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Annex 1 to Opinion (EIOPA-BoS-16/075): Technical part

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1. Introduction

1. This Annex provides information about certain technical aspects of the common framework's balance sheet and standardised risk assessment. It focuses on the most relevant technical issues where the QA and further technical work by EIOPA led to amendments or additional reasoning and explanation compared to the technical specifications prepared for the QA.
2. This Annex does not provide a complete technical description of the common framework. One reason for this is that many parts of technical specifications, like the risk free discount rate or shocks applied in the standardised risk assessment, would have to be regularly adjusted to reflect market developments. Thus, it would not make sense to include this in an opinion which intends to describe a general approach. Finally, a few technical issues need to be considered further, particularly in relation to the valuation of sponsor support¹. A full technical specification would therefore have to be developed should EIOPA's proposal be implemented.
3. The common framework is based on the holistic balance sheet put forward by EIOPA in its advice to the European Commission². It provides a comprehensive and transparent view of the values of all assets, liabilities and security and benefit adjustment mechanisms IORPs dispose of, e.g. non-unconditional benefits, benefit adjustment mechanisms, sponsor support and pension protection schemes, whether in an unstressed or in a stressed situation (e.g. when a stressed situation is used for the standardised risk assessment).
4. The use and value of security and benefit adjustment mechanisms in the common framework will often depend on the IORP's financial situation. For example:
 - The IORP is expected to pay more benefits when it has more assets at its disposal, if these benefits are conditional on the IORP's financial position;
 - The sponsor is expected to pay more contributions in the future when the IORP has fewer assets to cover liabilities, if it is required to supplement shortfalls (valued on a market-consistent basis);
 - A pension protection scheme is expected to contribute less to secure benefits when the IORP's financial situation is more favourable.
5. Security and benefit adjustment mechanisms will be available to absorb shocks incurred by the IORP in a stressed situation. In other words, they act as a substitute for financial capital.
6. For instance, in a scenario with adverse capital market developments the value of future benefits - subject to adjustments - will decline and/or the value of sponsor contributions will rise.
7. Sponsor support does not only absorb shocks, but also poses a risk for IORPs, like any other assets. The creditworthiness of the sponsor may deteriorate, which would reduce the expected value of future contributions. Exposure to sponsor default risk should be taken into account in a standardised risk assessment. A

¹ In addition, the assessment of methods and outputs by IORPs participating in the QA (see Section 7 of Annex 2) showed that some found the technical specifications complex and burdensome, pointing to the need to consider whether further simplifications could be appropriate. In particular, further simplification of the standardised risk assessment should be considered.

² EIOPA, EIOPA's Advice to the European Commission on the review of the IORP Directive 2003/41/EC, EIOPA-BoS-12/015, 15 February 2012.

pension protection scheme can absorb shocks by providing cover in case of sponsor default.

8. Like in the QA, the cash-flows and underlying assumptions included in the common framework will be based on the national prudential framework, and thus on national policies. This does not imply that the values of items in the common framework's balance sheet will be the same as the value of similar items on national prudential balance sheets. It does imply, though, that the cash-flows relating to security and benefit adjustment mechanisms are consistent with existing pension arrangements and supervisory regimes. For instance, the timing of sponsor payments is often determined by national funding targets – i.e. the level of technical provisions that has to be covered with financial assets – and national recovery periods.
9. The common framework will provide information about the current risk sharing, but does not say anything about whether the current risk sharing is the intended risk sharing. In other words, the value of a specific security or benefit adjustment mechanism in the common framework does not mean that this security or benefit adjustment mechanism should have a certain impact on the pension promise, it just says that a certain impact is expected (using market-consistent valuation).
10. A completely different issue are the conclusions drawn from the common framework. IORPs and NSAs would have to be flexible in deciding if they take any decisions based on the results of the common framework, and which decisions, if any. For instance, if the objective of supervision in a member state is that IORPs should avoid placing any reliance on sponsor support, a pension protection scheme or benefit reductions, then NSAs would probably require IORPs to take no account of the value of these security or benefit adjustment mechanisms in their risk management decisions.

2. Balancing item approach

11. EIOPA recognises that the common framework's balance sheet may, dependent on the characteristics of a pension scheme or IORP, or on social and labour law, include an element that will always ensure that liabilities do not exceed assets, i.e. will always 'balance the balance sheet'.
12. This could be the case because this element can in all cases provide additional assets to cover technical provisions and other liabilities, or because this element can in all cases decrease the technical provisions to such a level that the available assets can cover the (amended) technical provisions and other liabilities. In these cases, EIOPA considers that applying a balancing item approach to the valuation of this element would be appropriate.
13. Under the balancing item approach, the value of the element at hand would simply be the required value in order to equal the assets to technical provisions and other liabilities on the common framework's balance sheet. This refers to the "unstressed" as well as to the "stressed with loss absorbing capacity" balance sheet. The "stressed without loss absorbing capacity" balance sheet will usually not balance, because the loss absorbing effect of the element at hand would by definition not be considered in this balance sheet, so it could not show its balancing characteristic.
14. Considering that this method of valuation can only be used for elements that can always 'balance the balance sheet', the value thus calculated is equal to the best estimate that would be the result of a full valuation of the element. The

balancing item approach would therefore render the market-consistent value of the element.

15. There are several elements that could, under specific circumstances, serve as a balancing item:
 - Unlimited, legally enforceable sponsor support provided by a strong sponsor;
 - A pension protection scheme that covers 100% of benefits;
 - Unlimited benefit reductions. This could be ex ante benefit reductions, ex post benefit reductions, or benefit reductions in case of sponsor default.
16. The case of unlimited, legally enforceable sponsor support supported by a pension protection scheme included on the balance sheet by means of impacting on the default rate of the sponsor serving as a balancing item³ is not mentioned here, because the common framework includes all security and benefit adjustment mechanisms separately on the balance sheet. So, recognition of pension protection schemes as impacting on the default rate of the sponsor is not relevant here.
17. The balance sheet can be balanced only "once", and in case there are different mechanisms available which may in principle act as a balancing item, only the ultimate balancing item can be valued using the balancing item approach. All other elements would then have to be valued in accordance with regular valuation methods.
18. Whether or not an element can in a specific case be valued using the balancing item approach depends on the characteristics of the element.
19. More information about the balancing item approach in specific cases can be found in the chapters on sponsor support, pension protection schemes and benefit reduction mechanisms.

3. Sponsor support

3.1. Introduction

20. Sponsor support is the ability of the sponsor to provide financial support to the IORP or its members and beneficiaries when necessary. Many member states allow for this support in their legislation and/or supervisory or contractual frameworks (although mainly implicitly). In some countries it is even a key security mechanism available to IORPs, as demonstrated by the QA results that made this sponsor support explicit.
21. In its Advice on the review of the IORP Directive⁴ EIOPA recommended that sponsor support should be recognised on the common framework's balance sheet as an asset and as risk mitigation in the calculation of the standardised risk assessment, but concluded that the way it should be valued required further elaboration.
22. The technical specifications for the QIS outlined overarching principles for the valuation of sponsor support, including the need for market-consistent valuation taking into account the expected funding needs of the IORPs and the affordability of the sponsor. It also put forward some simplified methodologies to facilitate calculations in the QIS.

³ See paragraph 4.4 of EIOPA, Consultation paper on further work on solvency of IORPs, EIOPA-CP-14/040, 13 October 2014.

⁴ https://eiopa.europa.eu/Publications/Consultations/EIOPA-BOS-12-015_EIOPA_s_Advice_to_the_European_Commission_on_the_review_of_the_IORP_Directive.pdf

23. The QIS exercise showed that valuing sponsor support is subject to considerable practical issues, in particular the difficulty of placing a single market-consistent value on such a complex concept as sponsor support, assumptions relating to credit risk and the assessment of affordability. EIOPA concluded that further work was required to develop a suitable approach.
24. In 2013, EIOPA consulted on a discussion paper on sponsor support on how valuation principles and methodologies may be improved. A new simplification was also proposed for small and medium-sized IORPs (the Alternative Simplified Approach).
25. In its consultation on Further work on solvency of IORPs EIOPA refined its proposed approach to valuing sponsor support taking into account feedback to the 2013 consultation and outlined the advantages and disadvantages of the various approaches. The associated technical specifications for the QA outlined valuation principles and proposed simplifications for the purpose of undertaking the QA, leaving it to IORPs to decide on the most appropriate approach to adopt to suit their specific circumstances.
26. The rest of this section puts forward valuation principles for sponsor support and considers methodological issues, taking into account all the work done to date and the results of the QA exercise and comments from stakeholders received in the two consultations.

3.2. Scope and definitions

3.2.1. Forms of sponsor support

27. As set out in EIOPA's Advice, there are four main forms of support which sponsors may provide separately from and in addition to regular contributions:
 - A – Increases in contributions: additional contributions by the employer and/or employees in situations of insufficient funding;
 - B – Subsidiary liability of the sponsor: the employer can pay benefits directly to beneficiaries should the IORP not be able to fulfil the pension commitment;
 - C – Contingent assets of the sponsor: assets held by the sponsor that can flow to the IORP in a predetermined set of circumstances (e.g. charges over assets, parent company guarantees, escrow accounts);
 - D – Claims on the sponsor on discontinuance of the IORP.
28. All forms of sponsor support should be taken into account on the common framework's balance sheet. Contingent assets (i.e. Form C) should be recognised separately from the other forms of sponsor support and valued in accordance with the principles applying to the valuation of financial assets of the IORPs. In addition the valuation of the asset should reflect its anticipated value after the contingent event has occurred and, for those assets which are dependent on the continued existence or health of the sponsor, take account of the expected value the asset would have upon the decline or failure of the sponsor.
29. For reasons of simplicity the wording in this section refers mainly to form A but is meant to cover form B and D as well.
30. It is important to ensure that there is no double counting between the different forms of sponsor support, in particular with regards to contingent assets.

3.2.2. Accessibility of sponsor support

31. The extent to which IORPs have access to sponsor support depends on the type of legal, contractual and statutory obligations:
 - a. Unlimited legally enforceable sponsor support: the legal/contractual/statutory obligation corresponds to a full and automatic recourse to the sponsor support which usually is embedded in law or is based on a contract, a declaration of commitment or a statute;
 - b. Limited legally enforceable sponsor support: the legal/contractual/statutory obligation corresponds to an automatic recourse to the sponsor support but subject to certain contingencies usually stipulated as part of the contract between the IORP and the sponsor;
 - c. Non-legally enforceable sponsor support: the legal/contractual/statutory obligation does not correspond to an automatic recourse. IORPs have very limited or no automatic means to call on additional sponsor financing, with the decision whether to provide support resting on the sponsor alone.
32. EIOPA advises that all types of sponsor support should be taken into account when valuing the availability of sponsor support (see below for valuation principles).

