

EXPLANATORY NOTE

ACTUARIAL REPORT FOR LIFE TECHNICAL PROVISIONS

The Company and the Actuarial Function Holder should refer to the following publications.

- a. The Insurance and Reinsurance Business and other related matters Laws of 2016 and 2017 (the Law).
- b. The Commission Delegated Regulation (EU) 2015/35 of 10/10/2014 (DR).
- c. The Superintendents Orders dated 24/3/2015 regarding the valuation of technical provisions (Orders on TPs)
https://eiopa.europa.eu/Publications/Guidelines/TP_Final_document_EN.pdf
- d. ISAP 1 from the International Actuarial Association (IAA) (ISAP1)
http://www.actuaries.org/CTTEES_ASC/isaps/Final_ISAPs_posted/Conformance_Changes_Final_ISAPs_posted/ISAP1_Conformance_April2017.pdf
- e. The Service's Circular dated 1/3/2016 regarding the calculation of technical provisions (the Circular)
<http://mof.gov.cy/assets/modules/wnp/articles/201702/223/editor/tp.pdf>
- f. ESAP 1 from the Actuarial Association of Europe (AAE) (ESAP1)
http://actuary.eu/documents/AAE_ESAP1_031014.pdf
- g. ESAP 2 from the Actuarial Association of Europe (AAE) (ESAP2)
http://actuary.eu/documents/2016_01_31_ESAP2_final_GA-approved.pdf

Where the company has NSLT Health business, the AFR should cover the points raised in the non-life data request reporting on these technical provisions.

This letter relates to the reporting of Best Estimate Technical Provisions only within the Actuarial Function Report. There are several other aspects of the business which must be discussed within the AFR, for example effectiveness of underwriting and reinsurance policies, but these issues are outside the scope of this explanatory note.

DATA

1. The results of other data reconciliations and reasonableness checks (ISAP 1; ESAP 1 (3.5.2)).
2. A description of how risks are amalgamated into homogeneous groups whilst ensuring that data remains sufficiently homogeneous and of a large enough volume to allow credible statistical analyses to be carried out (Article 34 (3) of the DR; Orders 19 (1.50) and 23 of the Orders on TPs).
3. A commentary on the extent to which the data used in the calculation of the technical provisions are accurate, complete and appropriate to the calculations (Article 88 of the Law; Orders 1 to 4 of the Orders on TPs). This would include (but will not be limited to):
 - an assessment of the sufficiency and quality of the data used to calculate the technical provisions (Articles 19 and 27 of the DR; ESAP 2 (3.2.5.1));
 - a commentary on any unusual features of the data e.g. outliers, discontinuities (ISAP 1 (2.7.4); ESAP 1 (3.7.4));
 - a commentary on how the homogenous data groups used is appropriate for the underlying risk (ESAP 2 (3.2.5.3));
 - a description of how material data issues were resolved (Article 272 (1c) of the DR; Order 9 of the orders on TPs; ESAP 2 (3.2.5.2));
 - a list of any material data issues that could not be resolved (Article 20 of the DR; Order 13 of the Orders on TPs; ESAP 2 (3.2.5.2));
 - a description of any data adjustments and the reason for the adjustments (Orders 8 (1.29e) and 11 of the Orders on TPs; ISAP 1 (2.7.1); ESAP 2 (3.1.11)).

This should include commentary on how events not in the data are allowed for in the calculation of the technical provisions.
4. Justification of the use of any external data (Article 19 (4) of the DR; Order 8 (1.29d) of the Orders on TPs).
5. Commentary on how external data has been adjusted to make it relevant and appropriate to the Undertaking's risks and profile (Order 8 (1.29e) of the Orders on TPs; ESAP 2 (3.2.5.4)).

Additionally for short-term life business (Group and Credit life)

6. Claims Delay triangles (claims paid and claims incurred) for each class of business (ISAP 1 (3.2), ESAP 1 (4.2)).
7. The results of reconciliations between the source data and data in the claims delay triangles (ISAP 1 (2.5.2), ESAP 1 (3.5.2)).

