

EBA/CP/2014/35

---

10 November 2014

---

# Consultation Paper

---

Draft Guidelines

on methods for calculating contributions to Deposit Guarantee Schemes

# Contents

---

<b>1 RESPONDING TO THIS CONSULTATION .....</b>	<b>3</b>
<b>2 EXECUTIVE SUMMARY .....</b>	<b>4</b>
<b>3 BACKGROUND AND RATIONALE .....</b>	<b>5</b>
<b>4 DRAFT GUIDELINES ON METHODS FOR CALCULATING CONTRIBUTIONS TO DEPOSIT GUARANTEE SCHEMES.....</b>	<b>8</b>
TITLE I: SUBJECT MATTER, DEFINITIONS AND SCOPE .....	9
TITLE II: GUIDANCE FOR DEVELOPING METHODS FOR CALCULATING CONTRIBUTIONS TO DGSS .....	11
<b>Part I - Objectives for DGS contribution schemes .....</b>	<b>11</b>
<b>Part II - Principles for developing the calculation methods.....</b>	<b>11</b>
<b>Part III - Necessary elements of the calculation methods .....</b>	<b>14</b>
<b>Part IV - Optional elements of the calculation methods .....</b>	<b>28</b>
TITLE III: FINAL PROVISIONS AND IMPLEMENTATION .....	30
ANNEX 1: METHODS TO CALCULATE AGGREGATE RISK WEIGHTS (ARW) AND DETERMINE RISK CLASSES .....	31
ANNEX 2: DESCRIPTION OF CORE RISK INDICATORS.....	38
ANNEX 3: DESCRIPTION OF ADDITIONAL RISK INDICATORS .....	41
ANNEX 4: STEPS TO CALCULATE ANNUAL CONTRIBUTIONS TO DGS .....	46
<b>5 ACCOMPANYING DOCUMENTS.....</b>	<b>47</b>
5.1 COST-BENEFIT ANALYSIS / IMPACT ASSESSMENT .....	47
5.2 OVERVIEW OF QUESTIONS FOR CONSULTATION.....	64

# 1 Responding to this Consultation

---

The EBA invites comments on all proposals put forward in this paper and in particular on the specific questions summarised in 5.2.

Comments are most helpful if they:

- respond to the question stated;
- indicate the specific point to which a comment relates;
- contain a clear rationale;
- provide evidence to support the views expressed / rationale proposed; and
- describe any alternative regulatory choices the EBA should consider.

## **Submission of responses**

To submit your comments, click on the 'send your comments' button on the consultation page by 11.02.2015. Please note that comments submitted after this deadline, or submitted via other means may not be processed.

## **Publication of responses**

Please clearly indicate in the consultation form if you wish your comments to be disclosed or to be treated as confidential. A confidential response may be requested from us in accordance with the EBA's rules on public access to documents. We may consult you if we receive such a request. Any decision we make not to disclose the response is reviewable by the EBA's Board of Appeal and the European Ombudsman.

## **Data protection**

The protection of individuals with regard to the processing of personal data by the EBA is based on Regulation (EC) No 45/2001 of the European Parliament and of the Council of 18 December 2000 as implemented by the EBA in its implementing rules adopted by its Management Board. Further information on data protection can be found under the Legal notice section of the EBA website.

## 2 Executive Summary

---

This consultation paper seeks stakeholders' views on draft Guidelines pursuant to Article 13(3) of the Deposit Guarantee Directive (DGSD) which specify methods for calculating contributions to Deposit Guarantee Schemes (DGSs).

In a context where, until now, many Member States did not have pre-financed Deposit Guarantee Schemes, these Guidelines set out principles for technically sound methods for calculating contributions in order to ensure that costs of deposit insurance are borne primarily by the banking sector and that the available financial means reach the target level within the time horizon foreseen in the DGSD.

These Guidelines, which will apply both to ex-ante and ex-post contributions, will contribute to providing incentives to institutions to operate under a less risky business model. To that end these Guidelines set out principles on the risk component of the calculation method. In addition, they capture various aspects of the institutions' risk profile by specifying a number of core risk indicators pertaining to capital, liquidity and funding, asset quality, business model and management, and potential losses for the DGS.

In line with the principle of proportionality, the Guidelines allow authorities to take into account the diversity of institutions and business models while respecting a number of safeguards inherent in the need for harmonization and comparability within the Single Market. The Guidelines allow authorities to set aside, with regard to a given type of institutions, a core risk indicator that is unavailable due to the legal characteristics or supervisory regime of such institutions. They may also introduce additional risk indicators, provided that the minimum weights foreseen for the remaining core indicators and risk categories are respected. The authorities also have a margin of flexibility allowing them to reshuffle up to 25% of indicators' weights in order to increase the importance of risk indicators which better capture differences in risk profiles. This discretion is capped at 15% per single risk indicator except for qualitative indicators in the risk category 'Business model and Management' where full flexibility is allowed in order to properly reflect the varying characteristics of member institutions.

Finally, the Guidelines will offer the EBA a basis on which to assess progress in the convergence of national practices in calculating contributions to DGSs before the review foreseen in 2017.

These Guidelines have benefited from internationally agreed principles, such as the BIS-IADI Core Principles for Effective Deposit Insurance Systems and the IADI General Guidance for developing differential premium systems.

## 3 Background and rationale

---

1. The new Deposit Guarantee Schemes Directive (hereafter 'DGSD'), recasting Directive 94/19/EC and its subsequent amendments, was published in the Official Journal on 12 June 2014<sup>1</sup>.
2. Prior to this recast, there had been significant differences in DGS funding throughout the EU. In some Member States DGSs were funded by contributions from deposit taking institutions made in advance on a regular basis (the ex-ante model). In other Member States institutions only contributed once the DGS was required to repay depositors (the ex-post model). When the financial crisis aggravated in autumn 2008 some DGSs turned out to be underfinanced and had to remedy to public support. In order to harmonise DGS funding methods, to warrant a similar level of protection of depositors and to ensure that costs are primarily borne by member institutions rather than tax payers, the new DGSD introduced an obligation for the DGSs to annually raise ex-ante contributions from their members in order to reach, in principle, a target level of 0.8% of covered deposits by 3 July 2024<sup>2</sup>.
3. In addition, the new DGSD introduced a requirement for contributions to be risk-based. Indeed, if ex-ante DGS contributions were to be calculated as a fixed percentage of deposits of member institutions without taking into account the risk profile of these entities it could lead to moral hazard. In such cases, everything else equal, risky institutions would pay the same amount of contributions as less risky ones, causing cross-subsidisation among institutions and discouraging sound risk practices.
4. Article 13 of the DGSD lays down a number of criteria for the calculation of contributions to DGSs, and notably that:
  - contributions are compulsorily based on the amount of covered deposits and the risk profile of each member institution;
  - DGSs are allowed to develop and use their own calculation methods in order to tailor contributions to market circumstances and risk profiles;
  - Member States may provide for lower contributions for IPS members and low-risk sectors regulated under national law.
5. With the aim of ensuring consistent application of the DGSD across Member States the EBA was mandated to issue guidelines to specify methods for calculating contributions to DGSs in accordance with Article 13(1) and (2).
6. These EBA Guidelines are aimed at increasing harmonisation of practices of national DGSs, increasing level playing field and contributing to greater comparability of risk-based

---

<sup>1</sup> Directive 2014/49/EU of the European Parliament and of the Council of 16 April 2014 on deposit guarantee schemes, OJ L 173, 12.6.2014, p. 149–178.

<sup>2</sup> Article 10 of the DGSD.

contributions to DGSs across Member States. Pursuant to Article 13(3) second subparagraph, the Guidelines shall include *'a calculation formula, specific indicators, risk classes for members, thresholds for risk weights assigned to specific risk classes, and other necessary elements'*.

7. From February to April 2014 the EBA conducted among Member States a test exercise on three different systems for calculating risk-based contributions to DGSs. The test systems were developed with the aim to allow Member States to verify how different combinations of necessary elements of calculation methods could be applied in their national banking sectors. Each of the three test systems used a fixed set of risk indicators and proposed calibration of thresholds for particular risk indicators and risk classes to be applied in all Member States.
8. Taking into account the results of the test exercise and choices made by EU co-legislators, these Guidelines specify the objectives and principles for DGS contributions, and provide guidance on specific elements that should be taken into account in developing and assessing the methods for calculating risk-based contributions.
9. These Guidelines specify five categories of risk indicators in order to ensure that a sufficiently wide range of key aspects of institutions' operations are reflected in the risk classification. The selection of risk categories reflects the minimum elements specified in Article 13 of the DGSD, such as capital adequacy, asset quality and liquidity, but also the business model and management, and a need to take into account the potential loss to the DGS.
10. In order to strike the right balance between the need for flexibility inherent to the diversity of institutions on the one hand, and the need for harmonisation and comparability within the Single Market on the other, the Guidelines specify core risk indicators and provide guidance for assigning weights to the risk categories and indicators. Within each risk category, a set of core risk indicators should be used in order to promote comparable treatment of institutions. However, competent authorities may exclude, with regard to any institution, a core risk indicator upon justification that this indicator is unavailable due to the legal characteristics or supervisory regime of that institution.
11. In addition, they may also introduce additional risk indicators if they consider that the core indicators do not sufficiently take into account the characteristics of the member institutions, for example in order to reflect the presence of an IPS, or of institutions in low risk sectors regulated under national law. A minimum weight is assigned to each core indicator. The sum of all minimum weights equals 75% of the total aggregate weight, which means that authorities and DGSs are able to allocate the remaining 25%, either by increasing the weights of some core indicators above the minima, or by introducing additional risk indicators. In any event, the weight of any additional indicator, or any increase in the weight of one of the core indicators, may not exceed 15%, except for qualitative risk indicators from the risk category 'Business model and Management' representing the outcome of a comprehensive assessment of the member institution's risk profile and management.
12. These Guidelines acknowledge the option given to DGSs to use their own risk-based methods, in which case competent authorities will ensure that the Guidelines are respected when approving the own risk-based methods. The Guidelines also reflect the possibility recognised in Article 13(2) of the DGSD to take into account the asset side of the balance sheet of an

institution, for example in order to modulate the respective contributions of certain members of an IPS that pose a systemic risk to a scheme which is not sufficiently reflected in the amount of their covered deposits.

13. These Guidelines have benefited from internationally agreed principles, such as the BIS-IADI Core Principles for Effective Deposit Insurance Systems<sup>3</sup> and the IADI General Guidance for developing differential premium systems<sup>4</sup>. This is notably reflected in the goal to reduce the risk of DGS insolvency and the principle whereby the criteria used in the risk adjustment system should be transparent to market participants<sup>5</sup>.
14. In parallel to these Guidelines, the European Commission has adopted pursuant to Article 103(7) of the Bank Recovery and Resolution Directive<sup>6</sup>, a delegated act on ex-ante contributions to resolution financing arrangements<sup>7</sup>. The DGS funds and resolution funds, while constituting two essential components of the European crisis management framework, pursue different goals and have different contribution bases and target levels, therefore the risk indicators and calculation methods should reflect the specificities of each contribution scheme. However, these Guidelines ensure that the two contribution schemes do not send conflicting incentives in terms of risk behaviour of banks, and they strive to avoid unnecessary reporting burden for institutions by using similar indicators where appropriate.
15. In accordance with Article 10(1) of the DGSD, DGSs will have to collect contributions at least annually from the expiry of the transposition period (3 July 2015). From that date, in accordance with Article 13 of the DGSD, contributions will have to be risk-based, unless the appropriate authorities of a Member State have availed themselves of the option foreseen in Article 20(1), subparagraph 3 of the DGSD on the ground that a DGS is not yet in a position to comply with Article 13, in which case the risk-based requirement will have to be introduced no later than by 31 May 2016. Similarly, in order to make possible the implementation of these Guidelines, the risk-based contributions to be collected from member institutions by DGSs should comply with these Guidelines by the end of 2015, or as from the later date set pursuant to 20(1) subparagraph 3 of the DGSD.
16. In line with Article 13(3) of the DGSD the EBA will review these Guidelines by 3 July 2017 and at least every 5 years thereafter. These Guidelines will provide a basis on which to assess the progress achieved by competent and designated authorities in converging towards sound and harmonised practices, and to compare the results obtained across Member States when applying the calculation methods described in these Guidelines. The data gathered by the EBA for the purpose of conducting this review will be used to review the proposed list of core risk indicators and to recalibrate weights assigned to these indicators.

---

<sup>3</sup> The 'Core principles', Bank of International Settlements and International Association of Deposit Insurers, June 2009.

<sup>4</sup> [http://www.iadi.org/docs/IADI\\_Diff\\_prem\\_paper\\_FINAL\\_updated\\_Oct\\_31\\_2011\\_clean\\_version.pdf](http://www.iadi.org/docs/IADI_Diff_prem_paper_FINAL_updated_Oct_31_2011_clean_version.pdf)

<sup>5</sup> Those two requirements are laid down in principle 11 of the Core Principles.

<sup>6</sup> Directive 2014/59/EU of the European Parliament and of the Council of 15 May 2014 establishing a framework for the recovery and resolution of credit institutions and investment firms, OJ L 173, 12.6.2014, p. 190–348.

<sup>7</sup> Commission regulation supplementing Directive 2014/59/EU of the European Parliament and the Council of 15 May 2014 with regard to ex ante contributions to resolution financing arrangements, Document C(2014) 7674/3. Available on the European Commission's website, not yet published in the official journal.

## 4 Draft Guidelines on methods for calculating contributions to Deposit Guarantee Schemes

---

The text of the draft Guidelines includes further explanations on specific aspects of the proposed text, which either offer examples or provide the rationale behind a provision, or set out specific questions for the consultation process. Where this is the case, this explanatory text appears in a framed text box.

The text includes a number of specific questions, which respondents to the public consultation should consider in their responses.

Q1	Do you have any general comments on the draft Guidelines on methods for calculating contributions to DGSs?
Q2	Do you consider the level of detail used in the draft Guidelines to be appropriate?

### Status of the Guidelines

1. This document contains Guidelines issued pursuant to Article 16 of Regulation (EU) No 1093/2010 of the European Parliament and of the Council of 24 November 2010 establishing a European Supervisory Authority (European Banking Authority), amending Decision No 716/2009/EC and repealing Commission Decision 2009/78/EC (the EBA Regulation). In accordance with Article 16(3) of the EBA Regulation, competent authorities must make every effort to comply with the Guidelines.
2. The Guidelines set out the EBA's view of appropriate supervisory practices within the European Scheme of Financial Supervision or of how Union law should be applied in a particular area. The EBA therefore expects all competent authorities and designated authorities to whom guidelines are addressed to comply with guidelines by incorporating them into their supervisory practices or systems and procedures as appropriate (e.g. by amending their legal framework, their supervisory processes or their systems and procedures).

### Reporting Requirements

3. According to Article 16(3) of the EBA Regulation, competent authorities must notify the EBA as to whether they comply or intend to comply with these Guidelines, or otherwise with reasons for non-compliance, by [dd.mm.yyyy – two months after issuance]. In the absence of any notification by this deadline, competent authorities will be considered by the EBA to be non-

compliant. Notifications should be sent by submitting the form provided at Section [•] to [compliance@eba.europa.eu](mailto:compliance@eba.europa.eu) with the reference [•]. Notifications should be submitted by persons with appropriate authority to report compliance on behalf of their competent authorities.

4. Notifications will be published on the EBA website, in line with Article 16(3).

## Title I: Subject matter, definitions and scope

### Subject matter

5. The new DGS Directive (hereafter 'DGSD'), recasting Directive 94/19/EC and its subsequent amendments, was published in the Official Journal on 12 June 2014<sup>8</sup>. The DGSD harmonises the funding mechanisms of deposit guarantee schemes ('DGSs') and mandates the collection of risk-based contributions. Pursuant to Article 13 of the DGSD the contributions to DGSs shall be based on the amount of covered deposits and the degree of risk incurred by the respective member. The DGSs may develop and use their own methods for calculating the risk-based contributions of their members. Each method shall be approved by the competent authority in cooperation with the designated authority. The EBA shall be informed about the methods approved.
6. Article 13(2) of the DGSD stipulates that the calculation of contributions shall be proportional to the risk of the members and shall take due account of the risk profiles of the various business models. Those methods may also take into account the asset side of the balance sheet and risk indicators, such as capital adequacy, asset quality and liquidity.
7. These Guidelines fulfil the mandate given to the EBA under Article 13(3) of the DGSD, to issue guidelines to specify methods for calculating contributions to DGSs, and in particular, that such guidelines, shall include a calculation formula, specific indicators, risk classes for members, thresholds for risk weights assigned to specific risk classes, and other necessary elements.
8. These Guidelines specify the objectives and principles governing DGS contribution schemes. They also provide guidance on specific elements that should be taken into account in developing and assessing the methods for calculating risk-based contributions, while properly addressing the characteristics of national banking sectors and business models of member institutions.