3.2.3. Cash-flows to be included

33. The future cash-flows to be included in the valuation of sponsor are:
 - The additional deficit repair contributions;
 - Future additional contributions with respect to existing obligations and accrued rights included in the best estimate of technical provisions;
 - Both contributions paid by the employer(s) and employees (where employees are required to make contributions);
 - Possible restitutions (i.e. negative contributions or lowering of normal future contributions) by the IORP to the employer(s) and employees in favourable scenarios where legislation allows this.

3.3. Approach to valuing sponsor support

34. In light of the comments provided by stakeholders during the last two consultations and the outcome of the QA (see analysis below on robustness of simplified approaches), EIOPA recognises that it is difficult to devise detailed methodologies to the valuation of sponsor support. The position of sponsors can vary significantly and the appropriate approach for one type of sponsor may not be appropriate for another. For example, understanding the affordability position of a commercial sponsor will require very different analysis to that of a sponsor in the not-for-profit sector.
35. EIOPA therefore supports an approach to the valuation of sponsor support based on a general set of principles set at EU level, supplemented by additional guidance from EIOPA and/or NSAs. This would enable IORPs to value sponsor support using an approach that is proportionate and best suits specific national and individual circumstances.
36. IORPs would need to be able to demonstrate to the NSA the appropriateness of the approach they have adopted, including modelling assumptions, in particular that the chosen approach leads to a market-consistent value of sponsor support and is consistent with the risk profile of the IORP and characteristics of the

sponsor. NSAs should have the mandate to require measures from the IORP if the approach taken is deemed inadequate.

3.4. Balancing Item Approach for valuation of sponsor support

3.4.1. Conditions of applicability

37. EIOPA recognises that in certain circumstances the market-consistent value of sponsor support can be identified through the 'balancing item approach'. According to this approach, IORPs with certain characteristics are not required to perform detailed calculations in order to see whether the balance sheet balances.
38. In respect of sponsor support, applying the balancing item approach could be considered specifically in circumstances whereby it is obvious that the unlimited, legally enforceable sponsor support that is available to the IORP will be able to deal with any deficits that could arise in the valuation of the balance sheet without requiring the use of any other security and benefit adjustment mechanisms. Where an IORP does not satisfy the criteria for this approach, it would need to carry out a calculation of sponsor support according to the principles outlined below. This approach enables sponsor support to be valued in a proportionate way.
39. The consultation paper proposed three possible conditions of applicability for the use of the balancing item approach and outlined the advantages and drawbacks of each. The conditions are presented in the following sections.

3.4.2. Condition 1 – Sponsor support as a balancing item depending on the default rate of the sponsor

40. Under this condition the value of unlimited legally enforceable sponsor support is treated as a balancing item on the balance sheet with full loss-absorbency in the standardised risk assessment calculation if the one-year survival rate of the sponsor (or the equivalent in the case of multi-employer IORPs) exceeds the confidence level of the standardised risk assessment. This would entail a default rate of the sponsor of 0.5% or lower in the case of a 99.5% confidence level.
41. In addition the IORP should be able to demonstrate that the sponsor has sufficient financial strength to cover the resulting value of sponsor support on the balance sheet and the outcomes of the standardised risk assessment calculation.
42. This is a relatively simple method which has also the advantage of ensuring the same level of protection and cover the standardised risk assessment but one of the main drawbacks is that it introduces potential cliff effects. The consultation paper proposed to mitigate against this issue by suggesting that IORPs should be required to demonstrate the stability of the sponsor default rate over time.

3.4.3. Condition 2 – Sponsor support as a balancing item depending on the strength of the sponsor

43. Under this condition, the balancing item approach could be used for unlimited legally enforceable sponsor support if the value of the sponsor exceeded a multiple M of the value required to balance the balance sheet and to cover the gross outcome of the standardised risk assessment (i.e. liabilities + standardised risk assessment gross of the loss absorbing capacity of the sponsor – financial assets).
44. The value of the sponsor could be based on an assessment of the affordability of the sponsor or some other measure of sponsor income/wealth such as

shareholder funds. The consultation paper also suggested that total wages could be used as a potential measure of sponsor's capacity to provide support where such financial metrics were not available (e.g. multi-employer IORPs).

45. One of the drawbacks identified was that the valuation would not take account of the possibility that the financial situation of the sponsor could deteriorate over the lifetime of the pension obligations. This issue could be mitigated by requiring IORPs to demonstrate the value of the sponsor is likely to be stable over time.

3.4.4. Condition 3 – Sponsor support as a balancing item in case of the existence of a pension protection scheme

46. Under this condition the balancing item approach for the valuation of sponsor support could be applied if a pension protection scheme guarantees 100% of benefits (or where the pension protection scheme guarantees less than 100%, but the reduction in benefits is separately accounted for on the balance sheet) and has negligible default risk.
47. Since a pension protection scheme would be recognised as a separate asset in the common framework, Condition 3 is not applicable for the common framework. However, the pension protection scheme or the benefit reductions (where the pension protection scheme guarantees less than 100%) might be a balancing item themselves (see also sections 2, 4 and 5).

3.4.5. Stakeholder views

48. Stakeholders were asked for their views on the balancing item approach and the appropriateness of the three conditions.
49. There was overwhelming support among respondents for the principle of using sponsor support as a balancing item to facilitate a proportionate approach.
50. There were mixed views on condition 1 and 2. Some respondents thought that a range of conditions were required to reflect sponsor-specific and national circumstances and that both sets of conditions were appropriate depending on the circumstances. Others argued that a single condition was unlikely to be appropriate due to cliff-edge effects.
51. More stakeholders favoured Condition 2 for its simplicity and practicability although some thought it was too complicated and the M x wage sum approach should be easier for small and medium size IORPs or a suitable proxy for non-capitalised sponsors or multi-sponsor IORPs.
52. However concerns were expressed about the need to demonstrate stability of the conditions over time – this was thought to be too difficult.
53. Some additional factors to add to the existing conditions were suggested, including the expected long-term default rate (Condition 1); the size of the sponsor in relation to the IORP's shortfall on the balance sheet (Condition 2); the size of the IORP's shortfall in relation to overall liabilities (how close the balance sheet is to balancing); and the extent to which security is enhanced by presence of other security mechanisms.
54. Many respondents were of the view that there were no other conditions in which unlimited, legally enforceable sponsor support should be treated as a balancing item. However some respondents suggested the following circumstances where such approach may be warranted:
 - Industry-wide funds with a combination of individual sponsors and risk-sharing mechanisms;

- Government guarantees;
 - In cases where the Loss Given Default is zero (due to regulatory or contractual terms prevalent within an industry that demands a replacement sponsor will assume all pensions obligations in a default scenario such as for instance franchise arrangements).
55. There was no consensus as to what the value of M in Condition 2 should be as it was thought to be very sponsor or sector specific. Many argued that it was arbitrary to specify a value and this should be left to national supervisory authorities. Others thought that more analysis and research was required.

3.4.6. QA results

56. The QA also provided some useful information on the fitness-for-purpose of the conditions.
57. Participating IORPs were asked to provide data so that different calibrations of what conditions they would be able to meet could be assessed.
58. The conditions described above were specified as follows⁵ for the purpose of the QA:
- Condition 1 – default rate of the sponsor of 0.5% or lower. The requirement that IORPs should be able to demonstrate that the sponsor has sufficient financial strength to cover the resulting value of sponsor support on the balance sheet and standardised risk assessment and that the default rate was likely to be stable over time was not included;
 - Condition 2 – M was assumed to be 2 and the value of the sponsor should be determined by using the method set out in the specification to value sponsor affordability. However, the specification recognised that the appropriate value for M may be different.
59. The extent to which participating IORPs used the balancing item approach (BIA) for unlimited legally enforceable sponsor support varies between countries. All participating UK IORPs, over 80% of BE IORPs and over half of PT IORPs used the BIA, only 6% of DE IORPs and no NL IORPs used the BIA for valuing sponsor support. These differences can be accounted by the nature of the sample (e.g. UK participating IORPs are very large and tend to have lower default rates than smaller IORPs) or the existence of other security and benefit adjustment mechanisms.
60. Overall there was a significant preponderance of IORPs qualifying for Condition 1 (simplified as per the QA technical specifications) compared to Condition 2.
61. Further analysis was undertaken on UK participating IORPs and the whole UK universe of IORPs (around 6,000 schemes) to assess the robustness of the qualifying conditions. Some key points are included below:
- There is a significant difference in the number of schemes qualifying under Condition 1 and 2. Over 4,400 UK IORPs, representing 96% of liabilities, qualified for the BIA under the criteria that the probability of default is less than 0.5% (simplified Condition 1 in the QA) compared to just under 1,800 schemes under Condition 2 of Maximum sponsor support $< 2 * \text{Level A deficit} + \text{SCR}$ (accounting for over 18% of the liabilities under the current regime). When combining Condition 1 and Condition 2, just over 1,400 IORPs (representing almost 18% of liabilities under the current regime) qualified for the balancing item approach;

⁵ Note that condition 3 was not applied in the QA, as pension protection schemes and benefit reductions in case of sponsor default were recognised separately on the QA's balance sheets.

- Looking at the IORPs which participated in the QA only (these IORPs are very large and tend to have stronger sponsors than average), all IORPs qualified under Condition 1 compared to only 22% of IORPs under Condition 2 (representing 12% of Level A liabilities). All the IORPs which qualified for Condition 2 also qualified for Condition 1. This suggests that Condition 2 is a much stronger test than Condition 1 and Condition 1 on its own may not be reliable;
 - The headline results of Baseline Scenario 2 using the Balancing Item Approach were compared to those where the BIA was not used (i.e. the value of sponsor support was calculated for all IORPs in the universe). There were significant differences in some of the key elements of the balance sheet such as the estimated value of sponsor support, excess assets over liabilities and ex-post benefit reductions. A simplification such as the BIA would be expected to yield similar results to fully-fledged calculations.
62. Although the analysis above only relates to UK IORPs and conclusions may be different in other member states, it suggests that the conditions for the application of the balancing item approach for sponsor support should be reviewed to make sure they are fit-for-purpose

3.4.7. Conclusions and advice

63. EIOPA advises that a balancing item approach which enables IORPs which qualify for the specified conditions to bypass more detailed sponsor support calculations should be allowed to enable a proportionate application of the common framework.
64. However, the conditions of applicability should be reviewed to ensure that they are fit-for-purpose. In particular:
- Whether any of the Conditions 1 or 2 (or the combination of the two) are sufficiently robust and can be applied in a range of circumstances;
 - What the appropriate value is for the multiplier M and what other suitable metrics such as total wages could be used where typical financial data is not available; and
 - Whether other conditions of applicability may be developed which take account of other relevant circumstances such as industry-wide funds with risk-sharing mechanisms; sponsors with government guarantees; and franchise-type agreements.

