

**INTERNATIONAL ACTUARIAL ASSOCIATION (IAA)
GUIDELINES OF PRACTICE
for actuarial work provided with respect to
SOCIAL SECURITY PROGRAMS**

A. Introduction

Many Social Security Programs (SSP) face major financial challenges in planning for the future due, among other things, to the effects of changing demographic structures over time. Important political decisions are being planned, considered and/or made in order to meet these challenges. In many cases, the main concern is future long-term costs. Therefore, the need arises to perform financial projections and analyses of the SSPs. Actuaries possess significant expertise in such matters and are therefore in an important role carrying out these analyses. Accordingly, it is vital that all demographic and economic analyses carried out by actuaries provide reasonable projections of long-term future costs and financial impact on which to base these important decisions.

In many countries, actuarial professional bodies set professional standards and guidelines of practice for actuarial work on insurance and pension programs, but generally they do not apply to SSPs. Actuarial work on SSPs is also carried out in many countries where the profession is not well developed and no standards of practice exist. The need for guidelines for actuarial practice in this area has also been identified by the International Social Security Association. These guidelines are set to fill the gap and aim at ensuring that all actuaries involved in this type of work provide reliable evaluations.

Actuaries have to take into account sound actuarial principles, legal requirements and actuarial standards set by any actuarial associations to which they belong. Therefore, these guidelines shall prevail only to the extent that they complement and are not in conflict with such local requirements. Compliance with these guidelines should enable the users of such actuarial work to have confidence in the professionalism, objectivity and scientific rigour of actuaries. These guidelines are also intended to promote the development of consistent actuarial practice throughout the world. While these guidelines are not binding on actuaries, all actuaries engaged in work of this nature are recommended to adopt them. The guidelines will also provide a suitable framework for other experts working in this field.

These Guidelines become effective on DATE.

B. Scope

1. Type of program

These Guidelines cover SSPs having the following attributes:

- (a) Prescribed by statute

- (b) Almost universally compulsory for a defined wide population
- (c) The benefits provided by the program are generally payable in respect of one or more of the following: old age and/or retirement, death, disability, survivorship, sickness, maternity, unemployment, work-related injuries.

These Guidelines apply to the above-mentioned programs irrespective of the manner in which they are financed.

Moreover, these guidelines may also be used by actuaries responsible for the evaluations of public pension programs specifically sponsored by a government as an employer for its employees as well as social security programs which agree in spirit with the scope of these guidelines but are not covered by the precise wording.

2. Type of actuarial work

These Guidelines are intended to cover:

- Formal actuarial reports on the projected financial status of a SSP or equivalent reports
- Statements of opinion, papers or presentations on SSP policy matters, such as the adequacy of contributions and/or benefits relating to the existing provisions, or proposals for changes thereof.

C. Principles

These guidelines aim at providing guidance to the actuary in producing an actuarial report, paper or presentation with a view to respecting the following principles:

1. Scientific rigour

The actuary should ensure that the methodology used for the long-term financial projections is validated and consistent with generally accepted actuarial practice, and that the calculations accurately reflect the methods and assumptions used. In this context, the actuary should clearly indicate in the report that assumptions, though reasonably determined, are not predictions and that eventual differences between future experience and the report's assumptions will be analysed and taken into account in subsequent reports.

2. Objectivity

If the determination of assumptions used for demographic and financial projections is part of the actuary's mandate, he/she must ensure that they are determined without inappropriate political or external influences. If the evaluation actuary is not mandated to determine the assumptions, or wherever external work is relied upon in the determination of assumptions, the actuary should provide a statement as to the extent of reasonableness of the assumptions used.

3. Transparency, explicitness, simplicity and consistency of the information supplied in the report.

The report, paper or presentation must be easy to understand by those to whom it is addressed and contain sufficient information to allow another actuary to form an opinion regarding the report. The language of actuarial reports should be clear to social security experts and other interested parties. The evaluation actuary is accordingly recommended to include in the actuarial report an executive summary written in plain language and describing the purpose and the main findings of the actuarial work.

D. Matters to be included in actuarial reports

The content of an actuarial report varies depending upon the type of actuarial work involved. The following general list applies more specifically to formal actuarial reports on the projected financial status of an SSP or equivalent reports.

1. Executive Summary

- (a) Purpose of the report
- (b) Identification of the program
- (c) Identification of key assumptions
- (d) Main results
- (e) Main conclusions

2. Introduction

- (a) To whom the report is addressed
- (b) The identification of the SSP under review
- (c) The purpose of the evaluation including a reminder that projections are dependent upon the evaluation data, the methodology and the assumptions.
- (d) The evaluation date.
- (e) The span of the projection period starting with the evaluation date.
- (f) Reference to the preceding evaluation.
- (g) Contemplated date of next evaluation

3. Description of the provisions of the SSP concerned

The outcome of an SSP evaluation depends, *inter alia*, on the provisions of the program. Written reports must accordingly include a description of the provisions of the program that are materially relevant to the evaluation, e.g. coverage, financing, benefits.

4. Evaluation Data

To carry out a rigorous analysis, an actuary is reliant on access to reliable and sufficiently complete data materially relevant to the evaluation such as the:

- Demographic experience of the program;
- Economic experience of the program such as contributions, benefits, investment earnings and assets if any;
- Number of contributors and beneficiaries of the program.

