



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 Pension Plan: Fertility Projections

Panel 5: Roundtable Discussion

SOA Annual Meeting 2005
Fertility Symposium



OSFI
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15 November 2005

Canada 

Presentation

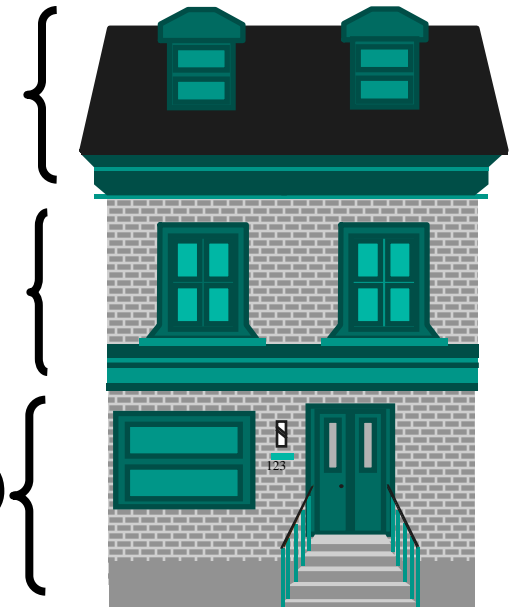
- Canadian Retirement System
- Size and aging of Canadian population
- Sensitivity tests – aging and financial impacts



Canadian Retirement Income Security

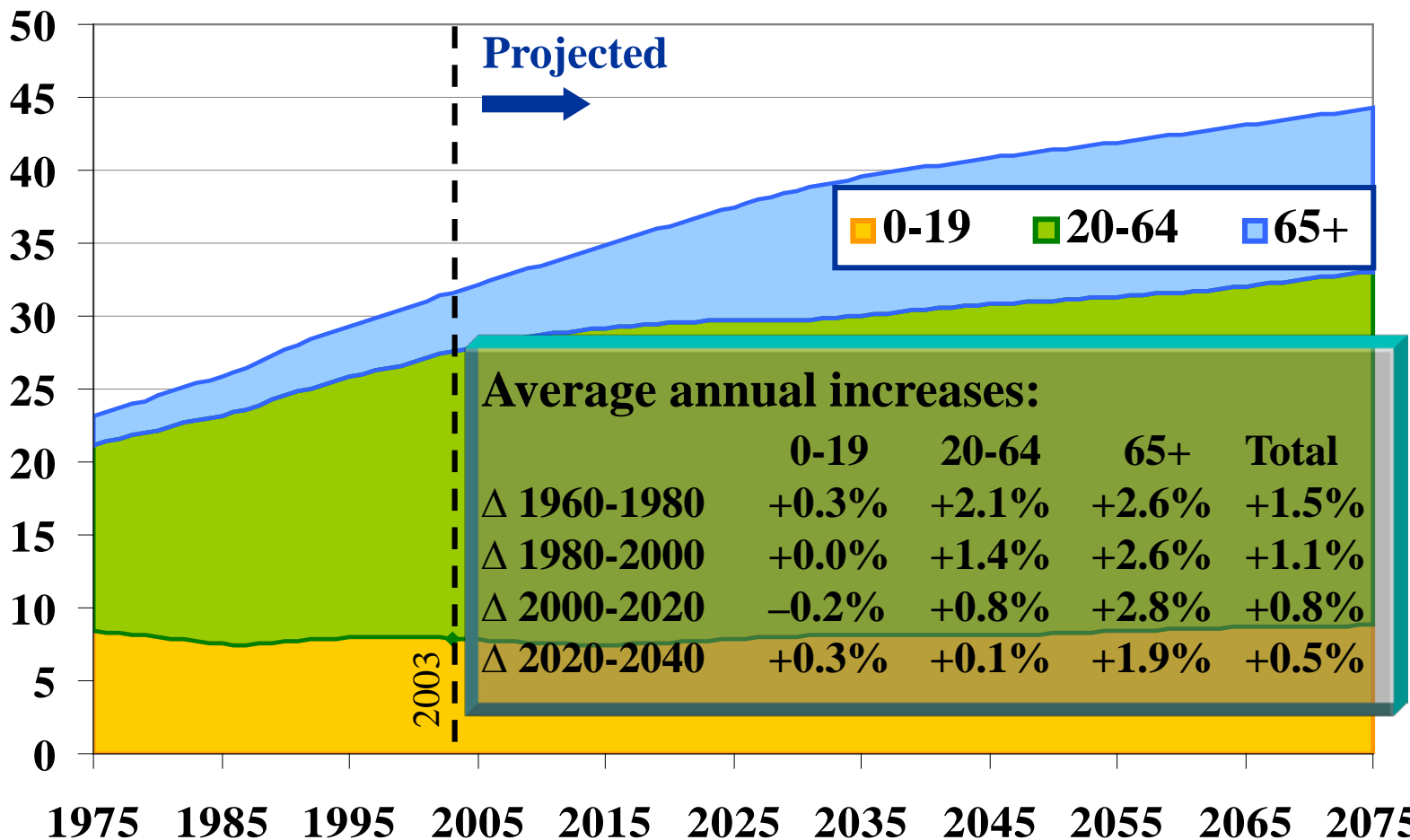
Canadian retirement system with mixed funding approaches is well recognized in the world for its capacity to adapt rapidly to changing conditions

