EIOPA IORPs Stress Test

Questions & Answers as of 5th July 2017

Question ID	Publication date	Related ST or QA document/ topic	No. Paragraph	Question	Answer
1	07/06/2016	Specifications	3.27 and 3.29	Which shocks should be applied to bonds issued by REITs that are collateralized by real estate assets? Should we apply the same shock as to the equity portion of the REIT? This does not seem logical in countries where REITs are heavily regulated by NSAs.	IORPs should treat these bonds as collateralized bonds and apply the stress for corporate bonds (financials, covered) as described in paragraph 3.27 of the ST specifications. The REIT shocks described in paragraph 3.29 of the ST specifications apply to the equity portion of REITs only.
2	07/06/2016	Specifications	3.29	What shocks should be applied to bonds issued by real estate companies that do not operate as REITs? Should we apply REIT, coprorate bond shocks or property stresses to these companies ?	Corporate bond shocks as described in paragraph 3.27 of the ST specifications apply in this case.
3	07/06/2016	Specifications	3.29	What shocks should be applied to loan and bond investments in retirement homes ?	Corporate bond shocks as described in paragraph 3.27 of the ST specifications apply in this case.
4	07/06/2016	DB QQ	46	Which assets does this question refer to, bonds only?	Whereas the DB Reporting template asks for the duration of fixed income investments only (sheet "Baseline &Adverse Scenario"), question 46 of the DB QQ refers to the duration of the investment portfolio as a whole. Question 46 aims to get information on the development of the interest rate sensitivity of overall assets. In determining the duration of overall assets IORPs should 1) include the effect of interest rate derivatives on the duration, and 2) assume that the duration of non-fixed income assets, such as equities, equals zero. For example, in case of an investment portfolio consisting of 50% bonds with a duration of 10 years and 50% equities, the duration of the IORP's (overall) assets equals 5 years.
5	07/06/2016	ST Specifications	Annex 3 (Look - through approach)	Regarding the necessity of the application of the look through approach methodology, in the following specific cases: - 2 specific positions in M/Fs fixed income where the % allocation of asset class is <90%, i.e 86% and 88%. The total percentage of these 2 positions equals 0,33% of IORP's total portfolio. - 4 specific positions in Money Market funds, where the % allocation of asset class is as well below 90%, but the funds' duration is small (i.e. equal to 0,15), so as the potential impact due to the adverse scenario should be negligible. The total percentage of these 4 positions, equals 6,02%. We would appreciate your input, in taking into consideration the financial burden to the IORPs created by the application of the look through approach.	As a general principle, IORPs may use simplifications if the use of such simplifications does not have material consequences for the outcomes (see par 4.22 of the ST specifications). As a possible simplification for the look-through approach, if over 90% of a collective investment fund or other indirect exposure is invested in one of the asset classes distinguished in the exercise then IORPs may assume that the collective investment fund or other indirect exposure is fully invested in that asset class (see Annex 3). However, IORPs may use their own simplifications if the use of such simplifications does not have a material impact on the outcomes. For example, with respect to the specific case described in the question, IORPs can assign 86% and 88% to the specific asset class distinguished in exercise. The remaining 14% and 12% can be categorised as 'residual investments funds' and subjected to the EU listed equity stress (see Q&A question 11).
6	07/06/2016	ST Specifications	Annex 3 (Look - through approach)	Regarding the necessity of the application of the look through approach methodology, in the following specific cases: - 1 specific position in M/F fixed income where the % allocation of asset class is <90%, i.e 86%. The percentage of this position equals 0,24% of IORP's total portfolio. -3 specific positions in Money Market funds, where the % allocation of asset class is as well below 90%, but the funds' duration is small (i.e. equal to 0,15), so as the potential impact due to the adverse scenario should be negligible. The total percentage of these 3 positions, equals 2,82%. We would appreciate your input, in taking into consideration the financial burden to the IORPs created by the application of the look through approach.	As a general principle, IORPs may use simplifications if the use of such simplifications does not have material consequences for the outcomes (see par 4.22 of the ST specifications). As a possible simplification for the look-through approach, if over 90% of a collective investment fund or other indirect exposure is invested in one of the asset classes distinguished in the exercise then IORPs may assume that the collective investment fund or other indirect exposure is fully invested in that asset class (see Annex 3). However, IORPs may use their own simplifications if the use of such simplifications does not have a material impact on the outcomes. For example, with respect to the specific case described in the question, IORPs can assign 86% to the specific asset class distinguished in exercise. The remaining 14% can be categorised as 'residual investments funds' and subjected to the EU listed equity stress (see Q&A question 11).