### Definitions

9. In addition to the definitions referred to in Article 2 of the DGSD, the following definitions apply for the purpose of these Guidelines:

---

<sup>8</sup> Directive 2014/49/EU of the European Parliament and of the Council of 16 April 2014 on deposit guarantee schemes, OJ L 173, 12.6.2014, p. 149–178.

- a. 'DGS contribution scheme' means the DGS financing arrangement which is entitled to raise from its member institutions both the ex-ante contributions and ex-post extraordinary contributions;
- b. 'calculation method' means the method for calculating contributions of member institutions to a DGS contribution scheme;
- c. 'member institution' means a credit institution, as defined in point (1) of Article 4(1) of Regulation (EU) No 575/2013<sup>9</sup>, affiliated to a particular DGS;
- d. 'annual target level' means the amount of contributions that a DGS plans to collect in a specific year from its member institutions;
- e. 'SREP' means the Supervisory Review and Evaluation Process as defined in Article 97 of Directive 2013/36/EU<sup>10</sup> and further specified in the EBA Guidelines on the common procedures and methodologies for SREP developed in accordance to Article 107 of Directive 2013/36/EU.

#### Abbreviations:

- a. DGS – Deposit Guarantee Scheme;
- b. IPS – Institutional Protection Scheme.

### Scope and level of application

- 10. These Guidelines are addressed to competent authorities and designated authorities as defined respectively in Article 2(1)(17) and 2(1)(18) of the DGSD.
- 11. Competent authorities and designated authorities should ensure that these Guidelines are applied by DGSs when developing methods for calculating risk-based contributions by their members, and are used when approving these calculation methods in accordance with Article 13(2) of the DGSD.
- 12. Where the competent authorities or designated authorities are responsible for developing the calculation method, they should apply the provisions of these Guidelines.
- 13. The calculation methods should be applicable both to ex-ante contributions and extraordinary ex-post contributions. Ex-post contributions should thus be calculated on the basis of the same risk categorisation as the one applied for the purpose of the last annual ex-ante contributions.
- 14. DGSs should seek approval from the competent authorities before the initial implementation of a calculation method. The DGSs should obtain renewal of the competent authorities'

<sup>9</sup> Regulation (EU) No 575/2013 of the European Parliament and of the Council of 26 June 2013 on prudential requirements for credit institutions and investment firms and amending Regulation (EU) No 648/2012, OJ L 176, 27.06.2013, p. 1.

<sup>10</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 Text with EEA relevance, OJ L 176, 27.06.2013, p. 338.

approval at a frequency at which competent authorities deem appropriate and, in any event, before introducing any material changes to an already approved calculation method. Non material changes should be notified to the competent authorities on a yearly basis.

15. According to Article 15(1) of the DGSD Member States shall check that branches established in their territory by a credit institution which has its head office outside the Union have protection equivalent to that prescribed in the DGSD. If protection is not equivalent, Member States may, subject to Article 47(1) of Directive 2013/36/EU, stipulate that those branches must join a DGS in operation within their territories. In any event, the DGSs are bound by the obligations to raise risk-based contributions from their members pursuant to Articles 10 and 13 of the DGSD. However, by virtue of Article 47 of Directive 2013/36/EU, the prudential requirements and supervisory treatment of branches of third country credit institutions fall under the responsibility of Member States. Consequently, many of the risk adjustment metrics provided for by these Guidelines do not apply to them and it is appropriate to leave to Member States the power of specifying the risk adjustment for such branches in a consistent manner with the treatment afforded to them under national law. Therefore, the branches of third country credit institutions should not fall within the scope of these Guidelines.

## Title II: Guidance for developing methods for calculating contributions to DGSs

### Part I - Objectives for DGS contribution schemes

16. Contribution schemes should:

- a. ensure that the cost of financing DGSs is, in principle, borne by credit institutions themselves, and that the financing capacity of DGSs is proportionate to their liabilities;
- b. ensure that the target level is reached within the build-up period laid down in Article 10 of the DGSD;
- c. help to mitigate incentives for excessive risk taking by member institutions by having higher contributions paid by riskier institutions; this should also ensure that failed institutions have properly contributed in advance.

### Part II - Principles for developing the calculation methods

17. DGSs, competent authorities and designated authorities, while developing or approving the methods for calculating contributions to DGS, should comply with the principles enlisted in the following paragraphs.

**Principle 1: Calculation methods should, as far as possible, reflect an increased liability incurred by a DGS as a result of a member's participation**

18. The contribution of each member institution should as far as possible reflect:

- the likelihood of the institution's failure (i.e. the institution would fail or would be likely to fail in the meaning of Article 32 of Directive 2014/59/EU<sup>11</sup> on the recovery and resolution of credit institutions and investment firms (hereafter 'BRRD');
- the potential losses stemming from a DGS intervention, on a net basis after potential recoveries from the bankruptcy estate of the failed institution.

**Principle 2: Calculation methods should be consistent with the build-up period foreseen in the DGSD**

19. The build-up period for the target level foreseen in Article 10(2) of the DGSD will be of no more than ten years originally but may be extended by four years in case of cumulative disbursement exceeding 0.8% of covered deposits. Within that time horizon, contributions should be spread out in time as evenly as possible until the target level is reached, but with due account of the phase of the business cycle and the pro-cyclical impact contributions may have on the financial position of member institutions.

20. In any event, the DGSD does not prevent Member States from setting a higher target level or providing that a DGS may request member institutions to make ex-ante contributions even after the target level is reached in order to fulfil the objective mentioned in paragraph 16(c).

**Principle 3: Incentives provided by contribution schemes should be aligned with prudential requirements**

21. In order to mitigate moral hazard the incentives provided by the DGS contribution scheme should be compatible with prudential requirements (i.e. capital and liquidity requirements reflecting the risk of the member institution).

22. In particular, if calculation methods are developed and calibrated using statistical and econometric tools, the outcome of the methodology regarding the riskiness of member institutions should be consistent with the prudential requirements applicable to the institutions.

**Principle 4: Calculation methods should take into account specific characteristics of the banking sector, and should be compatible with the regulatory regime, and accounting and reporting practices in the Member State where the DGS is established**

23. Calculation methods should be appropriate for the structure of the banking sector in a Member State. Therefore, DGSs established in Member States with a large number of heterogeneous institutions should develop more sophisticated calculation methods, applying an appropriately large number of risk classes (or a sliding scale approach) in order to properly

---

<sup>11</sup> Directive 2014/59/EU of the European Parliament and of the Council of 15 May 2014 establishing a framework for the recovery and resolution of credit institutions and investment firms, J L 173, 12.6.2014, p. 190–348.

differentiate institutions according to their risk profile. Conversely, DGSs established in Member States with a more homogenous banking sector should use simpler calculation methods. In any case, the risk indicators selected for the calculation method should enable the DGS to adequately capture differences in the risk profile of the institutions while taking due account of their business model.

**Principle 5: The rules for calculating contributions should be objective and transparent**

24. Risk-based contribution systems should be objective and ensure that deposit taking institutions with similar characteristics (in particular in terms of risk, systemic importance and business model) are categorised similarly.
25. DGS contribution schemes should be transparent, understandable and well explained. As a minimum, the basis and criteria used to calculate contributions should be transparent to member institutions. Transparency will help the member institutions to understand the purpose of applying risk-based contributions and will make the scheme predictable for them.

**Principle 6: The required data for the calculation of contributions should not lead to excessive additional reporting requirements**

26. For the purpose of calculating contributions DGSs should, to the extent possible, make use of information already available to them or requested from member institutions by competent authorities as part of their reporting obligations. A balance should be struck between requiring information necessary for the calculation of contributions and avoiding making unduly burdensome requests for information from the member institutions.
27. The DGSs should only require data that is not already reported on a regular basis if such information is needed for determining the risk member institutions pose to the DGS.
28. In cases where the DGS does not gather information directly from member institutions but relies on the information provided by the competent authority, it should be ensured that either statutory provisions or formal arrangements are in place so that information required for administering the contributions is collected and transmitted on a timely basis.

**Principle 7: Confidential information should be protected**

29. DGSs should keep confidential the information used in calculating contributions which is not otherwise publicly disclosed. The DGSs should disclose to the public at least the description of the calculation method and the parameters of the calculation formula, including risk indicators but not necessarily their respective weights. In contrast the results of the risk classification and its components for a particular member institution should be disclosed to that institution and not to the public.

**Principle 8: Calculations methods should be consistent with relevant historical data**

30. Where the DGS has access to the relevant historical data of financial institutions it should use that data when calibrating and re-calibrating the parameters of the calculation methods. For

this purpose historical data may include: (i) data about institutions' failures, events where an institution has been likely to fail but its failure has been avoided by actions of public authorities; or other events when risks posed by the member institutions to the DGS have materialised; and (ii) data about recovery rates of the DGS from such events.

31. Appropriate corrections to the calculation methods should be made in cases where regulatory or institutional changes have occurred (for example a change in the minimum levels of regulatory capital requirements).
32. In advance of the 2017 review of these Guidelines, competent authorities should compare the results obtained in applying calculation methods and compare them with the risk assessment performed under the SREP. This comparison should be made in a holistic manner (e.g. using samples). The competent authorities should inform the EBA of the holistic outcome of this comparison and the discrepancies observed.

### Part III - Necessary elements of the calculation methods

33. The essential elements for each calculation method of risk-based contributions to DGSs should encompass: (i) the calculation formula, (ii) thresholds for aggregate risk weights, (iii) risk categories and core risk indicators. These elements are described in the following paragraphs.

#### *Element 1. Calculation formula*

34. Annual contributions to a DGS by individual member institutions should be calculated using the formula provided below.

$$C_i = CR \times ARW_i \times CD_i \times \mu$$

Where:

$C_i$	=	Annual contribution for member institution i
CR	=	Contribution rate (identical for all member institutions in a given year)
$ARW_i$	=	Aggregate Risk Weight for member institution i
$CD_i$	=	Covered deposits for member institution i
$\mu$	=	Adjustment coefficient (identical for all institutions in a given year)

#### *(a) Contribution rate (CR)*

35. The contribution rate is the percentage rate that should be paid by a member institution with an Aggregate Risk Weight (ARW) that equals 100% (i.e. assuming no risk differentiation) in order to reach the annual target level. During the initial period, the calibration of the contribution rate should ensure that the target level is reached and that the annual contributions are spread out in time as evenly as possible.
36. The contribution rate should be established by the DGS on a yearly basis by dividing the annual target level by the sum of covered deposits of all its member institutions.

37. The annual target level should be established, at a minimum, by dividing the amount of financial means that the DGS still needs to collect in order to meet the target level, by the remaining build-up period (expressed in years) for reaching the target level. This formula is however without prejudice to the discretion left to Member States to foresee that DGSs continue collecting ex-ante contributions even after reaching the target level.

**Box 1 – Example: Effect of changes in the amount of Covered deposits (CD) on the target level, annual target level and Contribution Rate (CR)**

The following table presents the evolution of amounts of covered deposits over four consecutive years for all member institutions affiliated to a particular DGS. It shows corresponding target levels for DGS funds calculated on the basis of the current amount of covered deposits.

Year	Covered deposits (CD)(€)	Target level (CD × 0.8%)(€)
Year 20X1	1,000,000	8,000
Year 20X2	1,200,000	9,600
Year 20X3	1,300,000	10,400
Year 20X4	1,100,000	8,800

For each year calculation of the annual target level and Contribution Rate (CR) should be conducted in a way described below, under the following assumptions:

- in Year 20X1 the DGS starts collecting ex-ante contributions from its member institutions with the aim of reaching the target level within 10 years;
- the contributions need to be distributed among 10 years as evenly as possible; and
- in each year the contributions collected by the DGS equal to the annual target level established for that year.

**Year 20X1**

Annual target level<sub>1</sub> = 1/10 × Target level<sub>1</sub> = 1/10 × €8,000 = €800

CR<sub>1</sub> = Annual target level<sub>1</sub>/CD<sub>1</sub> = €800/€1,000,000 = 0.00080 = 0.080%

At the end of year 20X1 the funds available to the DGS amount to €800.

**Year 20X2**

Annual target level<sub>2</sub> = 1/9 × (Target level<sub>2</sub> – Funds already available in the DGS) = 1/9 × (€9,600 – €800) = €8,800/9 = €978

CR<sub>2</sub> = Annual target level<sub>2</sub>/CD<sub>2</sub> = €978/€1,200,000 = 0.00081 = 0.081%

At the end of year 20X2 the funds available to the DGS amount to €1,778 (= €800 + €978)

**Year 20X3**

Annual target level<sub>3</sub> = 1/8 × (Target level<sub>3</sub> – Funds already available in the DGS) = 1/8 × (€10,400 – €1,778) = €8,622/8 = €1,078

CR<sub>3</sub> = Annual target level<sub>3</sub>/CD<sub>3</sub> = €1,078/€1,300,000 = 0.00083 = 0.083%

At the end of year 20X3 the funds available to the DGS amount to €2,856 (= €1,778 + €1,078)

**Year 20X4**

Annual target level<sub>4</sub> =  $1/7 \times (\text{Target level}_4 - \text{Funds already available in the DGS}) = 1/7 \times (\text{€8,800} - \text{€2,856}) = \text{€5,944}/7 = \text{€849}$

CR<sub>4</sub> = Annual target level<sub>4</sub>/CD<sub>4</sub> =  $\text{€849}/\text{€1,100,000} = 0.00077 = 0.077\%$

At the end of year 20X4 the funds available to the DGS amount to €3,705 (= €2,856 + €849)

*(b) Aggregate Risk Weight (ARW)*

38. The Aggregate Risk Weight for a member institution *i* (ARW<sub>*i*</sub>) should be assigned on the basis of the Aggregate Risk Score for that institution (ARS<sub>*i*</sub>). The ARS<sub>*i*</sub> is calculated by summing up all individual indicators' risk scores weighted by appropriate indicator weights. Two different methods are laid down in Annex 1 for calculating the ARS<sub>*i*</sub> and assigning the ARW<sub>*i*</sub> to the member institution on the basis on its ARS<sub>*i*</sub>: the 'bucket' method and the sliding scale method. The DGSs should choose the calculating method after taking into consideration the characteristics of the national banking sector, and notably the degree of heterogeneity among institutions.

*(c) Adjustment coefficient (μ)*

39. According to Article 10(2) of the DGSD the available financial means of a DGS must at least reach the target level specified in the Directive within a ten year period. In line with the principle laid down in paragraph 19, these contributions should be spread out in time as evenly as possible until the target level is reached, but with due account of the phase of the business cycle and the pro-cyclical impact of contributions on the institutions' financial position. The total amount of contributions to the DGS in a given year depends on the riskiness of its member institutions (measured by their ARW<sub>*i*</sub>) and the amount of their covered deposits (CD<sub>*i*</sub>). Therefore, the sum of annual contributions from all member institutions based only on the CD<sub>*i*</sub>, ARW<sub>*i*</sub> and the fixed contribution rate (CR) in a given year may be higher or lower than the annual target level. In order to remedy this discrepancy, an adjustment coefficient (μ) should be used to adjust the CR with the goal to reach the annual target level when the total contributions otherwise would be too high or too low.

40. The adjustment coefficient (μ) should also factor in the business cycle in order to avoid excessive contributions during economic downturns, and to allow faster build-up of the DGS fund in economic upturns. The adjustment coefficient should take into account current economic conditions as well as medium term perspectives, as persistent economic difficulties may not indefinitely justify low contributions. The cyclical adjustment may also take into account expected evolutions in the covered deposits base. Competent authorities should assess this component of the calculation method taking into account relevant macro-prudential information. DGSs may be required to adapt the adjustment coefficient whenever needed to properly reflect evolutions in the business cycle that have occurred since the initial approval of the calculation method.

