Assessing the Sustainability of the Canada Pension Plan through Actuarial Balance Sheets

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Office of the Superintendent of Financial Institutions,
Office of the Chief Actuary, Canada
About the speaker

- Jean-Claude Ménard
- Chief Actuary
  Between 1980 and 1999, Mr. Ménard held progressively more senior roles with the Quebec Pension Board, culminating in his appointment as Chief Actuary and Director of Valuation in 1995. Mr. Ménard joined the Office of the Superintendent of Financial Institutions as Chief Actuary of Canada in August 1999.

Office of the Superintendent of Financial Institutions (OSFI)

Office of the Chief Actuary
  Office of the Chief Actuary (OCA) is an independent unit housed within OSFI that provides a range of actuarial valuation and advisory services to the federal government. The mandate of the OCA is to conduct statutory actuarial valuations of the Canada Pension Plan (CPP), Old Age Security program, federal public sector employee pension and insurance plans, Employment Insurance and the Canada Student Loans Program.
Canadian Retirement Income Security System: Not all eggs in the same basket!

Canadian retirement system with mixed funding approaches is well recognized in the world for its capacity to adapt rapidly to changing conditions.

- Pays-as-you-go funding (OAS/GIS: Demogrants)
- Full funding (Occupational Pension Plans/RRSP)
- Partial funding (CPP/QPP: DB Earnings-Related)
Financing the CPP (Steady-State Funding)

- Partial funding approach: hybrid of pay-as-you-go financing and full funding
- All new and/or improved benefits should be fully-funded
- Implemented to:
  - Build greater assets over time
  - Stabilize asset/expenditure ratio and contribution rate
- CPP relies heavily on future contributions as a source of revenues

Investment Income and Contributions as Percentage of Total CPP Revenues
(9.9% contribution rate)

<table>
<thead>
<tr>
<th>Year</th>
<th>Investment Income</th>
<th>Contributions</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>89%</td>
<td>11%</td>
</tr>
<tr>
<td>2025</td>
<td>70%</td>
<td>30%</td>
</tr>
<tr>
<td>2050</td>
<td>67%</td>
<td>33%</td>
</tr>
<tr>
<td>2075</td>
<td>65%</td>
<td>35%</td>
</tr>
</tbody>
</table>
Evolution of Asset/Expenditure Ratio

Asset Excess (Shortfall) = Assets – Obligations
Projected cash flows over an extended time period of 150 years
Social security pension system’s balance sheet should reflect the system’s financing approach and its membership

- **Closed group without future accruals**
  - Fully funded systems: the accrued obligations are assumed to be funded in advance

- **Closed group with future accruals**
  - A social security system is closed to new entrants

- **Open group approach considers the benefits and contributions of both current and future plan participants**
  - Ongoing pay-as-you-go and partially funded systems where current contributors allow the use of their contributions to pay current beneficiaries’ benefits
## CPP Groups With or Without Future Benefit Accruals – Balance Sheet at 31 December 2015 (9.9% contribution rate, best-estimate scenario)

<table>
<thead>
<tr>
<th>Present Value as at 31 Dec. (in $ billion)</th>
<th>Excluding Future Benefit Accruals</th>
<th>Including Future Benefit Accruals</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Closed Group</td>
<td>Closed Group</td>
</tr>
<tr>
<td><strong>Assets</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current Assets</td>
<td>285</td>
<td>285</td>
</tr>
<tr>
<td>Future Contributions</td>
<td>-</td>
<td>906</td>
</tr>
<tr>
<td>Total Assets (a)</td>
<td>285</td>
<td>1,191</td>
</tr>
<tr>
<td><strong>Obligations (including administrative expenses)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current Benefits</td>
<td>446</td>
<td>446</td>
</tr>
<tr>
<td>Future Benefits</td>
<td>725</td>
<td>1,336</td>
</tr>
<tr>
<td>Total Obligations (b)</td>
<td>1,171</td>
<td>1,782</td>
</tr>
<tr>
<td>Asset Excess (Shortfall) (a) – (b)</td>
<td>(886)</td>
<td>(591)</td>
</tr>
<tr>
<td>Total Assets as a Percentage of Total Obligations (%) (a)/(b)</td>
<td>24.4%</td>
<td>66.9%</td>
</tr>
</tbody>
</table>

If the CPP financial sustainability is to be measured using balance sheet, it should be done on an open group basis that reflects the partially funded nature of the CPP

- The CPP was never intended to be fully funded on the closed group basis
- It is essential to consider future contributions and benefits in the assessment of the financial sustainability
- Closed group methodologies consider only current participants and are not consistent with partial pre-funding.
- The inclusion of future contributions and benefits with respect to both current and future participants in the assessment of the Plan’s financial state confirms that the Plan is able to meet its financial obligations and is sustainable over the long term.
Open group balance sheet may be presented in an alternative format: split out into pay-as-you-go and funded components of the Plan.

Modified balance sheet emphasizes hybrid nature of partial (steady-state) funding of the Plan.

- It allows for a better understanding of how future expenditures are financed.
Open Group Modified Balance Sheet: Separate present values of contributions and expenditures on assets and obligations sides of balance sheet

As at 31 December 2015, 9.9% contribution rate, $ billion:
Open Group Modified Balance Sheet: Regroup present values into pay-as-you-go and funded components.