7	07/06/2016	ST Specifications	Par.4.61 (page 35)	In the document it is refered that the career growth profiles are provided by the tool, but these can be overridden by the IORP. In which sheet of the relevant file someone could override the salaries by age, so that they can be taken into account when running the application?	The future career salary growth is defined for each member in the columns L and M on their respective worksheets under the heading Career salary growth (from row 44 onwards). The default values are dependent of the Country of authorisation from worksheet "2. Participating IORP" and are based on (full time) earnings by age group in 2010 as published by Eurostat. Once the Country of authorisation has been set the default career salary growth is given in column L. One may overwrite these values by entering alternative values in column M. The combination of Current salary (to be entered in cell J19 for each respective member), a default projected annual real wage growth of 1% and the (eventually overwritten) career salary growth values will result in the projected real salary by age as shown in column H of each respective member worksheet. If one wants to replicate a predefined path of projected real salaries by age one has to invert this process (by a separate calculation outside the tool) by starting with the predefined salary at retirement, correct for the default projected annual real wage growth of 1% (i.e. divide by 1.01) and consecutively divide by the predefined projected real salary for the age one year before retirement to arrive at the alternative career salary growth rate for the last year before retirement. By recursively working backwards this way one will arrive at the alternative values for the career salary growth for each age to be entered in column M as well as the Current salary to be entered in cell J19.
8	07/06/2016	DC Input Template	3.1. Product specifications	In the electronic file "EIOPA DC ST2017 Input Template (20170518)", sheet 3.1, there are the following options regarding the pay-out product: nominal annuity, inflation-linked annuity, programmed drawdown. Please could you give us the list of parameters (i.e. longevity, interest rate) and the relevant values which are taken into account in the xlsb tool calculations?	[illegible] Longevity: "Age specific mortality rates by sex " as published by Eurostat for each respective country (http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=proj_15naasmr&lang=en). These mortality rates are projected cohort mortality rates (i.e.future calender year & age depended) taking account of a country specific longevity trend. Calculations have been based on unisex mortality rates where account is taken of 50% female mortality and 50% male mortality. Projected future interest and inflation rates for both scenarios (i.e. baseline and adverse) are derived from their respective term structures at start of the projection, i.e. end 2016 term structures. These term structures have been made available by a Supporting Excel spreadsheet named "EIOPA Yield Curves" at: https://eiopa.europa.eu/Pages/Financial-stability-and-crisis-prevention/Occupational-Pensions-Stress-Test-2017-.aspx. Projected future term structures have been derived from the applicable term structures at start of the projection using the constant 1-year forward rate assumption. From the spot rate term structures at start of the projection all future 1-year forward rates are derived. These 1-year forward rates are assumed to be constant in time, i.e. for each next future projection year the first 1-year forward rate for the last year rolls off the curve, while the remaining 1-year forward rates remain unchanged. Based on this assumption the spot rate term structures for each future projection year can be directly derived from the remaining 1-year forward rates by inverting the calculation process used to derive the original 1-year forward rates at start. The actuarial methodology used to derive life expectancies and annuities are based on generally accepted actuarial principles. Life expectancies have been calculated as complete cohort life expectancies, i.e. the expected future cohort life time at time t for age x denoted by $\bar{e}_x(t)$ Where: $\bar{e}_x(t)= (1/2)+ \Sigma^{\infty}_{k=0} \Pi^{k}_{s=0}(1-q_{x+s}(t+s))$ Nominal and real annuities have been calculated in a similar way as the expected future cohort life time taking account of nominal interest rates for discounting and break even inflation rates for accumulating annual nominal pay-outs, generally denoted by $\bar{a}_x(t)$. Where: $\bar{a}_x(t)=(1/2)+\sum^{\infty}_{k=0}(1+i_{t,k+1}/1+r_{t,k+1})^{k+1} \Pi^{k}_{s=0}(1-q_{x+s}(t+s))$ And: $i_{t,k+1}$: the (projected) break-even inflation rate at time t for year $k+1$, $r_{t,k+1}$: the (projected) nominal sport rate at time t for year k+1 Note: when calculating nominal annuities the break-even inflation rates are set to zero. Programmed drawdowns have been calculated in a similar way as annuities, however no account is taken of mortality and inflation, while discounting is based on the nominal interest rate increased by an assumed equity exposure of 25% after retirement times the equity risk premium.
