



Canadian  
Institute  
of Actuaries

Institut  
canadien  
des actuaires

# Memorandum

**To:** All Fellows, Affiliates, Associates and Correspondents of the Canadian Institute of Actuaries, and other interested parties

**From:** Edward Gibson, Chair  
Actuarial Standards Board

François Boulé, Chair  
Designated Group

**Date:** June 27, 2023

**Subject:** **Exposure Draft (ED) to Revise the Practice-specific Standards of Practice for Social Security Programs (Part 7000)**

**Comment deadline: September 30, 2023**

Document 223118

## Introduction

In 2022, the Actuarial Standards Board (ASB) established a designated group (DG) to review the Practice-specific Standards of Practice for Social Security Programs (Part 7000). A [notice of intent](#) (NOI) was issued in October 2022 with a January 31, 2023 comment deadline.

The NOI presented several specific proposals for changes in respect of: (i) wording to distinguish between the terms financing method and funding method, (ii) new paragraphs on subsequent events to account for considerations relating to social security program valuations that are not reflected in subsection 1430 of the General Standards and (iii) more detailed guidance regarding economic assumptions. As well, the NOI stated general changes to be considered in order to improve clarity, conciseness and specificity, while maintaining consistency between Part 7000 and International Standard of Actuarial Practice 2 – Financial Analysis of Social Security Programs.

Feedback was sought by the DG regarding the various proposals put forth as well as wording regarding consistency between standards and any other suggestions. One comment on the NOI was received from a CIA member.

## Comments in direct response to NOI question “Do you think a new section on subsequent events is necessary in Part 7000?”

One CIA member provided feedback regarding the question of adding a new section on subsequent events in Part 7000. The member stated that they did “not see a distinction between an actuarial report on a social security system and any other going concern, open group or projection valuation that reports on an entity ‘as it was at the calculation date and during the projection period.’” As such, the member

continued that: “If a change to standards is required ‘to explicitly permit the actuary to reflect subsequent events that make the entity different after the calculation date,’ then it should be made in the general standards.”

The member added that since Part 7000 applies to all work related to social security programs, and not just to external user or legislated reports, it’s possible different standards regarding reporting of subsequent events occurring prior to a cut-off date should apply to work for internal users.

## Response

The DG considered the feedback received and recognizes the advantage of clarifying wording regarding subsequent events in subsection 1430 of the General Standards instead of revising the wording specifically in Part 7000. The DG concluded that it would be best to first address the specific considerations of subsequent events relating to social security program valuations in Part 7000 before possibly changing subsection 1430. The reasons are as follows:

- Any proposed clarification to subsection 1430 would most likely be developed by a different CIA designated group other than the current Part 7000 DG.
- Any proposed changes to Part 7000 should not be delayed.
- Other areas of practice would need to consider the importance of any proposed clarification to subsection 1430 relating to their respective practice-specific standards. It is possible that agreement across the areas of practice would not be reached regarding possible new wording.

It is thus more efficient to revise Part 7000. It could be decided later on by the ASB to consider changes to subsection 1430.

## Proposed changes

This ED contains some proposed changes to subsection 7320 that were not in the October 27, 2022, NOI on Part 7000. The other changes proposed in this ED are consistent with the NOI.

- New paragraphs .09 to .11 in subsection 7310 are proposed to build upon subsection 1430 to account for considerations applicable particularly to social security program valuations, notably clarify the dual purpose of reporting as at the valuation date and during the projection period:
  - Paragraph 7310.09 states that the actuary may reflect a subsequent event if it makes the entity different during the projection period.
  - Paragraph 7310.10 states that the actuary would consider the effect of a subsequent event on financial status and assumptions in deciding whether to reflect that subsequent event in a valuation.
  - Paragraph 7310.11 states that the actuary would determine the cut-off date(s) up to which subsequent events would be recognized in a valuation, where such dates could vary by assumption.
- In subsection 7320 Assumptions, paragraph .04 regarding automatic balancing mechanisms is removed to avoid confusion and since it has no applicability in Canada.
- In subsection 7330 Economic assumptions, paragraph .07 is removed to avoid repetition of paragraph .02.
- In subsection 7360 Sensitivity testing, paragraph .01 clarification was added that the requirement applies to external user reports.

