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Actuarial Report on the Canada Pension Plan as at 31 December 2006 and its Peer Review Process

2008 Annual Meeting • Assemblée annuelle 2008
20 June 2008, Québec



Office of the Superintendent of
Financial Institutions Canada

Bureau du surintendant des
institutions financières Canada

Office of the Chief Actuary

Bureau de l'actuaire en chef

Canada

Presentation

- *Purpose of the CPP Actuarial Report*
- Demographic and Economic Assumptions
- CPP, a Partially Funded Pension Plan
- Reconciliation and Uncertainty of Results
- Strengthening the Accountability and Peer Review



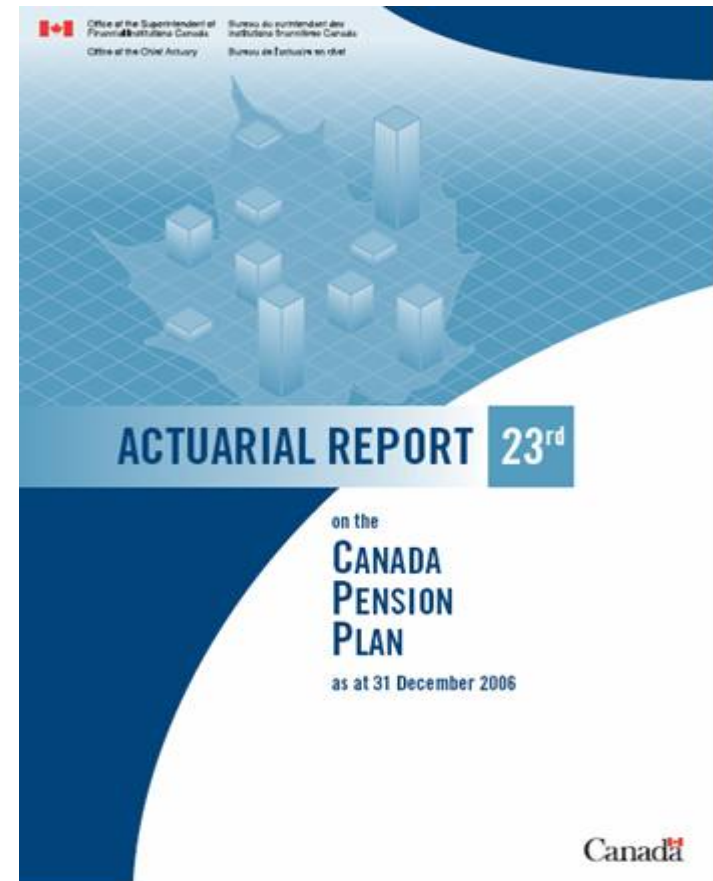
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Purpose of the CPP Actuarial Report



- Tabled by the Minister of Finance on 29 October 2007
- Inform on the current and projected future financial status of the Canada Pension Plan
- Calculate the minimum contribution rate



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Consultations on Assumptions

- CPP and QPP seminars were organized to get opinions from a wide range of experts in the fields of demography, economics and investments.
- Federal and provincial officials attended these seminars.



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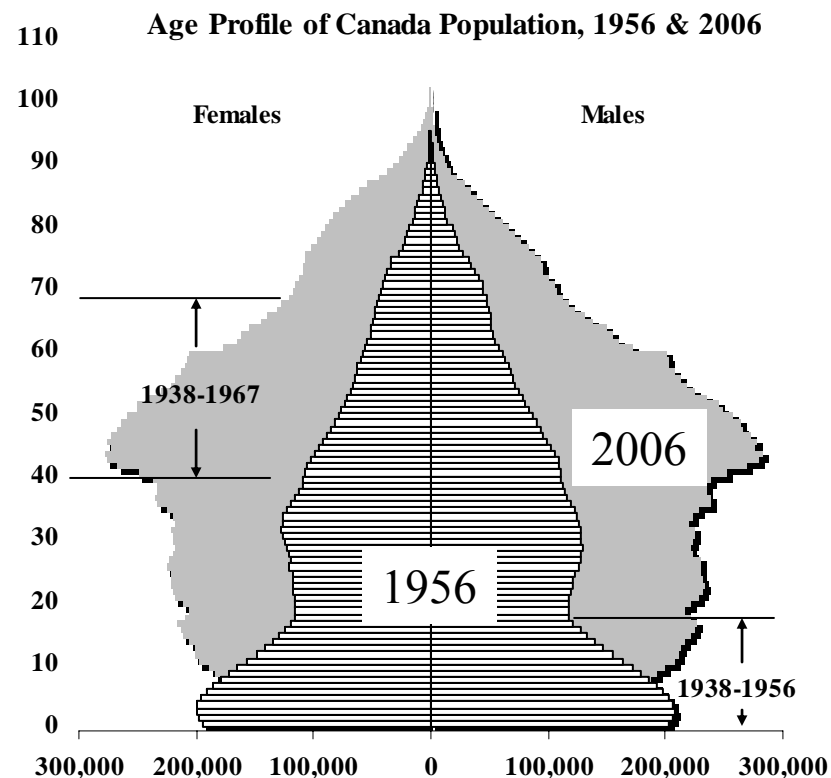
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Demographic Assumptions

- Fertility (Number of births)
- Migration
- Mortality (Life expectancy)
- Disability Rates } Benefit Assumptions
- Retirement Rates }



Sources: *Statistics Canada, U.N. population projections, CPP/QPP Seminars, Human Mortality Database, SSA 2006 U.S. Trustees Report, World Population Reference Bureau, HRSDC*