ASSUMPTIONS

8. A list of assumptions (and their values) used in the calculations of the technical provisions (ISAP 1 (3.2.1); ESAP 1 (4.2.1)). These should include assumptions used for the projection of products with cash values or guaranteed benefits.
9. Justification of the assumptions used in the calculations of Best Estimate Technical Provisions (Article 272 (1d and 2) of the DR; ISAP 1 (2.7.1 and 2.7.2); ESAP 1 (3.7.1 and 3.7.2); ESAP 2 (3.2.7.1 and 3.2.7.2)).
10. Commentary on whether the assumptions used in the calculation of the technical provisions are consistent with those used in the calculation of Own Funds and Solvency Capital Requirement (Order 24 of the Orders on TPs).
11. Justification of any material changes in assumptions since the previous year (Article 272 (1g) of the DA; ESAP 2 (3.2.7.3)).
12. A description of how any assumptions have been adjusted to allow for changes in the internal environment e.g. changes in premium structure, mix of business (ISAP 1 (2.7.1); ESAP 1 (3.7.1 and 3.7.2)).
13. Commentary on how past and future management actions have been allowed for in setting the assumptions e.g. bringing an outsourced function in-house, changes in commission rates or target market (Article 23 of the DR; Orders 38 to 40 of the Orders on TPs; ESAP 2 (3.2.7.4)).
14. A description of how any assumptions have been adjusted to allow for changes in the external environment or for changes in the way in which the assumptions have been determined over time (Order 8 (1.29e) of the Orders on TPs; ESAP 2 (3.2.5.4)).

Mortality & Longevity

15. Mortality and Longevity assumptions should, where possible, be derived from company experience for that product or type of product. Where other data sources are used, either to derive the base assumptions or to justify those derived from the company's own data, these must be clearly identified.
16. It is expected that these will consider:
 - company experience over the past 3 to 5 years;
 - policyholder age and gender;
 - duration in-force, where mortality is likely to be lower for some years' after the policy is underwritten;

- source and mix of business, where this may influence expected mortality;
- reinsurance rates, particularly for large schemes;
- the appropriateness of standard tables, and any adjustments made to these;
- the level underwriting applied to the product;
- whether the product is paying premiums, or premiums have ceased;
- if material amounts of business are written in more than one country, then country of residence or nationality should be considered.

Lapse

17. Lapse assumptions should, where possible, be derived from company experience for that product or type of product. Where other data sources are used, either to derive the base assumptions or to justify those derived from the company's own data, these must be clearly identified.

18. It is expected these will consider:

- company experience over the past 3 to 5 years;
- trends in mix of business;
- duration in-force;
- premium type and frequency;
- sales channel;
- economic conditions.

Morbidity

19. Morbidity assumptions should, where possible, be derived from company experience for that product or type of product. Where other data sources are used, either to derive the base assumptions or to justify those derived from the company's own data, these must be clearly identified.

20. It is expected that these will consider:

- company experience over the past 3 to 5 years ;
- policyholder age and gender;
- duration in-force, where morbidity may lower for a period the after policy is underwritten;
- source and mix of business, where this may influence expected morbidity;
- reinsurance rates, particularly for large schemes;
- an allowance for larger claims where the company's own experience may not provide sufficiently robust statistical evidence. The importance of this element will depend on the class of insurance;

- an allowance for catastrophic claims, if appropriate, where the company's own experience is unlikely to be statistically sufficient;
- the appropriateness of standard tables if adopted, and any adjustments made to these;
- the level underwriting applied to the product;
- whether the product is paying premiums, or premiums have ceased;
- any deferred periods which may require adjustments to the exposure from in-force products;
- if material amounts of business are written in more than one country, then country of residence or nationality should be considered.

Expenses

21. A description and full justification of the expenses allocated to the policies. Although Paragraph 55 of the Directive 2009/138/EC implies that expense assumptions should be based on a reference portfolio that reflects the amount the undertaking would have to pay if it transferred its contractual rights and obligations to another party, there is in practice no published data that would allow any insurer in Cyprus to assess an appropriate level of expenses to include on this basis. It is therefore expected that expense assumptions will be determined based on the company's own experience. The Orders 29 - 34 of the Orders on TPs should be followed.

22. Assumptions should be based on company's own experience in recent years, adjusted for realistic future developments and inflation.

23. It is expected that these will consider:

- company experience over the past 3 to 5 years ;
- expected changes in business;
- trends in mix of business;
- inflation;
- differences in acquisition and renewal costs;
- fixed and variable expenses;
- overall economic conditions.

Investment Return

24. Confirmation that investment returns have been determined on the EIOPA published risk free rates, or that the Volatility Adjustment or Matching Adjustments have been applied.

Options and guarantees and policyholder behaviour

25. A full description and justification of future discretionary bonus rates assumed

26. Assumptions reflecting contractual options, such as guaranteed rate on unit linked products, etc.

ANALYSES & COMMENTARY

27. Disclosure of opening and closing technical provisions, along with a commentary of the main items of movement (ESAP 2 (3.2.3.1)).

28. Description of the process used to calculate the technical provisions (Article 49 (1)(a) of the Law; ESAP 2 (3.2.4.1)).

29. Comment on the adequacy and reliability of the technical provisions derived, including any material shortcomings (Article 49 (1)(e) of the Law; Article 272 (5) of the DR; ESAP 2 (3.2.1.1)).

30. Commentary on whether technical provisions are calculated in compliance with Solvency II and what further measures are needed to achieve compliance (Article 272 (1) of the DRC; ESAP 2 (3.2.1.2)).