3.5. Market-consistent valuation

65. Sponsor support should be valued on a market-consistent basis i.e. with reference to the future cash flows the sponsor would be expected to pay to the IORP in excess of its regular contributions in order to ensure the assets in the scheme meet the full value of the technical provisions valued at the risk free rate.
66. The expected value of the future cash flows is dependent on three key elements:
- The expected funding gap on the common framework's balance sheet between the actual assets and total liabilities valued at Level A (risk-free rate) at any point in time;
 - The accessibility of the sponsor support needed, i.e. whether there is a legal basis for the IORP to require the support and/or a legal possibility for the sponsor to deny providing support (non-legally enforceable sponsor support should be valued separately from unlimited legally enforceable sponsor support); and

- The sponsor's affordability, i.e. the ability of the sponsor to make the required additional payments taking into account its financial position at the expected time of payment. Consideration should also be given to the ability of the IORP/NSA to demand them (level of obligation).
67. From a risk management point of view, it is important for IORPs to understand the ability of the sponsor to make good current and potential future deficits so that they can assess the risk profile of the IORP and determine appropriate risk management actions.
68. The discount rate used to discount the cash flows should be consistent with the discount rate used to value the liabilities (i.e. risk free rate).

3.5.1. Timing of sponsor support cash flows

69. The timeframe over which a current or potential future deficit could be recovered (i.e. the number of future years for which sponsor support is deemed to be payable) should be considered when making projections of future cash flows. The following factors are relevant when considering what an appropriate length of time to recover the expected deficit might be:
- Contractual and legal obligations: the timing of sponsor support may depend on the pension contract and/or social and labour law such as the length of recovery plan permitted in the supervisory framework;
 - The profile and duration of the liabilities: the shorter the duration of liabilities, the less time should be assumed for required contributions to make up the funding deficit;
 - The viability of the sponsor: the long-term prospect of the employer and the length of time over which it can be expected to be provide support is relevant, as is the level of certainty with which this can be predicted.
 - Affordability of the sponsor: whether and how sponsor's affordability may fluctuate over time.

3.5.2. Accessibility of sponsor support

70. Whether an IORP can count on the sponsor support being provided is primarily dependent on the form of sponsor support, i.e. the legal basis underlying the contract. Where the sponsor is obliged, by law or by contract, to provide support to the IORP, the IORP has a legally enforceable claim on the sponsor. In this case, the accessibility of sponsor support is 'guaranteed' for the IORP.
71. Where sponsor support is contractually limited, whether it is overall or in any individual year, the value of what the sponsor can afford to pay now or in the future should not exceed that limit.
72. IORPs and/or sponsors may be supported by entities that have no obligation to do so (legally or contractually). As set out above, allowance can be made for such non-legally enforceable support but where it is taken into account, it should be valued separately from legally enforceable sponsor support.
73. However, in considering potential non-legally enforceable sponsor support IORPs should make a risk-based assessment of what might realistically be available from the sponsor based on past practices in similar situations, being mindful that the intentions of the provider of that support may change in the course of the lifetime of the liabilities. This means that the accessibility of this type of sponsor support differs from the accessibility of legally enforceable sponsor support.
74. The accessibility of non-legally enforceable sponsor support will depend on IORP or country-specific circumstances. For instance in some industry-wide funds such

as in the Netherlands, the likelihood that such support will be withdrawn is relatively low and it is therefore appropriate to assume that it will remain available in the longer term.

3.5.3. Affordability

75. An assessment of the amount of support the sponsor can provide at any point in time to cover any current or future deficit is required to check that the expected value of sponsor support does not exceed the sponsor's financial capabilities. This is necessary to ensure that any modelled additional contributions or support required from the sponsor are affordable and to adjust the value of sponsor support if this is not the case.
76. Ideally, sponsor affordability should be checked for any future cash-flow. However, a simplification could be applied by allowing IORPs to assess the maximum amount of sponsor support a sponsor could provide, and compare that to the total value of all future (sponsor support) cash-flows.
77. Maximum sponsor support is also needed in the calculation of the standardised risk assessment to determine the maximum loss absorbing capacity of sponsor support and can be used in testing some of the qualifying conditions for the balancing item approach.
78. The assessment of affordability is highly sponsor-specific and can be complex. IORPs can take a proportionate approach to assessing affordability. Examples of factors that should be taken into account to decide whether a more or less detailed assessment is required include:
 - the structure and complexity of the sponsor;
 - the level of funding of the IORP;
 - the size of the IORP's liabilities relative to the size of the sponsor;
 - the extent to which affordability might be constrained;
 - whether the employer operations are changing (e.g. restructuring);
 - the stability of the sector in which the sponsor operates, including the responsiveness of the sector / sponsor to economic cycles;
 - the level of investment risk taken and degree of reliance on the sponsor.
79. IORPs should be in a position to justify the approach they have taken to assessing affordability and the outcome of the assessment. The NSA should be able to require amendments to the assessment performed where deemed necessary.
80. The approach to assessing sponsor affordability will depend on the information available to the IORP from the sponsor and/or from the sponsor's accounts. However, the following key factors for consideration are likely to be relevant to most IORPs and their sponsors:
 - Sponsor's balance sheet position - provides an insight in the ability of the sponsor to afford additional contributions in the short term and how their current financial position may affect future financial performance;
 - Projected cash flows - provide a direct insight into the ability of the sponsor to pay the required regular contributions and any additional payments that may be required by the IORP. Various demands can be made on the sponsor's discretionary cash flows and the IORP would need to assess what proportion can realistically be made available to support it. In particular it is important to take into account the sponsor's business plans and need to invest in growth so that it can continue to support the IORP in the long term;

- Future outlook - an assessment of the long-term prospects of the sponsor will enable assumptions to be made about whether the projected cash flows can be assumed to remain available in the longer term;
- Outcome for the IORP of sponsor insolvency - to assess what could flow to the IORP on insolvency of the sponsor (having regard to insolvency legislation and creditor priority ranking), particularly if this is a more likely prospect or significant reliance is placed on tangible assets.

3.5.4. Credit risk

81. The probability of occurrence of sponsor default should be taken into account to derive the expected future value of sponsor support. This is to reflect the uncertainty surrounding the future viability of the sponsor and its ability to meet the required contributions.
82. IORPs should use an appropriate method towards assessing credit risk, based on the characteristics of their sponsor and the availability of information.
83. Possible methods, based on a probability weighted approach, include
 - Using probabilities as implied by securities traded on financial markets, such as credit default swaps and corporate bonds;
 - Assessing the probability of default according to the sponsor's credit rating;
 - Using data from their sponsors' financial accounts to derive a suitable default probability⁶.

3.5.5. More complex IORP structures

84. Valuation of sponsor support and affordability can be more involved for IORPs with more complex arrangements with their sponsors such as
 - Sponsors with multiple IORPs;
 - IORPs with multiple sponsors;
 - IORPs with sponsors with parent guarantees, or with guarantees provided by third parties such as credit insurance, bank or government guarantees;
 - Charities, universities, mutuals and providents.
85. The consultation paper outlined possible methods for dealing with these more complex structures. These would need to be reviewed, together with the results from the QA and comments from respondents on these issues, should technical specifications be developed for implementation of the common framework.

3.6. Valuation methods

86. The consultation paper (see pp. 53-64) proposed various methods to value sponsor support, including simplifications that could be used, and outlined the circumstances in which it may be appropriate for different IORPs to use a particular method. The paper also mentioned some of the advantages and disadvantages of each approach based on previous work undertaken by EIOPA and stakeholder feedback.
87. The consultation paper also provided a quantitative comparison of some valuation methodologies which showed that there were some marked differences in the valuation of sponsor support depending on the method used. These findings are in line with additional analysis undertaken in parallel with the QA on the universe of UK schemes which suggests that there may be some material

⁶ This approach is used by the Pension Protection Fund in the UK.

differences between simplifications for different types of sponsors (e.g. at the weaker end of the spectrum).

88. Further work would therefore be required, taking into account the work of the QA, to ensure that any methodology or simplification put forward is fit-for-purpose and takes account of the wide range of sponsor specificities.

4. Pension protection schemes

89. According to the advice to include on the common framework's balance sheet all security and benefit adjustment mechanisms, a pension protection scheme will be included on the balance sheet as a separate item and taken into account in the same way in the standardised risk assessment.
90. Within the common framework, a pension protection scheme should be valued on a market-consistent basis. Furthermore, as described in the technical specifications of the QA the value of a pension protection scheme could be calculated using the balancing item approach, subject to certain conditions⁷, or using a simplification⁸.
91. The reliability of inputs underlying the valuation of pension protection schemes has been assessed in the QA as excellent by IORPs in those member states where a pension protection scheme exists⁹, which shows that IORPs are quite confident with regard to the quality of data underlying the valuation of a pension protection scheme.
92. Even though the value assigned to pension protection schemes in the QA is relatively small, they have an important role in certain member states and for certain IORPs, and it is important to consider pension protection schemes to get a comprehensive overview of the risk profile of an IORP or a pension promise.

5. Benefit reduction mechanisms

93. The common framework allows for three types of benefit reduction mechanisms which are shown separately on the balance sheet:
- An ex-ante benefit reduction mechanism is a mechanism based on a contract/bylaws, concluded beforehand and which describes precisely under which conditions and to which extent reductions will take place;
 - An ex-post benefit reduction is a measure of last resort (i.e. to be used when no other means are available), which may be allowed by national law and regulation;
 - A benefit reduction in the event of sponsor default/sponsor insolvency allows for the possibility to reduce pension benefits in the event of a default of the sponsor, in particular in cases when it provides unlimited support and/or when there are not enough assets to cover liabilities. The benefit reduction could occur as part of a transfer to a pension protection scheme or another institution, or as part of a recovery plan of the IORP, if the IORP continues to exist after the default of the sponsor.
94. Within the common framework, benefit reductions should be valued on a market-consistent basis. Furthermore, as described in the technical specifications of the

⁷ See paragraph HBS.8.9 of EIOPA, Technical Specifications Quantitative Assessment of Further Work on Solvency of IORPs, EIOPA-BoS-15/070v2, 11 May 2015.