- In subsection 7360 Sensitivity testing, paragraph .04 regarding assumptions tested is expanded to be more complete.
- In various places throughout Part 7000, the wording is modified and expanded to improve clarity and completeness and to minimize the possibility that a member could misunderstand the intent of the various sections of Part 7000.
- In various places throughout Part 7000, the wording was modified for consistency with the general standards. For example, as requested by the ASB, the word material was removed since Materiality/Material is a defined term in subsection 1240 and the actuary should use throughout their work the concept of materiality.
- Some edits were made by the CIA Editor throughout the Part 7000.

## Members of the DG

The members of the DG are François Boulé (Chair), Robert L. Brown, Philippe Guèvremont, Jean-Claude Ménard, Andréanne Pearson and Jill Wagman.

## Desired feedback

The DG is soliciting feedback on the ED from members of the CIA and any other interested groups by **September 30, 2023**. Please send them to [François Boulé](#) with a copy to [Chris Fievoli](#).

Feedback is welcomed on the proposed changes described above and in the ED. In addition, the DG is interested in feedback on any other changes to Part 7000 that respondents believe would be desirable.


No specific forums for expressing comments, other than through submission of written comments, are planned regarding this ED.

## Due process

The ASB's *Policy on Due Process for the Adoption of Standards of Practice* was followed in the development of the ED.

## Timeline and effective date

It is the responsibility of the ASB to make final decisions regarding the revised standards of practice. The ASB plans to adopt final standards to be effective no earlier than January 1, 2024.



*The Canadian Institute of Actuaries (CIA) is the qualifying and governing body of the actuarial profession in Canada. We develop and uphold rigorous standards, share our risk management expertise, and advance actuarial science to improve lives in Canada and around the world. Our more than 6,000 members apply their knowledge of math, statistics, data analytics, and business in providing services and advice of the highest quality to help Canadian people and organizations face the future with confidence.*

**7000 – Social Security Programs**

## Table of Contents

<b>7100</b>	<b>Scope .....</b>	<b>7003</b>
<b>7200</b>	<b>General .....</b>	<b>7004</b>
7210	Circumstances affecting the work .....	7004
7220	Data.....	7005
<b>7300</b>	<b>Valuation .....</b>	<b>7006</b>
7310	Methods.....	7006
7320	Assumptions.....	7007
7330	Economic <b>A</b> assumptions .....	7008
7340	Non-economic <b>A</b> assumptions.....	7009
7350	Margins for <b>A</b> adverse <b>D</b> eviations .....	7010
7360	Sensitivity <b>T</b> esting .....	7011
<b>7400</b>	<b>Experience <b>A</b>analysis.....</b>	<b>7012</b>
<b>7500</b>	<b>Reporting on the <b>V</b>aluation of a <b>S</b>ocial <b>S</b>ecurity <b>P</b>rogram .....</b>	<b>7013</b>

## 7100 Scope

01. Part 1000 applies to work within the scope of this ~~Part~~ 7000.
02. The standards in ~~Part~~ 7000 apply to an actuary when performing or reviewing, advising on, or opining on work related to social security programs.
03. In Canada, the social security programs include the Canada Pension Plan (~~CPP~~), the Québec Pension Plan (~~QPP~~), the Old Age Security (~~OAS~~) program, and other similar plans that fall under the definition of social security program.
04. The standards in ~~Part~~ 7000 do not apply to programs established solely or primarily for government employees, to workers' compensation programs, or to programs that primarily provide health insurance or property and casualty insurance.

## 7200 General

### 7210 Circumstances affecting the work

.01 The actuary's work on the valuation of benefit liabilities or other items contained in the financial statement of a social security program, or on the financing arrangements of a social security program, should take into account the circumstances affecting the work. [Effective February 1, 2018]

.02 The circumstances affecting the work would include:

- terms of the relevant statute, regulations, and other binding authorities;
- relevant accounting standards and policies; and
- terms of an appropriate engagement under which the work is being performed.

~~and~~ Additionally, the circumstances affecting the work may include the financing policy of the social security program.

.03 The terms of an appropriate engagement would define the role of the actuary and the purpose of the work. The work of the actuary may include the provision of advice on the financing of the social security program, its financial condition, and or any other actuarial item required under the terms of an appropriate engagement.