9	07/06/2016	ST Specifications	Par.4.51 (page 31)	In the document" IORP Stress Test 2017 Specifications".par. 4.51 refers that "...the analysis will focus on showing two approaches which enable a consistent comparison to be made : Lump sum and flat real annuity".Is this flat real annuity identical with the above three cases of annuities? If not, please could you give us the same information as asked above, regarding this annuity?	The "flat" real annuity is according to the answer for question 8, i.e. in real terms the annuity would be flat, however in nominal terms the annuity is increasing.
10	07/06/2016	Specifications	3.29; Annex 1 page 40	Regarding the real estate shocks: is the Global REITs shock a weighted average of EU REITs and non-EU REITS? Does Global REITs also include the EEA non-listed, unleveraged Commercial and Residential Properties? Also in the reporting template total property is the sum of all element, suggesting that it is possible to have both Global REITs and EU REITs.	The shocks need to be applied as following: the non-EU shock should be applied to US REIT exposures, the EU to the EU, and the Global shock to the REITs which are neither domiciled in the US nor the EU. Hence, the Global REIT should be rather interpreted as "other" (i.e. non-EU/non-US).

11	07/06/2016	Specifications	Annex 3 - Look-through approach	Could you please clarify how should 'residual investment funds' be stressed? What is the shock to be used by default?	EIOPA considers the look-through approach a leading principle for the classification of investments and the application of stress scenarios. When the required information to apply the look-through approach is not readily available, IORPs should make a best effort to retrieve that information. EIOPA expects the amount of 'residual investment funds' for IORPs to be limited. IORPs should only report a value for an investment fund as 'residual investment funds' if it is not possible to apply the look-through approach (taking into account annex 3 of the specifications and the use of simplifications as described in 1.41). In case investments have to be qualified as 'residual investment funds', a stress scenario of -48% must be applied.
12	07/06/2016	Specifications	Annex 3 - Look-through approach	With regard to the application of the look-through approach, could you provide more detail guidance on how to stress the bonds underlying investment funds, where the only information available is the net asset value of the investment fund? For equity it is quite straighforward as the shocks are expressed in terms of asset price, but for bonds more information is needed (even for the application of the aggregate shocks foreseen as simplifications) and this information is not available. Are there any default assumptions that can / should be made?	If the required information to apply the specified stress scenarios cannot be retrieved for certain (parts of) investment funds, the stress scenario for that (part of) investment fund should be set equal to the most severe scenario that is applicable, to the extent that a classification can be made. For example, if no rating is available for corporate bonds, a stress scenario that corresponds to a CCC rating is to be aplied (as specified in 3.27 and 4.18). In the case described in this question, if no further information about the durations of the bonds and loans (e.g. an upperbound) can be retrieved, IORPs are unable to apply the specified scenarios for fixed income assets. In such cases, IORPs should apply the most severe shock to investments in general (-48%).
13	07/06/2016	Specifications	General	How are infrastructure investments supposed to be stressed according to the specifications. If for example look-through for an infrastructure investment fund is not feasible?	First of all, IORPs should establish whether the infrastructure investments constitute bonds/loans or equity investments. Infrastructure bonds or loans should be stressed using the relevant corporate bond stresses (see par 3.27 and 4.18 of the ST specifications). IORPs should apply the relevant listed equity stress or unlisted private equity stress to infrastructure equity investments, depending on whether the infrastructure investment is listed on a public exchange or not (see par 3.28/30 and 4.19/21 of the ST specifications).
