Economic Security in an Aging Canadian Population

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Agenda

- Demographic background
- Income Patterns of the Elderly
- Government-Sponsored Income Security
- Employer-Sponsored Pension Plans
- Individual Savings / RRSPs / TFSAs
- Economic Security Aspects of Health Care
- Future Funding of Social Security
Define the Baby Boom

- Did not start until 1950’s
- Peaked in 1959 (all time high)
- Did not end until 1966
- Echo in late 1980’s (shallow)
- Deaths expected to outnumber births by 2030
Figure 4: Number of births and deaths in Canada, 1926 to 2056

Start of negative natural increase (according to the medium growth scenario)

Source: Statistics Canada (2008a), page 7
Demographic Background

- Those who think baby-boomers are 64 now (2010 – 1946) are off by 13 years (2010 – 1959)

- Baby-boomers now aged 44 to 59
Figure 5
Total fertility rate in Canada, 1926 to 2005

number of children per woman

Demographic Background

• Good news: Time to react

• Bad news: You ain’t seen nothing yet!
Demographic Background

- 2nd reason for population aging is lower mortality; higher life expectancy

- The “squaring” of the mortality curve
Figure 3: Survivor Curves Canada

Source: CPP Office of the Chief Actuary, Office of the Superintendent of Financial Institutions
<table>
<thead>
<tr>
<th>Year</th>
<th>At Birth</th>
<th></th>
<th>At Age 65</th>
<th></th>
<th>At Age 75</th>
<th></th>
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<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Male</td>
<td>Female</td>
<td>Male</td>
<td>Female</td>
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<tr>
<td>1921</td>
<td>58.8</td>
<td>60.6</td>
<td>13.0</td>
<td>13.6</td>
<td>7.6</td>
<td>8.0</td>
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<tr>
<td>1941</td>
<td>63.0</td>
<td>66.3</td>
<td>12.8</td>
<td>14.1</td>
<td>7.5</td>
<td>8.2</td>
</tr>
<tr>
<td>1961</td>
<td>68.4</td>
<td>74.2</td>
<td>13.5</td>
<td>16.1</td>
<td>8.2</td>
<td>9.5</td>
</tr>
<tr>
<td>1981</td>
<td>71.9</td>
<td>79.0</td>
<td>14.6</td>
<td>18.9</td>
<td>9.0</td>
<td>11.9</td>
</tr>
<tr>
<td>2001</td>
<td>76.9</td>
<td>82.0</td>
<td>17.0</td>
<td>20.5</td>
<td>10.3</td>
<td>12.9</td>
</tr>
<tr>
<td>2006</td>
<td>78.3</td>
<td>82.9</td>
<td>18.1</td>
<td>21.3</td>
<td>11.2</td>
<td>13.5</td>
</tr>
</tbody>
</table>
Demographic Background

- Baby-boom just accelerated “aging” process
- We will never go back to a youth dominated population
- Between 1996 and 2036, proportion of population aged 65+ will double
- Proportion of those 85+ will triple
**Table 2: Distribution of Canadian Population by Age-Group, 1956 to 2036**

<table>
<thead>
<tr>
<th>Age</th>
<th>1956</th>
<th>1976</th>
<th>1996</th>
<th>2016</th>
<th>2036</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 20</td>
<td>39.4</td>
<td>35.6</td>
<td>26.7</td>
<td>21.1</td>
<td>20.2</td>
</tr>
<tr>
<td>20 - 64</td>
<td>52.9</td>
<td>55.8</td>
<td>61.1</td>
<td>62.4</td>
<td>55.0</td>
</tr>
<tr>
<td>65+</td>
<td>7.7</td>
<td>8.6</td>
<td>12.2</td>
<td>16.4</td>
<td>24.8</td>
</tr>
<tr>
<td>75+</td>
<td>2.5</td>
<td>3.2</td>
<td>5.1</td>
<td>7.0</td>
<td>12.8</td>
</tr>
<tr>
<td>85+</td>
<td>0.4</td>
<td>0.7</td>
<td>1.2</td>
<td>2.1</td>
<td>3.8</td>
</tr>
</tbody>
</table>