- Full funding (RPP/RRSP)
- Partial funding (CPP/QPP)
- Pay-as-you-go funding (OAS/GIS)



Youths, Working-age Population, and Retirees

(in millions)



By 2030, all projected population increase will come from migration.



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Life Expectancies Under Varying Mortality Assumptions, with mortality improvements after each year shown

Males		High Mortality (0% improvement by 2025)	Best- Estimate	Low Mortality (350% B-E improvement by 2025)
2010	At Birth	80.0	83.3	91.7
	At Age 65	18.5	18.8	19.8
2030	At Birth	80.1	84.5	95.1
	At Age 65	18.7	19.8	22.6
2075	At Birth	80.1	86.8	100.5
	At Age 65	18.7	21.4	28.8

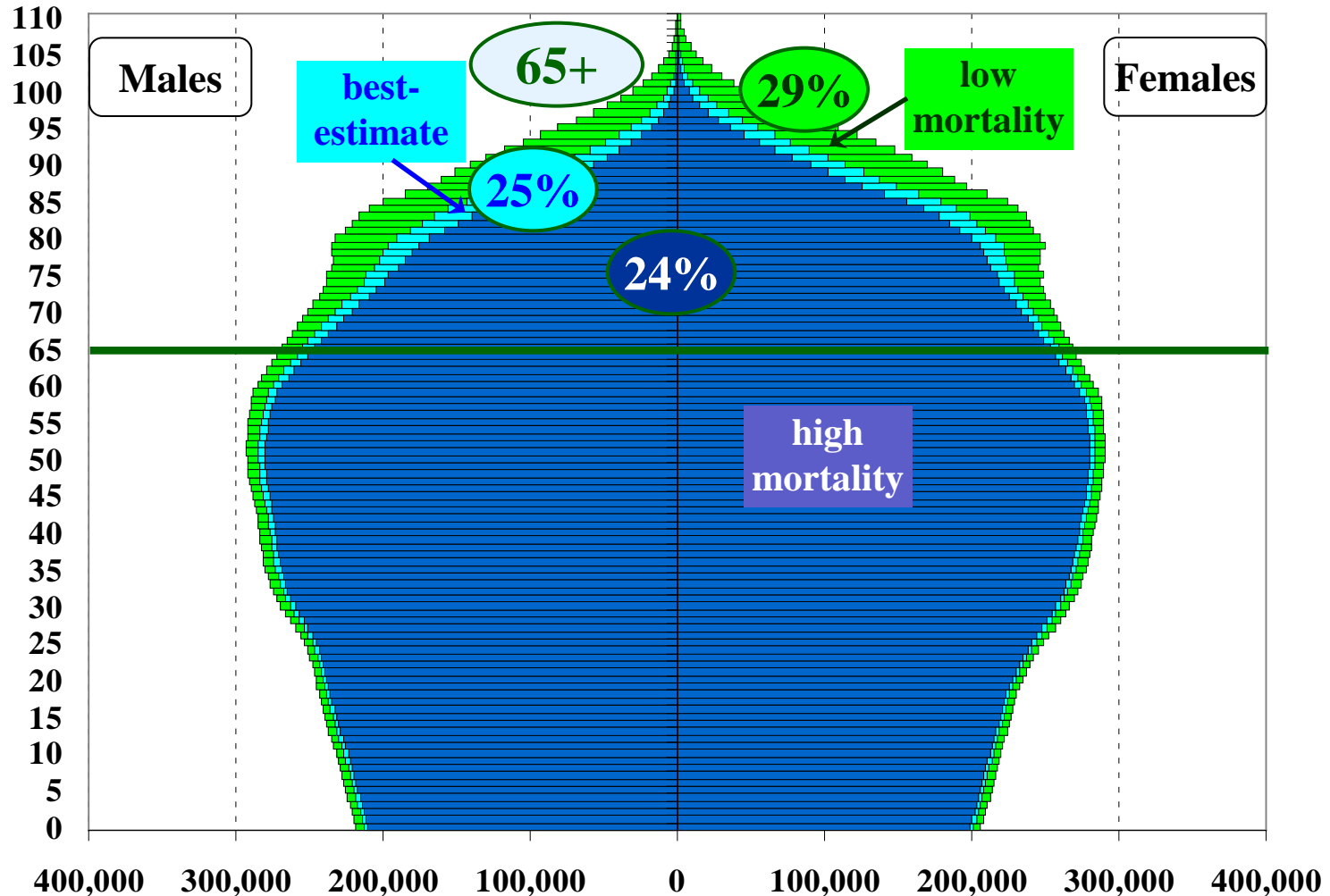


Life Expectancies Under Varying Mortality Assumptions, with mortality improvements after each year shown

Females		High Mortality (0% improvement by 2025)	Best- Estimate	Low Mortality (350% B-E improvement by 2025)
2010	At Birth	83.6	86.6	94.5
	At Age 65	21.3	21.7	22.8
2030	At Birth	83.6	87.7	97.5
	At Age 65	21.4	22.5	25.4
2075	At Birth	83.6	89.7	102.4
	At Age 65	21.4	24.1	31.3