⁸ See paragraph HBS.8.12 of EIOPA, Technical Specifications Quantitative Assessment of Further Work on Solvency of IORPs, EIOPA-BoS-15/070v2, 11 May 2015.

⁹ See also paragraphs 272 and 273 in section 7.5 of Annex 2.

QA, the value of benefit reductions could be calculated using the balancing item approach, subject to certain conditions¹⁰ or using a simplification¹¹.

95. The table below shows the availability of benefit reduction mechanisms as reported in the QA for IORPs who responded.

Ex post benefit reductions	10%
Ex ante benefit reductions	10%
Benefit reduction in case of sponsor default	55%
No benefit adjustment mechanisms/no response	22%

96. A significant proportion of IORPs reported that, where a recovery plan might be required, benefit reductions would form part of the recovery plan. This proportion varied from 13% of IORPs under Example 6 to 25% of IORPs under Example 4.
97. As regards the quality of output of benefit reduction figures, the majority of IORPs gave a view on this issue. IORPs gave a high rating to the relevance and materiality of the 'Benefit reductions in case of sponsor default' and a slightly lower rating for 'Ex post benefit reductions'.
98. Part of IORPs did not recognise benefit reduction mechanisms on the balance sheet in the baseline scenario(s), while at the same time reporting a negative excess of assets over liabilities on the balance sheet or on the stressed balance sheet underlying the SCR calculation. In these cases, EIOPA decided to resolve the shortfalls by including benefit reductions as a balancing item, even if not allowed for under national law or if only possible during a wind-up of the IORP or of the sponsor.¹²

6. Elements with discretionary decision-making processes

99. A number of elements on the common framework's balance sheet are (at least partly) the result of discretionary decision-making processes. These processes exist where a party to a pension arrangement has the power to make a subjective decision. The mapping exercise¹³ contains the following table:

¹⁰ See paragraph HBS.5.52 of EIOPA, Technical Specifications Quantitative Assessment of Further Work on Solvency of IORPs, EIOPA-BoS-15/070v2, 11 May 2015.

¹¹ See paragraph HBS.5.55 of EIOPA, Technical Specifications Quantitative Assessment of Further Work on Solvency of IORPs, EIOPA-BoS-15/070v2, 11 May 2015.

¹² See also paragraph 20 in section 3.3 of Annex 2.

¹³ See page 28 of EIOPA, Mapping Exercise for Further Work on Solvency of IORPs, EIOPA-14/514, 13 October 2014.

<i>Table 6.1: Brief overview of existing discretionary decision-making processes</i>		
Element	Number of countries*	Countries
Pure discretionary benefits	8 (38%)	BE, DE, FR, IE, IT, MT, NL, PT
Mixed benefits	8 (38%)	AT, BE, DE, DK, FR, IT, NL, SI
Non-legally enforceable sponsor support	9 (42%)	DE, DK, FI, IE, IT, NL, NO, PT, SE-PF
Ancillary own funds	4 (19%)	DE, FR, IE, SE-PF
Surplus funds	5 (24%)	DE, IE, IT, NL, SE-PF
Subordinated loans	10 (48%)	AT, BE, DE, DK, FR, IE, NL, NO, PT, SE-PF, SI
Other elements	3	BE, IE, PT

* Twenty member states have provided full responses to the survey on discretionary decision-making processes for a total of 21 types of IORPs. SE has provided separate responses for pension foundations (SE-FN) and for Article 4 insurance companies and pension funds (SE-PF).

100. In the QA, IORPs included pure discretionary benefits, mixed benefits and non-legally enforceable sponsor support in the (full) balance sheet. The QA did not take into account ancillary own funds, surplus funds or subordinated loans. The following subsections describe the results of the QA for pure discretionary benefits, mixed benefits and non-legally enforceable sponsor support.

6.1. Pure discretionary benefits

101. According to the mapping exercise, pure discretionary benefits could be granted in BE, DE, FR, IE, IT, MT, NL and PT. Of these member states, BE, DE, IE, NL and PT participated in the QA.

102. Of the member states participating in the QA, only 1 BE IORP reports a value for pure discretionary benefits in the balance sheet. Under baseline 1, with valuation based on Level A, the value of pure discretionary benefits is approximately 3.5% of the value of unconditional liabilities.

103. Looking at the explanations provided in the mapping exercise, it is not illogical that most IORPs do not foresee any pure discretionary benefits being granted in the future. The current challenging environment for IORPs does not allow for granting pure discretionary benefits, as many countries report funding deficits. Illustrative is that member states responded to the mapping exercise that even in better financial times, over the period 2003 – 2008, pure discretionary benefits were being granted 'sometimes', respectively 'hardly ever'.

6.2. Mixed benefits

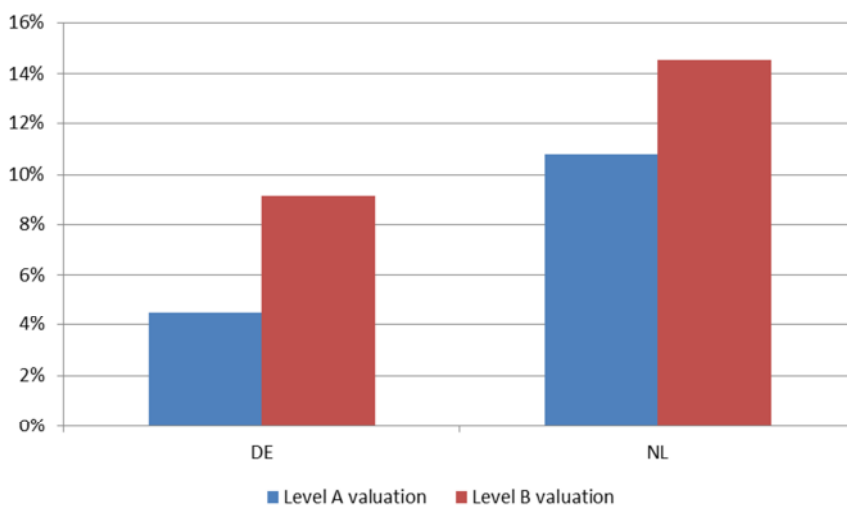
104. According to the mapping exercise, mixed benefits¹⁴ could be granted in AT, BE, DE, DK, FR, IE, IT, NL and SI. Of these member states, BE, DE, IE and NL participated in the QA.

¹⁴ EIOPA has decided not to distinguish mixed benefits as a separate category of benefits in the common framework (see section 1.3 of the opinion)

105. Of the member states participating in the QA, only DE and NL IORPs report a value for mixed benefits in the balance sheet. The financial position of IE IORPs, with the value of unconditional liabilities significantly exceeding the value of assets, is such that mixed benefits are not likely to be granted in the foreseeable future. The reason why BE IORPs did not report a value for mixed benefits in the balance sheet is that mixed benefits are possible for a limited number of IORPs only and none of these participated in the QA.
106. The following graph contains the value of mixed benefits in the balance sheets reported for the QA¹⁵, as compared to the net value of unconditional benefits, conditional liabilities and ex ante benefit reductions.

Figure 6.1: Mixed benefits, Level A and Level B valuation

% of net value of unconditional and conditional liabilities and ex ante benefit reductions



Source: EIOPA

6.3. Non-legally enforceable sponsor support

107. According to the mapping exercise, non-legally enforceable sponsor support could be used by IORPs in DE, DK, FI, IE, IT, NL, NO, PT and SE-pension foundations. Of these member states, DE, IE, NL and PT participated in the QA.
108. Of the member states participating in the QA, IE, NL and PT IORPs report a value for non-legally enforceable sponsor support in the balance sheet. The financial position of DE IORPs, with current surpluses over the national funding requirement¹⁶ and sufficient availability of legally enforceable sponsor support, is such that non-legally enforceable sponsor support is not needed in the foreseeable future.
109. It should be noted that cash-flows for the common framework's balance sheet have been based on national funding requirements. The fact that a member state reports surpluses over the national funding requirement does not necessarily imply that IORPs from this member state would be able to report a positive

¹⁵ Note that the balance sheet proposed as part of the common framework does not include 'mixed benefits' as a separate category. The benefits described in this paragraph would be classified as either conditional or discretionary benefits in the common framework's balance sheet. See section 1.3 of the opinion.

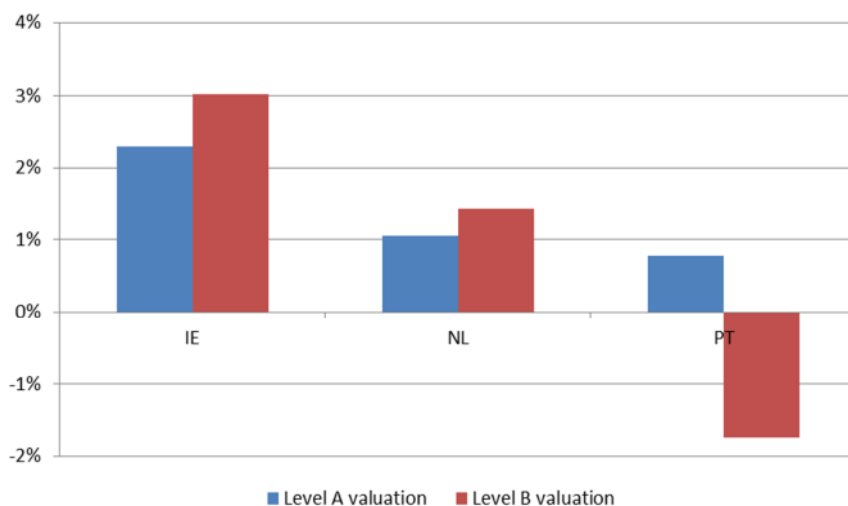
¹⁶ See paragraph 52 and figure 6 in EIOPA, IORPs Stress Test Report 2015, 26 January 2016.

excess of assets and liabilities under the common framework's balance sheet (especially when based on Level A valuations).

110. The following graph shows the value of non-legally enforceable sponsor support, as reported in the balance sheet, in comparison to the value of the total liabilities (excluding benefit reductions).