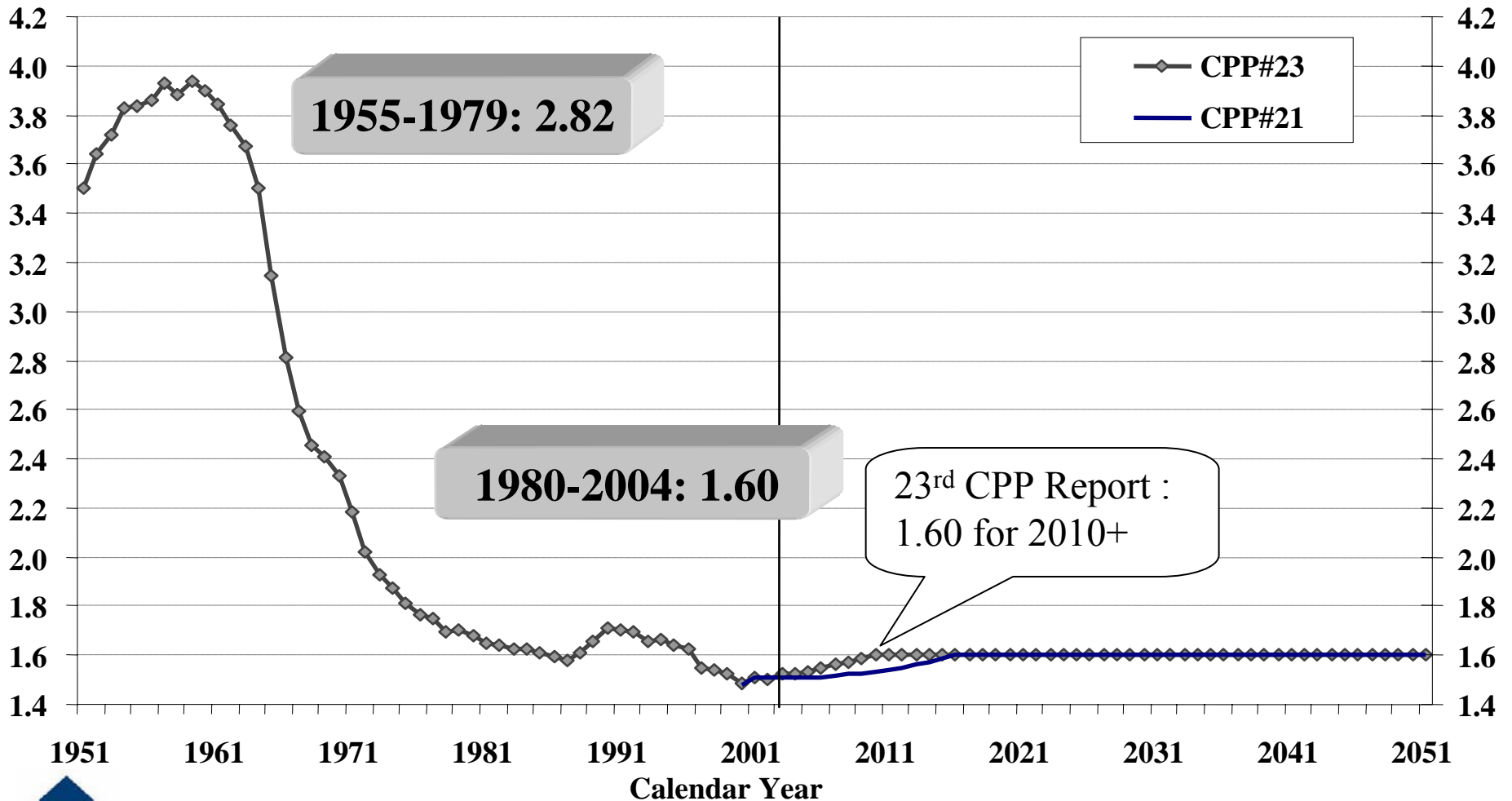
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Fertility Rate

(Children per woman)



23rd CPP Report :
1.60 for 2010+

Panel's view: reasonable



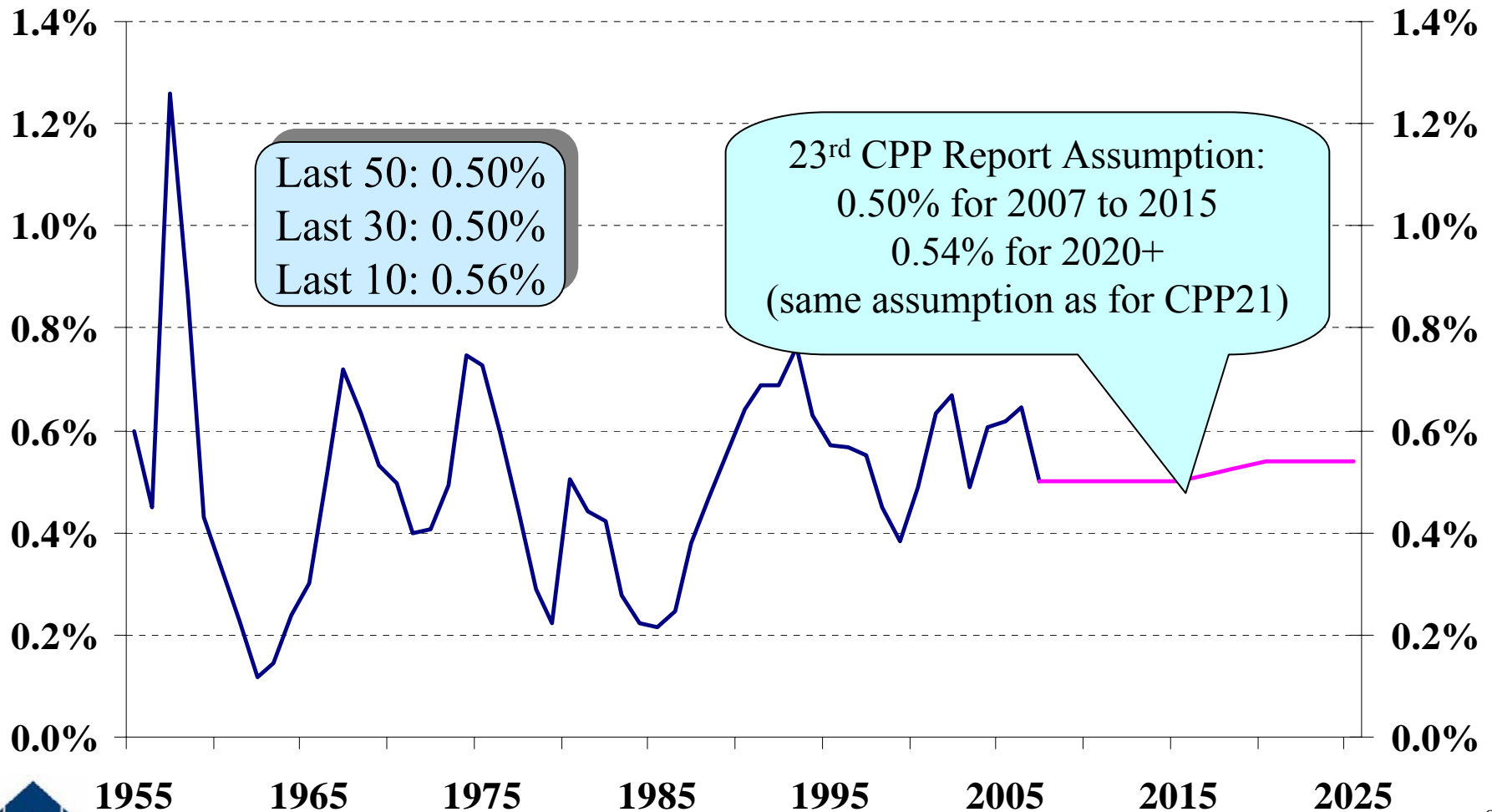
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Net Migration Rate