Age Structure Under Varying Mortality Assumptions 2075



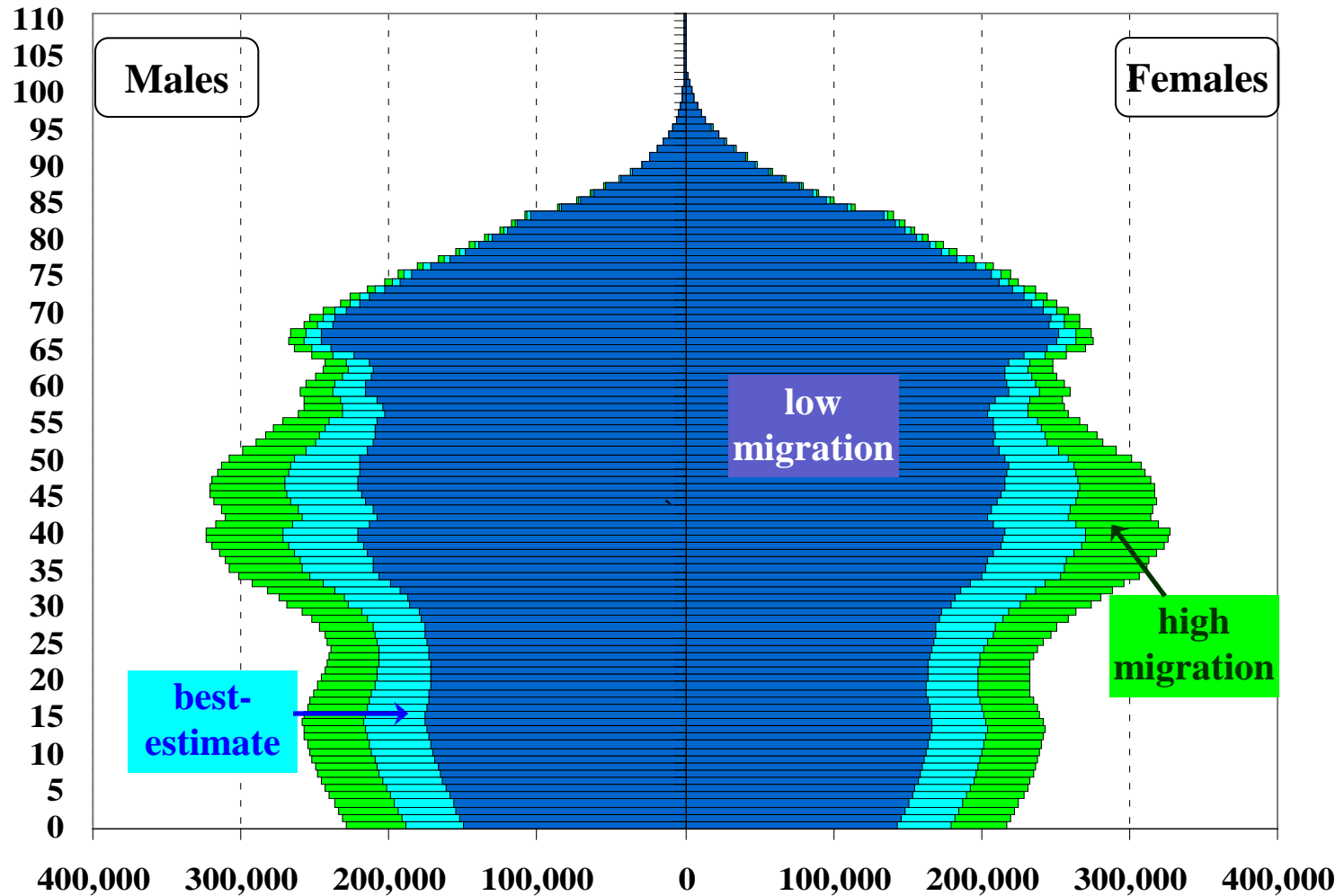
Sensitivity Tests - Migration

% of Population