Figure 6.2: Non-legally enforceable sponsor support, Level A and Level B valuation

% of total liabilities, excluding benefit reductions



Source: EIOPA

111. As a percentage of the total liabilities, both IE and NL IORPs report a higher value under level B valuation. The reason for this is that IORPs reported almost identical values of non-legally enforceable sponsor support under Level A and Level B valuation, whereas the value of the liabilities is lower under Level B valuation. IE and NL IORPs report significant values for ex post benefit reductions, both under Level A and under Level B valuation.

112. For PT IORPs, the value of non-legally enforceable sponsor support turns negative under Level B valuation. This indicates that PT IORPs are allowed to 'return' money to the plan sponsor (or lower future normal contributions) if and when the financial position of the IORP allows.

7. Benefits and contributions to be included in cash flows in technical provisions

113. For benefits and contributions to be included in cash flows in technical provisions, the following definition should be used, as amended after the EIOPA consultation on further work on solvency of IORPs and used in the QA:

114. For IORPs/schemes where obligations of the IORP to pay benefits are only established following payments of contributions to the IORP/scheme, cash flows to be included in the calculation of technical provisions should be determined as follows:

1. All cash-flows relating to obligations of the IORP relating to current members and beneficiaries shall be recognised in the calculation of technical provisions,

unless otherwise stated below. Apart from the cases described below, obligations shall include those obligations relating to current members and beneficiaries which result from contributions received by the IORP after the valuation date.

2. Any cash-flows relating to obligations of the IORP relating to contributions received by the IORP after any of the following dates shall not be recognised in technical provisions:

a. The future date where the IORP has a unilateral right or obligation to terminate the agreement with the plan sponsor and/or the plan members to provide the pension benefits as agreed between plan sponsor and plan members;

b. The future date where the IORP has a unilateral right or obligation to reject additional contributions;

c. The future date where the IORP has a unilateral right or obligation to amend the contributions payable after this date or the benefits related to those contributions in such a way that the contributions fully reflect the risks related to them and the related benefits; or

d. The future date where the sponsor or sponsors have a unilateral right to terminate future accrual of benefits.

115. For IORPs/schemes where obligations of the IORP to pay benefits are established independently from payments of contributions to the IORP, cash flows to be included in the calculation of technical provisions should be determined as follows:

1. All cash-flows relating to obligations of the IORP relating to current members and beneficiaries shall be recognised in the calculation of technical provisions unless otherwise stated below. Apart from the cases described below, obligations shall include those obligations relating to current members and beneficiaries which are established after the valuation date. Any contributions which are directly linked to the financing of certain obligations established after the valuation date shall also be recognised in technical provisions, unless otherwise stated below.

2. Any cash-flows relating to obligations established after any of the following dates shall not be recognised in technical provisions:

a. The future date where the IORP has a unilateral right or obligation to terminate the agreement with the plan sponsor and/or the plan members to provide the pension benefits as agreed between plan sponsor and plan members;

b. The future date where the IORP has a unilateral right or obligation to reject the establishment of additional obligations;

c. In cases where contributions are directly linked to the financing of certain obligations established after the valuation date, the future date where the IORP has a unilateral right or obligation to amend those contributions or those obligations to fully reflect the risk; or

d. The future date where the sponsor or sponsors have a unilateral right to terminate future accrual of benefits.

116. IORPs were asked in the qualitative questionnaire to provide elements that were not clear in the definition of benefits and contributions to be included in cash flows, but very few issues were raised. BE IORPs responded that the NSA provided clear instructions on how to interpret the definition. One IORP indicated that it did not consider any future benefits and contributions in cash flows, because the value of contributions is expected to exceed the value of benefits.

Another participant mentioned that it did not take into account benefits generated by future profits, since the IORP is free not to provide such benefits. In NL the national supervisor provided guidance to IORPs to use 'normal contribution policy' as a basis for the valuation of sponsor support. However, some NL IORPs mentioned that normal contributions are lower than the contributions needed to finance new pension rights (using risk-free market interest rates as discount rate), which should - in principle - be included in the best estimate of technical provisions.

117. IORPs were also asked to provide suggestions to improve the definition of benefits and contributions to be included in cash flows. As a possible improvement, it was suggested that the definition should take into account national prudential regulation by only including minimum guaranteed benefits. Moreover, the suggestion was made that cash flows should not only include benefits and contributions, but also investment income. The view was also expressed that it should be mandatory to include future contributions and benefits, even if specific risks can be hedged, since this would improve the balance sheet outcomes.

8. Standardised risk assessment: Presentation of outcomes

118. The aim of the standardised risk assessment is to measure the expected change in IORP's excess of assets over liabilities (EAL) with and without the overall capacity of sponsoring undertakings, pension protection schemes and benefit adjustment mechanisms to absorb shocks. IORPs would have to make transparent to which extent shocks would be absorbed by each of the available security and benefit adjustment mechanisms.

119. The outcomes of the standardised risk assessment could be presented in two ways:

- A concise presentation of the outcomes would only show the impact of the stressed risk factors on EAL (excl. shock-absorbency), the shock-absorbency of each of the available security and benefit adjustment mechanisms, and EAL (incl. shock-absorbency);
- A comprehensive presentation of the outcomes would show a full stressed balance sheet, besides the pre-stress balance sheet.

120. Both ways of presenting the results have not been (fully) operationalised in the reporting template for the QA.

121. The standardised risk assessment is not based on one comprehensive scenario, but on several stressed risk factors, of which the impact has to be assessed separately. Subsequently, the results of these separate calculations have to be aggregated. The technical specifications only prescribed how the post-stress EAL should be aggregated using a correlation matrix.

122. In the QA IORPs could calculate the standardised risk assessments using two approaches:

- If the shock-absorbency applied to the IORP as a whole or if IORPs applied the balancing item approach to the valuation of sponsor support then IORPs only had to assess the impacts of each of the risk factors on the balance sheet without taking into account the shock-absorbency of security and benefit adjustment mechanisms. The reporting template aggregated the impacts on the EAL (excl. shock absorbency) using the correlation matrix. Subsequently, IORPs had to report to what extent the impact on the EAL (excl. shock-absorbency) could be

- absorbed by the various security and benefit adjustment and to what extent there would be an impact on the EAL (incl. shock-absorbency);
- If the shock-absorbency did not apply to the IORP as a whole and if IORPs did not apply the balancing item approach to the valuation of sponsor support then IORPs had to assess the impacts of each of the risk factors on the balance sheet with and without taking into account the shock-absorbency of security and benefit reduction mechanisms. The reporting template aggregated the impacts on the EAL (excl. shock-absorbency) as well as on the EAL (incl. shock-absorbency). In consequence, no aggregate outcomes were calculated about the extent to which the impact on the EAL (excl. shock-absorbency) could be absorbed by each of the individual security and benefit adjustment mechanisms. Still, many of the IORPs that used this approach also reported the allocation of the overall shock-absorbency to each of the individual security and benefit adjustment mechanisms.
123. This shows that IORPs were able to allocate the overall-shock absorbency to the various security and benefit adjustment mechanisms, even though the technical specifications did not contain specific guidance how to do so. Still, in EIOPA's view it might be useful to further analyse whether specifications should be developed to aggregate the shock-absorbency of security and benefit adjustment mechanisms in order to assist IORPs and ensure consistency under a concise presentation of outcomes.
124. The comprehensive presentation of outcomes, i.e. by means of an overall stressed balance sheet, has not been implemented in the QA. In consequence, further analysis would be needed to develop specifications to aggregate stressed balance sheets at the level of individual risk factors, if this were the preferred way to present the results of the standardised risk assessment.

9. Standardised risk assessment: Duration-based equity risk sub-module

125. The duration-based equity risk sub-module refers to a provision of the Solvency II Directive (Article 304) allowing life insurance undertakings making use of Article 4 of Directive 2003/41/EU to apply, for the purpose of the Solvency Capital Requirement, an equity charge of 22% instead of the normal 39% or 49% charges. This lower shock can only be applied if several criteria are met and is subject to approval by the NSA. In particular the average duration of the liabilities corresponding to the business must exceed an average of 12 years.
126. In the qualitative questionnaire of the QA, IORPs were asked to evaluate the effect on the SCR of applying this duration-based equity sub-module instead of the normal shocks. On average, the use of the duration-based equity sub-module reduces the SCR by percentages ranging from 1% (DE) to 28% (BE) in the baseline scenario 1, and from 2% (DE) to 29% (NL) in the baseline scenario 2 (see table 9.1). At European level, the overall effect of the use of the duration-based equity sub-module is a decrease by 13% in baseline scenario 1 and by 14% in baseline scenario 2.
127. The significant differences between the different member states are mainly explained by the relative shares of the equity risk sub-module in the Basic SCRs (from 10% in DE to 69% in BE in the baseline scenario 1, and from 13% in DE to 71% in NL and BE in the baseline scenario 2). The results also depend on the representativeness of the IORPs which made the evaluation among IORPs which participated to the QA.

Table 9.1: Effect of applying duration-based equity sub-module and share of equity risk submodule in Basic SCR, baseline scenario 1 and 2

	ALL	BE	DE	NL	PT	UK
Number of IORPs responding (in % of IORPs)	37%	83%	74%	100%	100%	3%
Baseline scenario 1						
Average effect of the equity-risk submodule (in % of the gross SCR)	-13%	-28%	-1%	-27%	-13%	-14%
Equity risk submodule (in % of the Basic SCR)	43%	69%	10%	64%	29%	33%
Baseline scenario 2						
Average effect of the equity-risk submodule (in % of the gross SCR)	-14%	-28%	-2%	-29%	-15%	-19%
Equity risk submodule (in % of the Basic SCR)	57%	71%	13%	71%	34%	50%

128. In the context of a pillar 1 framework (regarding funding and capital requirements), the use of the duration-based equity risk sub-module for IORPs could have been a way to ensure a level-playing field with life insurance undertakings making use of Article 4 of Directive 2003/41/EU subject to the Solvency II directive which may be allowed to apply this lower shock.

129. However, since EIOPA proposes a common framework for risk assessment and transparency (and not for pillar 1 purposes), and since no solvency capital requirement is calculated in this respect, EIOPA is of the opinion that the duration-based equity risk sub-module should not apply.

10. Adjustments to the risk free rate

130. The common framework is based on market-consistent valuation. This includes using a risk free discount rate curve for discounting technical provisions. In line with the supervisory framework for insurance undertakings (Solvency II), an ultimate forward rate is included in the risk free discount rate used in the common framework.