Source: Statistics Canada Population Projections
Demographic Background

• Shift is very clear in the following population pyramids
Figure 4
Figure 5

Expected Percentage Change in Age Bands by 2026

Source: Statistics Canada
Demographic Background

- Population “aging” will not reverse when baby boom dies off
An International Comparison

- Next to Japan, we have the most dramatic population aging in the world
- Much more dramatic than the U.S.
- U.S. fertility rate = 2.1
- Canada’s fertility rate = 1.5
- Sweden has the “oldest” population today and the smallest shift
<table>
<thead>
<tr>
<th>Country</th>
<th>ADR 2005 (%)</th>
<th>ADR 2050 (%)</th>
<th>Increase (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Japan</td>
<td>30</td>
<td>76</td>
<td>153.3</td>
</tr>
<tr>
<td>Canada</td>
<td>19</td>
<td>45</td>
<td>136.8</td>
</tr>
<tr>
<td>Italy</td>
<td>30</td>
<td>64</td>
<td>113.3</td>
</tr>
<tr>
<td>France</td>
<td>25</td>
<td>47</td>
<td>88.0</td>
</tr>
<tr>
<td>US</td>
<td>19</td>
<td>34</td>
<td>78.9</td>
</tr>
<tr>
<td>UK</td>
<td>24</td>
<td>38</td>
<td>58.3</td>
</tr>
<tr>
<td>Sweden</td>
<td>26</td>
<td>40</td>
<td>53.8</td>
</tr>
</tbody>
</table>

Income Patterns of the Elderly

- Social Security benefits are up
- Especially the G.I.S.
  (used by 1/3 of Canadian elderly)
- More females now in C/QPP
Figure 7

Real Maximum CPP, OAS and GIS Benefits (1961-2009)

Notes: GIS benefits are for single individual. The CPP phase-in calculation is for December of the indicated year.
Table 4

C/QPP Contributors by Sex
(As a % of those aged 20-64)

<table>
<thead>
<tr>
<th>Year</th>
<th>Females</th>
<th>Males</th>
</tr>
</thead>
<tbody>
<tr>
<td>1971</td>
<td>48.0</td>
<td>95.8</td>
</tr>
<tr>
<td>1981</td>
<td>64.0</td>
<td>94.3</td>
</tr>
<tr>
<td>1991</td>
<td>66.7</td>
<td>82.6</td>
</tr>
<tr>
<td>2001</td>
<td>70.8</td>
<td>82.5</td>
</tr>
<tr>
<td>2007</td>
<td>73.8</td>
<td>82.6</td>
</tr>
</tbody>
</table>

Source: Office of the Chief Actuary, Canada Pension Plan (personal memo)
Income Patterns of the Elderly

- Private Pensions and RRSPs are also up
### Table 3
Percentage of Income from Various Sources for those 65+

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Private Pensions</td>
<td>16.5</td>
<td>8.6</td>
<td>20.5</td>
<td>9.0</td>
<td>32.9</td>
<td>18.6</td>
<td>36.3</td>
<td>23.4</td>
</tr>
<tr>
<td>And RRSPs</td>
<td>2.2</td>
<td>1.1</td>
<td>15.5</td>
<td>10.1</td>
<td>20.9</td>
<td>18.3</td>
<td>21.2</td>
<td>20.3</td>
</tr>
<tr>
<td>C/QPP</td>
<td>29.3</td>
<td>60.5</td>
<td>26.1</td>
<td>45.2</td>
<td>20.7</td>
<td>36.7</td>
<td>19.3</td>
<td>34.3</td>
</tr>
<tr>
<td>OAS/GIS</td>
<td>20.5</td>
<td>19.7</td>
<td>21.2</td>
<td>28.0</td>
<td>12.1</td>
<td>17.4</td>
<td>10.7</td>
<td>14.0</td>
</tr>
<tr>
<td>Investment</td>
<td>31.6</td>
<td>10.1</td>
<td>16.8</td>
<td>7.8</td>
<td>13.4</td>
<td>9.0</td>
<td>12.5</td>
<td>8.0</td>
</tr>
</tbody>
</table>


* “Other” includes work earnings.
Income Patterns of the Elderly

- Today’s news is good
  - Two worker families increase probability of at least one pension
  - No pension today does not mean no pension ever
  - From 1976 to 2007, real incomes for couples up 55%
  - For singles, increase was 79%
  - Median replacement rate = 80% (but this varies widely by income levels)
Income Patterns of the Elderly