.04 The terms of an appropriate engagement may specify applicable policies of the social security program relevant to the work of the actuary. These policies may include a formal or informal financing policy, an accounting policy, and or an investment policy.

.05 Significant terms of an appropriate engagement may stipulate one or more ~~of~~:

- use of a specified asset value or method of asset valuation; and
- use of a specified financing method based on a pre-determined financing objective.

.06 Objectives of the financing method specified by the terms of an appropriate engagement may include, but are not limited to, a specific funding target, the security of benefits, a principle of intergenerational or intragenerational equity ~~among generations~~, and/or a stable contribution rate over the long term.

.07 The actuary would take into account established practice (if relevant) when no law exists with regard to certain benefit provisions or financial measures (for example, the basis for future indexation of retirement benefits).

**7220 Data**

- .01 Where sufficient, reliable, and relevant data are not available for the valuation of a specific benefit, the actuary should make appropriate assumptions and/or introduce appropriate methods to compensate for any perceived deficiencies in the data.  
[Effective ~~October 15, 2017~~ Month XX, 202X]
- .02 Sufficient, reliable, and relevant data may not be available to the actuary in various circumstances, for example, such as:
- a newly established social security program;
  - the relevant statute may have been amended to provide a new or revised benefit;
  - an applicable policy of the social security program may have been recently revised; or
  - the social security program administration practices may have recently changed.
- .03 Where the data are not sufficient, not fully reliable, and/or not sufficiently relevant to expected future experience for a specific benefit, the actuary may consider taking one or more of the following actions:
- ~~i~~ntroducing appropriate assumptions regarding missing, incomplete, or unreliable data, ~~and~~
  - ~~a~~Adjusting data and historical experience for the purpose of the work, as appropriate, to remove any actual or perceived distortions, such as the effect of historical inflation or one-time benefit changes.
- .04 For a newly established or substantially changed social security program, the actuary would take into account other relevant information, including relevant experience of comparable social security programs.



## 7300 Valuation

### 7310 Methods

- .01 The actuary should value the social security program assuming that it continues indefinitely as a going concern. [Effective October 15, 2017]
- .02 The actuary should select an actuarial cost method that is consistent with the circumstances affecting the work. [Effective February 1, 2018]
- .03 The actuary's work should take into account the benefits, relevant policies, and administration practices of the social security program, as of the calculation date, and should take into account any virtually definitive amendment to these items that is expected to have an material effect on benefits, unless the circumstances affecting the work require otherwise. [Effective ~~February 1, 2018~~ Month XX, 202X]
- .04 The actuary would use a valuation methodology that is consistent with the financing method used for the social security program. Two methods are available:
- An open group methodology, under which contributions and benefits of both current and future participants are considered, is most appropriate for pay-as-you-go and partially funded social security programs and may also be used for social security programs that are meant to be fully funded. ~~and~~
  - A closed group methodology, under which only current participants are considered, with or without their assumed future benefit accruals and contributions, is only appropriate for a ~~fully funded~~ social security program that is meant to be fully funded.
- .05 For a social security program that is meant to be fully funded, the actuary would:
- ~~M~~measure the funded status of the social security program under a closed group methodology; and
  - ~~i~~f also using an open group methodology, disclose the relationship between assets (the value of the social security program's current assets and the present value of its future contributions) and liabilities (the present values of its current and anticipated future liabilities over the projection period).

- .06 Based on the circumstances affecting the work, the actuary may judge an alternative valuation methodology to be more appropriate. That approach would be used with justification communicated in the report.

- .07 The projection period used in the actuary's work should be sufficient considering the circumstances affecting the work. [Effective February 1, 2018]

#### **Amendments ~~and subsequent events~~**

- .08 The actuary's valuation of the social security program would reflect all virtually definitive amendments of which the actuary is aware on the calculation date, including those amendments with an effective date after the calculation date. Where the circumstances affecting the work require otherwise, the actuary may exclude the effect of a known virtually definitive amendment, but the actuary would disclose the effect of such amendment.

#### **Subsequent events**

- .09 For social security programs, one of the purposes of the report is to assess the financial condition of the program throughout the projection period. In addition to the examples described in subsection 1430, the actuary may reflect the subsequent event if it makes the entity different during the projection period.
- .10 The actuary would consider the effect of subsequent events on financial status or assumptions (individually and in aggregate) in their decision to reflect the subsequent event in the valuation.
- .11 The actuary would determine the cut-off date(s) up to which subsequent events would be recognized in the valuation. Such cut-off dates may vary by assumption.