131. In Solvency II, adjustments to the risk free rate are possible: the matching adjustment and the volatility adjustment¹⁷.

132. These adjustments have been introduced in Solvency II to take into account long term guarantees provided by insurance undertakings and to reduce volatility of technical provisions and/or own funds of insurance undertakings¹⁸.

133. In Solvency II, application of the matching adjustment needs prior approval by the NSA in all cases. With regard to the application of the volatility adjustment, member states may require prior approval by NSAs. The need for prior approval

¹⁷ For more information about those adjustments see Directive 2009/138/EU.

¹⁸ See recitals 30, 31 of Directive 2014/51/EU.

shows that these adjustments are not automatically part of the regulatory framework in Solvency II.

134. Solvency II requires insurance undertakings applying matching and/or volatility adjustment to report the effects of those adjustments compared to using the risk free rate without adjustments. This clearly shows that the results without adjustments are considered important information also in Solvency II.
135. Volatility of technical provisions and/or own funds can be a material problem in a framework used for determining solvency capital requirements, in particular when the prudential regime provides for significant consequences that come into force more or less automatically when solvency or minimum capital requirements are not met.
136. For the common framework proposed for IORPs, volatility is much less of a problem. If adjustments to the risk free rate are not used in the common framework, the volatility of financial markets will be directly visible in the results provided by the common framework. But since the common framework does not define capital requirements, there is significant freedom for IORPs and NSAs to deal with the results of the common framework, and to apply judgement (which may include reasoning also used in defining the adjustments to the risk free rate in Solvency II), also taking into account the results of other risk management tools used.
137. EIOPA therefore considers that the matching adjustment and volatility adjustment are not necessary in the common framework, and should therefore not be included in it. Not including volatility and matching adjustment in the common framework would in addition reduce the burden on IORPs, since they would have to do the calculations with and without adjustments in the case of inclusion of those adjustments in the framework (in analogy to Solvency II).

11. Risk margin

138. Pension obligations can often not be replicated using financial instruments for which a market value is observable. Therefore, in order to obtain a market-consistent value of technical provisions, a risk margin should be added to the best estimate of technical provisions to ensure that the value of technical provisions is equal to the amount that a third party would be expected to require to take over and meet pension obligations.
139. According to the cost-of-capital approach, the risk margin should be calculated by determining the cost of providing an amount of eligible own funds equal to the solvency capital requirement necessary to support pension obligations over the lifetime thereof.
140. The proposal presented in this opinion does not foresee the calculation of a solvency capital requirement and therefore IORPs are not required to raise eligible own funds equal to a solvency capital requirement necessary to support the pension obligations. Still, there are risks that are associated to the pension obligations and unless there are mechanisms in place to fully absorb those risks, one can consider that a third party would be expected to require a margin to assume those risks.
141. The calculation of the risk margin could be done in a similar way as to the cost-of-capital approach by considering a "notional" solvency capital requirement, which is a measure of risk estimated as part of the standardised risk assessment.
142. This calculation should be based on a set of theoretical assumptions, including (non-exhaustive list) that the whole portfolio of pension obligations of the IORP

that calculated the risk margin (the original IORP) is taken over by a third party, and the transfer of pension obligations includes any security and benefit adjustment mechanisms, which means that if those mechanisms contain full loss absorbing capacity, allowing the reduction of the net "notional" solvency capital requirement to zero, then the risk margin will also be zero.

143. Practical consequences of this approach include:

- IORPs in a deficit situation in terms of unstressed (financial) assets over liabilities will often have a risk margin of zero, because the notional SCR will be fully absorbed by security and benefit adjustment mechanisms (ultimately reduction of benefits will have to be recognised).
- IORPs that have enough financial assets to cover liabilities both in an unstressed and stressed balance sheet will have a positive risk margin.
- There are also cases "in between" where the notional SCR will be partly covered by financial assets and partly absorbed by security and benefit adjustment mechanisms. Because the notional SCR will not be zero in such cases, these IORPs will have a positive risk margin.

12. Method to derive (examples of) supervisory frameworks from the "complete" balance sheet

144. In the 'Consultation Paper on Further Work on Solvency of IORPs', EIOPA included 6 examples of supervisory frameworks. As part of its objective, the QA aimed¹⁹ to 'provide quantitative information about the six examples of supervisory frameworks'.

145. For reasons of practicality and limiting the number of calculations, EIOPA requested²⁰ participating IORPs to calculate two baseline scenarios only, one using the risk free discount rate to value liabilities ('Level A') and one using the expected return on assets to value liabilities ('Level B'). The two baseline scenarios would contain the 'complete balance sheet'. "Complete" here refers to the fact that they include all security and benefit adjustment mechanisms. The examples of supervisory frameworks would then be derived from these two baseline scenarios by excluding the relevant security and benefit adjustment mechanisms²¹. In other words, where an example of a supervisory framework would not contain a specific element of the complete balance sheet, the value of that element would be set to zero for the purpose of that specific example.

146. This 'baseline approach' only applied to the first five examples of supervisory frameworks which introduce harmonised capital and funding requirements, using balance sheets that exclude specific security and benefit adjustment mechanisms. Example 6 introduces a common framework for risk assessment and transparency which is based on a market-consistent balance sheet, including all security and benefit adjustment mechanisms. Therefore, the balance sheet in example 6 was assumed to be identical to the balance sheet in baseline scenario 1.

¹⁹ See paragraph I.3.2 of EIOPA, Technical Specifications Quantitative Assessment of Further Work on Solvency of IORPs, EIOPA-BoS-15/070v2, 11 May 2015.

²⁰ See paragraphs I.6.9 – I.6.11 of EIOPA, Technical Specifications Quantitative Assessment of Further Work on Solvency of IORPs, EIOPA-BoS-15/070v2, 11 May 2015.

²¹ See paragraph I.6.19 of EIOPA, Technical Specifications Quantitative Assessment of Further Work on Solvency of IORPs, EIOPA-BoS-15/070v2, 11 May 2015.

147. Participating IORPs were invited²² to perform separate calculations of the five examples of supervisory frameworks that do not contain all security and benefit adjustment mechanisms, if they considered that a separate calculation would be more suitable. Underlying reason for this was that excluding particular security or benefit adjustment mechanisms might affect the values of other items on the balance sheet.

148. Reasons for this may include²³:

- The supervisory frameworks in the examples may have different funding targets and/or recovery periods. Hence, the distribution of cash-flows relating to security and benefit adjustment mechanisms over time would also differ between examples;
- There may be interdependencies of items on the asset and liabilities side of the common framework's balance sheet;
- The granting of certain types of benefits (e.g. pure conditional or mixed benefits) may depend on information provided by the balance sheet (e.g. a "funding ratio");
- Exclusion of certain items may lead to a different SCR which does have an impact on the risk margin.

149. A number of IORPs performed separate calculations. The outcomes of the separate calculations show different values for elements of the balance sheet for each example as compared to values that were derived using the baseline approach, confirming that the baseline approach should be considered an approximation.

12.1. IORPs performing separate calculations

150. The qualitative questionnaire to the QA included a specific question whether participating IORPs thought separate calculations would lead to different results compared to the balance sheets derived for the examples. A large majority of more than 84% of all participating IORPs (96% responded to this question, with positive answers from 88% of those) agreed that different results would be found.

151. Reasons mentioned by IORPs through the qualitative questionnaire were:

- Examples of supervisory frameworks (particularly example 1) will necessitate an adjustment of pension schemes provided by IORPs. As a result, it is not appropriate to extrapolate the values calculated for the baseline scenarios, which had to be consistent with national IORP systems and national prudential regulation, to the examples of supervisory frameworks;
- The examples of supervisory frameworks often do not recognise specific security mechanism, types of benefits and benefit reduction mechanisms on the balance sheet. This means that the importance, and hence the value, of other security and benefit adjustment mechanisms will change.
- All security and benefit adjustment mechanisms (incl. benefit reduction mechanisms) are included in the baseline scenario, which means that the SCR and subsequently the risk margin is zero. However, the examples of supervisory frameworks do often not include all security and benefit adjustments which means that the risk margin is likely not to be zero.

²² See paragraph I.6.22 of EIOPA, Technical Specifications Quantitative Assessment of Further Work on Solvency of IORPs, EIOPA-BoS-15/070v2, 11 May 2015.

²³ See paragraph I.6.20 of EIOPA, Technical Specifications Quantitative Assessment of Further Work on Solvency of IORPs, EIOPA-BoS-15/070v2, 11 May 2015.

152. Only a limited number of IORPs, from BE, DE, NL and PT, actually performed separate calculations for specific examples of a supervisory framework (see figure 12.1 and figure 12.2):

Figure 12.1: IORPs performing own calculations or using automatically derived values for examples of supervisory frameworks

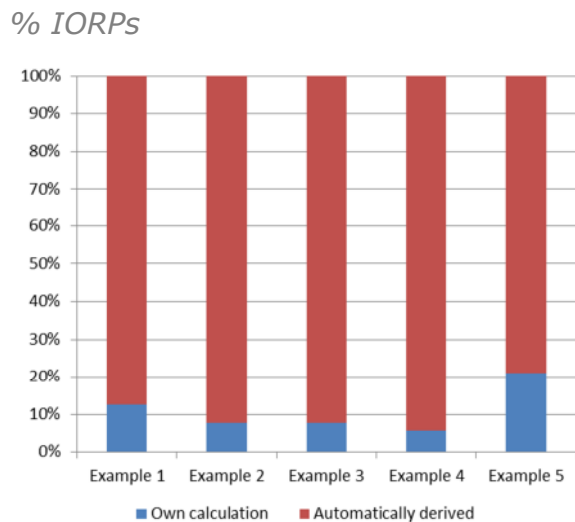
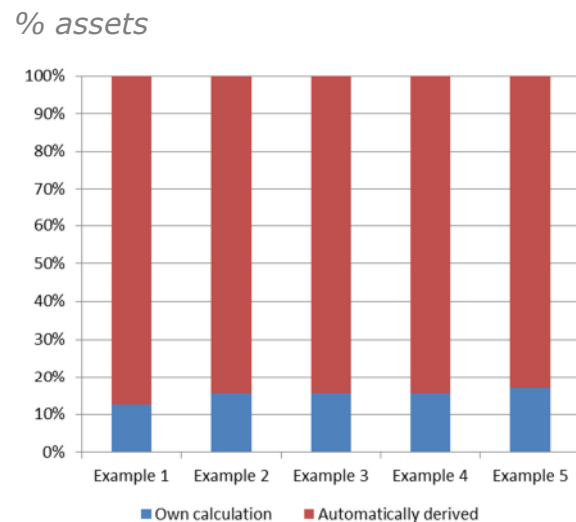


Figure 12.2: IORPs performing own calculations or using automatically derived values for examples of supervisory frameworks



Source: EIOPA

153. The IORPs that did not perform separate calculations even though they thought different results would be found in such separate calculations, were asked what the reason for that decision was. 13% of these IORPs indicated that they did not have the resources or the capacity to perform the separate calculations.