31. A description of the sources and degree of uncertainty within the technical provision calculations (Article 272 (2 & 5) of the DR; ESAP 2 (3.2.1.3)).

32. Description of the factors which have a material impact on the technical provisions (ESAP 2 (3.2.2.1)), including known subsequent events that occurred after the reporting date, but before the Actuarial Function Holder's report on the Technical Provisions was finalised, that could materially change the value of the best estimate technical provisions (ISAP 1 (2.12); ESAP 1 (2.13)).

33. Commentary on the material judgements made in the calculation of the technical provisions (ESAP 2 (3.2.2.2)).

34. Commentary on:

- outstanding large claims;
- any significant claims under litigation and how they have been allowed for in the best estimate technical provisions or other liabilities;
- possible related claims, such as group life or personal accident;
- catastrophes in historic claims experience;

35. A description of how best estimates allow for expected external future developments (e.g. demographic, legal, medical, technological, social, environmental and economic developments) that will have a material impact on claims related cash-flows (Article 29 of the DA).

36. A description of the Undertaking's allocation of expenses (overheads and claims related expenses) between different lines of business (Articles 28c and 31 of the DR; Orders 29 to 34 of the Orders on TPs).
- Justification of any change in the method of allocating expenses (Article 272 (1g) of the DR).
 - An assessment of the reasonableness of the total expense value.
 - Commentary on how the company's overall expenses have changed over time.
 - An analysis of expense inflation.
37. Commentary on the adequacy of IT systems to support the actuarial and statistical procedures (Article 272 (3) of the DR ; ESAP 2 (3.2.6.5)).
38. Assessment of the appropriateness of methods and models used in the calculation of options and guarantees (Article 272 (1h) of the DR; ESAP 2 (3.2.6.4)).

METHODS

Long-term Life business and SLT Health

39. A summary of Cash flow projections for each class of business (ISAP 1 (3.2), ESAP 1 (4.2)).
40. Note that cash flow projections should be carried out separately for each policy. Where separate calculations is too burdensome, the grouping used must meet the following requirements:
- there should be no significant difference in the underlying risk within the group;
 - the grouping does not misrepresent the underlying risk or misstate the expenses;
 - the grouping is likely to give the same result as policy level calculations, especially for financial guarantees and contractual options.

(Article 35 of the DR)

41. A description of the methods used to calculate the technical provisions (Article 49 (1)(b) of the Law; Article 272(2) of the DR; ESAP 2 (3.2.6.1)). In general, it is expected that a cash flow projection is used to calculate these provisions (Article 79 (1a) to (1b) of the Law; Circular), subject to any simplifications being adopted.
42. Justification of the method used to determine each component of the best estimate technical provisions and draw attention to any unusual or non-

standard methods used. This should refer to the quality of available data and the nature of the risks insured (Orders 5 and 44 (1.83) of the Orders on TPs; Article 272 (2) of the DR; ESAP 2 (3.2.6.1 and 3.2.6.2)).

43. An explanation of how the method of calculating the best estimate technical provisions adequately reflects the frequency, method of collection and duration of cash flows arising from premium income (Circular).
44. Assessment of the appropriateness of methods and models used in the calculation of options and guarantees (Article 272 (1h) of the DR; ESAP 2 (3.2.6.4)).
45. Justification of any changes in the methods used since the previous year (Article 272 (1g) of the DR; ESAP 2 (3.2.6.7)).
46. Justification of any simplifications used by referring to the nature, scale and complexity of risks (Article 49 (1)(f) and 88 of the Law; Article 21, Section 6 of the DR; ESAP 2 (3.2.6.3)).
47. Commentary on the limitations of the methods used and whether this could lead to a material level of error (Order 49 of the Orders on TPs; ESAP 2 (3.2.6.6)).

Matching Adjustment

48. Commentary on the use and effect of a MA by the firm in calculating the best estimate liabilities.
49. Compliance with any relevant supervisory approval received, showing the date of the correspondence (Article 81(1) of the Law).
50. A description of the matching asset portfolio, showing each asset and its credit quality.
51. Details of valuation method used for assets where not listed in sufficiently deep and liquid markets.
52. Statement on the allowance for credit risk in the asset valuation.
53. Details of mortality stress tests on relevant best estimate technical provisions to demonstrate that these do not increase by more than 5% as required by Article 88 (1f) of the Law, where appropriate.

54. Any material changes in asset quality over the previous year.
55. Demonstration that matching of assets and liabilities over the previous 12 months showing asset and best estimate technical provision values at the prior year end, and each quarterly reporting date.
56. Demonstration of matching showing projected cash flows for both assets and liabilities.
57. Discounted Mean Terms of both assets and liabilities

Volatility Adjustment

58. Commentary on the use and effect of a VA by the firm in calculating the best estimate liabilities.
59. Compliance with any supervisory approval received, showing the date of the correspondence (Article 83(1) of the Law).