### **7320 Assumptions**

- .01 The actuary should select assumptions that reflect the projection period and the expectation that the social security program will continue indefinitely as a going concern, but may adjust such assumptions to reflect short-term considerations, where appropriate. [Effective October 15, 2017]
- .02 The actuary should select either best estimate assumptions or best estimate assumptions modified to incorporate margins for adverse deviations to the extent, if any, mandated by law or by the circumstances affecting the work, and should provide the rationale for the decision made with respect to the inclusion or exclusion of margins. [Effective February 1, 2018]

.03 Where a social security program has a policy or history of providing ad hoc adjustments to contributions or to benefits, or a periodic update of parameters of the program, such as the maximum insurable earnings, the actuary should recognize such policy or history when valuing the social security program. The actuary should by selecting assumptions consistent with such policy or history as appropriate, unless a virtually definitive decision to discontinue such adjustments or updates has been taken by the social security program. The actuary should value the social security program with and without ~~any assumed~~ ad hoc adjustments. [Effective ~~October 15, 2017~~ Month XX, 202X]

~~.04 The actuary would consider any automatic balancing mechanisms that exist in a social security program when selecting the assumptions. The actuary would consider to what extent the social security program is “immunized” from the volatility of some variables by the automatic balancing mechanisms.~~

### 7330 Economic ~~A~~assumptions

.01 The needed economic assumptions may include, but are not limited to, the following:

- the discount rate;
- the ~~expected~~ rate of investment income;
- the ~~expected~~ investment and administrative expenses;
- the ~~expected~~ rate of general inflation;
- the ~~expected~~ real wage growth;
- the ~~expected~~ labour force participation rate; and
- the ~~expected~~ unemployment rate.

.02 The economic assumptions needed would depend on the nature of the benefits that are being valued, and may vary by year.

.03 The actuary would ~~develop and~~ disclose separate nominal ~~assumptions, but may prefer to complete the calculations using~~ rates and rates that are net of inflation, net of expenses or net of some other factor, where appropriate.

.04 When determining the best estimate assumption for the ~~expected~~ rate of investment income, the actuary would take into account the expected pattern of risk-free rates of return, the expected additional investment return on the assets of the social security program at the calculation date, if any, and the expected investment policy after that date. The actuary would provide justification for the expected additional investment return. Possible justifications include:

- additional returns over risk-free rates expected to be earned on non-risk-free fixed income assets of the type and quality owned on the reporting date and expected to be acquired pursuant to the investment policy of the social security program;
- additional returns over risk-free interest rates expected to be earned on other types of investments, including publicly traded common or preferred equities, private placements, real estate, and private equity; and
- projected composition of the investment portfolio in future years.

.05 In establishing the assumption for the ~~expected~~ rate of investment income, the actuary would assume that there would be no additional returns achieved, net of investment expenses, from an active investment management strategy compared to a passive investment management strategy, except to the extent that the actuary has reason to believe, based on relevant supporting data, that such additional returns will be consistently and reliably earned over the long term.

.065 The ~~expected~~ assumption for the investment expenses would depend on the investment policy of the social security program and the types of investments held and projected to be held in the future. Historical experience would also be considered, as appropriate.

~~.06—The assumed expected rate of investment income need not be a flat rate but may vary from period to period.~~

### 7340 Non-economic ~~A~~assumptions

.01 When setting non-economic assumptions, the actuary would reflect all known material contingencies.

.02 The needed non-economic assumptions may include, but are not limited to, the following:

- the benefit ~~take-up~~ election rates;
- the ~~expected~~ fertility rate;
- the ~~expected~~ migration rate; and
- the ~~expected~~ mortality and morbidity rates.