### Box 2 – Example of application of the calculation formula

For illustration purposes calculations are carried out for a Member State *A* in year 2X01. There are only three credit institutions and one DGS in that Member State, and the total amount of deposits covered by the DGS is €1,500,000. It is assumed that year 2X01 is the first year when the DGS in Member State *A* starts collecting ex-ante contributions from deposit taking institutions in order to reach a target level of 0.8% of covered deposits in 10 years (i.e. by year 2X11). Therefore, assuming that the contributions in the initial period are distributed evenly, the annual target level, representing total annual contributions (*TC*) from all institutions in Member State *A* in year 2X01 should reach approximately 1/10 of the target level. The Contribution Rate in this case amounts to 0.0008 ( $CR = 1/10 \times 0.8\%$ ). The total annual contributions for year 2X01 may be calculated as follows:  $TC = €1,500,000 \times (0.0008) = €1,200$

The table below shows the breakdown of the total covered deposits and the respective risk unadjusted contributions by the institutions in Member State *A* in year 2X01.

Institution	Covered deposits (€)	Risk unadjusted contributions (€)
Institution 1	200,000	160 (= 200,000 × 0.0008)
Institution 2	400,000	320 (= 400,000 × 0.0008)
Institution 3	900,000	720 (= 900,000 × 0.0008)
<b>Total</b>	<b>1,500,000</b>	<b>1,200 (= 1,500,000 × 0.0008)</b>

The method for calculating risk-based contributions adopted in Member State *A* relies on four different risk classes, with different Aggregate Risk Weights (ARW) assigned to each risk class as follows: 75% for the institution with lowest risk profile, 100% for institutions with the average risk profile, 120% for risky institutions, and 150% for the most risky institutions.

The following formula is used to calculate annual contributions for individual institutions *i*:

$$C_i = CR \times ARW_i \times CD_i \times \mu$$

#### Scenario 1: relatively high-risk institutions in year 2X01

Under Scenario 1 the  $ARW_i$  for institutions 1, 2, and 3 are 75%, 150% and 120%, respectively. After applying the pure risk adjusting factor based on the ARW the amount of total annual contributions from all institutions in Member State *A* (€1,464) is higher than the planned total annual contribution level (€1,200) as is illustrated in the table below.

Risk-adjusted contributions in Member State *A* in year 2X01 under Scenario 1

Institution	$CD_i$ (€)	$ARW_i$	Risk adjusted contributions (€)
Institution 1	200,000	75%	120 (= 200,000 × 0.0008 × 0.75)
Institution 2	400,000	150%	480 (= 400,000 × 0.0008 × 1.50)
Institution 3	900,000	120%	864 (= 900,000 × 0.0008 × 1.20)

<b>Total</b>	1,500,000		1,464
--------------	-----------	--	-------

Therefore, there is a need to use an adjustment coefficient  $\mu$  in order to ensure that the total annual contributions (i.e. the sum of all individual contributions) would equal to 1/10 of the target level. In this case, the adjustment coefficient to be applied for all institutions can be calculated as  $\mu_1 = \text{€}1,200/\text{€}1,464 = 0.82$ . The estimates for the risk-adjusted contributions after the application of the adjustment coefficient  $\mu_1$  are presented in the table below.

Corrected risk adjusted contributions in Member State *A* in year 2X01 under scenario 1

Institution	$CD_i(\text{€})$	$ARW_i$	Risk adjusted contributions (€)	Adjustment coefficient $\mu_i$	Final risk adjusted contributions (€)
Institution 1	200,000	75%	120	0.82	98 (= 120 × 0.82)
Institution 2	400,000	150%	480	0.82	394 (= 480 × 0.82)
Institution 3	900,000	120%	864	0.82	708 (= 864 × 0.82)
<b>Total</b>	1,500,000		1,464		1,200

#### Scenario 2: relatively low-risk institutions in year 2X01

Under Scenario 2 the  $ARW_i$  for institutions 1, 2, and 3 are 75%, 120% and 75%, respectively. When the pure risk adjusting factor (ARW) is applied, the total annual contribution from all institutions in the Member State *A* is €1,044 and it is lower than the planned total annual contribution level of €1,200.

Risk adjusted contributions in Member State *A* in year 2X01 under scenario 2

Institution	$CD_i(\text{€})$	$ARW_i$	Risk adjusted contributions (€)
Institution 1	200,000	75%	120 (= 200,000 × 0.0008 × 0.75)
Institution 2	400,000	120%	384 (= 400,000 × 0.0008 × 1.20)
Institution 3	900,000	75%	540 (= 900,000 × 0.0008 × 0.75)
<b>Total</b>	1,500,000		1,044

An adjustment coefficient  $\mu$  is applied in order to ensure that the total annual contribution equals 1/10 of the target level. Under this scenario, the adjustment coefficient to be applied for all institutions can be calculated as  $\mu_2 = \text{€}1,200/\text{€}1,044 = 1.15$ . As the sum of the risk adjusted contributions is lower than the annual target level, the corrective coefficient is greater than 1.

Corrected risk adjusted contributions in Member State *A* in year 2X01 under scenario 2

Institution	$CD_i(\text{€})$	$ARW_i$	Risk adjusted contributions (€)	Adjustment coefficient $\mu_i$	Final risk adjusted contributions (€)
Institution 1	200,000	75%	120	1.15	138 (= 120 × 1.15)
Institution 2	400,000	120%	384	1.15	442 (= 384 × 1.15)
Institution 3	900,000	75%	540	1.15	620 (= 540 × 1.15)
<b>Total</b>	1,500,000		1,044		1,200

The adjustment coefficient  $\mu$  can be determined after all member institutions are categorised into risk classes and are assigned Aggregate Risk Weights (reflecting their risk profile). If the need arose to restate the data used for risk classification this would affect also the  $\mu$ , however any potential change would depend on both: (i) the relative change of the risk adjustment (bigger impact if change from 75% to 150% rather than from 75% to 100%); and (ii) the amount of covered deposits of the member institution which restated its data. Such adjustments would never be perfect therefore the total amount of contributions paid each year can deviate from 1/10 of the target level, but the  $\mu$  is helpful to ensure an even distribution of contributions in time. The application of the adjustment coefficient also allows adjusting the total annual contributions to the business cycle (e.g. lower  $\mu$  can be applied during the economic downturn).

Q3	Is the proposed formula for calculating contributions to DGS sufficiently clear and transparent?
----	--

#### ***Element 2. Thresholds for Aggregate Risk Weights (ARW)***

41. In order to help to mitigate moral hazard the ARWs should reflect the differences in risk incurred by different member institutions. Where the calculation method uses risk classes with different ARWs assigned to them (the 'bucket' method) it should set specific values of ARW applicable to each risk class. Where the calculation method follows a sliding scale approach instead of a fixed number of risk classes (the 'sliding scale' method), the upper and lower limits of ARWs should be established.

42. The lowest ARW should range between 50% and 75% and the highest ARW between 150% and 200%. A wider interval could be established upon justification that the interval limited to 50%-200% does not reflect sufficiently the differences in business models and risk profiles of member institutions, and would create moral hazard by artificially grouping together member institutions with very different risk profiles.

43. The DGS should strive to map the ARW to the Aggregate Risk Scores (ARS) in such a way that it would be possible for member institutions to be assigned to the lowest and highest ARW, and for the various risk classes to be populated. In particular, the DGS should avoid calibrating the model in a way that almost all member institutions, despite having significantly different risk profiles, would be assigned to only one risk class (e.g. the risk class for institutions with an average risk profile). However, this does not imply that in each year the DGS shall necessarily use the full interval and assign any institution the ARW corresponding to the lowest and the highest end of the interval.

Q4	Considering the need for sufficient risk differentiation and consistency across the EU, do you agree on the minimum risk interval (75%-150%) proposed in these Guidelines?
----	--

### ***Element 3. Risk categories and core risk indicators***

#### *Categories of risk indicators*

44. The calculation of the Aggregate Risk Weight ( $ARW_i$ ) for an individual member institution should be based on a set of risk indicators from each of the following risk categories:

- a. Capital
- b. Liquidity and funding
- c. Asset quality
- d. Business model and Management
- e. Potential losses for the DGS

45. Within each category, the calculation method should include the core risk indicators specified in Table 1. By exception, competent authorities may allow to exclude, with regard to a specific type of institutions, a core indicator upon justification that this indicator is unavailable because of the legal characteristics or supervisory regime of such institutions.

46. Where competent authorities remove a core risk indicator with regard to the specific type of institutions, they should strive to use the most appropriate proxy to the removed indicator. They should ensure that the risks posed by the institution to the system are reflected in other indicators used, and take into account the need for level playing field with other institutions for which the indicator is available.

47. A description of the risk categories and specification of the core risk indicators is provided in Table 1 below. A more detailed description of the core risk indicators is presented in Annex 2.

**Table 1. Risk categories and core risk indicators**

Risk category	Description of the risk category and core risk indicators
<b>A. Likelihood of failure</b>	
<b>1. Capital</b>	<p>Capital indicators reflect the level of loss absorbing capacity of the institution. Higher amounts of capital held by the institution indicate that it has better ability to absorb losses internally (mitigating the risks arising from the institution's high risk profile), thus decreasing its likelihood of failure. Therefore, institutions with higher values on capital indicators should contribute less to the DGS.</p> <p>Core indicators:</p> <ul style="list-style-type: none"> <li>- Leverage ratio<sup>12</sup>, and</li> <li>- Capital coverage ratio or Common Equity Tier 1 ratio (CET1)</li> </ul>
<b>2. Liquidity and funding</b>	<p>The liquidity and funding indicators measure the institution's ability to meet its short and long-term obligations as they come due without adversely affecting its financial conditions. Low liquidity levels indicate the risk that the institution may be unable to meet its current and future, expected or unexpected, cash-flow obligations and collateral needs.</p> <p>Core indicators:</p> <ul style="list-style-type: none"> <li>- Liquidity Coverage Ratio<sup>13</sup> (LCR), and</li> <li>- Net Stable Funding Ratio<sup>14</sup> (NSFR)</li> </ul>
<b>3. Asset quality</b>	<p>Asset quality indicators demonstrate the extent to which the institution is likely to experience credit losses. Large credit losses may cause financial problems that increase the likelihood of failure of the institution. For instance, a high NPL ratio indicates that the institution is more likely to incur substantial losses and consequently require a DGS intervention; therefore it justifies higher contributions to the DGSs.</p> <p>Core indicator:</p> <ul style="list-style-type: none"> <li>- Non-performing loans ratio</li> </ul>
<b>4. Business model and Management</b>	<p>This risk category takes into account the risk related to the institution's current business model and strategic plans (business strategy and risk appetite), and enables to reflect the quality of its internal governance and internal controls.</p> <p>Business model indicators can, for instance, include profitability indicators, balance sheet development indicators and exposure concentration indicators:</p> <ul style="list-style-type: none"> <li>- Profitability indicators provide information on the ability of the member institution to generate profits. Low profitability or losses incurred by the</li> </ul>

<sup>12</sup> Tier 1 Capital/Total Assets ratio should be used until a definition of a leverage ratio determined according to Regulation (EU) No 575/2013 is fully operational.

<sup>13</sup> If available, a national definition of the liquidity ratio, such as Liquid assets/Total Assets should be used until the Regulation (EU) No 575/2013 measures are fully operational.

<sup>14</sup> The NSFR ratio should be applied once its definition determined according to Regulation (EU) No 575/2013 is fully operational.

	<p>institution indicate that it may face financial problems that could lead to its failure. However, high and unsustainable profits may also indicate elevated risk. In order to avoid point-in-time measurements, the profitability indicators should be calculated as average values over a period of at least two years. This will mitigate pro-cyclical effects and better reflect the sustainability of the income sources.</p> <ul style="list-style-type: none"> <li>– Balance sheet development indicators can provide information on potential excessive growth in total assets, certain portfolios or segments. These indicators may also include the relative measure of risk weighted assets to total assets.</li> <li>– Concentration indicators can provide information on excessive sectoral or geographical concentrations of institution’s exposures.</li> </ul> <p>Other potential types of risk indicators in this category include: indicators measuring economic efficiency or sensitivity to market risk, as well as market-based indicators.</p> <p>The management indicators introduce qualitative factors into the risk classification of the institutions in order to reflect the quality of their internal governance arrangements. In particular, qualitative indicators can be based on off-site and on-site inspections performed by DGSs; on special questionnaires designed for this purpose by DGSs and/or on the comprehensive assessment of institutions internal governance reflected in the SREP.</p> <p>Core indicators:</p> <ul style="list-style-type: none"> <li>- Risk-weighted Assets/Total Assets, and</li> <li>- Return on Assets (RoA)</li> </ul>
<b>B. Potential losses for the DGS</b>	
<p><b>5. Potential losses for the DGS</b></p>	<p>This category of indicators reflects the risk of loss for the DGS in case a member institution defaults. The extent to which the institution’s assets are encumbered<sup>15</sup> will have a particular impact as encumbrance will lower the recovery prospect of the DGS in claiming back the pay-out amount from the institution’s bankruptcy estate.</p> <p>Core indicator:</p> <ul style="list-style-type: none"> <li>- Unencumbered assets / Covered deposits</li> </ul>

<sup>15</sup> Definition of encumbered assets for the purpose of the EBA Guidelines on disclosure of encumbered and unencumbered assets is determined in the following way: ‘an asset should be treated as encumbered if it has been pledged or if it is subject to any form of arrangement to secure, collateralise or credit-enhance any on-balance-sheet or off-balance-sheet transaction from which it cannot be freely withdrawn (for instance, to be pledged for funding purposes). Assets pledged that are subject to any restrictions in withdrawal, such as assets that require prior approval before withdrawal or replacement by other assets, should be considered encumbered. In particular, the following types of contracts should be considered encumbered [...].’

Q5	Do you agree with the core risk indicators proposed in these Guidelines? If not, please specify your reasons and suggest alternative indicators that can be applied to institutions in all Member States. Do you foresee any unintended consequences that could stem from the suggested indicators?
Q6	Do you agree with the option to use either capital coverage ratio or Common Equity Tier 1 ratio as a measure of capital? Would you favour one of these indicators rather than the other, and why?
Q7	Are there any particular types of institutions for which the core risk indicators specified in these Guidelines are not available due to the legal characteristics or supervisory regime of these institutions? Please describe the reasons why these core indicators are not available.

#### *Additional risk indicators*

48. Apart from the core risk indicators, DGSs may include additional risk indicators if they are relevant to determine the risk profile of member institutions.
49. The additional risk indicators should be classified into appropriate risk categories according to Table 1. Only in cases where additional indicators do not fall into the description of any other risk category, they should be qualified as Business Model and Management indicators.
50. Each DGS should define its own set of risk indicators in order to reflect the differences in risk profile of its member institutions. Annex 3 provides a list of examples of additional quantitative and qualitative risk indicators with a detailed description.

#### *Weights for risk indicators and categories*

51. The sum of weights assigned to all risk indicators in the method for calculating contributions to DGSs should be equal to 100%.
52. When assigning weights to particular risk indicators used in the calculation method the minimum weights for the risk categories and core risk indicators, as specified in Table 2, should be preserved.

**Table 2. Minimum weights for risk categories and core risk indicators**

Risk categories and core risk indicators	Minimum weight
<b>1. Capital</b>	<b>18%</b>
1.1. Leverage ratio	9%
1.2. Capital coverage ratio or CET1 ratio	9%
<b>2. Liquidity and funding</b>	<b>18%</b>
2.1. LCR	9%
2.2. NSFR	9%
<b>3. Asset quality</b>	<b>13%</b>
3.1 NPL ratio	13%
<b>4. Business model and Management</b>	<b>13%</b>
4.1. RWA / Total Assets	6.5%
4.2. RoA	6.5%
<b>5. Potential losses for the DGS</b>	<b>13%</b>
5.1. Unencumbered assets / Covered deposits	13%
<b>Sum</b>	<b>75%</b>

53. The sum of the minimum weights specified in these Guidelines for risk categories and core risk indicators amounts to 75% of total weights. DGSs should distribute the remaining 25% among the risk categories laid down in Table 1.

54. Where a core indicator is not used, the minimum weight of the remaining core indicator from the same risk category should amount to the full minimum weight for this risk category.