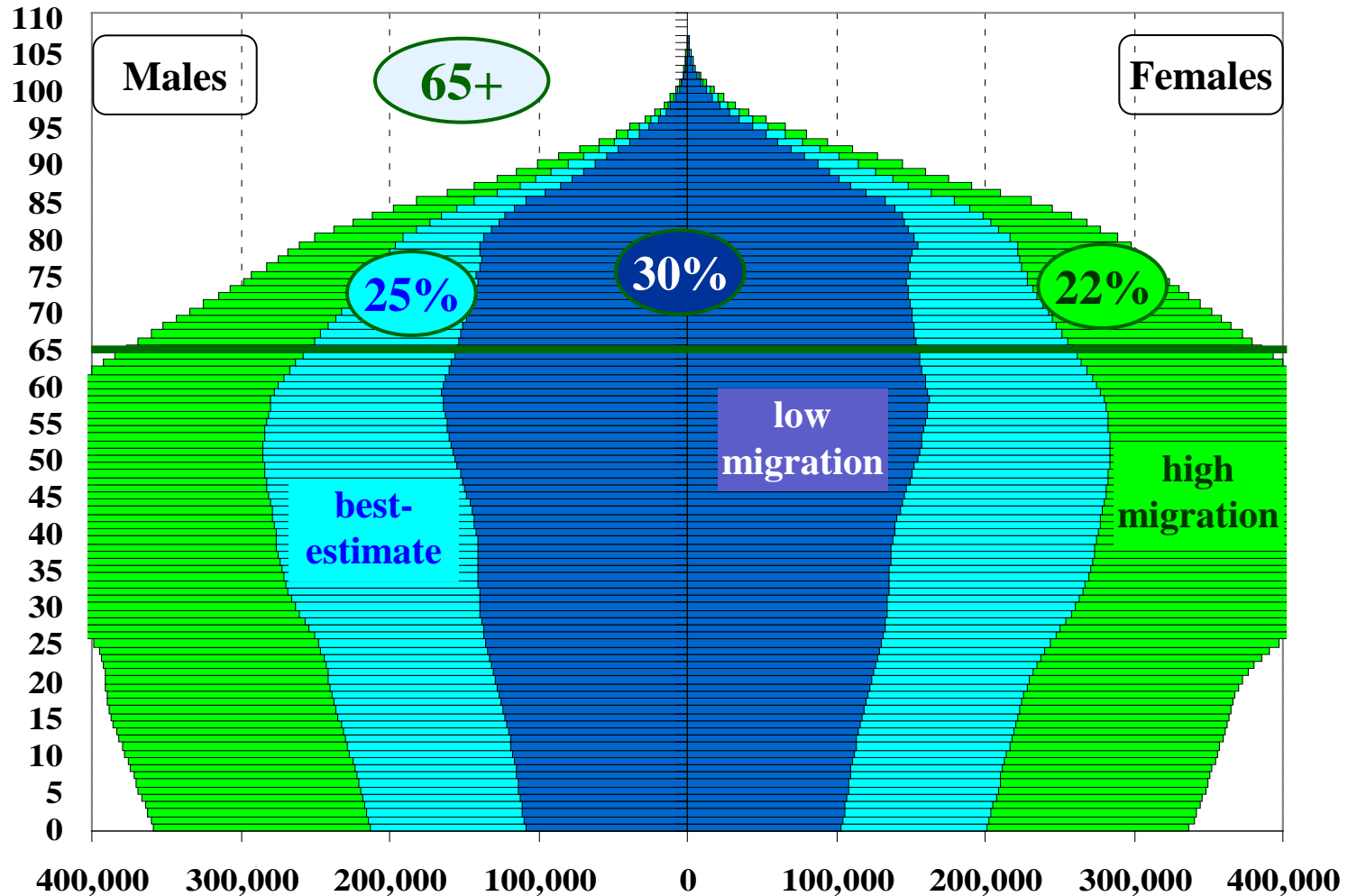
Assumption	2004	2010+	2015-2020+
Low (zero) migration		0%	
Best-Estimate	0.50%	0.50%	→ 0.54%
High migration		1%	