- Canada looks good among OECD
  - Old age poverty rate of 4.4% is fifth lowest in 30 OECD countries (OECD average is 13.3%)

- Administration of public plans is low (only New Zealand is lower)

- Our diversified system is a strength
Median Equivalent Income After Tax, Families and Unattached Individuals, Aged 45-64 and 65+, Canada, 1976 to 2007

Source: Tabulations by Tristat Resources using Statistics Canada SCFs and SLIDs.
BUT

• 1/5 of Canadians may not have sufficient savings to replace at least 90% of pre-retirement consumption

• Management fees are high and no proof that active management better than passive
  - 2% of assets not unusual
  - results in loss of 37% of total accumulation

• Next generation is not on track to do as well
Government Sponsored Income Security

• OAS / GIS
  - Costs will rise with population aging
  - But benefits indexed to CPI not wages
  - So GNP should grow faster
  - Will return to this later
  - GIS non-taxable but clawed back
  - OAS taxable and clawed back
<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1996</td>
<td>2001</td>
<td>2011</td>
<td>2030</td>
</tr>
<tr>
<td>20.8</td>
<td>24.7</td>
<td>34.4</td>
<td>77.3</td>
</tr>
</tbody>
</table>

Government of Canada, 1996b, p34
Government Sponsored Income Security

- **C / QPP**
  - Contributions are 9.9% from YBE ($3500 constant) up to YMPE ($47,200 in 2010 – indexed to wages)
  - 9.9% split 50/50 with employer
  - Self employed pay 9.9%
  - Benefit = 25% of recorded earnings over 40 years (some drop outs allowed)
  - Benefits are taxable but not clawed back
  - Can be split evenly with spouse
  - Plan is sustainable for at least 75 years (since 1997 reforms)
  - Still lots of room for private savings
Employer-Sponsored Income Security

• The private pension coverage rate is down (now 38.5% of paid labour force)

• Reasons
  - Decline in union density
    (76% of union members have pension)
    (28% of non-union members have RPP)
  - Decline in larger workplaces
  - Decline in the manufacturing sector, especially auto

• Pension coverage rates for males vs. females now virtually equal
Employer-Sponsored Pension Plans

• Dichotomy of public vs. private workers
  - Public sector coverage is 78%
  - Private sector coverage is 25%
• As life expectancy rises, so do pension costs
• Plus, investment returns are low
• 1984: Seniors received 77% of income from public plans and 23 % from RPPs and RRSPs
• 2004: Seniors received 60% of income from public plans and 40% from RPPs and RRSPs
• Studies show that those with no RPP achieve same income replacement as those with RPP
Individual Savings and RRSPs

- What is the “correct” replacement ratio? (60%, 70%)
- A 70% ratio requires contributions of 14% of pay over 35 years
- A 60% ratio requires 11%
- Retiring later has a significant impact
- In 2006, 9 million Canadians had $1.9 trillion in RRPs and RRSPs
- New TFSA introduced in 2008 (no impact on OAS/GIS)
  - By December 31, 2009, there were 4.7 million TFSAs holding assets of $15.8 billion
Economic Security Aspects of Health Care

• Second most important reason for rising costs due to an aging population

• Clearly health care costs rise with age
Figure 10: Relative per capita costs of health care for males and females by age

Relative cost per capita (arbitrary units)

Source: Denton, Feaver and Spencer, 2005.
Economic Security Aspects of Health Care

- Canada now spends 10%+ of GDP on health care and rising
- For Ontario, health care is 42% of budget expenditures
- Is the “aging” population the cause
- “No” since oldest baby boomer is now aged 59
Economic Security Aspects of Health Care

• Most health care expended in last six months of life

• Improved life expectancy will delay these costs (which is good)
## Table 14

Cost Ratio: Died*/Survived Costs of Medical and Social Care by Age

<table>
<thead>
<tr>
<th>Age Band</th>
<th>Cost Ratio: Died*/Survived</th>
</tr>
</thead>
<tbody>
<tr>
<td>65</td>
<td>16.7</td>
</tr>
<tr>
<td>75-76</td>
<td>8.4</td>
</tr>
<tr>
<td>85-87</td>
<td>3.8</td>
</tr>
<tr>
<td>90-93</td>
<td>2.5</td>
</tr>
</tbody>
</table>