55. The DGS should allocate the flexible 25% of weights by distributing them among the additional risk indicators and/or by increasing the minimum weights of the core risk indicators provided that the following conditions are met:

- the minimum weights of risk categories and core risk indicators are preserved;
- where only core risk indicators are used in the calculation method the flexible 25% weight should be allocated among the risk categories in the following way: Capital - 24%, Liquidity and Funding - 24%, Asset quality - 18%, Business model and Management - 17%, and Potential use of DGS funds - 17%;
- the weight of any additional indicator, or the increase in the weight of a core risk indicator, should not be higher than 15%, except for additional qualitative risk indicators representing the outcome of a comprehensive assessment of the member institution's risk profile and management (included in the risk category 'Business model and Management') and cases specified in paragraph 54.

### Box 3 – Example of use of the flexibility in assigning 25% weights among risk categories and core risk indicators

#### Scenario 1

All core risk indicators are used and no additional indicators are included in the calculation method. The flexible 25% of weights is distributed among core risk indicators in such a way that the proportions between minimum weights for risk categories and core risk indicators are retained (e.g. additional weight for capital amounts to 6% = 25% × (18%/75%).

Indicator name	Min weights (1)	Flexible weights (2)	Final weights (1) + (2)
<b>1. Capital</b>	<b>18%</b>	<b>+ 6%</b>	<b>24%</b>
1.1. Leverage ratio	9%	+ 3%	12%
1.2. Capital coverage ratio OR CET1 ratio	9%	+ 3%	12%
<b>2. Liquidity and funding</b>	<b>18%</b>	<b>+ 6%</b>	<b>24%</b>
2.1. LCR	9%	+ 3%	12%
2.2. NSFR	9%	+ 3%	12%
<b>3. Asset quality</b>	<b>13%</b>	<b>+ 5%</b>	<b>18%</b>
3.1 NPL ratio	13%	+ 5%	18%
<b>4. Business model and Management</b>	<b>13%</b>	<b>+ 4%</b>	<b>17%</b>
4.1. RWA / Total Assets	6.5%	+ 2%	8.5%
4.2. RoA	6.5%	+ 2%	8.5%
<b>5. Potential losses for the DGS</b>	<b>13%</b>	<b>+ 4%</b>	<b>17%</b>
5.1. Unencumbered assets / Covered deposits	13%	+ 4%	17%
<b>Sum</b>	<b>75%</b>	<b>+ 25%</b>	<b>100%</b>

#### Scenario 2

One of the core risk indicators is not available (NSFR) during a transitional period and no additional risk indicators are included in the calculation method. The minimum weight assigned to the LCR ratio would amount to the total weight for the risk category Liquidity and funding 18% (18% = 9% + 9%) increased by 6% (the whole increase for this risk category capital as described in Scenario 1), and the other weights would be distributed among the risk indicators in a similar way as under Scenario 1.

Indicator name	Min weights (1)	Flexible weights (2)	Final weights (1) + (2)
<b>1. Capital</b>	<b>18%</b>	<b>+ 6%</b>	<b>24%</b>
1.1. Leverage ratio	9%	+ 3%	12%
1.2. Capital coverage ratio OR CET1 ratio	9%	+ 3%	12%
<b>2. Liquidity and funding</b>	<b>18%</b>	<b>+ 6%</b>	<b>24%</b>
2.1. LCR	9%	+(6%+9%)	24%

2.2. NSFR	9%	- 9%	N/A
<b>3. Asset quality</b>	<b>13%</b>	<b>+ 5%</b>	<b>18%</b>
3.1 NPL ratio	13%	+ 5%	18%
<b>4. Business model and Management</b>	<b>13%</b>	<b>+ 4%</b>	<b>17%</b>
4.1. RWA / Total Assets	6.5%	+ 2%	8.5%
4.2. RoA	6.5%	+ 2%	8.5%
<b>5. Potential losses for the DGS</b>	<b>13%</b>	<b>+ 4%</b>	<b>17%</b>
5.1. Unencumbered assets / Covered deposits	13%	+ 4%	17%
<b>Sum</b>	<b>75%</b>	<b>+ 25%</b>	<b>100%</b>

### Scenario 3

All core risk indicators are used in the calculation method but the DGS would like to increase (by 5%) the weight of one core indicator (Leverage ratio) because it considers this indicator to have a high power in predicting distress among its member institutions. Moreover, the DGS intends to include two additional risk indicators (one with a weight of 3% in the risk category Asset quality, and the second one with a weight of 5% in the risk category Business model and Management). The remaining 12% of flexible weights will be distributed among all unadjusted core risk indicators in a way that would preserve the relation of the minimum weights assigned to these indicators.

Indicator name	Min weights (1)	Flexible weights (2)		Final weights (1) + (2)
<b>1. Capital</b>	<b>18%</b>	<b>+ 5%</b>	<b>+3%</b>	<b>26%</b>
1.1. Leverage ratio	9%	+ 5%		14%
1.2. Capital coverage ratio OR CET1 ratio	9%		+ 3%	12%
<b>2. Liquidity and funding</b>	<b>18%</b>		<b>+ 3%</b>	<b>21%</b>
2.1. LCR	9%		+ 1.5%	10.5%
2.2. NSFR	9%		+ 1.5%	10.5%
<b>3. Asset quality</b>	<b>13%</b>	<b>+ 3%</b>	<b>+ 2%</b>	<b>18%</b>
3.1 NPL ratio	13%		+ 2%	15%
3.2. Additional risk indicator (1)	N/A	+ 3%		3%
<b>4. Business model and Management</b>	<b>13%</b>	<b>+ 5%</b>	<b>+ 2%</b>	<b>20%</b>
4.1. RWA / Total Assets	6.5%		+ 1%	7.5%
4.2. RoA	6.5%		+ 1%	7.5%
4.3. Additional risk indicator (2)	N/A	+ 5%		5%
<b>5. Potential losses for the DGS</b>	<b>13%</b>		<b>+ 2%</b>	<b>15%</b>
5.1. Unencumbered assets / Covered deposits	13%		+ 2%	15%
<b>Sum</b>	<b>75%</b>	<b>+ 13%</b>	<b>+ 12%</b>	<b>100%</b>

#### Scenario 4

All core risk indicators are used in the calculation method but the DGS would like to include also additional five indicators (one indicator in risk categories Capital, Asset Quality and Potential losses for the DGS, and two indicators in risk category Business Model and Management). The weights assigned to risk indicators after applying flexibility are presented in the last column in the table below.

Indicator name	Min weights	Flexible weights	Final weights
<b>1. Capital</b>	<b>18%</b>	<b>+ 5%</b>	<b>23%</b>
1.1. Leverage ratio	9%		9%
1.2. Capital coverage ratio or CET1 ratio	9%		9%
1.3. Additional risk indicator (1)	N/A	+ 5%	5%
<b>2. Liquidity and funding</b>	<b>18%</b>		<b>18%</b>
2.1. LCR	9%		9%
2.2. NSFR	9%		9%
<b>3. Asset quality</b>	<b>13%</b>	<b>+ 5%</b>	<b>18%</b>
3.1 NPL ratio	13%		13%
3.2. Additional risk indicator (2)	N/A	+ 5%	5%
<b>4. Business model and Management</b>	<b>13%</b>	<b>+ 10%</b>	<b>23%</b>
4.1. RWA / Total Assets	6.5%		6.5%
4.2. RoA	6.5%		6.5%
4.3. Additional risk indicator (3)	N/A	+ 5%	5%
4.4. Additional risk indicator (4)	N/A	+ 5%	5%
<b>5. Potential losses for the DGS</b>	<b>13%</b>	<b>+ 5%</b>	<b>18%</b>
5.1. Unencumbered assets / Covered deposits	13%		13%
5.3. Additional risk indicator (5)	N/A	+ 5%	5%
<b>Sum</b>	<b>75%</b>	<b>+ 25%</b>	<b>100%</b>

#### *Requirements for risk indicators*

56. The risk indicators used in the calculation method should capture a sufficiently wide spectrum of risk drivers.
57. The selection of the risk indicators should be aligned with the best practices in risk management and with the existing prudential requirements.
58. For each member institution the values for risk indicators should be calculated on a solo basis. The indicators calculated on a consolidated or semi-consolidated basis can be used only in the following cases:

- according to Articles 7, 8 or 21 of Regulation (EU) 575/2013 the member institution has received a waiver from meeting capital and/or liquidity requirements on a solo basis;
- the Member State where the DGS is established exercises the option given in Article 13(1) of DGSD to the central body and all credit institution permanently affiliated to the central body, as referred to in Article 10(1) of Regulation (EU) 575/2013, to be subject as a whole to the risk weight determined for the central body and its affiliated institutions on a consolidated basis.

59. For calculating values of risk indicators for a given period the DGS should use:

- for positions from the income statement, the value at the end of the period (e.g. Net Income as reported on 31 December for the annual Income Statement);
- for positions from the balance sheet, the average value between the beginning and the end of the reporting period (e.g. average value of total assets from the 1 January and 31 December in a given year).

#### Part IV - Optional elements of the calculation methods

60. Article 13(1), second to fifth subparagraphs of the DGSD foresee a number of national options for to the calculation of risk-based contributions, namely with regard to low-risk sectors, IPS members, credit institutions affiliated to a central body, and the possibility to set minimum contribution amounts. The following paragraphs provide guidance on incorporating such national options into the DGS calculation method. These provisions should be applied while developing and assessing the calculation methods.

##### (i) *Minimum contribution*

61. According to Article 13(1) of the DGSD Member States may decide that credit institutions should pay a minimum contribution irrespective of the amount of their covered deposits.

62. Where a Member State exercises the option to have member institutions paying a minimum contribution (MC) irrespective of the amount of their covered deposits the following modified calculation formula should be used to calculate the individual contributions:

- a. In cases where the minimum contributions are paid by each member institution in addition to its risk-based contributions:

$$C_i = MC + (CR \times ARW_i \times CD_i \times \mu)$$

- b. In cases where the minimum contributions are paid only by those member institutions which annual risk-based contributions calculated according to the standard formula (as specified in paragraph 34) would be lower than the amount of the minimum contribution:

$$C_i = \text{Max} \{MC ; (CR \times ARW_i \times CD_i \times \mu)\}$$

Where:

$C_i$	=	Annual contribution for a member institution $i$
MC	=	Minimum contribution
CR	=	Contribution rate (applied for all member institutions in a given year)
$ARW_i$	=	Aggregate Risk Weight for a member institution $i$
$CD_i$	=	Covered deposits for a member institution $i$
$\mu$	=	Adjustment coefficient (applied for all institutions in a given year)

63. When setting a minimum contribution, competent authorities and designated authorities should take due care of the risk of moral hazard inherent in setting fixed contributions and the risk of creating barriers to entry on the market for banking services.

### **(ii) IPS - membership**

64. According to Article 13(1) of the DGSD Members States may decide that members of an IPS pay lower contributions to the DGS. As reflected in recital 12 of the DGSD, this option has been introduced in order to recognise schemes that protect an institution itself rather than only depositors and, in particular, ensure its liquidity and solvency.

65. Where an institution is member of an IPS that is separate from the DGS, in cases where a Member State avails itself of this option, its Aggregated Risk Weight (ARW) may be reduced to take into account the additional safeguard provided by the IPS. In this case, the reduction should be implemented by including into the calculation method an additional risk indicator, related to IPS membership, into the risk category Business model and Management. The IPS membership indicator should reflect the additional solvency and liquidity protection provided by the scheme to the member, taking into account whether the amount of the IPS ex-ante funds, which are available without delay for both recapitalisation and liquidity funding purposes in order to support the affected entity in case of problems, is sufficiently large to allow for a credible and effective support of that entity. The level of the IPS funding should be examined in relation to the total assets of the IPS member institution.

66. Competent authorities may also allow increased contributions for certain entities within an IPS which, due to their position within the scheme, are systemic to the scheme and pose specific risks to the IPS that are not reflected in the amount of their covered deposits. For that purpose, they would use appropriate additional indicators in category Business model and Management reflecting, for example, the asset side of the balance sheet of those entities.

### **(iii) Low risk sectors**

67. According to Article 13(1) of the DGSD, Member States may provide for lower contributions to institutions belonging to low risk sectors which are regulated under national law.

68. If a Member State has, through regulation, imposed restrictions on institutions within a certain subsector in a manner that substantially reduces the likelihood of failure, DGS contributions may be proportionately reduced on the basis of adequate motivation.
69. Reductions in contributions for institutions belonging to low risk sectors should be allowed based on empirical evidence indicating that within these low risk sectors the occurrence of failure has been consistently lower than in other sectors. Such determination should be made by the competent authority in cooperation with the designated authority, after consulting the DGS.
70. Such reductions should be implemented into the calculation method by including an additional risk indicator into the risk category Business model and Management.

### Title III: Final Provisions and Implementation

71. Competent authorities and designated authorities should implement these Guidelines by incorporating them in their supervisory processes and procedures by the [end of 2015]. From that date on, contributions to be raised by DGSs should comply with these Guidelines.
72. However, where, according to the third subparagraph of Article 20(1) of the DGSD, appropriate authorities establish that a DGS is not yet in a position to comply with Article 13 of such Directive by 3 July 2015, these Guidelines should be implemented by the new date set by such authorities, and in any case no later than by 31 May 2016.

## ANNEX 1: Methods to calculate Aggregate Risk Weights (ARW) and determine risk classes

### *(i) The 'bucket' method*

#### *Individual risk indicators*

1. In the bucket method a fixed number of buckets should be defined for each risk indicator by setting upper and lower boundaries for each bucket. The buckets should reflect different levels of risk posed by the member institutions (e.g. high, medium, low risk) assessed on the basis of particular indicators. The number of buckets for each risk indicator should be at least two.
2. There should be an Individual Risk Score (IRS) assigned to each bucket. If the value of the risk indicator is higher (lower) than the upper (lower) boundary of the highest (lowest) bucket, it should be assigned the IRS of the highest (lowest) bucket.
3. The buckets' boundaries should be determined either on an absolute or relative basis, where:
  - when using the absolute basis: the buckets' boundaries are determined to reflect the riskiness of a specific indicator. In this case all institutions may end up in the same bucket if they all have high, medium or low risk;
  - when using the relative basis: the IRSs of member institutions depends on their relative risk position vis-à-vis other institutions. In this case institutions are distributed evenly between risk buckets, meaning that institutions with similar risk profiles may end up in different buckets.
4. For each risk indicator the boundaries of buckets determined on the absolute basis should ensure sufficient and meaningful differentiation of member institutions. The calibration of the boundaries should take into account, where available, the regulatory requirements applicable to the member institutions and historical data on the indicator's values. The DGS should avoid calibrating the boundaries in a way that all member institutions, despite representing significant differences in the area measured by a particular risk indicator, would be classified into the same bucket.
5. For each risk indicator, the IRSs assigned to buckets should range from 1 to 100, where 1 indicates the lowest risk and 100 the highest risk.

#### Box 4 - Examples of bucket-scoring by type of risk indicator

The following examples illustrate how the Individual Risk Scores (IRSs), from a range of 1 to 100, should be assigned to various buckets for different types of risk indicators.

##### Scenario 1

Five buckets; a risk indicator for which higher values indicate higher risk (e.g. NPL ratio)

Buckets	Boundaries	IRS
Bucket 1	< 2%	1
Bucket 2	< 2 – 3.5%)	25
Bucket 3	< 3.5 – 5%)	50
Bucket 4	< 5 - 7%>	75
Bucket 5	> 7%	100

##### Scenario 2

Three buckets; a risk indicator for which higher values indicate higher risk (e.g. NPL ratio)

Buckets	Boundaries	IRS
Bucket 1	< 2%	1
Bucket 2	< 2 - 7%>	50
Bucket 3	> 7%	100

##### Scenario 3

Four buckets; a risk indicator for which higher values indicate lower risk (e.g. Liquidity ratio)

Buckets	Boundaries	IRS
Bucket 1	> 60%	1
Bucket 2	< 40 – 60%)	33
Bucket 3	< 20 - 40%)	66
Bucket 4	< 20%	100

##### Scenario 4

Two buckets; a risk indicator with binary values that can be either neutral or negative to the risk profile assessment (e.g. Excessive balance sheet growth ratio)

Buckets	Boundaries	IRS
Bucket 1	< 15%	50
Bucket 2	≥ 15%	100

## Scenario 5

Two buckets; risk indicator with binary values that can be either positive or neutral to the risk profile assessment (e.g. institution belonging to the low risk sector regulated under the national law should be regarded as less risky, whereas the institutions not belonging to the low risk sectors should be considered as posing an average risk).