Short-term life business – Group Life and Credit Life

In this section the terms “claims reserves” and “premium reserves” have been used as defined for non-life business.

Methods – Claims reserves

60. A description of the methods used to calculate claims reserves (Article 272(2) of the DR; Orders 44 to 48, 69 and 70 of the Orders on TPs; ISAP 1 (3.2.1); ESAP 1 (4.2.1); ESAP 2 (3.2.6.1)).
61. Justification of the method used to determine claims reserves. This should refer to the quality of available data and the nature of the risks insured (Order 5 of the Orders on TPs; Article 272 (2) of the DR; ESAP 2 (3.2.6.1 and 3.2.6.2)).
62. Commentary on the length of the claims delay table selected; selection and justification of any tail factors (Order 82 of the Orders on TPs).
63. Justification of the granularity of claims triangles used. For instance, if annual claims triangles were adopted, an explanation of why quarterly and/or monthly claims triangles were not adopted.
64. Where incurred claims methods were adopted, an explanation and justification for these being more reliable than paid claims methods.

65. Justification of any changes in the methods used since the previous year (Article 272 (1g) of the DR; ESAP 2 (3.2.6.7)).
66. Justification of any simplifications used by referring to the nature, scale and complexity of risks (Article 49 (1)(f) and 88 of the Law; Article 21 and Section 6 of the DR; ESAP 2 (3.2.6.3)).
67. Commentary on the limitations of the methods used and whether this could lead to a material level of error (Order 49 of the Orders on TPs).

Methods – Premium reserves

68. A description of the methods used to calculate premium reserves (Article 49 (1)(b) of the Law; Article 272(2) of the DR). In general, it is expected that a cash flow projection is used to calculate the premium reserves (Article 79 (1) of the Law; Circular), subject to any simplifications being adopted.
69. Justification of the method used to determine premium reserves and draw attention to any unusual or non-standard methods used. This should refer to the quality of available data and the nature of the risks insured (Orders 5 and 44 (1.83) of the Orders on TPs; Article 272 (2) of the DR; ESAP 2 (3.2.6.1 and 3.2.6.2)).
70. An explanation of how the method of calculating the premium reserves adequately reflects the frequency, method of collection and duration of cash flows arising from premium income (Circular).
71. A description and full justification of the expenses allocated to the policies. Although Paragraph 55 of the Directive 2009/138/EC implies that expense assumptions should be based on a reference portfolio that reflects the amount the undertaking would have to pay if it transferred its contractual rights and obligations to another party, there is in practice no published data that would allow any insurer in Cyprus to assess an appropriate level of expenses to include on this basis. It is therefore expected that expense assumptions will be determined based on the company's own experience.
72. Justification of any changes in the methods used since the previous year (Article 272 (1g) of the DR; ESAP 2 (3.2.6.7)).
73. Justification of any simplifications used (Article 21, Section 6 of the DR; ESAP 2 (3.2.6.3)).

74. Commentary on the limitations of the methods used and whether this could lead to a material level of error (Order 49 of the Orders on TPs; ESAP 2 (3.2.6.6)).

REINSURANCE & RISK MITIGATION

75. Method used to calculate recoverables from reinsurance contracts (Articles 79(1) and 87 of the Law; Orders 78 to 80 of the Orders on TPs).

76. Details of Reinsurance Premium Reserve showing reinsurance premiums and commission assumptions.

77. A description of the method used to calculate any adjustment for counterparty default (Article 42 of the DR; Order 81 the Orders on TPs).

STRESS - SCENARIO AND SENSITIVITY TESTING

78. A description of alternative assumptions used in sensitivity testing – these tests consider variations in a single key assumption (Article 34 (4 & 5) and Article 272 (5) of the DR; ISAP 1 (2.7.7); ESAP 1 (3.7.7); ESAP 2 (3.2.9.1)).

79. A description of alternative assumptions used in scenario testing – these tests consider consistent variations in key assumptions (Article 34 (4 & 5) and Article 272 (5) of the DR; ISAP 1 (2.7.7); ESAP 1 (3.7.7); ESAP 2 (3.2.9.1)).

COMPARISON WITH EXPERIENCE (ANALYSIS OF SURPLUS)

80. Commentary on the reasons for the change in technical provisions over the last year e.g. new business, change in the assessment of future inflation etc. (Article 272 (1g) of the DR; ESAP 2 (3.2.8.1)).

81. Descriptions of how accurate past calculations have been in the light of experience. A description of the lessons learned from these analyses and any new processes and procedures implemented in the light of this analyses to improve the accuracy of future calculations (Article 89(1)(2) of the Law; Article 272 (4) of the DR; Order 87 of the Orders on TPs; ESAP 2 (3.2.8.2)).