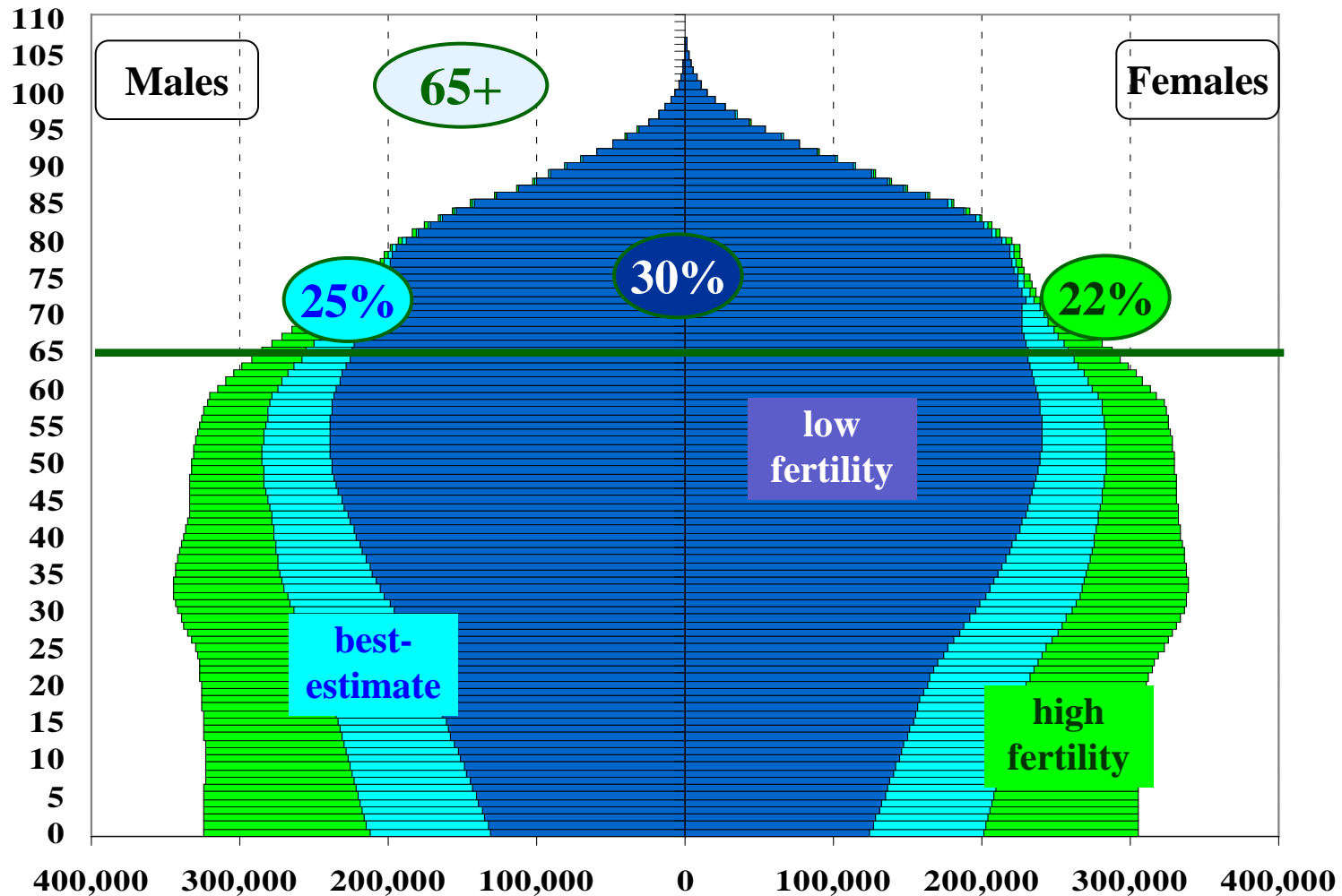
Age Structure Under Varying Migration Assumptions 2030



Age Structure Under Varying Migration Assumptions 2075



Age Structure Under Varying Fertility Assumptions 2075



Sensitivity of CPP Steady-State and Pay-As-You-Go Contribution Rates (%)