Buckets	Boundaries	IRS
Bucket 1	Institution belonging to a low risk sector	1
Bucket 2	Institution not belonging to the low risk sector	50

## Scenario 6

Three buckets; risk indicator with non-standard interpretation of results (e.g. RoA) where both negative values (losses) as well as the excessive values of the indicator can indicate high risk profile of the institution.

Buckets	Boundaries	IRS
Bucket 1	< 0 – 2%)	1
Bucket 2	< 2 – 15%>	50
Bucket 3	< 0% or > 15%	100

Please note that in examples under Scenarios 1-4 the mapping of the Individual Risk Scores (IRS) to buckets is linear (e.g. 1 – 33 – 66 – 100). This is not the general requirement and for some risk indicators it may be warranted to apply a non-symmetrical allocation of the Individual Risk Scores within the range of 1-100 (e.g. 1 – 25 – 50 – 90 – 100) in order to properly reflect the cases where the institution becomes far more risky when the indicator's value reaches a specific threshold.

*Aggregate Risk Score (ARS)*

- Each IRS for an institution  $i$  should be multiplied by an indicator weight ( $IW_j$ ) assigned to a specific risk indicator; and it should be summed up to an Aggregate Risk Score ( $ARS_i$ ) using an arithmetic average.
- The weights assigned to each indicator  $i$  ( $IW_j$ ) should be the same for all institutions and calibrated by using supervisory assessment and/or historical data on failures of institutions.
- The structure of the described model could be as follows:

Risk indicator	Indicator Weight	Buckets	Individual Risk Scores (IRS)
Indicator $A_1$	$IW_1$	$A_1$	$IRS_{A_1}$
		$B_1$	$IRS_{B_1}$
		...	...
		$M_1$	$IRS_{M_1}$
Indicator $A_2$	$IW_2$	$A_2$	$IRS_{A_2}$
		$B_2$	$IRS_{B_2}$
		...	...
		$M_2$	$IRS_{M_2}$

...	...	...	...
Indicator $A_n$	$IW_n$	$A_n$	$IRS_{A_n}$
		$B_n$	$IRS_{B_n}$
		...	...
		$M_n$	$IRS_{M_n}$

9. The Aggregate Risk Score ( $ARS_i$ ) for institution i shall be calculated for each institution according to the following formula:

$$ARS_i = \sum_{j=1}^n IW_j * IRS_j$$

Where:

$$\sum_{j=1}^n IW_j = 100\%, \text{ and}$$

$$IRS_j = IRS_{X_j}, \text{ for some } X \text{ in } \{A, B, \dots, M\} \text{ (i.e. the bucket corresponding to indicator } A_j)$$

*Aggregate Risk Weight (ARW)*

10. Every  $ARS_i$  should have a corresponding Aggregate Risk Weight ( $ARW_i$ ), which should be used to calculate the contribution of an individual member institution ( $C_i$ ) according to the contribution formula specified in paragraph 34 of these Guidelines.

*Risk classes*

11. The ARW may be calculated via a bucketing method, where ranges for the ARS are defined in such a way that they correspond to a particular risk class and ARW (see table below).

Risk Class	Aggregate Risk Score (ARS) boundaries	Aggregate Risk Weight (ARW)
1	$a_1 \leq a_2$	$ARW_1$
2	$a_3 \leq a_4$	$ARW_2$
3	$a_5 \leq a_6$	$ARW_3$
...	...	...

12. The number of risk classes should be proportionate to the number and variety of DGS member institutions. However, the number of risk classes should be four as a minimum. There should be at least one risk class for member institutions with an average risk, at least one risk class for low risk members, and at least two risk classes for high risk institutions.

### Box 5 - Example – application of Aggregate Risk Weights to institutions

The following example illustrates how the Aggregate Risk Weight (ARW) might be assigned to the member institutions on the basis of the values of the Aggregate Risk Scores and assuming that there are four risk classes with risk weights (75%, 100%, 125% and 150%) assigned to each class in the following manner:

Risk class	Boundaries for ARS	ARW
1	< 40	75%
2	< 40 – 55 )	100%
<b>3</b>	<b>&lt; 55 – 70 &gt;</b>	<b>125%</b>
4	> 70	150%

For instance, if the ARS for a given institution amounts to 62 this institution should be classified into the third risk class and the ARW of 125% should be assigned to it.

### (ii) The sliding scale method

#### Individual risk indicators

13. In this method, for each institution, an Individual Risk Score ( $IRS_j$ ) will be calculated for each risk indicator  $A_j$ . An upper and a lower boundary for each risk indicator,  $a_j$  and  $b_j$ , should be defined for each risk indicator  $A_j$ . When a higher indicator value indicates a riskier institution and the indicator is above the upper bound, the  $IRS_j$  will be a fixed value of 100. Similarly, when the indicator's value is below the lower bound, the  $IRS_j$  will be 1. Analogously, if a lower indicator indicates a riskier situation and the indicator is below the lower bound, the  $IRS_j$  will be a fixed value of 100. Correspondingly, when the indicator value is above the upper bound, the  $IRS_j$  will be 1.
14. If the indicator's value is between the defined boundaries, the  $IRS_j$  will lie between 1 and 100. Each  $IRS_j$  has a pre-determined risk weight which is used to calculate the Aggregate Risk Score for each institution  $i$  ( $ARS_i$ ). By construction, the  $ARS_i$  in this model will always be a value between 1 and 100.
15. For each risk indicator a determination of the upper and lower boundaries  $a_j$  and  $b_j$  should ensure sufficient and meaningful differentiation of member institutions. The calibration of these boundaries should take into account, where available, the regulatory requirements applicable to the member institutions and historical data on the indicator's values. The DGS should avoid calibrating the upper and lower boundaries in a way that all member institutions, despite significant differences in the area measured by a particular risk indicator, will persistently fall either below the lower boundary or above the upper boundary.

16. The structure of the described model could be as follows:

Risk indicator	Indicator Weight	Upper Bound	Lower Bound	Individual Risk Scores (IRS)
Indicator $A_1$	$IW_1$	$a_1$	$b_1$	$IRS_1$
Indicator $A_2$	$IW_2$	$a_2$	$b_2$	$IRS_2$
...	...	...	...	...
Indicator $A_n$	$IW_n$	$a_n$	$b_n$	$IRS_n$

Where:

$$\sum_{j=1}^n IW_j = 100\%.$$

17. For each risk indicator  $A_j$ , its value will correspond to an output score ( $IRS_j$ ), defined as follows:

$$IRS_i = \begin{cases} 100 & \text{if } A_j > a_j \\ 1 & \text{if } A_j < b_j \\ \frac{A_j - b_j}{a_j - b_j}, & \text{if } b_j \leq A_j \leq a_j \end{cases}, \text{ where } j = 1 \dots n.$$

#### Aggregate Risk Score (ARS)

18. The aggregate risk score ( $ARS_i$ ) for an institution  $i$  will be calculated as  $ARS_i = \sum_{j=1}^n IW_j * IRS_j$ .

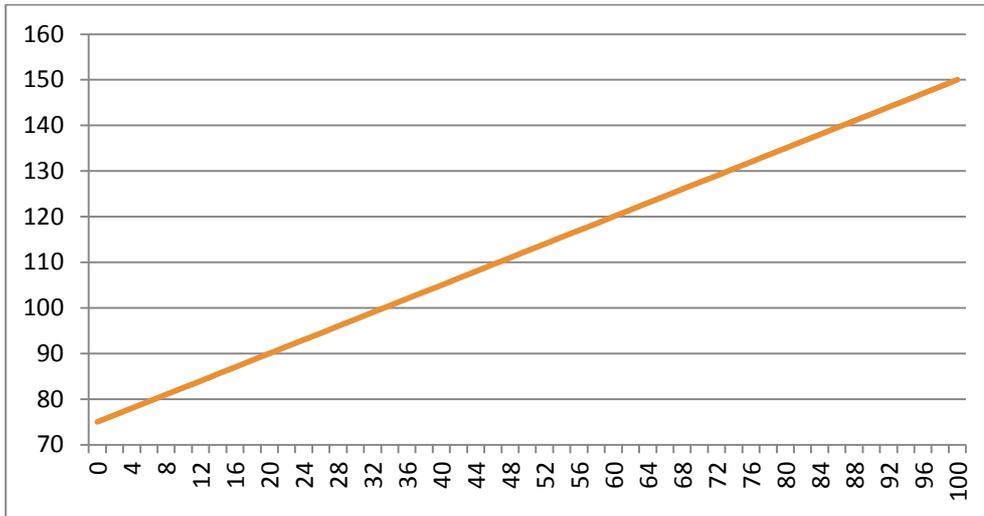
#### Aggregate Risk Weight (ARW)

19. The  $ARS_i$  might be translated into an Aggregate Risk Weight ( $ARW_i$ ) by using a sliding scale method based either on a linear formula or exponential formula.

20. The following linear formula can be used to translate  $ARS_i$  into the  $ARW_i$ :

$$ARW_i = \beta + (\alpha - \beta) * ARS_i$$

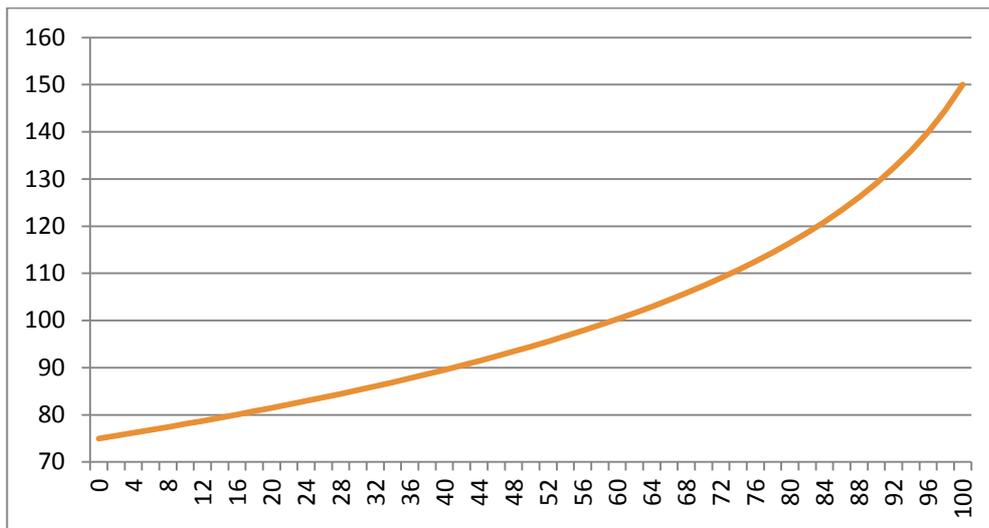
In this method, the  $ARW_i$  associated to the  $ARS_i$  is linear, with an upper and lower bound,  $\alpha$  and  $\beta$ , e.g. 150% and 75%, respectively. For a given institution where the  $ARS_i$  is 100 (the riskiest score), the corresponding risk weight will be  $\alpha$ , the highest risk weight. Similarly, if the  $ARS_i$  is 1, the corresponding risk weight will be  $\beta$ , the lowest risk weight. The graph below illustrates the linear behaviour of the suggested formula.



21. For example the following exponential formula can be used to translate  $ARS_i$  into the  $ARW_i$

$$ARW_i = \beta + (\alpha - \beta) * (1 - \log_{10}(10 - 9 * ARS_i))$$

In this method, the  $ARW_i$  associated to the  $ARS_i$  is exponential, with an upper and lower bound,  $\alpha$  and  $\beta$ , e.g. 150% and 75%. For a given institution where the  $ARS_i$  is 100 (the riskiest score), the corresponding risk weight will be  $\alpha$ , the highest risk weight. Similarly, if the  $ARS_i$  is 1, the corresponding risk weight will be  $\beta$ , the lowest risk weight. The graph below illustrates the non-linear behaviour of the suggested formula so that there is a higher increase in the contribution when an institution lies on the higher end of risk scale. This formula presents a stronger incentive for institutions to have a lower risk score, when compared to a linear method. The calculation method may also use non-linear methods other than the logarithmic one presented in this Annex.



Q8	Do you think that more guidance, or specific thresholds, should be provided in these Guidelines with regard to calibration of buckets for risk indicators, or minimum and maximum values for a sliding scale approach?
----	--

## ANNEX 2: Description of core risk indicators

Indicator name	Formula / Description	Comments	Sign
<b>1. Capital</b>			
1.1. Leverage ratio	$\frac{\text{Tier 1 Capital}}{\text{Total Assets}}$ <p>This formula should be replaced by the leverage ratio according to Regulation (EU) No 575/2013 once it becomes fully operational</p>	The aim of the leverage ratio is to measure the capital position regardless of risk weighting of the assets.	(-) A higher value indicates lower risk
1.2. Capital coverage ratio	$\frac{\text{Actual CET1 ratio}}{\text{Required CET1 ratio}}$ <p>Or</p> $\frac{\text{Actual own funds}}{\text{Required own funds}}$	Capital coverage ratio measures the actual capital held by a member institution in excess of the total capital requirements applicable to that institution, including additional own funds required pursuant to Article 104(1)(a) of Directive 2013/36/EU.	(-) A higher value indicates lower risk
1.3. Common Equity Tier 1 ratio (CET1 ratio)	$\frac{\text{Common Equity Tier 1 Capital}}{\text{Risk Weighted Assets}}$ <p>Where: 'Risk weighted assets' means the total risk exposure amount as defined in Article 92(3) of Regulation (EU) No 575/2013</p>	The CET1 ratio expresses the amount of capital held by an institution. A high ratio indicates good loss absorption capacity which can mitigate risks from the institution's business activities.	(-) A higher value indicates better risk mitigation
<b>2. Liquidity and funding</b>			
2.1. Liquidity Coverage Ratio (LCR)	LCR ratio as defined by Regulation (EU) No 575/2013 once it becomes fully operational.	The aim of the LCR ratio is to measure an institution's ability to meet its short term debt obligations as they come due. The higher the ratio, the larger safety margin to meet obligations and unforeseen liquidity shortfalls.	(-) A higher ratio indicates lower risk

2.2. Net Stable Funding Ratio (NSFR)	NSFR ratio as defined by Regulation (EU) No 575/2013 once it becomes fully operational.	The aim of the NSFR ratio is to measure an institution's ability to match the maturity of its assets and liabilities. The higher the ratio, the better maturity match and the lower funding risk.	(-) A higher ratio indicates lower risk
2.3. Liquidity ratio (national definition)	$\frac{\text{Liquid Assets}}{\text{Total Assets}}$ <p>Where: 'Liquid assets' as defined in the national regulations for the purpose of supervising credit institutions (to be replaced with the LCR ratio when in force).</p>	Transitional indicator. The aim of the liquidity ratio is to measure an institution's ability to meet its short term debt obligations as they come due. The higher the ratio, the larger safety margin to meet obligations and unforeseen liquidity shortfalls.	(-) A higher value indicates lower risk
<b>3. Asset quality</b>			
3.1 Non-performing Loans ratio (NPL ratio)	$\frac{\text{Non Performing Loans}}{\text{Total Loans and Debt Instruments}}$ <p>or alternatively, in cases when national accounting or reporting standards do not impose on institutions an obligation to report data on Debt Instruments:</p> $\frac{\text{Non Performing Loans}}{\text{Total Loans}}$ <p>Where (in both cases): 'Non-Performing Loans' as defined in the national regulations for the purpose of supervising credit institutions</p>	The NPL ratio gives an indication of the type of lending an institution engages in. A high degree of credit losses in the loan portfolio indicates lending to high risk segments / customers.	(+) A higher value indicates higher risk
<b>4. Business model and Management</b>			
4.1. Risk-weighted assets (RWA) / Total Assets ratio	$\frac{\text{Risk Weighted Assets}}{\text{Total Assets}}$ <p>Where: 'Risk weighted assets' means the total risk exposure amount as defined in Article 92(3) of Regulation (EU) No 575/2013</p>	The level of RWA gives an indication of the type of lending an institution engages in. A high ratio signals that an institution engages in risky activities. For this ratio, various calibration rules can be envisaged for institutions calculating minimum own funds requirements using advanced methods instead of standardised methods.	(+) A higher value indicates higher risk

4.2 Return on Assets (RoA)	$\frac{\text{Net Income}}{\text{Total Assets}}$	<p>RoA measures an institution's ability to generate profits. A business model which is able to generate high and stable returns indicates lower risk. However, unsustainably high level of RoA also indicates higher risk. Some institutions may have restrictions on their level of profitability based on their ownership structure so they should not be disadvantaged by the calculation method.</p> <p>To avoid including one-off events and avoid pro-cyclicality in contributions, an average of at least two years should be used.</p>	<p>(+)/(-) Negative values indicate higher risk but too high values can also indicate high risk</p>
<b>5. Potential losses for the DGS</b>			
5.1. Unencumbered assets / Covered deposits	$\frac{\text{Total Assets} - \text{Encumbered Assets}}{\text{Covered Deposits}}$ <p>Where: 'Encumbered Assets' is defined in the EBA Guidelines on disclosure of encumbered and unencumbered assets</p>	<p>This ratio measures the degree of expected recoveries from the bankruptcy estate of the institution which was resolved / put under normal insolvency proceedings. An institution with a low ratio exposes the DGS to higher expected loss.</p>	<p>(-) A higher value indicates lower risk</p>

## ANNEX 3: Description of additional risk indicators

1. The following list of additional risk indicators is provided for illustrative purpose only.
2. In cases data on specific items used in the formulas presented below is not covered by the national financial or regulatory reporting templates, the DGS may use equivalent items from its national templates.