14	14.06.16	Specifications	Annex 1	The shock for hedge funds is to be fixed to -10% in a seemingly contrast with the look-through principle. Is it possible to apply for a -10% shock even if the look-through is feasible?	IORPs have to apply the look-through approach to distinguish the asset categories distinguished in adverse scenario and the reporting template. Since hedge funds are an asset class distinguished in the stress test, no further look-trough is necessary and IORPs should apply the -10% shock to this category. Hedge funds are a very diverse asset class, employing a wide range of strategies, so it is difficult to provide a single definition (see for example: Filippo Stefani, 2006, Investment strategies of hedge funds, Wiley Finance). Key characteristics that distinguish hedge funds from other investment funds (which are subject to the look-through approach) are: • Hedge funds are available to professional investors, as opposed to retail investors; • Hedge funds are not subject to a priori regulatory restrictions on investments; • Hedge funds make use of leverage, derivatives and/or short-selling of securities; • Hedge funds have a fee structure that includes a performance fee on profits, in addition to a management fee which is common for regular investment funds; IORPs should not classify more assets in the stress test as hedge funds than allowed under the national legal framework.
15	14.06.17	DB QQ	Q19	Q19 -"In which economic sector does/do your sponsor/sponsors operate" - Industry-wide IORPs are set up for companies in specific sectors but the sponsor is a separate entity which only does administrative tasks such as manage contributions, pay member benefits etc. Technically, the sponsor does not operate in the same category as its underlying companies. In this case, how should we classify the sponsor of an industry wide pension scheme? Is this referring to the underlying sector (construction, healthcare, etc.....) or to the legal organiser of the industry wide sector (administrative)?	Article 6 of the IORP II Directive (EU) 2016/2341 provides the following definition of the sponsoring undertaking (or sponsor): " 'sponsoring undertaking' means any undertaking or other body, regardless of whether it includes or consists of one or more legal or natural persons, which acts as an employer or in a self-employed capacity or any combination thereof and which offers a pension scheme or pays contributions to an IORP." According to this definition, the sponsor(s) of an IORP is not the "legal organiser" of an industry-wide IORP, but rather the undertaking(s) whose (former) employees are members and beneficiaries of the industry-wide IORP. This means that Question 19 of the DB Qualitative/Quantitative Questionnaire should be answered by specifying the industry for which the IORP provides occupational pensions (the "underlying sector")
16	14.06.17	DB QQ	Q21	Q21-"Please indicate the nature of the sponsor". How to classify the nature of the sponsor of an industry wide pension scheme? Is this referring to the underlying sector (multiple sponsors?, private company/group? Or members of a profession?) or to the legal organiser of the industry wide sector (not for profit)?	Question 21 of the DB Qualitative/Quantitative Questionnaire does not refer to the "legal organiser" of an industry wide IORP, but to the "underlying sector" (see answer to Q15). In case of an industry wide IORP, the answer to Question 21 of the DB Qualitative/Quantitative Questionnaire should be "Multiple sponsors".
17	14.06.17	DC Input Template	3.1.	How should we implement performance costs within Input Template framework if according to Slovak legislation IORPs can charge their clients performance fee only if actual value of pension unit (NAV divided by number of pension units) of a given fund at the end of year is higher than historical maximum of actual value of pension unit. This is so-called "high water mark system". Given the initial shock to value of assets, in line with stress scenario, actual values of pension units would decrease under their historical maximums and it would take several years to recoup these losses. Only after IORPs eliminated initial losses they would be allowed to charge performance fee again. To be precise performance fee is calculated as F(t)=10 % * NAV (t)*((AVPU(t)/max(AVPU(t-1)))-1), where F(t) - amount of performance fee for day t AVPU(t) - actual value of pension unit for day t max(AVPU(t-1)) - historical maximum AVPU attained until day t-1	The current cost structure components in the DC tool do not allow for modelling a cost structure like the "high water mark system". The functionality of the tool will not be extended at this stage since this would require additional programming and testing. IORPs are requested to raise any such specificities which are not taken into account in the DC tool through the qualitative questionnaire (Section 8, Other, Q31), so EIOPA can consider them on future occasions.
