
UK	United Kingdom	Prudential Regulation Authority