Indicator name	Formula / Description	Comments	Sign
<b>3. Asset quality</b>			
Level of forbearance	$\frac{\text{Exposures with forbearance measures}}{\text{Total corresponding instruments on the balance sheet}}$ <p>Where: ‘Exposures with forbearance measures’ as defined in the EBA Guidelines on Supervisory reporting on forbearance and non-performing exposures</p>	This ratio measures the extent to which counterparties of the institution have been granted modification of terms and conditions of their loan contracts. The ratio gives information on the forbearance policy of the institution and it may be compared to the level of default itself. A high value of this ratio indicates known problems in the loan portfolio of the institutions / potential low quality of other assets.	(+) A higher value indicates higher risk
<b>4. Business model and Management</b>			
Sector concentrations in loan portfolio	$\frac{\text{Exposures from the sector with the highest concentrations}}{\text{Total loan portfolio}}$	The aim of this indicator is to measure the risk of incurring substantial credit losses as a result of a downturn in a specific sector of the economy to which an institution is highly exposed.	(+) A higher value indicates higher risk
Large exposures	$\frac{\text{Large exposures}}{\text{Eligible capital}}$ <p>Where: ‘Large exposures’ as defined according to Regulation (EU) No 575/2013 ‘Eligible capital’ as defined in point 71 in Article 4(1) of Regulation (EU) No 575/2013</p>	The aim of this indicator is to measure the risk of incurring substantial credit losses as a result of the failure of an individual counterparty or group of connected counterparties.	(+) A higher value indicates higher risk

Excessive balance sheet growth ratio	$\frac{[\text{Total Assets in year } T - \text{Total Assets in year } (T - 1)]}{\text{Total Assets in year } (T - 1)}$	<p>This indicator measures at what rate the institution's balance sheet is growing. The intention is to capture by this ratio unsustainably high growth which might indicate elevated risk. Off-balance sheet items and their growth should also be included. While setting thresholds for this indicator it is necessary to determine which level of growth is considered to be too risky. This determination should take due account of the growth of the economy in a given Member State or national banking sector. While using this indicator it is necessary to define special rules for new institutions and for entities which took part in mergers and acquisitions over the last few years.</p> <p>To avoid including one-off events in calculating contributions, an average growth observed during the last three years should be used.</p>	<p>(+) Values exceeding a predefined level of excessive growth indicate higher risk</p>
Return on Equity (RoE)	$\frac{\text{Net Profit}}{\text{Total Equity}}$	<p>This ratio measures institutions' ability to generate profits to shareholders from the capital they invested in the institution. A business model which is able to generate high and stable returns indicates lower likelihood of failure (i.e. lower risk to the DGS). However, unsustainably high level of RoE also indicates higher risk. Some institutions may have restrictions on their level of profitability based on their ownership structure so they should not be disadvantaged by the calculation method.</p> <p>To avoid including one-off events and avoid pro-cyclicality in calculating contributions, an average of at least two years should be used.</p>	<p>(-)/(+) Negative values indicate higher risk however too high values can also indicate high risk</p>

Core earnings ratio	$\frac{\text{Core earnings}}{\text{Total loan portfolio}}$ <p>Where:  ‘Core earnings’ may be calculated as (Interest income + fee and commission income + other operating income) - (interest expenses + fee and commission expenses + other operating expenses + administrative expenses + depreciation)</p>	<p>The core earnings ratio measures an institutions ability to generate profits from its core business lines. A business model which is able to generate high and stable earnings indicates lower likelihood of failure (i.e. lower risk to the DGS).  To avoid including one-off events and avoid pro-cyclicality in calculating contributions, an average of at least two years should be used.</p>	(-) A higher value indicates lower risk
Cost to income ratio	$\frac{\text{Operating costs}}{\text{Operating income}}$	<p>This ratio measures an institution’s cost efficiency. An unusually high ratio may indicate that institution’s costs are out of control especially if they are represented by the fixed costs (i.e. higher risk), whereas very low ratio can indicate that operating costs are too low to be able to have the required risk and control functions in place (i.e. higher risk).</p>	(+) / (-) Too high values of the ratio indicate higher risk, however too low values may also indicate high risk
Off-balance sheet liabilities / Total assets	$\frac{\text{Off balance sheet liabilities}}{\text{Total Assets}}$	<p>Large off balance sheet exposures indicate that an institutions’ exposure to risk may be larger than what is reflected on their balance sheet.</p>	(+) A higher value indicates higher risk

Qualitative assessment of the quality of management and internal governance arrangements	<p>Depending on data availability and operational capacity of the DGS the assessment of qualitative aspects of its member institutions may be based on the following sources of information:</p> <ul style="list-style-type: none"> <li>- special questionnaires designed by the DGSs to assess the quality of management and internal governance arrangements of its member institutions; accompanied with on-site and/or off-site inspections performed by the DGSs;</li> <li>- the comprehensive assessment of institutions internal governance reflected in the SREP scores;</li> <li>- external ratings assigned to all member institutions by a recognised external credit assessment institution.</li> </ul>	<p>Good quality of management and robust internal governance practices may mitigate the risk faced by member institutions and decrease the likelihood of failure. Qualitative indicators are more forward looking than accounting ratios and they provide relevant information on the institution's risk management and risk mitigation techniques. In order to be used in the calculation method the qualitative indicators need to be available for all member institutions of the DGS. Moreover, the DGS should strive to ensure that the qualitative assessment is based on pre-defined criteria and strives to ensure fair and objective treatment of its member institutions. The DGS methodology for assessing the quality of management and internal governance arrangements should include a list of criteria that should be examined with regard to each member institution.</p>	<p>(+)/(-) Qualitative judgment can be both positive and negative</p>
IPS membership	$\frac{\text{Available ex ante funds in the IPS}}{\text{Total assets of the individual IPS member}}$ <p>The IPS membership indicator measures the level of ex-ante funding of the IPS.</p>	<p>An IPS membership, all else equal, should lower the risk of the institution because the scheme insures its members' entire liability side of the balance sheet. However, in order for the IPS protection to be fully recognized it should fulfill additional conditions related to the level of its ex-ante funding.</p>	<p>(-) Membership in the IPS with a higher level of ex-ante funding indicates lower risk</p>
Systemic role in the IPS	<p>The indicator can have two values:</p> <ul style="list-style-type: none"> <li>(i) the institution has a systemic role in the IPS; or</li> <li>(ii) the institution does not have a systemic role in the IPS</li> </ul>	<p>The fact that an institution has a systemic role in the IPS, for example by providing other IPS members with critical functions, implies that its failure can have a negative impact on the viability of other IPS members. Therefore, the systemic member of the IPS should pay higher contributions to the DGS in order to reflect the additional risk it poses to the system.</p>	<p>(+) Only binary values are possible: (i) indicates higher risk; (ii) does not indicate higher risk.</p>

Low-risk sectors	<p>The indicator can have two values:</p> <p>(i) the institution belongs to a low risk sector regulated under national law; or</p> <p>(ii) the institution does not belong to a low risk sector regulated under national law</p>	<p>This indicator allows for reflecting in the calculation method the fact that some institutions belong to low-risk sectors regulated under national law. The rationale is that such institutions should be regarded as less risky for the purpose of calculating contributions to DGSS.</p>	<p>Only binary values are possible:</p> <p>(i) indicates lower risk;</p> <p>(ii) indicates average risk.</p>
<b>5. Potential losses for the DGS</b>			
Own funds and eligible liabilities held by institution in excess of MREL	$\frac{\text{Own funds and eligible liabilities}}{\text{Total liabilities including own funds}} - MREL$ <p>Where:</p> <p>‘Own funds’ shall mean the sum of Tier 1 and Tier 2 Capital in accordance with the definition in point (118) of Article 4(1) of Regulation (EU) No 575/2013.</p> <p>‘Eligible liabilities’ are the sum of liabilities referred to in point (71) of Article 2(1) of the BRRD.</p> <p>‘MREL’ shall mean the minimum requirement for own funds and eligible liabilities as defined in Article 45(1) of the BRRD.</p>	<p>This indicator measures the loss absorbing capacity of the member institution. The higher the loss absorbing capacity of the institution the lower the potential losses of the DGS.</p>	<p>(-)</p> <p>A higher value indicates lower risk</p>

## ANNEX 4: Steps to calculate annual contributions to DGS

Upon collecting data from its member institutions, the DGS should follow the following steps in order to calculate annual contributions of all its members.

Step	Step description	Relevant provisions from the draft Guidelines
Step 1	Calculating values of all risk indicators	Paragraphs 44-50, 56-59, 65-70 of the Guidelines (requirements for indicators); Annex 2 and Annex 3 (formulas for indicators)
Step 2	Assigning Individual Risk Scores (IRSs) to all risk indicators for each member institution	Paragraphs 1-5 and 13-17 of Annex 1
Step 3	Calculating the Aggregate Risk Score (ARS) for each institution by summing up all its IRSs (using an arithmetic average)	Paragraphs 51-55 of the Guidelines (requirements for weights of indicators); Paragraphs 6-9 and 18 of Annex 1
Step 4	Assigning an Aggregate Risk Weight (ARW) to each member institution (categorising the institution into a risk class) based on its ARS	Paragraphs 38, 41-43 of the Guidelines; Paragraphs 10-12, 19-21 of Annex 1
Step 5	Defining the annual target level	Paragraph 37 of the Guidelines
Step 6	Defining the Contribution Rate (CR) applicable to all member institutions in a given year	Paragraphs 35-36 of the Guidelines
Step 7	Calculating unadjusted risk-based contributions for each member institution by multiplying the Contribution Rate (CR) by institution's Covered Deposits (CD) and its ARW	Paragraphs 34 and 62 of the Guidelines
Step 8	Summing up the unadjusted risk-based contributions of all member institutions and determining the adjustment coefficient ( $\mu$ )	Paragraphs 39-40 of the Guidelines
Step 9	Applying the adjustment coefficient ( $\mu$ ) to all member institutions and calculating adjusted risk-based contributions	Paragraphs 34 and 62 of the Guidelines

## 5 Accompanying documents

---

### 5.1 Cost-Benefit Analysis / Impact Assessment

#### Introduction

Article 13(3) of the DGSD requires the EBA to develop Guidelines to specify methods for calculating contributions to DGSs in accordance with paragraphs 1 and 2 of the same Article.

As per Article 16(2) of the EBA Regulation (Regulation (EU) No 1093/2010 of the European Parliament and of the Council), any Guidelines developed by the EBA shall be accompanied by an annex setting out an Impact Assessment (IA) which analyses ‘the potential related costs and benefits’. Such annex shall provide the reader with an overview of the findings as regards the problem identification, the options identified to remove the problem and their potential impacts.

This annex presents the IA with cost-benefit analysis of the provisions included in the Guidelines described in this Consultation Paper.

#### Problem definition

Currently, in the majority of Member States the contributions of member institutions to DGSs are not adjusted to risk, i.e. institutions pay their contributions to DGS as a fixed percentage of deposits. It is reasonable to expect that the market is exposed to the following problems when the contributions to DGS are not risk adjusted:

- Competitive disadvantage for risk-averse institutions and unfair competition: risk averse members of the DGS can be worse off if they are pooled in the DGS with institutions with high probability of default but their contributions are not differentiated according to the risk profile. Where the contributions are homogenous, the member institutions with low-risk profile subsidise the institutions with high risk profile.
- Moral hazard and insufficient incentives for sound risk management: in the absence of risk-adjusted contributions the institutions may not have sufficient incentives to optimise their risk level ex-ante. Institutions under the DGS scheme may take high risk and increase their probability of default without bearing the marginal cost of additional risk, i.e. increasing their contributions to the scheme. Overall, this practice could make the entire banking system more vulnerable.

A second important issue that the Guidelines aim to address is represented by variations across Member States in the application of practices in the DGS, which cannot be justified by structural differences in national banking sectors, and may lead to:

- Uneven playing field: institutions of similar risk profile but located in different Member States would be subject to an uneven treatment, if the DGS contributions are based on completely divergent calculation criteria.

## Objectives

The draft Guidelines firstly aim to establish a framework for calculating risk-based contributions to DGSs that would be used in all Member States. This framework should be based on risk indicators reflecting institutions' risk-profile and ensuring a fair treatment of institutions in calculating DGS contributions. In order to ensure objective risk assessment the indicators should reflect a sufficiently wide spectrum of aspects of institutions operations.

Secondly, the draft Guidelines aim to ensure that the elements fundamental to the effective functioning of the DGS contribution schemes are consistent across Member States. Table 1 summarises the objectives of the Guidelines.

Table 1 Objectives of the current Guidelines

Operational objectives	Specific objectives	General objectives
Ex-ante contributions to DGS are calculated as a function of risk parameters.	Institutions fully internalise the cost associated with risk taking.	Reduce moral hazard and promote fairness among institutions in calculating DGS contributions.
Common methods and criteria are set for risk-based contributions to DGSs.	Methods and criteria in the DGS contributions framework are consistent and comparable across Member States.	Create a level playing field and information symmetry across Member States.

## Baseline scenario

There are ten Member States<sup>16</sup> [DE, EL, FR, IT, LV, PL, PT, FI, NO<sup>17</sup> and SE] where DGSs apply risk-based contributions<sup>18</sup>. In addition, some Member States [HU, RO] do not have a risk-based contribution system in place but they make slightly different use of risk-based information in the DGS framework. Therefore, in terms of transition to risk-based contributions, the Guidelines are expected to have an impact on the majority of the Member States.

The remainder of the section will focus on the current practices in Member States in relation to the technical options considered in the IA.

<sup>16</sup> Member States throughout the IA refer to the Member States of the European Economic Area (EEA).

<sup>17</sup> The system in Norway is based on RWA and covered deposits.

<sup>18</sup> All data in this part of the IA is based on the following sources of information: European Commission, Joint Research Centre Unit, 'Risk-based contributions in EU Deposit Guarantee Schemes: current practices', June 2008; Calculating risk-based contributions for a DGS: Result of the EFDI Research Working group, June 2014; IADI General Guidance for Developing Differential Premium Systems, October 2011.

### Categories, indicators and the weights of the indicators

Risk-based contributions are calculated on the basis of a single or several risk indicators (mostly quantitative) that aim to reflect the risk profile of each institution. The indicators that DGSs use in the methods vary across Member States. While some Member States use single indicators [FI, NO, PT, SE], other Member States use several indicators [AT, DE, EL, FR, IT, NL<sup>19</sup>]. Where multiple indicators are used, the number varies from 2 [EL] to 12 [DE<sup>20</sup>]. Table 2 presents a summary of the indicators used in Member States which risk-based contributions to DGSs.

Table 2 Indicators applied in Member States

Indicators	Member States
Capital indicators	DE, EL, FR, IT, NO, PT, SE
Liquidity indicators	DE, EL, FR, IT
Asset quality indicators	DE, IT
Income/profitability indicators	DE, IT
Qualitative indicators	DE, EL

Source: European Commission, Joint Research Centre Unit, 'Risk-based contributions in EU Deposit Guarantee Schemes: current practices', June 2008; Calculating risk-based contributions for a DGS: Result of the EFDI Research Working group, June 2014.