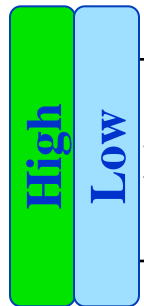
Assumption	Scenario	Steady-State Contribution Rate	Pay-As-You-Go Rates		
			2025	2050	2075
Best-Estimate		9.8	10.42	11.29	11.32
Fertility Rate	→ Low cost	9.5	10.38	10.44	9.83
	→ High cost	10.1	10.47	12.30	13.28
Mortality Rates	→ Low cost	9.6	10.39	10.97	10.68
	→ High cost	10.2	10.50	12.05	12.76
Migration Rate	→ Low cost	8.9	9.42	9.67	9.67
	→ High cost	10.8	11.72	13.90	14.01

High
Low

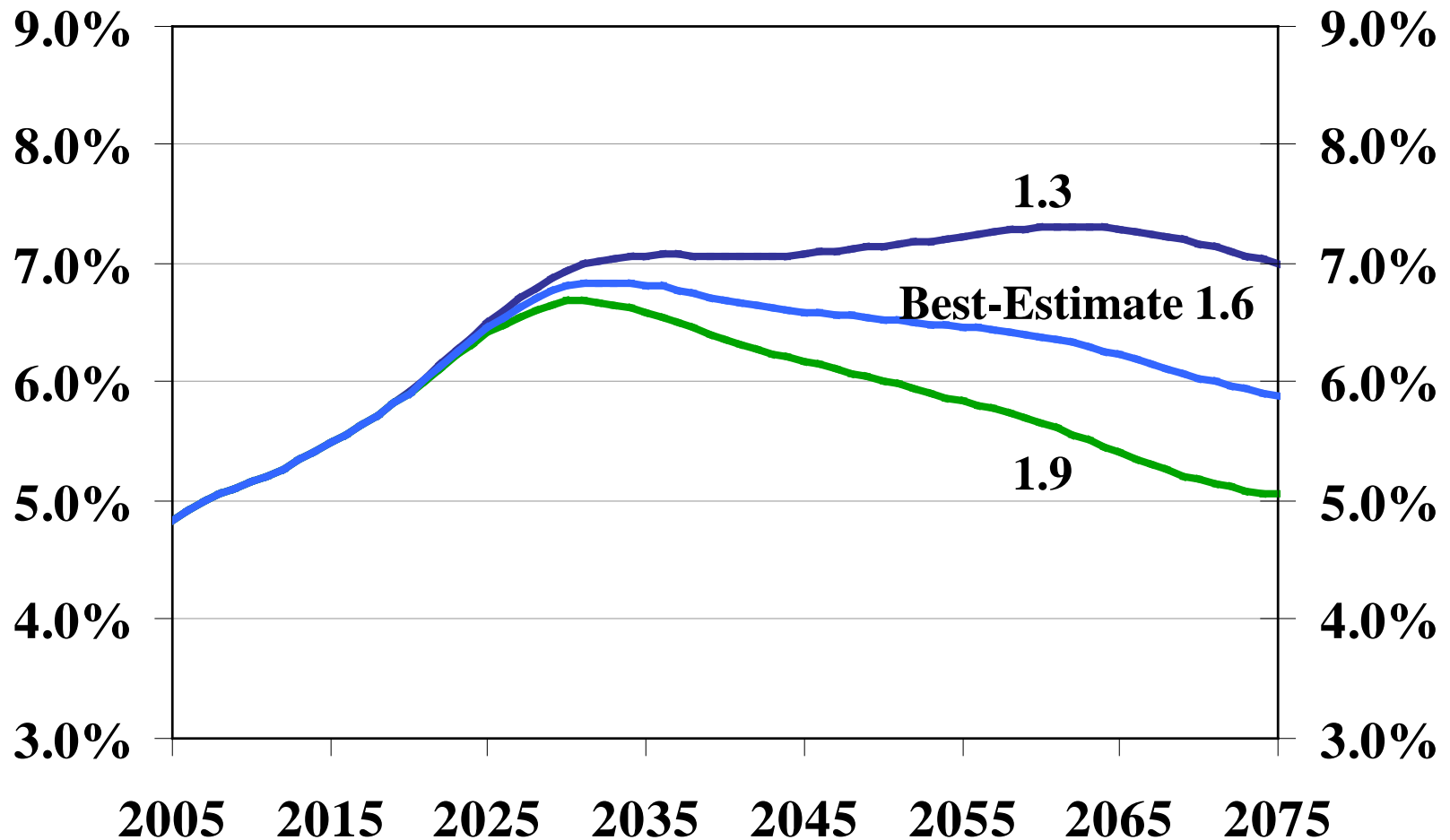


Sensitivity of CPP Steady-State and Pay-As-You-Go Contribution Rates – Relative Change from B-E (%)