### 7350 Margins for ~~A~~adverse ~~D~~deviations

- .01 The actuary should not include any margins for adverse deviations when the circumstances affecting the work require a best estimate calculation. [Effective February 1, 2018]
- .02 The actuary should include one or more margins for adverse deviations when the circumstances affecting the work require such margins. A non-zero margin should be sufficient, without being excessive. The overall provision for adverse deviations resulting from the application of all margins for adverse deviations should be appropriate in the aggregate. [Effective February 1, 2018]
- .03 If the actuary is required by the circumstances affecting the work to use a margin for adverse deviations that is outside the range that the actuary considers appropriate, the actuary may use such imposed assumption, but the actuary should disclose that the margin is outside of the appropriate range and disclose the reason for using such margin. [Effective February 1, 2018]
- .04 Examples of situations ~~where in which~~ the circumstances affecting the work might require an unbiased calculation include the following:
- the legislation governing the social security program requires an unbiased calculation; or
  - the social security program's financing policy requires the use of best estimate assumptions.
- .05 Examples of situations ~~where in which~~ the circumstances affecting the work might require the inclusion of one or more margins for adverse deviations include the following:
- the relevant legislation or financing policy requires inclusion of margins for adverse deviations; or
  - Paragraph 7350.04 does not apply and the level of uncertainty or volatility around a particular assumption is high, and not considered to be sufficiently mitigated by the underlying adaptability of the social security program.

.06 Where the actuary includes a margin for adverse deviations, the actuary would provide the rationale for inclusion of the margin and for the selection of the specific amount of the margin. The rationale may include considerations such as:

- the financing policy of the social security program;
- the relative importance placed on the balancing of competing interests (e.g., benefit security versus cost of the social security program);
- the level of uncertainty inherent in the assumption;
- the level of reliability or credibility of the data or historical information upon which the assumption is based;
- the asset/liability mismatch risk; and
- the legislative or other restrictions on the ability to mitigate past adverse experience.

### 7360 Sensitivity ~~T~~esting

.01 For an external user report, ~~T~~the actuary should perform sensitivity testing of adverse scenarios to illustrate ~~plausible material~~ risks to which the social security program may be exposed and to aid in the understanding of the effect of adverse changes to assumptions. [Effective ~~October 15, 2017~~ Month XX, 202X]

.02 The actuary may also perform sensitivity testing of favourable scenarios.

.03 When selecting the assumptions and scenarios for sensitivity testing, the actuary would consider the circumstances affecting the work, and would select those assumptions ~~that~~ which have an material impact on the valuation. The actuary may consider the use of testing of integrated sensitivity scenarios, for example, the effect of a deep and prolonged recession.

.04 Assumptions tested may include, but are not limited to, ~~the following~~:

- investment rate;
- real wage growth;
- labour force participation rates;
- migration;
- fertility rates; and
- mortality rates.

## 7400 Experience Analysis

- .01 The actuary should conduct an experience analysis, including a comparison of actual and expected experience for the period between the prior calculation date and the current calculation date. [Effective October 15, 2017]
- .02 The actuary should conduct a reconciliation of the main results of the social security program valuation between the prior calculation date and current calculation date. The reconciliation should include an analysis and itemization of the changes in the methodology and assumptions used, legislative amendments that occurred, or other components of the valuation that contributed to the change in the main results. [Effective ~~October 15, 2017~~ Month XX, 202X]
- .03 The actuary's analysis would include all significant experience variations. At a minimum, the actuary's analysis would consider the impact of any significant changes to the assumptions or methods used, any significant changes to the benefits or policies of the social security program, gains or losses due to investment returns on the social security program's assets, legislative changes, and any other areas where the difference between actual and expected experience is significant.

## 7500 Reporting on the ~~V~~valuation of a ~~S~~social ~~S~~security ~~P~~program

- .01 For work pursuant to this part, the actuary should prepare a report that:
- states the calculation date, ~~and~~ the report date and the cut-off date(s), of the actuarial opinion given;
  - identifies the legislation or other authority under which the work is completed;
  - describes the significant terms of the appropriate engagement that are material-relevant to the actuary's work, including the purpose of the work;
  - describes the sources of the participants' data, program provisions and policies, and assets, if any, and the dates at which they were compiled;
  - describes the data used for the valuation and any limitations thereof, and any significant assumptions made about insufficient or unreliable data;
  - describes the social security program's provisions, significant policies, and relevant administration practices, including the identification of any amendments made since the prior calculation date, and the effect of such amendments on the program's financial condition;
  - describes the social security program's source(s) of financing;
  - describes any automatic balancing mechanisms of the social security program and the extent to which they are triggered based on the result of the valuation;
  - describes any definitive or virtually definitive amendment, policy change or change to administration practice, confirms whether or not such amendment or change has been reflected in the valuation, and identifies the effect of such amendment or change on the program's financial condition;
  - discloses any subsequent events of which the actuary is aware, whether or not the events are taken into account in the work, or, if there are no subsequent events of which the actuary is aware, includes a statement to that effect;
  - describes the nature and extent of ~~material~~-risks faced by the social security program, and the approach taken by the actuary to assess those risks;
  - states that the assumptions are best estimates, where that is the case, or discloses the aggregate provision for adverse deviations in the



results, where the assumptions include margins for adverse deviations;