Although the indicators used in Member States vary, the categories that the DGSs are somewhat homogenous. The DGSs in Member State focus on the CAMELS<sup>21</sup> approach and capital ratio, liquidity ratio, asset quality ratio, profitability ratio are the core quantitative components utilised in most Member States. Qualitative elements are present although rare in the calculation of risk profiles for DGS contributions, as only two Member States [DE and EL] use qualitative indicators in addition to quantitative indicators.

In terms of weights of the indicators, current practices can be classified under three categories including those which use: (i) differential weights determined by expert judgement and/or exact calibration [DE, IT, NL], (ii) equal weights for all risk categories [FR], and (iii) only one risk indicator with a weight of 100% [FI, PT, SE]. For example, in Germany the methodology is based on common statistical procedures, e.g. discriminate analysis, used in order to determine the weights of the indicators. Table 3 indicates the risk categories/indicators with their respective weights in the calculation of risk-based contributions in Member States.

<sup>19</sup> NL planned to introduce the risk-based contribution system in 2015. The system will include several indicators.

<sup>20</sup> This is the statutory DGS for private banks.

<sup>21</sup> C: capital adequacy, A: asset quality, M: management quality, E: earnings, L: liquidity, S: sensitivity to market risk.

Table 3 Weights for risk categories/indicators used in Member States

Practice	Member State	Category/ Indicator	Weight	Notes
Differential weights determined by using expert judgement and/or by exact calibration	DE	Capital structure*	35%	DGS for cooperative banks
		Income structure*	50%	
		Risk structure*	15%	
		Qualitative indicators <sup>22</sup>	50%	The statutory DGS for private banks
	Quantitative indicators including:	4.91%		
	Capital adequacy*	10.45%		
	Asset quality*	4.55%		
	Earning/profitability*	14.54%		
	Liquidity*	6.65%		
	Sensitivity to market risk*	8.90%		
	IT	Capital adequacy		Different weights for indicators with time-series data. The more recent the data are the higher the weight they take
		Liquidity		
		Asset quality		
		Profitability ratio (x2)		
Equal weights for all risk indicators	FI	Capital adequacy ratio	100%	Single indicator
	FR	Solvency ratio	25%	
		Uncovered exposure ratio	25%	
		Maturity transformation ratio	25%	
		Operating ratio	25%	
	PT	Core Tier 1 ratio	100%	Single indicator
SE	Capital adequacy ratio	100%	Single indicator	

Notes:

\*Risk category that includes different indicators.

### Risk classification

The current practices across DGSs that apply risk-based contributions rely on two types of risk classification. While in some Member States [FI, NO, SE] a sliding scale is used, some other Member States [DE, FR, IT, PT] operate a bucketing approach. The main difference between the two models is that the former applies continuous scale and the latter measures the risk of the institutions on a discrete scale.

### Risk classes

Where the Member States use discrete scaling (e.g. bucketing approach) for the classification of risk, they set a number of risk classes under which the institutions are classified given their risk profiles. Currently, there are Member States [DE] that use a large number of risk classes while some other Member States [FR, IT, PT] set a smaller number of risk classes to identify the risk

<sup>22</sup> Qualitative indicators are based on the external ratings with a focus on deposit taking behavior.

level of the institutions. As mentioned above, there are also Member States [FI, NO, SE] that use a sliding scale. Table 4 indicates the number of risk classes for a sub-sample of Member States.

Table 4 Number of risk classes used in a sub-sample of Member States

Risk classification	Member State	No. of risk classes
Discrete scale (i.e. bucketing approach)	DE <sup>23</sup>	9
	FR, PT	5
	IT, NL	4
Continuous scale (i.e. sliding scale approach)	FI, NO, SE	N/A

### Risk weights

The range for the risk weights assigned for risk classes falls between 60% and 350% and the core range of risk weights is between 75% and 150%.<sup>24</sup> Most Member States [BE, DE, FI, FR, IT, NL, NO, PT, SE] apply a narrow range of risk weights that may lead to cross-subsidisation relative to actual difference in risk between most and least risky institutions. In Germany the DGS for cooperative banks applies a range of 80%-140% while the statutory DGS applies a range of 75%-200%. In Italy the DGS correct in a range between -24% and +24%. In Sweden, where the DGS does not apply risk categories but sliding scale the floor is 6 and the cap is 14 basis points.

### Technical options

This section provides an assessment of the options considered under a set of policy areas including:

- A. Specification of risk indicators
- B. Selection of risk categories and core risk indicators
- C. Weights of risk categories / indicators
- D. Risk classification
- E. Models for calculating contributions (calculation formula).

Under each sub-section technical options will be presented first, followed by a discussion of their potential advantages and disadvantages.

<sup>23</sup> This is the statutory DGS for private banks.

<sup>24</sup> Calculating risk-based contributions for a DGS: Result of the EFDI Research Working group, June 2014.

## A. Specification of risk indicators

### Option 1a: An exhaustive list of risk indicators

Option 1a is to include in the Guidelines one calculation model with a set of indicators that all national DGSs have to comply with. This option would ensure of the highest level of harmonisation. Under this option the weights assigned to risk indicators would also be fixed and national DGS would not be able to include any additional risk indicators into the calculation method. This approach would ensure that exactly the same indicators are used when calculating risk-based contributions to DGSs. It would ensure the same approach across all MS. Moreover, it may increase certainty among the member institutions about factors that will be taken into consideration for the DGS contributions purposes. In addition, it would be easier for the national DGS to implement the calculation model proposed in the Guidelines as they would not be obliged to determine which indicators are the most relevant to reflect risk profiles of their member institutions. The main drawback of this approach is that risk-based contribution systems with an exhaustive list of core indicators may not accommodate the characteristics of the banking sector peculiar to Member States. This may result in calculation methodology inappropriate for certain banking sectors. This option may be too rigid to achieve the objectives of these Guidelines.

### Option 1b: A generic list of indicators

This option introduces no compulsory core risk indicators for calculating contributions but establishes general guidance for national DGSs on what has to be taken into consideration when developing the models. This option gives national DGSs a full flexibility in choosing risk indicators and distributing weights among them. This option would help to ensure that the method for calculation of contributions duly takes into account specific characteristics of the national banking sectors and various business models. However, the option is expected to fail to address the problems related to uneven playing field. Furthermore, it does not effectively achieve the objectives of harmonisation and fails to establish a framework where the DGSs across the Union follow common and consistent approach to calculate risk-based contributions. In addition, this approach would not guarantee that some indicators that are crucial for the calculation of risk-based contributions are given an appropriate importance in calculating the DGSs contributions.

### Option 1c: A list of core risk indicators and rules for adding additional indicators

Under this option the Guidelines would outline core risk indicators and allow flexibility to add new indicators to the calculation method (within the pre-defined risk categories and complying with rules on assigning weights to risk indicators). This approach would ensure that the core indicators play a predominant role in calculating DGS contributions and that member institutions in various Member States are treated in a similar way. At the same time, this option allows national DGSs to incorporate into the method additional risk indicators in order to better accommodate the characteristics of the national banking sector. In other words, this option would ensure that fundamental indicators which reflect homogeneity across Member States are taken into account, while at the same time leaving room for flexibility to address issues which are peculiar to some

Member States only. This option seems to combine the advantages of the two options discussed above.

Taking into account the argumentation presented above Option 1c has been selected as a preferred option.

## B. Selection of risk categories and core risk indicators

The selection of risk categories and core risk indicators is based mostly on the analysis of the baseline scenario and Member States' responses to the Survey accompanying the EBA Test Exercise on three different test systems for calculating risk-based contributions, which was conducted from February to April 2014.

The three test systems were developed by the EBA with a view to allow Member States to assess how different combinations of necessary elements of calculation methods could be applied in their national banking sectors. Each of the three test systems used a fixed set of indicators (4, 6 and 9 respectively) and proposed calibration of thresholds for these indicators. The test systems were accompanied with an Excel Application (enabling Member States to calculate Aggregate Risk Weights for the sample of institutions) and with a Survey on the results of calculations (where respondents were asked to express their views on various elements of the calculation systems - including the choice of risk indicators).

Approximately 80% of all respondents to the Survey (in total 24 Member States<sup>25</sup> including Norway responded) expressed specific views on at least one risk indicator included in the Test Exercise and the remaining respondents provided more general comments on indicators. Some of the indicators proposed in the test exercise received a wide support from respondents (e.g. NPL ratio, Liquid Assets / Total Assets) whereas dissenting views were expressed on other indicators (e.g. Core earnings, Balance sheet growth ratio). The respondents also suggested adding to the calculation method some specific indicators (e.g. LCR, NSFR) which could not be included into the Test Exercise due to the lack of data (because these ratios are based on new regulatory requirements and reporting obligations were not in place at the moment of running the Test Exercise). Table 5 presents a summary of the findings from the answers to the Survey.

---

<sup>25</sup> AT, CY, CZ, DE, DK, EE, EL, ES, FI, FR, HU, HR, IE, LU, LT, LV, MT, NL, PL, PT, SE, SI, UK

Table 5 Overview of responses to the EBA Survey on DGS

Risk categories	Core indicators proposed in the Guidelines	Indicators used in DGS Test Exercise	Feedback from Member States to the Test Exercise	Conclusions
Capital	CET1/RWA or Capital coverage ratio	Tier 1 / RWA*	Only one respondent claimed that capital adequacy is not a strong risk indicator.	CET 1 as a new and more conservative capital adequacy measure (in comparison to the Tier 1 ratio) was included in the Guidelines among core risk indicators.  National DGSs can replace the CET1 ratio with the Capital coverage ratio.
	Leverage ratio	N/A	Suggestions to include this indicator into the calculation method.	This ratio was included in the core indicators.
Liquidity and funding	Liquid assets / Total assets	Liquid assets / Total assets*	No concerns regarding usefulness of the indicator. Differences in national definitions of liquid assets used in Member States.	This indicator will be used on a temporary basis until fully harmonised EU definition of LCR is implemented.
	LCR	N/A	Suggestions to include this indicator into the calculation method.	This ratio was included in the core indicators.
	NSFR	N/A	Suggestions to include this indicator into the calculation method.	This ratio was included in the core indicators.
Asset quality	NPL ratio	NPL ratio*	No concerns regarding usefulness of the indicator. However, some comments received indicating the lack of comparability in defining NPLs across the Union.	This ratio was included in the core indicators.
Business model and management	RWA / Total assets	RWA / Total assets†	The vast majority of comments on this indicator recommended its use. One respondent pointed out an uneven treatment of institutions using the IRB and STA approach for credit risk.	This ratio was included in the core indicators, with a possibility to use different calibration for institutions using advanced methods (e.g. IRB) for calculating minimum own funds requirements, and standardised methods.
	RoA	Core earnings*	Some respondents expressed critical views on Core earning indicator as not being appropriate for various business models.	Core earnings ratio included only in the examples of additional risk indicators. Instead the RoA ratio was included in the list of core indicators because this measure of profitability can be more universally applied among institutions.

Risk categories	Core indicators proposed in the Guidelines	Indicators used in DGS Test Exercise	Feedback from Member States to the Test Exercise	Conclusions
	N/A	Interest expenses / Interest bearing liabilities <sup>†</sup>	Split views among respondents on the usefulness of this risk indicator.	This ratio was not included in the Guidelines.
	N/A	Total loans / Total deposits <sup>¶</sup>	Split views among respondents on the usefulness of this risk indicator.	This ratio was not included in the Guidelines.
	N/A	Balance sheet growth <sup>¶</sup>	Split views among respondents on the usefulness of this risk indicator. Only excessive growth should be considered as risky.	This ratio was included only in the examples of additional risk indicators.
	N/A	Qualitative indicators based on supervisory / external rating <sup>¶</sup>	The majority of comments supported the use of qualitative indicators reflecting the management. Some concerns were expressed about the confidentiality of supervisory information and the availability of external ratings.	The indicator was included in the examples of additional indicators, it is not obligatory and can be used in the calculation methods subject to data availability and lack of confidentiality problems. External ratings can be used as the additional indicator if they are available for all member institutions of the particular DGS.
Potential use of DGS funds	Unencumbered assets / Covered deposits	N/A	Many respondents recommended the use Asset Encumbrance ratio since it directly influences the potential loss of the DGS. One respondent recommended to use an enhanced version of this ratio – i.e. Unencumbered assets / Covered deposits because it better reflects which part of the pay-out (for covered deposits) the DGS can recover from the unencumbered assets of the institution.	The ratio was included in the core indicators.

Notes: Result of the survey accompanying the EBA Test Exercise on DGSs.

\*Indicator is used in all three test systems;

†Indicator is used in systems two and three;

¶ Indicator is used in system three only.

The baseline scenario and the results of the Survey show that there is a common set of indicators (which may be grouped into risk categories) that the national DGSs currently use or consider

necessary to use in the future for calculating DGS contributions. In addition, the text of DGSD provides that the calculation methods ‘may take into account [...] risk indicators including capital adequacy, asset quality and liquidity’. On the other hand, the European framework of Supervisory Risk and Evaluation Process (SREP), which is equivalent to the CAMELS approach, envisages that the comprehensive assessment of the institutions’ risk profile should cover the following four areas: Capital adequacy, Liquidity and funding, Business model and strategy, and Internal governance and institution-wide controls. The risk categories were selected in order to ensure that a sufficiently wide spectrum of institution’s activities is taken into account when assessing the risk profile and that all crucial areas are reflected in the calculation method. At the same time, it was necessary to include only these risk categories that would be applicable to institutions of various business models across the Union. Finally, apart from the risk categories reflecting the likelihood of institution failure, it was important to include also an additional risk category which reflects the potential loss of the DGS. Taking into account all considerations mentioned above, Table 6 presents the risk categories and core risk indicators included in the draft Guidelines.

Table 6 Risk categories and core indicators proposed in the draft Guidelines

Risk category	Core risk indicators
Capital	- Capital coverage ratio or CET 1 - Leverage ratio
Liquidity and funding	- LCR - NSFR
Asset quality	- NPL ratio
Business model and Management	- RWA / Total assets - Return on Assets (RoA)
Potential losses for the DGS	- Unencumbered assets / Covered deposits

### C. Weights for risk categories / indicators

#### Option 3a: Equal weights for all risk indicators or categories

The choice of applying equal weights to all risk indicators / categories would be a simple approach from an operational viewpoint. However, this would translate in assigning the same relative importance to all risk indicators, while their significance *vis-à-vis* the risk posed to the DGS could vary.

#### Option 3b: Different weights for risk categories / indicators

In contrast to equal weights, differentiated weights could better reflect the varying significance of various risks indicators or categories. On the other hand the assessment of this option depends on how to determine that differentiation (i.e. either by expert judgement, exact calibration based on historical data, or in a combination of these two approaches).

#### Option 3b.i: Different weights determined by exact calibration only

This option may increase the predictive power of a model for calculating DGS contributions and ensure that the weights assigned to particular risk indicators represent their expected impact on the probability that the institution would fail. Nevertheless, in order to conduct necessary statistical analysis it is necessary to have historical data about failures of institutions and the values of the risk indicators from previous reporting periods. The number of failed institutions in a given period may not be large enough in order to make the results of this analysis statistically significant. Moreover, with regard to a few risk indicators proposed in the draft Guidelines the historical data is not available because they reflect new regulatory requirements which have not been measured or reported in the past. In any case, the results of the statistical analysis would need to be verified by applying expert judgement.

#### Option 3b.i: Different weights determined by expert judgment only

This option would be the easiest to apply and it would not encounter problems related to data availability. However, two problems with this option could be: (i) a lack of transparency in the decision-making under which some institutions may benefit from a particular weight structure in terms of lower contributions with respect to their risk levels, (ii) the autonomy of the DGS may be influenced by the competent authorities, (iii) that where full flexibility in specifying weights of risk categories / indicators is left to national DGSs, the degree of harmonisation may turn to be relatively low and the option may fail to address the identified problems.