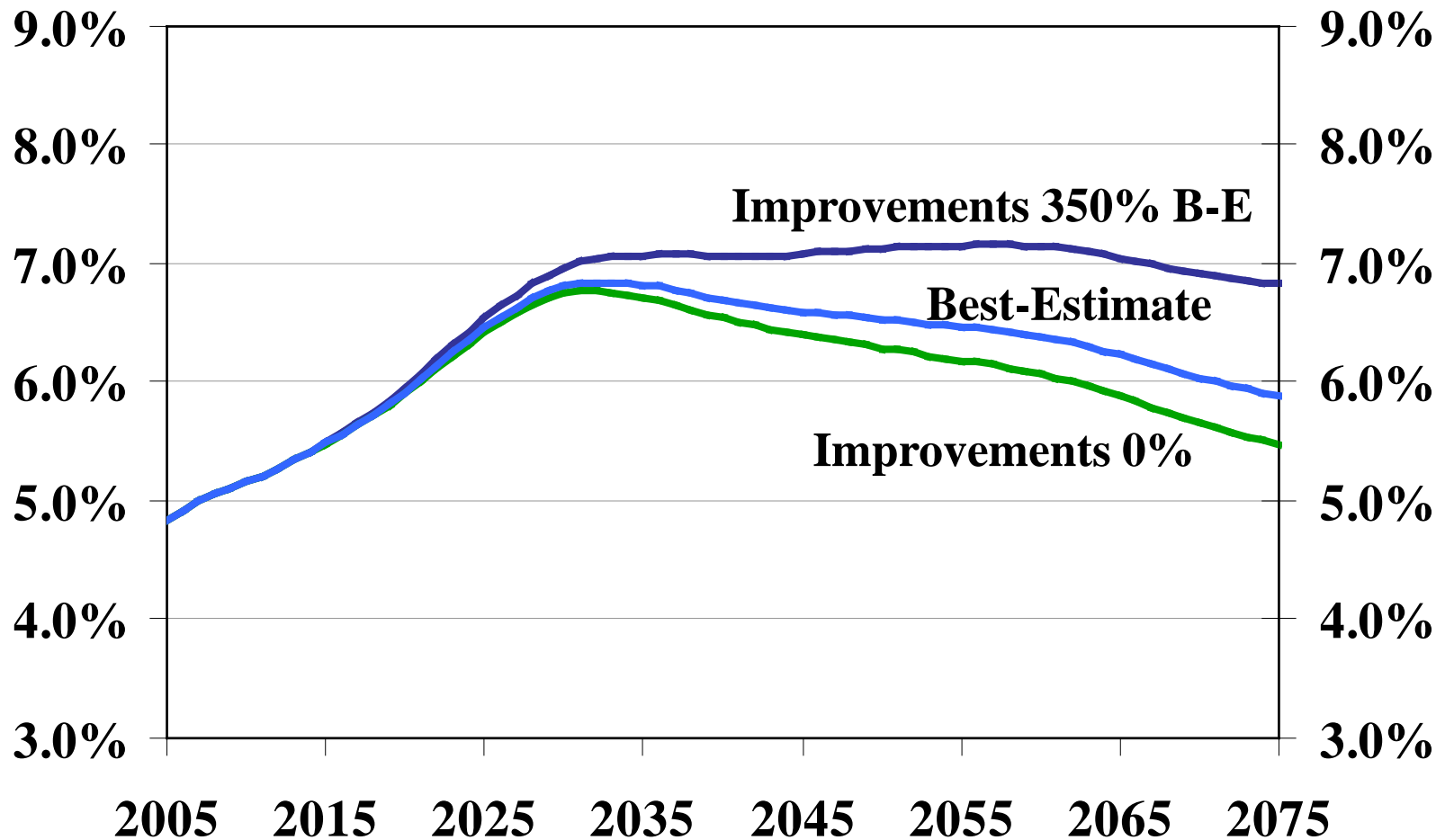
Assumption	Scenario	Steady-State Contribution Rate	Pay-As-You-Go Rates		
			2025	2050	2075
Best-Estimate					
Fertility Rate	→ Low cost	-3.2	-0.4	-7.6	-13.2
	→ High cost	3.4	0.4	8.9	17.4
Mortality Rates	→ Low cost	-1.7	-0.3	-2.8	-5.6
	→ High cost	4.2	0.8	6.8	12.8
Migration Rate	→ Low cost	-8.6	-9.6	-14.3	-14.5
	→ High cost	10.6	12.4	23.1	23.8