The evaluation actuary is reliant on the accuracy of data and should take steps to verify that the information provided is consistent with other information from other sources, particularly any accounting data.

Where data is not available in the form that can best be applied for the evaluation, then it is reasonable for the actuary to allow for this shortfall in the report as he/she sees fit. The actuary must describe clearly all data used for the analyses underlying the report and the extent of sufficiency and reliability of the data.

The report should indicate the main three areas in which data was used for evaluation purposes:

- (a) Starting point of the projected results;
- (b) Analysis of past experience as a basis for determining the assumptions used in the evaluation;
- (c) Validation of the projection methodology.

5. Evaluation Assumptions

Normally for a SSP, assumptions are expected to be determined on:

- (a) realistic basis, as opposed to a conservative or a liberal basis, so as not to bias the results. Each assumption should be individually realistic
- (b) An explicit, as opposed to implicit, basis to the extent possible.
- (c) A basis taking into account:
 - Internal consistency, e.g. correlation/interrelationship between assumptions.
 - Overall consistency, e.g. the economic and demographic assumptions used are consistent with the long-term experience and the outlook for the economy.

The actuary must clearly describe in the evaluation report the rationale used for the determination of all assumptions used for analyses underlying the report.

Actuarial reports prepared for SSPs are usually concerned with the very long-term future and therefore the assumptions should reflect expected long-term trends rather than giving undue weight to recent experience. However, where necessary, estimates for the earlier years should take account of short-term trends and phase in to the longer term assumptions.

Considering the uncertainty surrounding the assumptions, it may be appropriate for the actuary to consult other professionals with relevant expertise in deciding on what assumptions to make about the future.

Where a report is part of a series, and there have been changes in assumptions from the previous report, the actuary should take steps to explain any material impact that changes in assumptions have on the results of the evaluation.

6. Evaluation Methodology

The methodology employed for the actuarial evaluation and the financial projections should be described in a manner that provides sufficient information for a reader to place checks on the evaluation results.

7. Evaluation results

The actuarial report should include all results of the actuarial work that is relevant to the purpose of the report and to whom it is addressed. The following model framework for the evaluation results to be included in the evaluation report is presented, being understood that the framework may need adjustments to take into account the nature of the report. Most of the evaluation results would normally be found in either of the following two areas of the report (it is desirable that the report also include similar information in respect of some years preceding the evaluation date):

Sections on data, methodology and assumptions

- (a) Population by age groups and sex and in total
- (b) Dependency ratios
- (c) Employment earnings by age groups and sex, and averages
- (d) Contributory earnings by age groups and sex, and averages
- (e) Pensionable earnings by age groups and sex, and averages

Section on cash flow financial projections

- (f) Contribution rate
- (g) Pay-as-you-go-rate
- (h) Contributions
- (i) Investment earnings
- (j) Other income
- (k) Total income
- (l) Benefits
- (m) Administrative expenses
- (n) Total expenditures
- (o) Fund balance

Irrespective of the financing method, the results shown should include a cash flow projection of the income, expenditures, and assets of the program by individual calendar and/or fiscal year in respect of both the past experience of the program and the evaluation projection period. Due to the usual complexity of the benefit design, the report is expected to show the projected value of benefits, wherever applicable, by type of benefit, age, gender and any other factor serving as a basis for the determination of the benefit level.

8. Analysis of evaluation results

Besides the presentation of evaluation results discussed in the previous subsection, the actuarial report should also present an analysis of those results along the following lines:

- (a) Sensitivity analyses, showing the effect on the main results of variations in key assumptions. The main objective of sensitivity analyses is to provide indications of the degree to which the evaluation results are affected by each assumption. The corresponding auxiliary results can also serve as a basis for deriving a reasonable approximation of the projected effect of changes in the value specified by one or more of the key assumptions.

- (b) Reconciliation of results with those of the previous evaluation.
- (c) Explanations of the pattern of financial projections over the years (ageing of the population, maturation of the program, recent changes in the program financing or benefit provisions, etc.) and the implications thereof.
- (d) Effect, if material, on evaluation results of events subsequent to the evaluation date

9. Conclusions

The evaluation actuary may include remarks beyond those listed above but should bear in mind that the main objective of an actuarial report is normally limited to the presentation of the actuary's estimate of the program's costs and projected financial status. It is important to ensure that the readers of the report will have a sound understanding of the future financial prospects for the SSP concerned, taking into account the inevitable uncertainties in making projections. In this connection, the report should provide measurements of the eroding effect of inflation on the real value of benefits for plans that do not provide full benefit protection against inflation.

10. Attestations

In the evaluation report, the actuary should provide an opinion regarding the:

- Sufficiency and reliability of data.
- Reasonableness and appropriateness of assumptions.
- Appropriateness of the methodology and its consistency with sound actuarial principles
- Reports compliance with, and departures from, any local standards and guidelines and the IAA guidelines of practice.

The report should also include a reminder that the results of the evaluation are based on assumptions that are uncertain and therefore subject to discrepancies from eventual experience.

11. Actuary's Name, Signature, Position Held and Date