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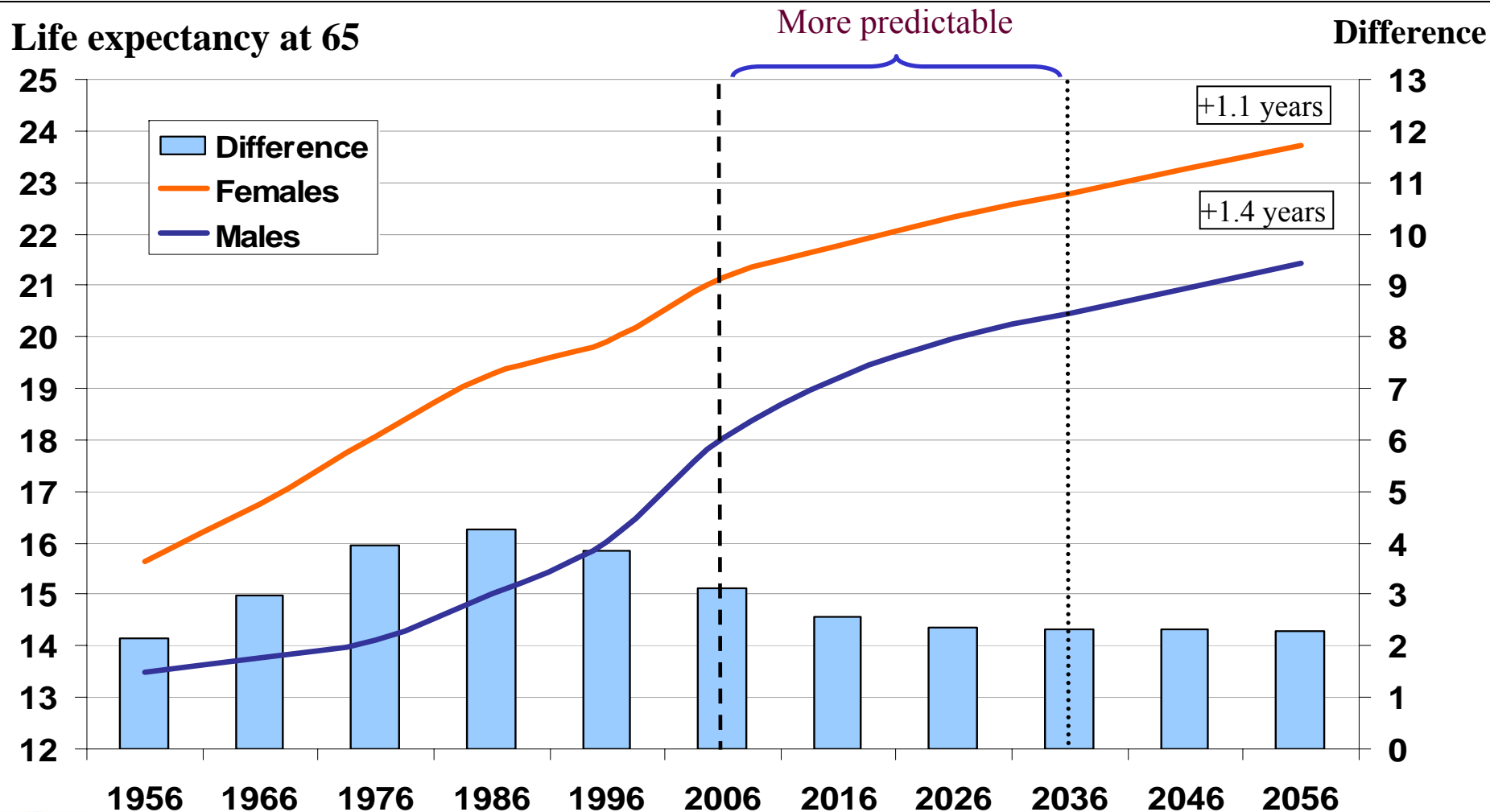
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Panel's view: reasonable



Increase in Life Expectancy at 65*

*Life expectancies shown are without assumed future mortality improvements.



More contributors are expected to reach the retirement age of 65.

Retirement beneficiaries are expected to receive their benefit for a longer period.



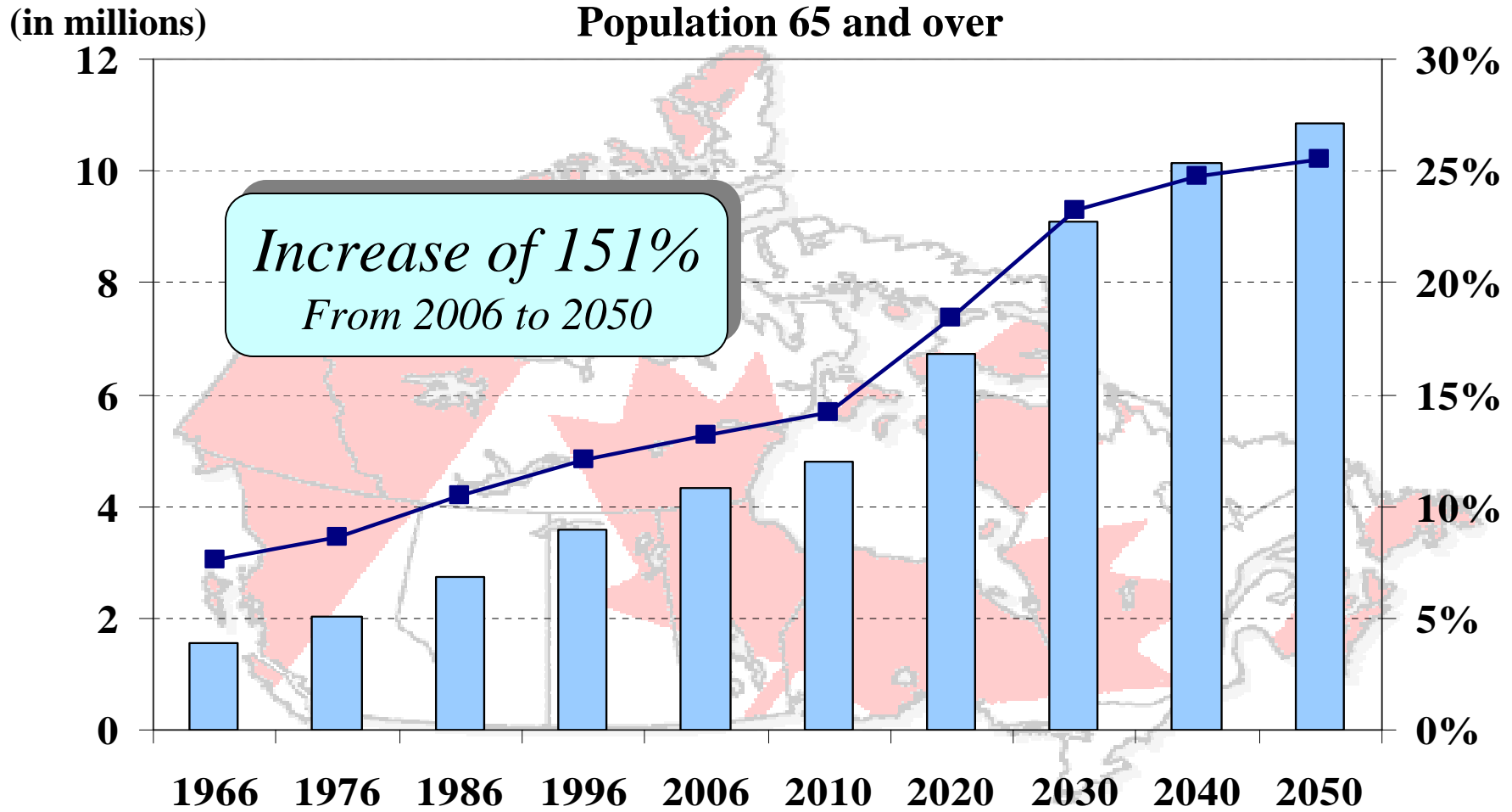
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Panel's view: reasonable