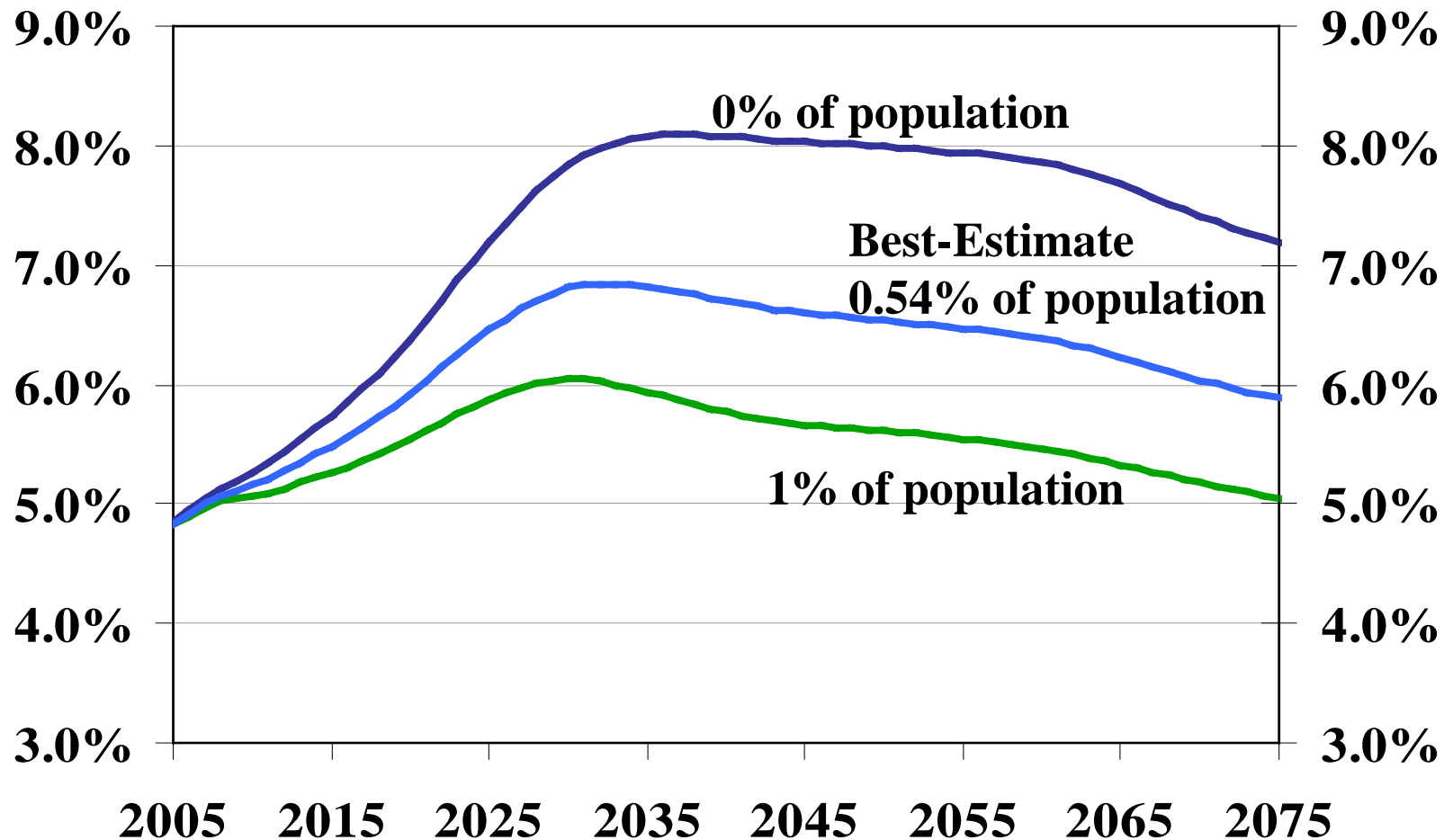
CPP/OAS/QPP Expenditures as % of GDP Under Varying Fertility Assumptions



CPP/OAS/QPP Expenditures as % of GDP Under Varying Mortality Assumptions



CPP/OAS/QPP Expenditures as % of GDP Under Varying Migration Assumptions





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Thank you.

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