18	21.06.17	Topic: Shock on Insurance Linked Securities	Topic: Shock on Insurance Linked Securities	Some IORPs invest in insurance-based investment products (such as catastrophic bonds or catastrophic insurance contracts that have the same structure as credit default swaps), which pay a fixed rate (insurance premium) and offer a protection against loss of capital over the life of the investment. Should these products be entered in the EIOPA balance sheet as "other investments"? And which shock should be applied on these products?	In general IORP's should apply the look through approach when trying to assess the risk nature of any derivative position and what shock to apply to them in the adverse scenario. For example for Credit Default Swaps the shock to apply could be derived from assessing the nature of the underlying bond. Although in general the structure of catastrophic bonds/insurance linked contracts is similar to credit default swaps there is no specific shock foreseen in the adverse scenario's for such type of insurance risk. Furthermore due to the floating rate nature of catastrophic bonds their interest rate sensitivity is quite low. Therefore IORPs are requested to report catastrophic bonds/insurance contracts under "other investments" without applying any shock on them in the adverse scenario.
19	21.06.17	EIOPA-17-284-IORP_ST17_DC_Template-(20170518).xls	QQ_Questionnaire	Are the warnings in H182 (also H183) correct? The sum refers to Column D - G. D182 should be the sum of E182 and G182.	The validation rules in H182 and H183 are correct. IORPs should complete the table based on the breakdown of the corporate bond portfolio that was used in applying the corporate bond stresses. The values provided for 'all corporate bonds' in column D should not be the sum of its components in columns E, F and G. For example, if an IORP only applied the detailed standard stresses relating to non-financial, financial and/or financial (covered) corporate bonds then the values in column D relating to 'all corporate bonds' should be zero. Column D should only contain non-zero values if the simplified stresses for 'all corporate bonds' were applied to (part of) the corporate bond portfolio.
20	21.06.17	Stress test specifications	3.29 and table on page 40	Is there a guidance on how to split residential vs commercial real estate? Examples are: Student housing, Offices, Retail property (shopping centers, unit shops, super markets, retail warehouses), Industrial property (warehouses, self storage, data centers), Healthcare, Hotels, Logistics, Social Housing, Education, Leisure, Garage/parking, Mixed use properties, Service stations. Investments are in the form of listed stocks and bonds in rated and unrated companies (airports, retirement homes, etc), stocks in REITs, and direct real estate.	The split between residential vs commercial real estate depends on whether the real estate is used for housing and living or for business-related activities. Residential real estate would, for example, be student housing and social housing whereas hotels are classified as commercial real estate. Overall, stocks in real estate companies need to be stressed based on the specifications in paragraph 3.29, applying the REIT shock (EU/non-EU) to the stocks. Bonds in rated and unrated companies need to be stressed according to the specifications in paragraph 3.27 of the technical specifications. Bonds in REITs which are guaranteed by a collateral need to be stressed according to the covered bond shock in paragraph 3.27 of the technical specifications. The property shocks should be applied to direct investments in real estate
21	21.06.17	Stress test specifications	3.29 and table on page 40	How do we stress real estate securities with multiple underlying activities/sectors?	IORPs need to apply a look-through approach to those securities and apply the commercial/residential stresses provided in the table on page 40.
22	28.06.2017	Cash flow analysis	Sheet "CF_Analysis" of the DB template	Cash flows in the table start on year 1. How do we report cash flows which take place at year 0 (i.e.: on the very short-term)? We have liabilities that are due in the very short-term and will not be projected in the future (like capital to be paid to deceased people, etc.).	The year 1 cash flow should contain the sum of all projected cash flows which are due during the first projection year, i.e. 2017. The year 2 cash flow should contain the sum of all projected cash flows which are due during the second projection year, i.e. 2018 etc. etc..