Aging of the Canadian Population



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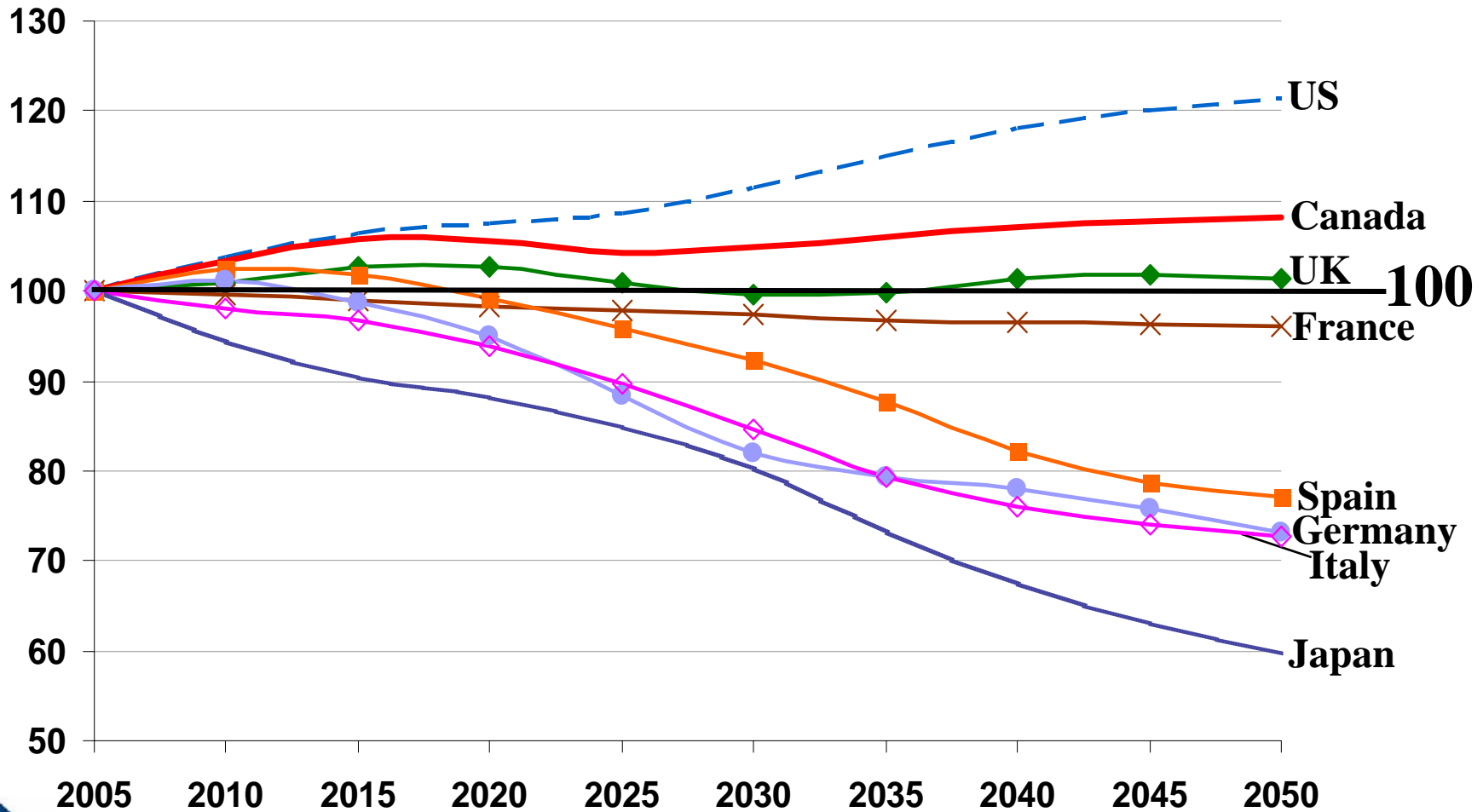
Number

% of Population

Increase of 249% for 80+



Working Age Population (ages 20-59) (indexed 2005=100)



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Source: United Nations Population Division, World Population Prospects: The 2006 Revision

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Economic Assumptions

- Participation rates
 - Employment increase (Job creation rate)
 - Unemployment rate
 - Inflation rate
 - Increase of average employment earnings
 - Interest rate and rate of return by asset class
- } # of earners

Sources: *Historical Trends, Recent Experience, PEAP (U of T), Conference Board, Department of Finance, CIA Report on Canadian Economic Statistics, Watson Wyatt Economic Expectations Survey, Canada Revenue Agency, Bank of Canada, CPP/QPP Seminars, CPPIB*