- describes the methodology used to assess the financial condition of the social security program at the calculation date. The description of the methodology should specify:
  - whether it is based on a closed or open participants group; and
  - how any automatic balancing mechanisms, if present, are incorporated;
- presents the projections of the components of the program's cash flows, including the contributions, benefits, administrative expenses, and investment income, if any;
- presents the key results of the valuation with and without any assumed ad hoc adjustments;
- states the key contribution rates required for the social security program, if applicable;
- describes and quantifies a reconciliation of the actual and expected experience with respect to the assets, if applicable, expenditures, and key contribution rates or other indicators of the social security program from the prior calculation date to the current calculation date; and
- describes sensitivity or scenario testing performed for key assumptions and reports the results of such testing.

Depending on the terms of the engagement, the report should:

- state the prior calculation date and next calculation date, as applicable;
- describe the social security program's assets, if any, including their market value, the assumptions and methods used to value the assets, and a summary of the assets by major category;
- state the financial condition of the social security program; and
- if the social security program is meant to be fully funded, state:
  - its funded status at the calculation date under a closed group methodology;
  - if also using an open group methodology, the extent to which the social security program's current assets and the present value of its future contributions cover the present values of its current and anticipated future liabilities over the projection period under an open group methodology;

and describe the differences between the above two measures. [Effective ~~February 1~~ Month XX, 202X18]

.02 The report should provide the following five statements of actuarial opinion, all in the same section of the report and in the following order:

- A statement regarding the data, which would usually be, “In my opinion, the data on which the valuation is based are sufficient and reliable for the purpose of the valuation.”<sup>7</sup>
- A statement regarding the assumptions, which would usually be, “In my opinion, the assumptions used for the purpose of the valuation are reasonable and appropriate, both individually and in aggregate.”<sup>7</sup>
- A statement regarding the methods, which would usually be, “In my opinion, the methods employed in the valuation are appropriate for the purpose of the valuation.”<sup>7</sup>
- If applicable to the mandate, a statement certifying the required key contribution rates or other measures to finance the social security program. The statement may take the form of:

“Based on the results of this valuation, I hereby certify that the [name(s) of key contribution rate(s) and/or other measure(s)] to finance the [name of social security program] is [X.XX]% for the year [YYYY] and thereafter.”<sup>7</sup>

- A statement regarding conformity to accepted actuarial practice, which should be, “This report has been prepared, and my opinions given, in accordance with accepted actuarial practice in Canada.”  
[Effective ~~October 15, 2017~~ Month XX, 202X]

.03 The report should be sufficiently detailed to enable another actuary to examine the reasonableness of the valuation and to enable stakeholders, policymakers,<sup>7</sup> and other interested parties to make informed decisions regarding the social security program.  
[Effective ~~October 15, 2017~~ Month XX, 202X]

.04 There are several measures the actuary may use to present the results, including:

- projected cash flows and ending positions;<sup>7</sup>
- discounted cash flows;<sup>7</sup> and/or
- contribution rates required.

- .05 The actuary may be asked to answer questions regarding the financial condition of the social security program, such as the estimated effect from changing an assumption used in the most recent valuation. In such instances, the actuary would specify the purpose and scope of the work and any limitations or constraints that apply to the interpretation of the results of the work compared to the results of the most recent valuation. If an actuarial opinion is required for such work, the actuarial opinion would be similarly adjusted.
- .06 The circumstances affecting the work may result in a deviation from accepted actuarial practice in Canada. For example, the applicable legislation or the terms of engagement may require that the actuary use a margin for adverse deviations that is outside the range that the actuary considers appropriate. In such case, the actuary would disclose such deviation in the report, and if practical, useful, and appropriate under the terms of the engagement, report the results of applying accepted actuarial practice.