12.2. Results of the separate calculations

154. This section explains the outcomes of the separate calculations performed for the five examples of supervisory frameworks, and compares these outcomes to the baseline approach in which values were automatically derived. Given that only a limited number of IORPs performed separate calculations, the analysis of the examples is made on an individual basis, to allow for proper comparison.

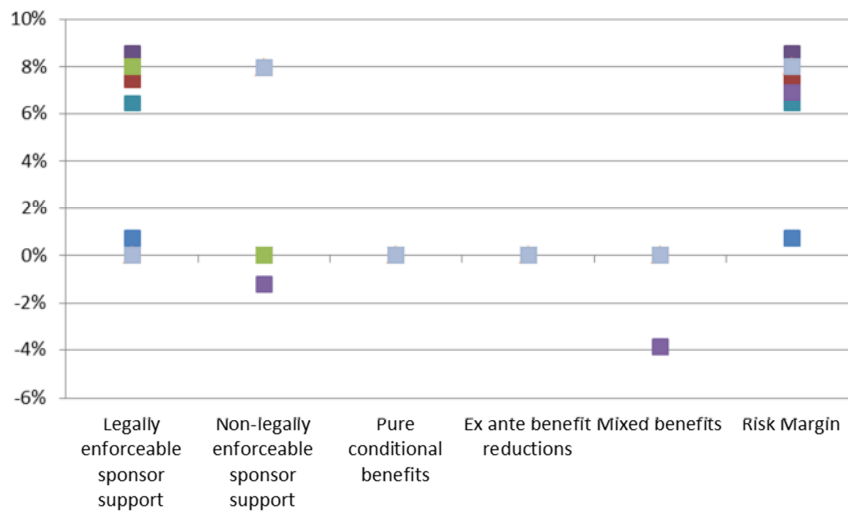
Example 1 of supervisory framework

155. Separate calculations for example 1 of supervisory framework were conducted by 19 IORPs from BE, NL and PT. Example 1 excludes pension protection schemes, pure discretionary benefits, ex post benefit reductions and benefit reductions in case of sponsor default, as compared to baseline scenario 1. Moreover, IORPs would be granted a short recovery period (less than 1 year), in the event of non-compliance with the capital requirement or funding requirement.

156. All IORPs that performed separate calculations included a non-zero value for the risk margin, in nearly all cases compensating the higher value of technical provisions with a higher value of sponsor support (see figure 12.3). One IORP, which was not allowed to recognise ex post benefit reductions in this example, reported a decline in the value of mixed benefit in combination with a fall in the value of non-legally enforceable sponsor support.

Figure 12.3: Absolute differences between derived and calculated values for individual IORPs, example 1

% total derived liabilities



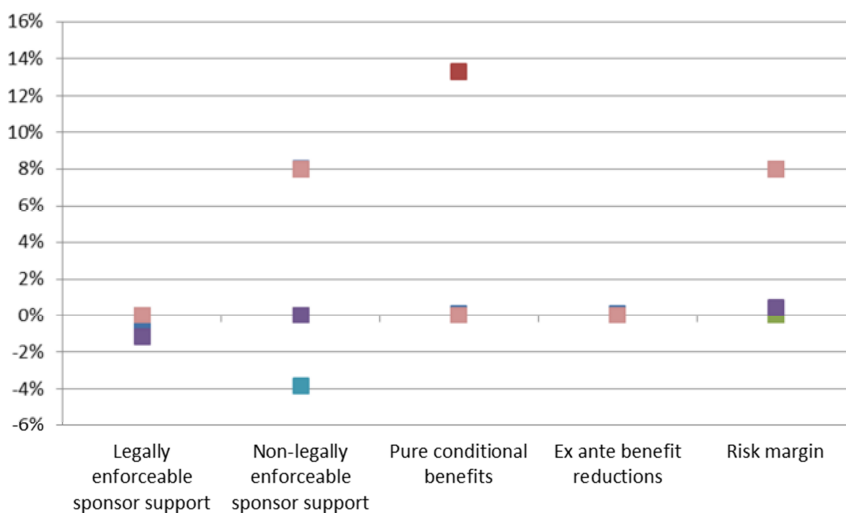
Source: EIOPA

Example 2 of supervisory framework

157. Separate calculations for example 2 of supervisory framework were conducted by 8 IORPs from DE, NL and PT, of which 1 IORP did not make any changes to the balance sheet items. Example 2 excludes pension protection schemes, pure discretionary benefits, mixed benefits, ex post benefit reductions and benefit reductions in case of sponsor default, as compared to baseline scenario 2.

Figure 12.4: Absolute differences between derived and calculated values for individual IORPs, example 2

% total derived liabilities



Source: EIOPA

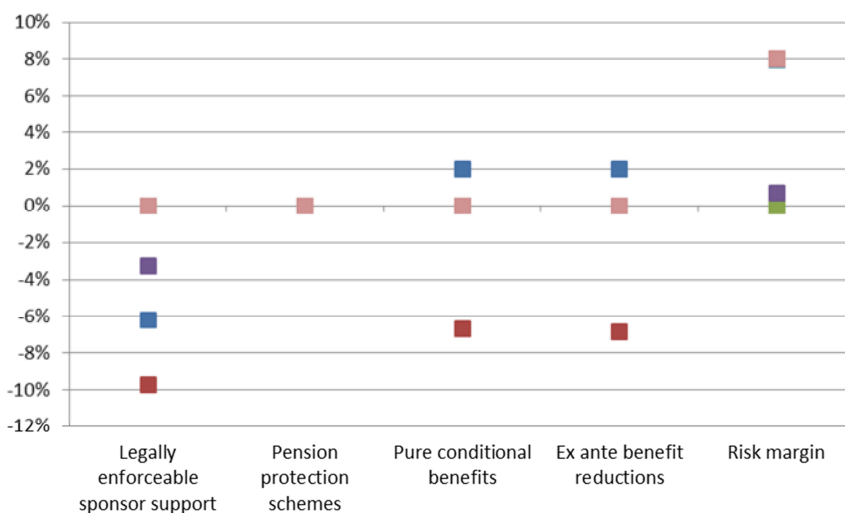
158. DE IORPs decreased the value of sponsor support, increased the value of pure conditional benefits and/or reduced the value of ex ante benefit reductions (see figure 12.4). These IORPs considered that the absence of mixed benefits would require less sponsor support and would allow for higher other benefits. The NL IORP reported an increase in the risk margin, as ex post benefit reductions cannot provide full loss-absorbency in the SCR, together with a decrease in the value of non-legally enforceable sponsor support. IORPs in PT also recognised a non-zero risk margin, but this was compensated by a higher value of non-legally enforceable sponsor support.
159. IORPs from NL and PT used the same simplified value for the risk margin of 8% of the best estimate of technical provisions. As a result, the change in the risk margin in NL and PT and non-legal enforceable sponsor support in PT is not distinguishable in figure 12.4 for the individual IORPs in these countries.

Example 3 of supervisory framework

160. Separate calculations for example 3 of supervisory framework were conducted by 8 IORPs from DE, NL and PT, of which 1 IORP did not make any changes to the balance sheet items. Example 3 excludes non-legally enforceable sponsor support, pure discretionary benefits, mixed benefit, ex post benefit reductions and benefit reductions in case of sponsor default, as compared to baseline scenario 1.
161. DE IORPs decreased the value of sponsor support, increased the value of pure conditional benefits and/or reduced the value of ex ante benefit reductions (see figure 12.5). These IORPs considered that the absence of mixed benefits would require less sponsor support and would allow for higher other benefits. One IORP reported a considerable increase in ex ante benefit reductions, i.e. a decrease in its negative value. As ex ante benefit reduction are part of pure conditional benefits, these declined by a similar amount.
162. IORPs in NL and PT recognised a non-zero risk margin of 8% of liabilities. These IORPs all dispose of non-legally enforceable sponsor support, but in example 3 this type of sponsor support is not shown on the balance sheet.

Figure 12.5: Absolute differences between derived and calculated values for individual IORPs, example 3

% total derived liabilities



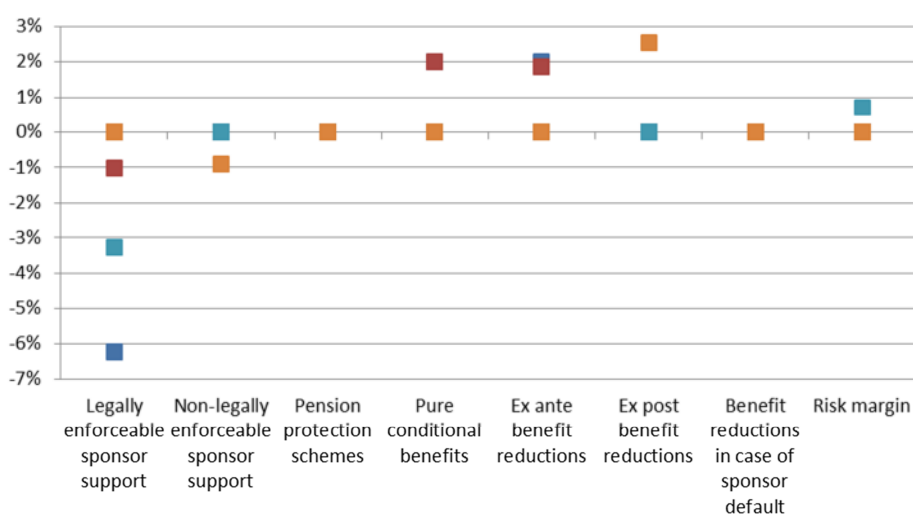
Source: EIOPA

Example 4 of supervisory framework

163. Six IORPs from DE and NL made separate calculations for example 4, of which two did not report any changes to the balance sheet items. Example 4 only excludes pure discretionary benefits and mixed benefits, compared to baseline scenario 1.
164. The four IORPs all dispose of mixed benefits, but not of pure discretionary benefits. The exclusion of mixed benefits led these IORPs to report lower values of legally and non-legally enforceable sponsor support, higher pure conditional benefits and/or lower ex ante and ex post benefit reductions, i.e. a less negative value (see figure 12.6).