#### Option 3b.ii: Different weights determined by expert judgement with the possibility to revise the results if the statistical data becomes available

An alternative option is to specify weights for risk categories by applying the expert judgement and at the later stage, while reviewing the EBA Guidelines, revise the proposed weights on the basis of the statistical analysis based on the historical data. The proposed weights should be based on the supervisory judgement and will be re-calibrated by the EBA by 3 July 2017 as the part of the first review of the Guidelines on DGSs contributions, according to Article 13(3) of DGSD, and at least every 5 years after this date. Option 3b.ii is expected to constitute a feasible and the most effective solution to achieve the objectives of the Guidelines, hence is selected as the preferred option.

### D. Risk classification

In order to calculate the Aggregate Risk Weight (ARW) for each institution the Aggregate Risk Score (ARS) shall be assigned for the purpose of classifying institutions according to their risk profiles. Two different approaches are set within the Guidelines, which ought to be selected by each DGS having taken into consideration the characteristics of the national banking sector. The DGSs should also choose the appropriate calculation method after having considered all the relevant advantages and disadvantages associated with them.

#### Option 4a: Discrete scale (buckets approach)

The first method considered for purposes of risk classification is to use a discrete scale (i.e. employing buckets). This method would have the advantage of setting true incentives for banks to move between buckets in order to be classified in a more favourable way. However, this would carry the disadvantage of potential significant cliff-effects, with relatively similar institutions treated in a much different way. In addition to this, the very calibration of buckets may be a difficult task, in that the determination of relevant values for buckets could not rely on solid grounds.

#### Option 4b: Continuous scale (sliding scale approach)

The second method considered for purposes of risk classification is to use a continuous scale (which would require no buckets to be set). Such method would carry the advantage of allowing for all possible differentiation among institutions, something which is particularly helpful in case a high degree of heterogeneity is verified among institutions. This advantage is partially counterbalanced by the complexity which could come to characterise this method in case a high number of institutions is considered. Moreover, this method could prove sub-optimal in case an indirect (i.e. mediated through buckets) impact on the contribution is preferred.

Taking into account the merits of the bucketing approach and the sliding scale approach, depending on characteristics of the national banking sector, the preferred option is to include in the draft Guidelines the flexibility to choose either of these approaches.

#### *Calibration of boundaries used for risk indicators*

Both in the bucketing approach and the sliding scale approach, the calibration of boundaries established for mapping values of risk indicators to Individual Risk Scores (IRSs) has a significant influence on the risk differentiation achieved by the calculation method. Therefore, it is crucial to establish these boundaries by setting thresholds at levels which appropriately reflect differences between risk profiles of member institutions. A wrong calibration of boundaries may result in assigning the same IRS to member institutions despite significant discrepancies in their risk profiles, and consequently hinder the risk differentiation achieved by the calculation method.

Given existing differences in banking business models and structures across Member States, as well as various accounting standards, at this stage it does not appear feasible to establish in the Guidelines specific thresholds for boundaries for each core risk indicator. Harmonised boundaries set at EU level could bear very different consequences across national banking sectors, or even DGSs, with very different memberships (e.g. sectors with a lot of small banks, or DGSs with fewer members). Therefore, at this stage, instead of proposing a harmonised Union-wide calibration of thresholds for the core risk indicators, the Guidelines introduce a general requirement for DGSs or competent authorities to define boundaries for risk indicators with a view to ensure meaningful risk differentiation of DGS members, taking into account the regulatory requirements applicable to the member institutions and historical data on indicators' values. The Guidelines also stipulate that DGSs should avoid calibrating the boundaries in a way that all member institutions, despite representing significant differences in the area measured by a particular risk indicator, would be

classified into the same bucket (if using the bucketing approach) or fall outside the lower/upper boundary (if using the sliding scale approach).

## E. Models for calculating contributions (calculation formula)

The objective of the assessment is to find an optimal model to calculate risk-based contributions to DGS. The sub-section offers two models of which the features are extensively presented through illustrations.

### Assumptions for the illustration

For the purpose of the illustration the calculations are carried out for a Member State *A* in year 2X01 and the amount of total covered deposits under DGS is €1.5 million.

It is assumed that year 2X01 is the first year when the DGS in Member State *A* starts collecting ex-ante contributions from deposit taking institutions in order to reach a target level of 0.8% of covered deposits in 10 years (i.e. by year 2X11). Therefore, assuming that the contributions are distributed evenly within the initial period, the annual target level, representing annual total contributions (*TC*) from all institutions in the Member State *A* in year 2X01, should reach approximately 1/10 of the target level which may be calculated as follows:

$$TC = €1,500,000 \times (0.1 \times 0.008) = €1,500,000 \times (0.0008) = €1,200$$

Table 7 shows the breakdown of the total covered deposits and the respective risk unadjusted contributions by these institutions.

Table 7 Covered deposits and risk unadjusted contributions by institutions in Member State *A* in year 2X01

Institution	Covered deposits (€)	Risk unadjusted contributions (€)
Institution 1	200,000	160 (= 200,000 × 0.0008)
Institution 2	400,000	320 (= 400,000 × 0.0008)
Institution 3	900,000	720 (= 900,000 × 0.0008)
<b>Total</b>	<b>1,500,000</b>	<b>1,200 (= 1,500,000 × 0.0008)</b>

The method for calculating risk-based contributions adopted in Member State *A* uses four different risk classes, with different aggregate risk weights (ARW) assigned to each risk class as follows: 75% for the institution with lowest risk profile, 100% for institutions with the average risk profile, 120% for risky institutions, and 150% for the most risky institutions.

The assumptions apply for both models and for all scenarios.

### Option 6a. Multiplicative model

The multiplicative model for institution *i* in Member State *A* and for a given year 2X01 is defined as:

$$C_i = CR \times ARW_i \times CD_i \times \mu \quad (1)$$

where:

- $C_i$  = annual contribution for institution  $i$ ;  
 $CR$  = contribution rate;  
 $ARW_i$  = Aggregate Risk Weight for institution  $i$ ;  
 $CD_i$  = covered deposits for institution  $i$ ; and  
 $\mu$  = adjustment coefficient.

Notice that  $\mu$  does not have  $i$  subscript therefore it is constant, i.e. the same for all institutions in a given year. As the illustration shows, in practice the policy-maker will use adjustment coefficient  $\mu$  to reach the annual target level.  $\mu = 1$  if the sum of annual contributions equals the annual target level.

### Scenario 1: relatively high risk institutions in year 2X01

Under Scenario 1 after applying the pure risk adjusting factor, the amount of total contributions from all institutions in Member State *A* (€1,464) is higher than the planned total annual contribution level (€1,200). Table 8 shows the estimates.

Table 8 Risk adjusted contributions by high risk institutions in Member State *A* in year 2X01

Institution	$CD_i$ (€)	$ARW_i$	Risk adjusted contributions (€)
Institution 1	200,000	75%	120 (= 200,000 × 0.0008 × 0.75)
Institution 2	400,000	150%	480 (= 400,000 × 0.0008 × 1.50)
Institution 3	900,000	120%	864 (= 900,000 × 0.0008 × 1.20)
<b>Total</b>	<b>1,500,000</b>		<b>1,464</b>

Therefore, there is a need to use the adjustment coefficient  $\mu$  in order to ensure that the total annual contributions (i.e. the sum of all individual contributions) would equal to 1/10 of the target level. In this case, the adjustment coefficient to be applied for all institutions can be calculated as  $\mu_1 = €1,200/€1,464 = 0.82$ . Table 9 shows the estimates for risk adjusted contributions after the application of the adjustment coefficient  $\mu_1$ .

Table 9 Corrected risk adjusted contributions by high risk institutions in Member State *A* in year 2X01

Institution	$CD_i$ (€)	$ARW_i$	Risk adjusted contributions (€)	Adjustment coefficient $\mu_i$	Final risk adjusted contributions (€)
Institution 1	200,000	75%	120	0.82	98 (= 120 × 0.82)
Institution 2	400,000	150%	480	0.82	394 (= 480 × 0.82)
Institution 3	900,000	120%	864	0.82	708 (= 864 × 0.82)
<b>Total</b>	<b>1,500,000</b>		<b>1,464</b>		<b>1,200</b>

### Scenario 2: relatively low-risk institutions in year 2X01

Under Scenario 2 when pure risk adjusting factor is applied, the total contribution from all institutions in the Member State A is €1,044 and it is lower than the planned total annual contribution level of €1,200, as shown in Table 10.

Table 10 Risk adjusted contributions by low-risk institutions in Member State A in year 2X01

Institution	$CD_i$ (€)	$ARW_i$	Risk adjusted contributions (€)
Institution 1	200,000	75%	120 (= 200,000 × 0.0008 × 0.75)
Institution 2	400,000	120%	384 (= 400,000 × 0.0008 × 1.20)
Institution 3	900,000	75%	540 (= 900,000 × 0.0008 × 0.75)
<b>Total</b>	1,500,000		1,044

Adjustment coefficient  $\mu$  is applied in order to ensure that the total annual contribution equals 1/10 of the target level. Under this scenario, the adjustment coefficient to be applied for all institutions can be calculated as  $\mu_2 = €1,200/€1,044 = 1.15$ . Because the sum of the risk adjusted contributions is lower than the threshold, the corrective coefficient is greater than unity and increases the contribution by each institution. Table 11 presents the calculations.

Table 11 Corrected risk adjusted contributions by low-risk institutions in Member State A in year 2X01

Institution	$CD_i$ (€)	$ARW_i$	Risk adjusted contributions (€)	Adjustment coefficient $\mu_i$	Final risk adjusted contributions (€)
Institution 1	200,000	75%	120	1.15	138 (= 120 × 1.15)
Institution 2	400,000	120%	384	1.15	442 (= 384 × 1.15)
Institution 3	900,000	75%	540	1.15	620 (= 540 × 1.15)
<b>Total</b>	1,500,000		1,044		1,200

### Option 6b: Additive model

The additive model for institution  $i$  in Member State A and for a given year 2X01 is defined as:

$$C_i = (FR \times CD_i) + (CR \times ARW_i \times CD_i) \quad (2)$$

where:

- $C_i$  = annual contribution for a member institution  $i$ ;
- $FR$  = flat rate;
- $CD_i$  = covered deposits for a member institution  $i$ ;
- $CR$  = contribution rate; and
- $ARW_i$  = Aggregate Risk Weight for a member institution  $i$ .

Notice that  $FR$  and  $CR$  do not have  $i$  subscript hence they are constant. Policy makers can calibrate these parameters in order to reach the global threshold for the total contributions. For simplicity, the following scenarios will attach the initial value of 60% for  $FR$  and of 40% for  $CR$ .

### Scenario 1: relatively high risk institutions in year 2X01

Under Scenario 1 after applying the pure risk adjusting factor, the amount of total contributions from all institutions in the Member State A (€1,306) is higher than the planned total annual contribution level (€1,200) (Table 12).

Table 12 Risk adjusted contributions by high risk institutions in Member State A in year 2X01

Institution	$CD_i$ (€)	$ARW_i$	Risk adjusted contributions (€): [(60% × 0.0008 × $CD_i$ ) + (40% × 0.0008 × $CD_i$ × $ARW_i$ )]
Institution 1	200,000	75%	144 [= (0.00048 × 200,000) + (0.00032 × 200,000 × 0.75)]
Institution 2	400,000	150%	384 [= (0.00048 × 400,000) + (0.00032 × 400,000 × 1.50)]
Institution 3	900,000	120%	778 [= (0.00048 × 900,000) + (0.00032 × 900,000 × 1.20)]
<b>Total</b>	1,500,000		1,306

It is then possible to adjust the flat rate ( $FR$ ) and keep the contribution rate ( $CR$ ) fixed in order to ensure that the total annual contribution level equals 1/10 of the target level of €1,200. For instance if  $CR = 40\%$ , then  $FR = 51.23\%$  for  $TC = €1,200$ . The adjusted values for contributions are presented in Table 13.

Table 13 Corrected risk adjusted contributions by high risk institutions in MS A in year 2X01

Institution	$CD_i$ (€)	$ARW_i$	Risk adjusted contributions (€): [(51.23% × 0.0008 × $CD_i$ ) + (40% × 0.0008 × $CD_i$ × $ARW_i$ )]
Institution 1	200,000	75%	130 [= (0.00041 × 200,000) + (0.00032 × 200,000 × 0.75)]
Institution 2	400,000	150%	356 [= (0.00041 × 400,000) + (0.00032 × 400,000 × 1.50)]
Institution 3	900,000	120%	714 [= (0.00041 × 900,000) + (0.00032 × 900,000 × 1.20)]
<b>Total</b>	1,500,000		1,200

### Scenario 2: relatively low-risk institutions in year 2X01

Under Scenario 2 after applying the pure risk adjusting factor, the aggregate value of the contributions from all institutions in the Member State A (€1,138) is lower than the planned total annual contribution level (€1,200). The results are presented in Table 14.

Table 14 Risk adjusted contributions by low-risk institutions in Member State A in year 2X01

Institution	$CD_i$ (€)	$ARW_i$	Risk adjusted contributions (€): [(60% × 0.0008 × $CD_i$ ) + (40% × 0.0008 × $CD_i$ × $ARW_i$ )]
Institution 1	200,000	75%	144 [= (0.00048 × 200,000) + (0.00032 × 200,000 × 0.75)]
Institution 2	400,000	120%	346 [= (0.00048 × 400,000) + (0.00032 × 400,000 × 1.50)]
Institution 3	900,000	75%	648 [= (0.00048 × 900,000) + (0.00032 × 900,000 × 1.20)]
<b>Total</b>	1,500,000		1,138

As above, in order to comply with the global cap there is a need to adjust the fixed rate. If the  $FR$  is set to 65.16%, the total contribution equals €1,200, as shown in Table 15.

Table 15 Risk adjusted contributions by low-risk institutions in Member State A in year 2X01

Institution	$CD_i$ (€)	$ARW_i$	Risk adjusted contributions (€): $[(65.16\% \times 0.0008 \times CD_i) + (40\% \times 0.0008 \times CD_i \times ARW_i)]$
Institution 1	200,000	75%	152 [= $(0.00052 \times 200,000) + (0.00032 \times 200,000 \times 0.75)$ ]
Institution 2	400,000	120%	362 [= $(0.00052 \times 400,000) + (0.00032 \times 400,000 \times 1.50)$ ]
Institution 3	900,000	75%	685 [= $(0.00052 \times 900,000) + (0.00032 \times 900,000 \times 1.20)$ ]
<b>Total</b>	1,500,000		1,200

As illustrated by examples in the two scenarios, the multiplicative model seems to deliver more balanced results if compared to the additive model. In addition to this, the multiplicative model is simpler, since it does not require any specific weight to be set in order to balance the flat rate and the contribution rate. In both cases calculation results do need to be adjusted in order to reach the annual target level. However, under the multiplicative model all parameters are multiplied by the contribution rate, not only the risk-adjusted part, thus delivering more smoothed contributions.

Q9	Do you agree with our analysis of the impact of the proposals in this Consultation Paper? If not, can you provide any evidence or data that would explain why you disagree or might further inform our analysis of the likely impacts of the proposals?
----	---

## 5.2 Overview of questions for Consultation

### Questions related to the draft Guidelines

Q1	Do you have any general comments on the draft Guidelines on methods for calculating contributions to DGSs?
Q2	Do you consider the level of detail of these draft Guidelines to be appropriate?
Q3	Is the proposed formula for calculating contributions to DGS sufficiently clear and transparent?
Q4	Considering the need for sufficient risk differentiation and consistency across the EU, do you agree on the minimum risk interval (75%-150%) proposed in these Guidelines?
Q5	Do you agree with the core risk indicators proposed in these Guidelines? If not, please specify your reasons and suggest alternative indicators that can be applied to institutions in all Member States. Do you foresee any unintended consequences that could stem from the suggested indicators?
Q6	Do you agree with the option to use either capital coverage ratio or Common Equity Tier 1 ratio as a measure of capital? Would you favour one of these indicators rather than the other, and why?
Q7	Are there any particular types of institutions for which the core risk indicators specified in these Guidelines are not available due to the legal characteristics or supervisory regime of these institutions? Please describe the reasons why these core indicators are not available.
Q8	Do you think that more guidance, or specific thresholds, should be provided in these Guidelines with regard to calibration of buckets for risk indicators, or minimum and maximum values for a sliding scale approach?

### Questions related to the Impact Assessment

Q9	Do you agree with our analysis of the impact of the proposals in this Consultation Paper? If not, can you provide any evidence or data that would explain why you disagree or might further inform our analysis of the likely impacts of the proposals?
----	---