As at 31 December 2015, 9.9% contribution rate, $ billion:

Asset Excess/Shortfall is driven by funded component.
The closed group approach does not provide any information regarding the changing cost of the CPP when fertility expectations change.

<table>
<thead>
<tr>
<th>Fertility</th>
<th>MCR</th>
</tr>
</thead>
<tbody>
<tr>
<td>TFR: 2.00</td>
<td>9.40%</td>
</tr>
<tr>
<td>BE TFR: 1.65</td>
<td>9.79%</td>
</tr>
<tr>
<td>TFR: 1.30</td>
<td>10.22%</td>
</tr>
</tbody>
</table>

### Total Fertility Rate - Asset Excess (Shortfall) ($ billion)

**Open Group**
- TFR: 2.00
  - Total Assets as % of Obligations: 104.5%
- TFR: 1.65
  - Total Assets as % of Obligations: 100.1%
- TFR: 1.30
  - Total Assets as % of Obligations: 95.6%

**Closed Group**
- TFR: 2.00
  - Total Assets as % of Obligations: 24.4%
- TFR: 1.65
  - Total Assets as % of Obligations: 24.4%
- TFR: 1.30
  - Total Assets as % of Obligations: 24.4%
The younger generations who are affected the most by the changes in future mortality are either not included at all under the closed group or have low accrued-to-date benefits.

<table>
<thead>
<tr>
<th>Cohort life expectancy at age 65, 2050</th>
<th>MCR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Males 20.9</td>
<td>9.46%</td>
</tr>
<tr>
<td>Females 23.2</td>
<td></td>
</tr>
<tr>
<td>Males 23.3 (best estimate)</td>
<td>9.79%</td>
</tr>
<tr>
<td>Females 25.6 (best estimate)</td>
<td></td>
</tr>
<tr>
<td>Males 25.8</td>
<td>10.10%</td>
</tr>
<tr>
<td>Females 27.9</td>
<td></td>
</tr>
</tbody>
</table>
Contrary to the statutory methodology, the closed group assessment under higher wage increases results in higher cost of the CPP.

<table>
<thead>
<tr>
<th>Real Wage Increase</th>
<th>MCR</th>
</tr>
</thead>
<tbody>
<tr>
<td>RWI: 1.8%</td>
<td>9.31%</td>
</tr>
<tr>
<td>BE RWI: 1.1%</td>
<td>9.79%</td>
</tr>
<tr>
<td>RWI: 0.4%</td>
<td>10.32%</td>
</tr>
</tbody>
</table>

Real Wage Increase - Asset Excess (Shortfall) ($ billion)

Open Group

- RWI: 1.8%: 143
- RWI: 1.1%: 1
- RWI: 0.4%: (87)

Closed Group

- RWI: 1.8%: (913)
- RWI: 1.1%: (886)
- RWI: 0.4%: (852)

Total Assets as % of Obligations

- RWI: 1.8%: 104.6%
- RWI: 1.1%: 100.1%
- RWI: 0.4%: 96.0%
- RWI: 1.8%: 23.8%
- RWI: 1.1%: 24.4%
- RWI: 0.4%: 25.1%
Main sources of reporting on the financial state of the CPP

- **Long-term Sustainability Reporting**

- **Consolidated Financial Statements**
  - [Public Accounts of Canada 2017 Volume I](#)
CPP Consolidated Financial Statements provide multiple disclosures

- **Note 13: Financing of the Canada Pension Plan**
  - Summary of the financing principles of the CPP
  - Main findings of the latest actuarial report

- **Note 14: Actuarial obligation in respect of benefits**
  - CPP balance sheet is presented under two approaches
    - Open group, and
    - Closed group without future accruals

- Same information included in the Public Accounts of Canada
Public Accounts of Canada favour the open group approach

“if the CPP’s financial sustainability is to be measured based on its asset excess or shortfall, it should be done on an open group basis that reflects the partially funded nature of the CPP, that is, its reliance on both future contributions and invested assets as a means of financing its future expenditures.”
The key to good disclosure is the cooperation between professions

- The Canadian disclosure model is a result of:
  - Many hours of discussions,
  - Efforts to understand each other’s position, and
  - Several compromises

Between professionals involved in the reporting process:
Actuaries
Accountants
Auditors

**The triple “A” Team!**
To conclude...

- Pay-as-you-go and partially funded programs should be assessed using the open group approach.

- The inclusion of future contributions and benefits with respect to both current and future participants in the assessment to the Plan’s financial state confirms that the CPP is able to meet its financial obligations and is sustainable over the long term.

- The reporting of financial information for social security systems should be internally consistent.
  - The information provided should educate and not confuse.

- Multiple disclosures similar to those used for the Canada Pension Plan could be the answer.

- International organizations, Governments and actuarial community should work together to develop the reporting requirements that will provide meaningful and complete information to users.
Thank you!
Thank you very much for your attention!

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Appendix
Length of projection period for the open group

- Limiting the projection period to e.g. 75 years
  - Excludes from the obligations part of the future expenditures for cohorts that will enter the labour force during the projection period
  - Most of the contributions for these cohorts are included in the assets

- However, increasing the length of the projection period also increases the uncertainty of results.
Change in the discount rate for PayGo component does not affect asset excess (shortfall) and Funded component remains unchanged.