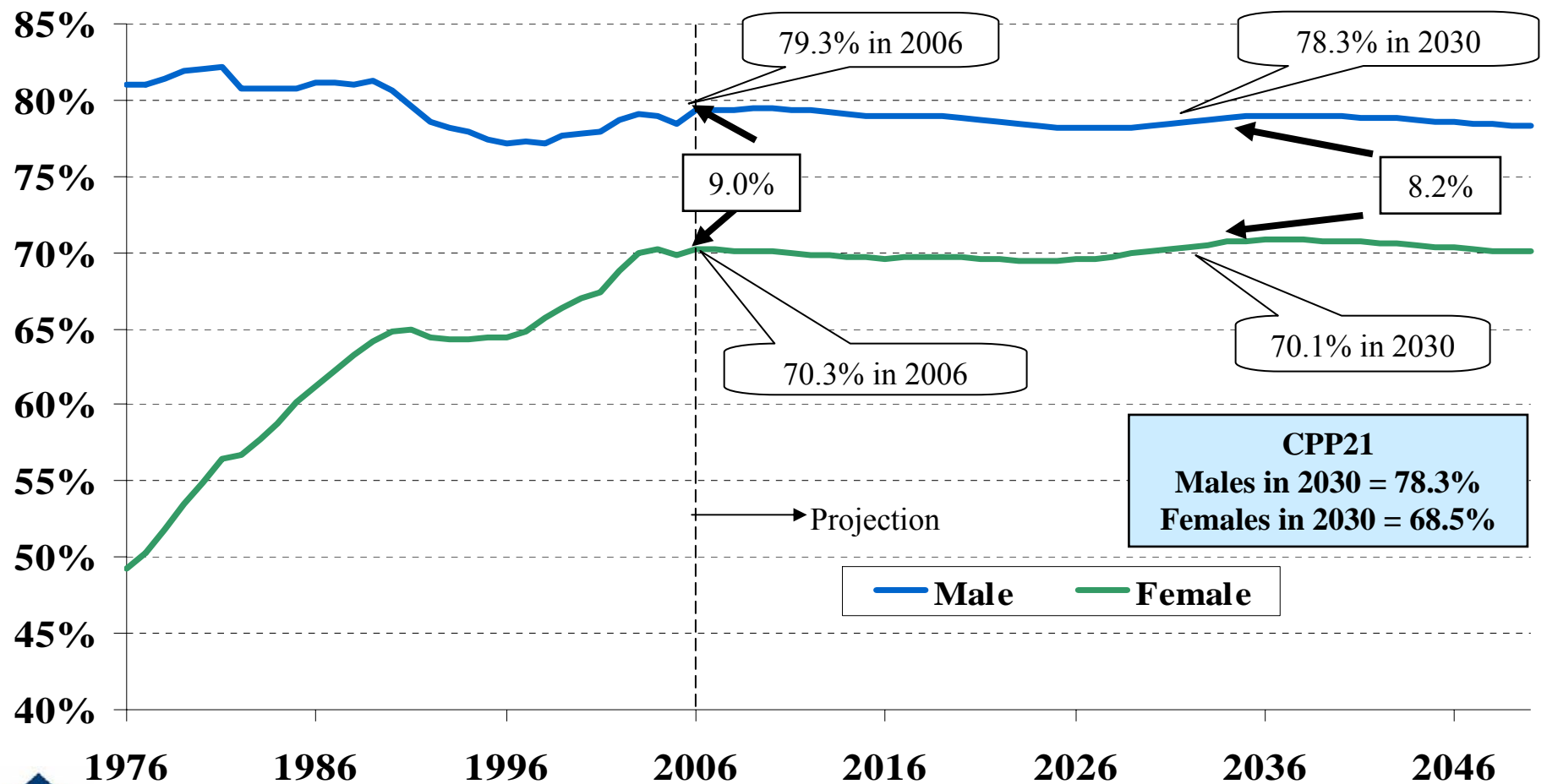
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Gap between male and female participation rates will continue to decrease but at a slower pace

Participation Rates of 15-69 (Canada)



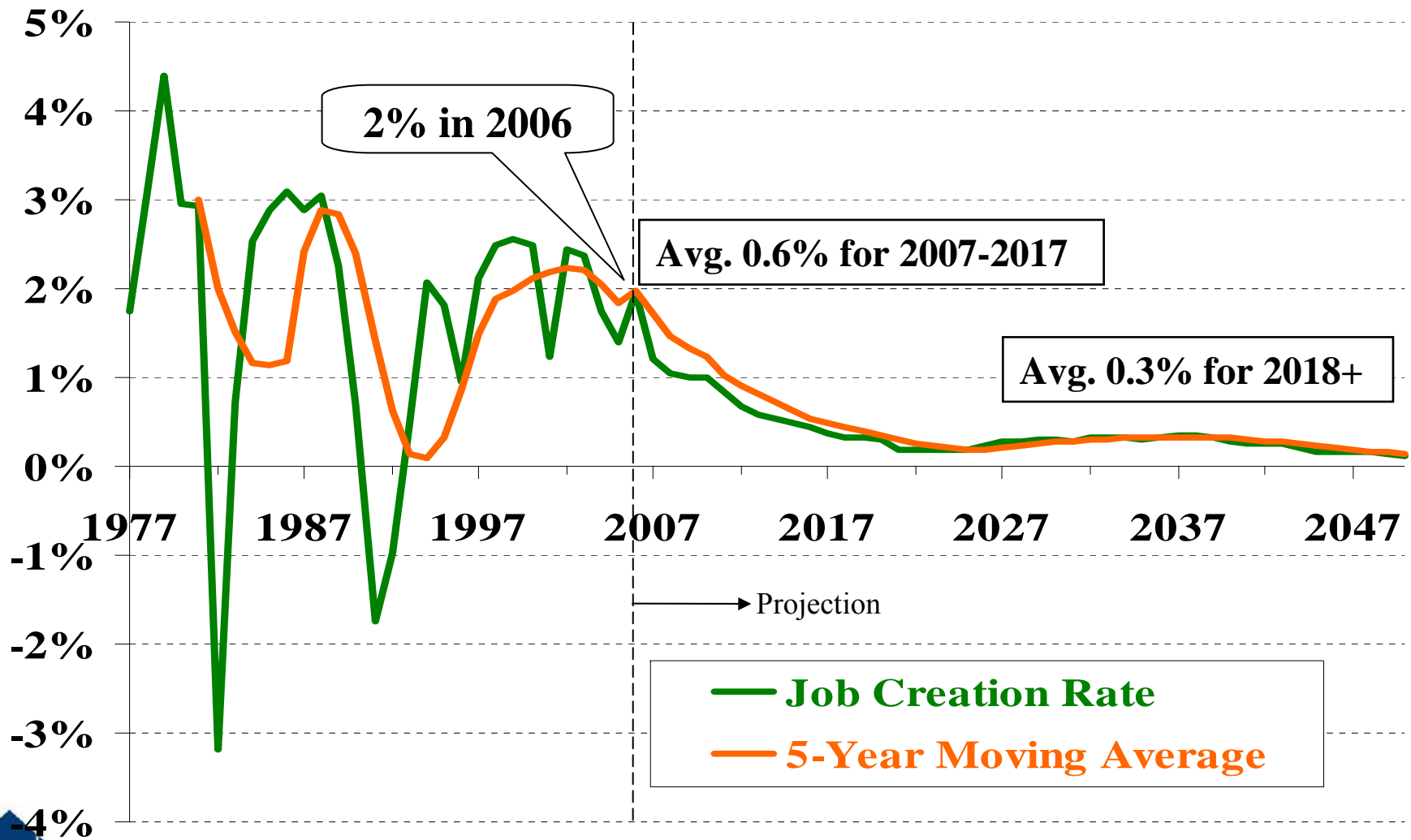
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Panel's view: reasonable