23	28.06.2017	Specification, DC spreadsheet	Para. 4.77, QQ_Questionarie Section 6 Subsection D	Paragraph 4.77 states that the IORPs have to provide 2007-2008-2012-2016 data and choose between the overall and the largest investment option. However, in section D this faculty seems not available and also in the question 24 the column concerning 2016 (J108:J121) is calculated with the IORP's overall asset (see the formula).	IORPs can also provide data in section D only for the largest investment option and in this case have to overwrite the formula in the relative column of year 2016.
24	28.06.2017	Qualitative/Quantitative questionnaire for DB / hybrid IORPs	Question 41, 1)	Should the IORP take buying/selling due to rebalancing into account when answering this question? Example: if the fund only buys an asset to rebalance back to the original weight after the negative shock and does not change its target weights, should the fund answer (+) or (=)?	Yes, if due to rebalancing an asset is bought the answer should be submitted as (+). If due to rebalancing an asset is sold the answer should be submitted as (-). In case of a buy & hold strategy the answer should be submitted as (=).

25	05.07.2017	DC_Template	QQ_Questionnaire/question 27	According to the simplification given for the look-through approach, it comes out that for the collective investment funds categorized as fixed income > 90%, there is no analytical information referring to the breakdown of their total NAV, by individual countries. Therefore, in the relevant section of the QQ Questionnaire, the relevant NAV of such collective investment funds has been shocked by using simplified stress, i.e. the Euro area aggregate simplification, and not the analytical individual stresses per country. Could you please clarify if the adoption of the aforementioned procedure is correct or not ?	First, when the required information to apply the look-through approach is not available, IORPs should make a best effort to retrieve that information (see Q&A answer 11). Second, if the required information to apply the specified stress scenarios cannot be retrieved for certain (part of) investment funds, the stress scenario for that (part of) investment fund should be set equal to the most severe scenario that is applicable, to the extent that a classification can be made (see Q&A answer 12). So, if no information is available on the issuing countries in a government bond fund then a yield stress of 489-548 bps should be applied depending on the duration of the government bond portfolio, if known. The simplification using the euro area aggregate stress should only be applied when the IORP knows that the government bonds constitute a well-diversified portfolio of bonds issued by euro area countries (see par. 4.24 of the ST specifications).
26	05.07.2017	Cash flow analysis	Sheet "CF_Analysis" of the DB template	Our IORP provides real annuities during retirement. How should we report the corresponding cash-flows?	Projected nominal cash flows should be reported excluding discounting, i.e. no present values of projected cash flows should be reported.
27	05.07.2017	Technical Specifications	Para. 2.2.1	IORP has 70% of assets on government bonds. Cash flows (from gov bonds) will be used to pay a share of pension obligations over time. In this case, is it possible to apply for point 2.2.1 and value the share of pension obligations with the value of the government bond? Both on baseline and adverse scenarios.	No. The value of technical provisions shall be equal to the sum of a best estimate and a risk margin, where the best estimate is equal to the sum of the discounted projected liability cash flows using the appropriate risk free rate for discounting. The "TP calculation as a whole"-method is in general only applicable where it is not possible to calculate the value of the technical provisions by means of a best estimate + risk margin. In particular the "TP calculation as a whole"-method applies to those kind of liabilities where the cash flows are either directly or indirectly linked to the value, cash flows and/or pay-offs of the underlying assets, i.e. the liabilities are exposed to investment risk, like for instance pure DC liabilities. Furthermore government bonds are not risk free as they still incorporate credit risk, neither do they match the mortality risk present in the liability cash flows, hence it is highly unlikely that the projected liability cash flows, regardless the relative share of the government bonds in the total investment portfolio, can be fully and timely matched by the government bond cash flows. This kind of mismatch risk remains with the IORP and does not affect the liabilities.
28	05.07.2017	DC Template	Table on investment assets	We are not sure where to classify bonds issued by municipalities. We find it sensible to put them in the same class as government bonds. Can you please give us advice in this matter?	Bonds issued by municipalities should be classified under government bonds. That category should include all bonds issued by public authorities, whether by central governments, supra-national government institutions, regional governments or municipal governments (see comment in cell C29 in the [Baseline_&_Adverse_Scenario] sheet of the reporting spreadsheet).