- Last six months of life

Source: McGrail et al. (2000)
Economic Security Aspects of Health Care

• Statistics show that health care costs rise 2.6% per annum

• Only 0.8% of this is due to population aging

• Those in health care like to hide behind the “aging” population arguments since it is “beyond our control”
Economic Security Aspects of Health Care

- What is driving increased health care costs today is increased servicing (heavier, more intense treatment) especially for the elderly
- No evidence of increased needs
- Outcomes appear to be unchanged
- Common occurrence in industrialized countries
Figure 11:

Increase in medical use by seniors in good and bad health

Economic Security Aspects of Health Care

- Internationally we fare well
- Spending more on health does not guarantee improved health
- Must work “smarter”
Table 15

Resources and Health Indicators, 2006

<table>
<thead>
<tr>
<th>Country</th>
<th>Health Expenditure As a % of GDP</th>
<th>Life Expectancy at birth</th>
<th>Infant Mortality per 100 live births</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada</td>
<td>10.0</td>
<td>80.7</td>
<td>5.0</td>
</tr>
<tr>
<td>France</td>
<td>11.0</td>
<td>80.7</td>
<td>3.8</td>
</tr>
<tr>
<td>Japan</td>
<td>8.1</td>
<td>82.4</td>
<td>2.6</td>
</tr>
<tr>
<td>UK</td>
<td>8.5</td>
<td>79.5</td>
<td>5.0</td>
</tr>
<tr>
<td>US</td>
<td>15.8</td>
<td>78.1</td>
<td>6.7</td>
</tr>
</tbody>
</table>

Source: www.oecd.org/document/16/0,3443,en_2649_34631_2085200_1_1_1_1,00.html
Future Funding of Social Security

• The leading cause of increased costs in an aging population

• As aged dependency ratios rise, youth dependency ratios fall

• Do they cancel each other out?
Figure 12:

Youth and Aged Dependency Ratios
1950 to 2025

Source: Author’s calculation using statistics from Brown and Bilodeau, 1997
Future Funding of Social Security

• Answer is “no”

• Publicly funded costs of elderly are about 2.5 times those for the young (per capita)

• So we must weight the elderly with a proportionate weight of 2.5
The Wealth Transfer Index

• Define: \[ WTI = \frac{#Y + 2.5 \times #A}{\text{Labour Force}} \]

• Labour force \( \equiv \) creates GNP by working

• \( Y + 2.5A \equiv \) consumes GNP but does not produce
Figure 13: Wealth Transfer Index, 1975 to 2041

The Wealth Transfer Index

• Trended downward from 1991 to 2006
• Note: it really does not take off until after 2016 (= 1951 + 65)
• Could we move some early retirees from the consuming numerator to the producing denominator?
• That is, raise the normal retirement age
Figure 14: Median Retirement Age in Canada with no Productivity Improvements (1996 to 2047)

The Wealth Transfer Index

NOTE: With productivity improvements, age of retirement need not rise as much.
Future Funding of Social Security

• On an international comparison, Canadian Social Security (OAS + GIS + C/QPP) is small and highly focused.
Figure 2
Canadian Security System in 2006 ($11,000-$100,000)

Income Replacement Ratio (based on benefits in Canadian Dollars)

Yearly Pre-retirement Income (in thousands of Canadian Dollars)

Net OAS (%)  CPP (%)  GIS (%)
Future Funding of Social Security

- Costs of OAS + GIS will rise from $33 billion in 2007 to $110 billion in 2030
- But indexed to CPI not wage growth
- Costs of OAS + GIS as a ratio of GNP
  
<table>
<thead>
<tr>
<th>Year</th>
<th>2007</th>
<th>2030</th>
<th>2050</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ratio</td>
<td>2.2%</td>
<td>3.1%</td>
<td>2.7%</td>
</tr>
</tbody>
</table>
  
- CPP in good shape and CPPIB has returned 5.1% per annum since its inception in 1999
- QPP story not as good
  - lower birth rate
  - lower in migration
  - lower GDP growth rate
Conclusion

• Social Security and health care are sustainable even with population aging

• Mitigating factors:
  – Later retirement
  – Faster GDP growth (productivity)