Job Creation Rate (15+, Canada)

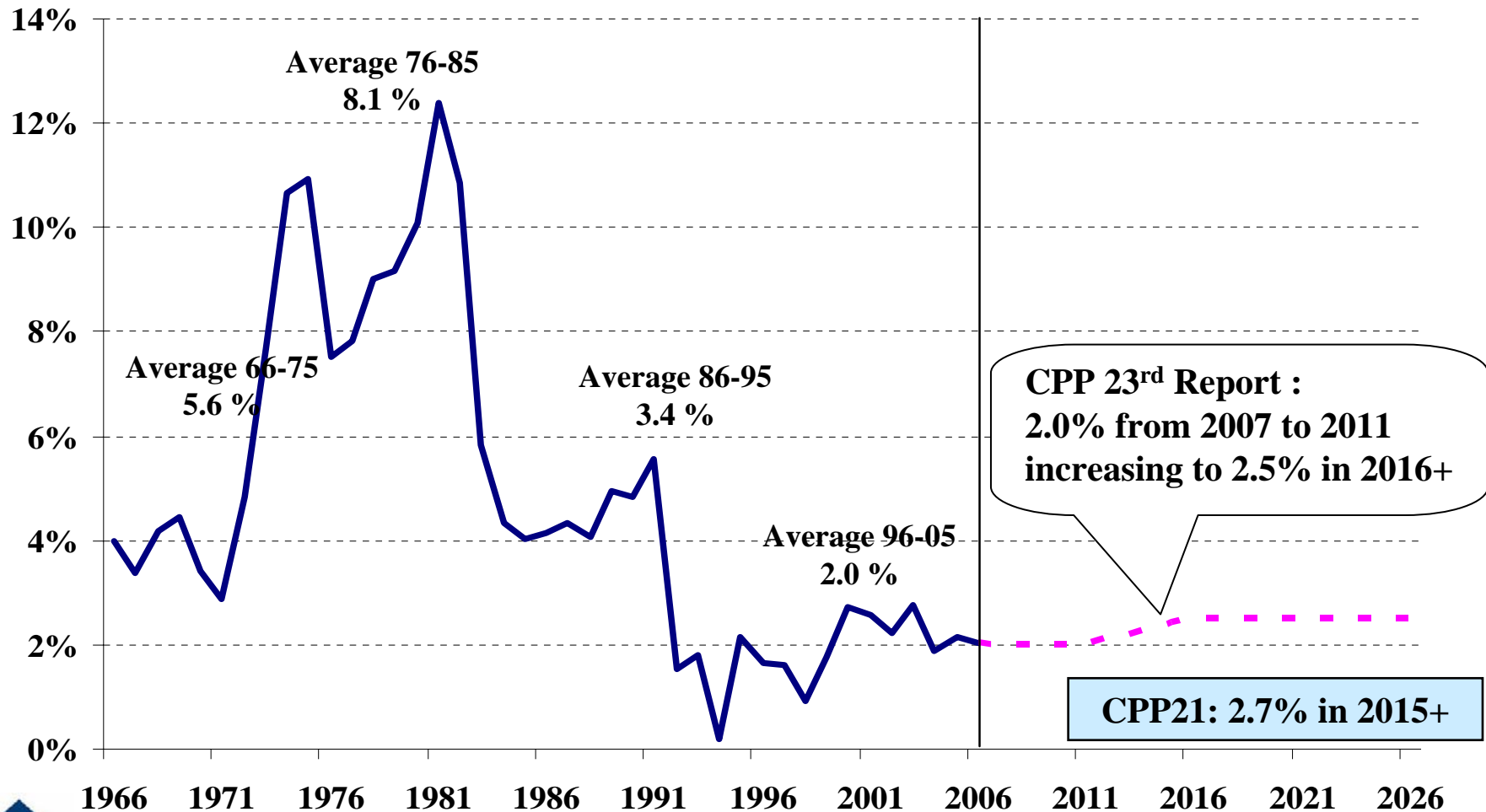


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Annual Increase in Consumer Price Index