Figure 12.6: Absolute differences between derived and calculated values for individual IORPs, example 4

% total derived liabilities



Source: EIOPA

165. DE IORPs did not report any non-legally enforceable sponsor support in the complete balance sheet. In addition, DE IORPs that performed the separate calculations for example 4 did not report a changed value for ex-post benefit reductions. Calculated values for these IORPs differed from derived values for legally enforceable sponsor support, pure conditional benefits and ex-ante benefit reductions (which are directly connected) and the risk margin. The results thus show a connection between mixed benefits, legally enforceable sponsor support and conditional benefits (including ex ante benefit reductions) for those DE IORPs that performed the separate calculations. If these DE IORPs would not (have to) grant mixed benefits, they would therefore need less support from their sponsors and would have less need to reduce their conditional benefits.
166. The NL IORP did not report any pure conditional benefits or ex ante benefit reductions in the complete balance sheet. Calculated values for the NL IORP that performed the separate calculations did differ from derived values for non-legally enforceable sponsor support and ex post benefit reductions. The results show a connection between mixed benefits, sponsor support and ex post benefit reductions for the NL IORP that performed the separate calculations. If the NL IORP would not (have to) grant mixed benefits, it would therefore need less

support from its sponsor and would have less need to reduce unconditional benefits.

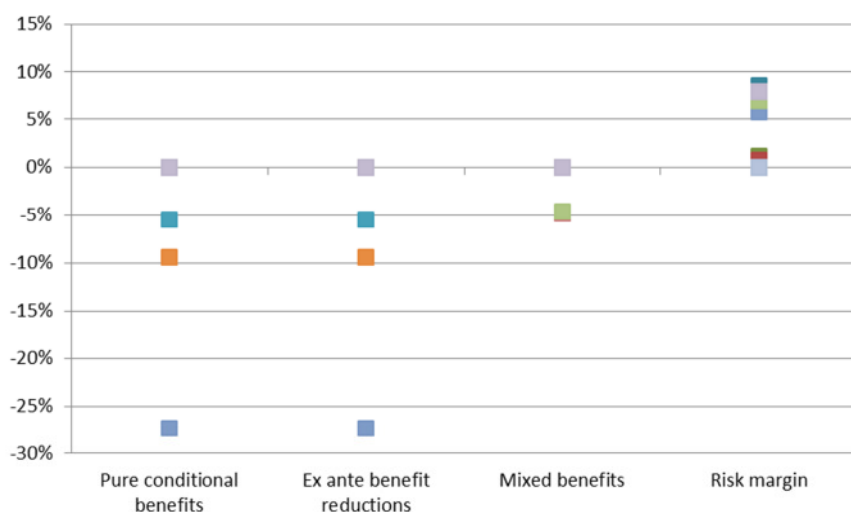
167. Both the explanations for the DE and NL IORPs that performed the separate calculations provide intuitive relationships, as not granting mixed benefits would mean the IORP retains more funding power, which could then be used to deal with future underfunding scenarios. However, as the number of IORPs that performed the separate calculations for example 4 is limited, it is not possible to draw definite conclusions for all IORPs.
168. The conclusion that can be drawn from the analysis is that excluding security and/or benefit adjustment mechanisms from the balance sheet can change the value of other elements, dependent on the correlation between them. However, as the common framework's balance sheet contains all security and benefit adjustment mechanisms, this conclusion does not change EIOPA's proposal.

Example 5 of supervisory framework

169. Separate calculations for example 5 of supervisory framework were conducted by 22 IORPs from BE, DE, NL and PT, of which 4 IORPs did not make any changes to the balance sheet items. Example 5 intends to harmonise the valuation of technical provisions at the EU level. As such, the balance sheet excludes sponsor support, pension protection schemes, pure discretionary benefits, ex post benefit reductions and benefit reductions in case of sponsor default, as compared to baseline scenario 1.

Figure 12.7: Absolute differences between derived and calculated values for individual IORPs, example 5

% total derived liabilities



Source: EIOPA

170. All IORPs from BE, NL and PT and only one IORP from DE included a positive value for the risk margin (see figure 12.7). DE IORPs reported a lower value for pure conditional benefits (due to higher ex ante benefit reductions) or mixed benefits, because sponsor support is not recognised on the balance sheet in example 5. The NL IORP recognised a decrease in the value of mixed benefits.
171. The PT IORPs, including those that did not make any changes to the balance sheet items, also set the regulatory own funds requirement to zero. The

reporting spreadsheet contained a default value for the regulatory own funds requirement of 5% of technical provisions, in line with Art. 17(1) IORP Directive. IORPs in PT considered that the regulatory own funds requirement does not apply to them, since risks are borne by the sponsoring undertaking, instead of the institution itself. IORPs in BE should also have considered to set own funds requirement to zero, since risks are borne by the sponsoring undertaking; but they did not do so. The NL IORP replaced the regulatory own funds requirement with the national, risk-based buffer requirement.

13. Proportionality and simplifications

172. The technical specifications for the QA contained a specific section on proportionality and simplifications (Section I.8) which explained the proportionality principle ("proportionate to the nature, scale and complexity of the underlying risk"), referring also to the concepts of relevance and materiality, and which provided a two-step approach to determine the proportionality of a simplification: (1) the assessment of the nature, scale and complexity of underlying risks; and (2) the reasonable assurance that model-error is not material.
173. These steps remain a good approach to determining the proportionality of a simplification. However, the reference to the possibility for a lower degree of accuracy than financial and supervisory reporting was only acceptable for the purpose of the QA. When applying the common framework in supervisory practice, data should be as accurate as for other financial and supervisory reporting. Also, the first step should include an assessment of the proportionality with regard to the nature, scale and complexity of the activities, not only of the underlying risks.
174. Due to the limited time for completing the QA and the possible limited availability of certain data or modelling infrastructure, material model-error was allowed for the QA since IORPs were requested to perform the calculations on a best effort basis. This implies that certain methods and simplifications may have been applied which may not be appropriate in applying the common framework in supervisory practice.
175. The technical specifications of the QA included a list of possible simplifications throughout the text and in Annex 4, leaving the possibility for IORPs, on a case by case basis or on a national level (guided by their NSA), to apply further (or fewer) simplifications.
176. This opinion proposes to use the common framework as a risk assessment and transparency tool. In that context the use of simplifications included in the technical specifications of the QA may be appropriate as long as the proportionality principle is respected.
177. The following list provides an overview of the simplifications that were included in the technical specifications of the QA²⁴:
- Best estimate of technical provisions:
 - Biometric risk factors (Annex 4)
 - Financial options and guarantees (HBS.5.64 and Annex 4)
 - Investment guarantees (Annex 4)

²⁴ The text in parentheses refers to the source in EIOPA, Technical Specifications Quantitative Assessment of Further Work on Solvency of IORPs, EIOPA-BoS-15/070v2, 11 May 2015.

- Other options and guarantees (Annex 4)
- Pure conditional, pure discretionary and mixed benefits (Annex 4, HBS.5.7, HBS.5.38 and HBS.5.42)
- Expenses and other charges (Annex 4 and HBS.5.12)
- Cash-flows and term structure (Annex 4 and HBS.4.9)
- Timing of cash-flows (Annex 4)
- Grouping of obligations (HBS.5.3, SCR.7.15, Annex 6)
- Discretionary benefits (HBS.5.42)
- Management actions (HBS.4.27)
- Valuation of assets and liabilities (HBS.11.2)
- Security and benefit adjustment mechanisms (HBS.5.10 and HBS.5.38)
 - Sponsor support (HBS.7.60 - HBS.7.100)
 - Pension protection schemes (HBS.8.12 - HBS.8.18)
 - Reduction of benefits (HBS.5.55)
- Recoverables from (re)insurance contracts (Annex 4)
- Risk margin (HBS.6.9 – 6.13)
- Standardised risk assessment:
 - interest rate risk (SCR.5.44)
 - spread risk on bonds (SCR.5.115-5.116)
 - currency risk (SCR.5.83-5.84)
 - counterparty default risk (SCR.6.60)
 - longevity risk (SCR.7.21-7.22)
 - mortality risk (Annex 6)
 - disability-morbidity risk (Annex 6)
 - benefit option risk (Annex 6)
 - expense risk (Annex 6)
 - catastrophe risk (Annex 6)
 - excluding risk modules if negligible

178. EIOPA proposed the following supplementary simplifications as part of its Opinion:

- Mixed benefits do not have to be distinguished as a separate category of benefits;
- Surplus funds do not have to be identified in the common framework;
- The values of security and benefit reduction mechanisms do not have to be calculated if IORPs have sufficient financial assets to cover liabilities on the (stressed) balance sheet.

179. In addition, the assessment of methods and outputs by IORPs participating in the QA (see Section 7 of Annex 2) showed that some IORPs found the technical specifications complex and burdensome, pointing to the need to consider whether further simplifications could be appropriate. In particular, further simplification of the standardised risk assessment should be considered.

Annex A: List of country abbreviations

AT	Austria
BE	Belgium
BG	Bulgaria
CY	Cyprus
CZ	Czech Republic
DE	Germany
DK	Denmark
EE	Estonia
ES	Spain
FI	Finland
FR	France
GR	Greece
HR	Croatia
HU	Hungary
IE	Ireland
IS	Iceland
IT	Italy
LI	Liechtenstein
LT	Lithuania
LU	Luxembourg
LV	Latvia
MT	Malta
NL	Netherlands
NO	Norway
PL	Poland
PT	Portugal
RO	Romania
SE	Sweden
SI	Slovenia
SK	Slovakia
UK	United Kingdom

Annex B: List of other abbreviations used

BIA	Balancing item approach
EAL	Excess of assets over liabilities
EIOPA	European Insurance and Occupational Pensions Authority
EU	European Union
FN (in SE-FN)	Pension foundations (in Sweden)
HBS	Holistic balance sheet
IORP	Institution for Occupational Retirement Provision
NSA	National supervisory authority
PF (in SE-PF)	Pension funds (in Sweden)
QA	Quantitative assessment
QIS	Quantitative impact study
SCR	Solvency capital requirement