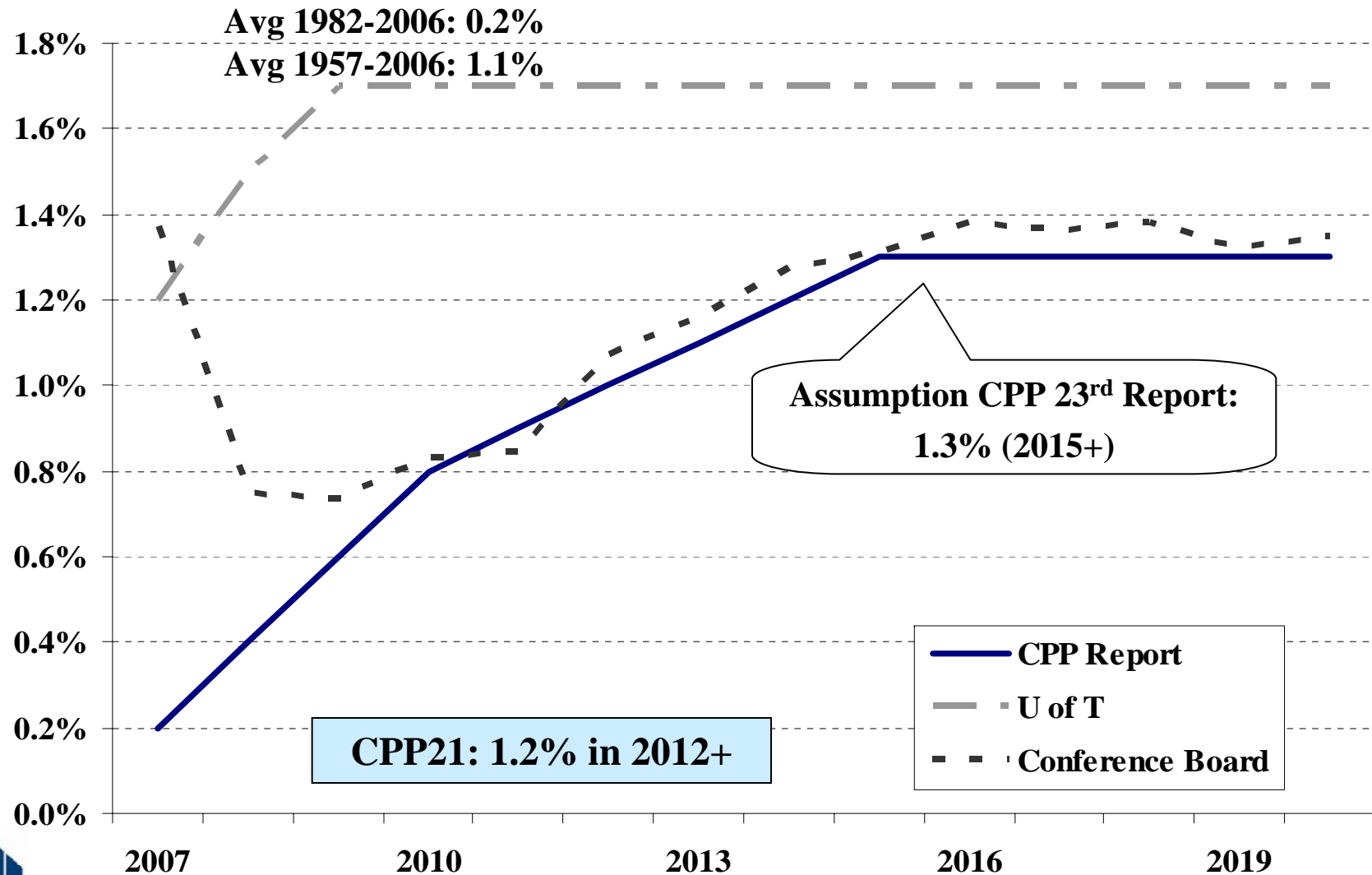


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Panel's view: is within, but towards the high side of, the reasonable range.



Annual Increase in Real Wages

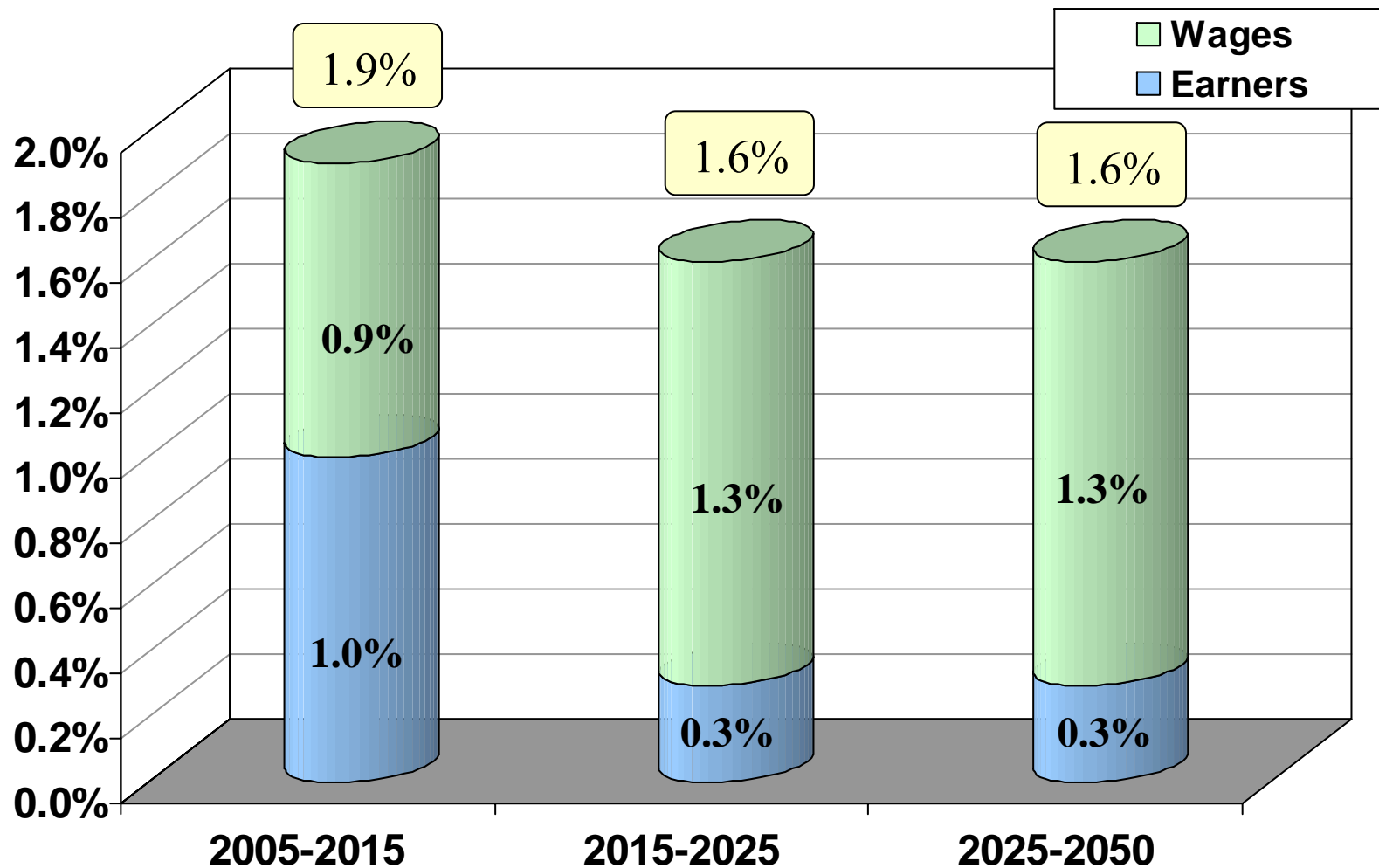


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Real Increase of Total Employment Earnings (18-69, Canada less Québec)



CPP21

1.6%

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1.5%

1.5%



CPP reference portfolio consists of 65% equity and 35% debt

Evolution of CPP Asset Mix

	Fixed Income	Equity	Inflation-Sensitive
2007	28%	65%	7%
2010	30%	60%	10%
2015	30%	60%	10%
2020	35%	55%	10%
2025	40%	50%	10%



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Real Rate of Return by Asset Class

	(2007-2011)	<u>CPP23 (2025+)</u>		<u>CPP21 (2033+)</u>	
	↓	Rate	Mix	Rate	Mix
• Canadian Equities:	(3.5%)	5.1%	15%	4.6%	15%
• Foreign Equities:	(3.5%)	5.1%	35%	5.0%	30%
• RE & Infrastructure:	(2.9%)	3.95%	10%	4.0%	10%
• Marketable Bonds:	(2.7%)	3.2%	39.5%	3.4%	44.5%
• Cash:		1.0%	0.5%	1.5%	0.5%
• Total Real Return		4.22%		4.1%	

Average Real Rate of Return (2007-2016): 3.8%



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Panel's views: is within, but towards the low side of, the reasonable range.



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CPP, a Partially Funded Pension Plan

- *Steady-state funding*: replaces the original pay-as-you-go financing to build a reserve of assets equivalent over time to about five and a half years of benefit expenditures or about 25% of Plan liabilities.
- *Incremental full funding*: requires that changes to the CPP that increase benefits or add new benefits be fully funded (eg: increase in eligibility for disability benefits for long-term contributors).



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CPP, a Partially Funded Pension Plan

Sources of Income

- CPP follows the 70:30 Rule (Contributions : Investment Earnings).
- When the A/E ratio reaches approximately 5.5, 30% of revenues will come from investment earnings.
- Sources of income of fully-funded pension plans are the opposite (the 30:70 Rule).

How annual benefits are paid

- From 2007 to 2019, contributions exceed benefits.
- Once the A/E ratio reaches about 5.5, annual contributions will equal approximately 90% of annual benefits paid.
- In 2030, 27% of investment earnings is required to pay benefits.

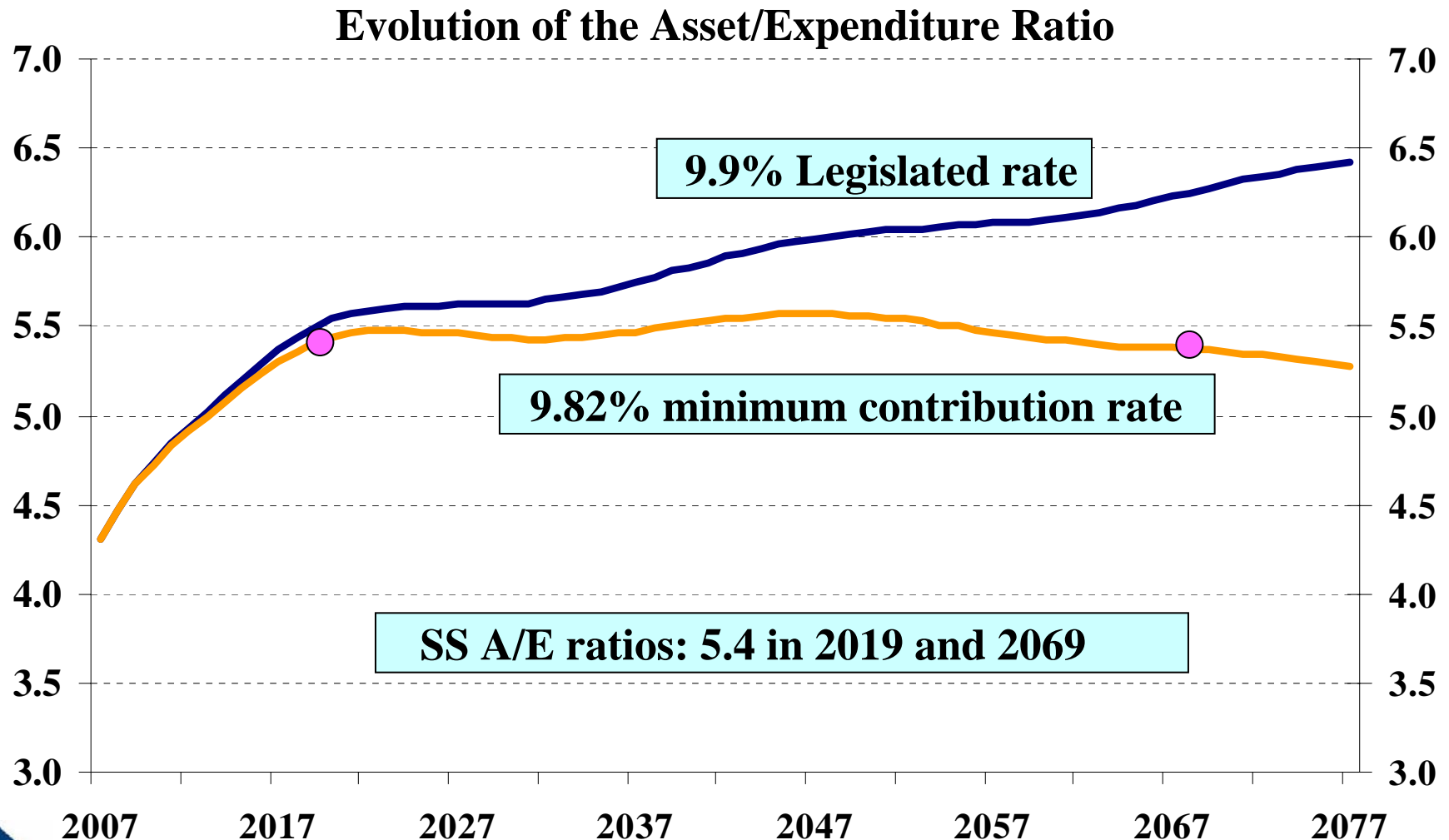


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Higher projected life expectancies have more than offset better-than-anticipated experience

Reconciliation of the Minimum Contribution Rate

	Minimum Rate
Actuarial Report as at 31 December 2003	9.77
Better investment experience (2004 to 2006)	(0.09)
Higher participation and job creation rates (2004 to 2006)	(0.04)
Contribution rate with no change in assumptions	9.64
Higher projected life expectancies	0.16
More people asking their retirement benefit at age 60	0.05
Others (including Bill C-36)	(0.03)
Report as at 31 December 2006	9.82



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Uncertainty of Results

- Younger and Older populations → 9.1% and 10.7%.
- Equity shock -10% in both 2009 and 2010 → 9.82% to 9.98%. Assets reduced by \$28 billion by end of 2010.
- Individual tests show that minimum rate could vary significantly from best-estimate if other than best-estimate assumptions are realized over projection period. Examples are :
 - Higher Life Expectancies at 65 → 9.82% to 10.2%
 - Males 25 vs. 22 years in 2050 (currently 19)
 - Female 28 vs. 24 years in 2050 (currently 22)
 - Higher retirement benefit uptake at age 60 → 9.82% to 10.0%
 - Males from 40% to 60%
 - Females from 45% to 65%



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Strengthening the Accountability in 1997

- Federal and provincial governments took meaningful steps to strengthen the transparency and accountability of actuarial reporting. They endorsed plans:
 - to review the CPP every three years, instead of every five years as before. Therefore, frequency of actuarial reporting was increased to three years with a further requirement to produce the report within one year of the valuation date.
 - to consult regularly with experts on assumptions to be used in actuarial reports;
 - to establish regular peer reviews of future actuarial reports on the CPP.
 - to supply actuarial information to Canadians in a timely manner.



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CPP has been peer reviewed four times since 1998

- Role of the Auditor General and Selection Process
- Three press releases (14 May 2007, 6 September 2007, 21 April 2008)
- Overseeing of the Peer Review by GAD
 - Selecting the Canadian actuaries
 - Providing an opinion of the review (28 April 2008)



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23rd Actuarial Report on the Canada Pension Plan as at 31 December 2006 and its Peer Review Process

*Presentation to the Canadian Institute of Actuaries
Annual Meeting, Quebec City*



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20 June 2008

Thank you

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