Thoughts on the Future Adequacy of Canadian Retirement Incomes
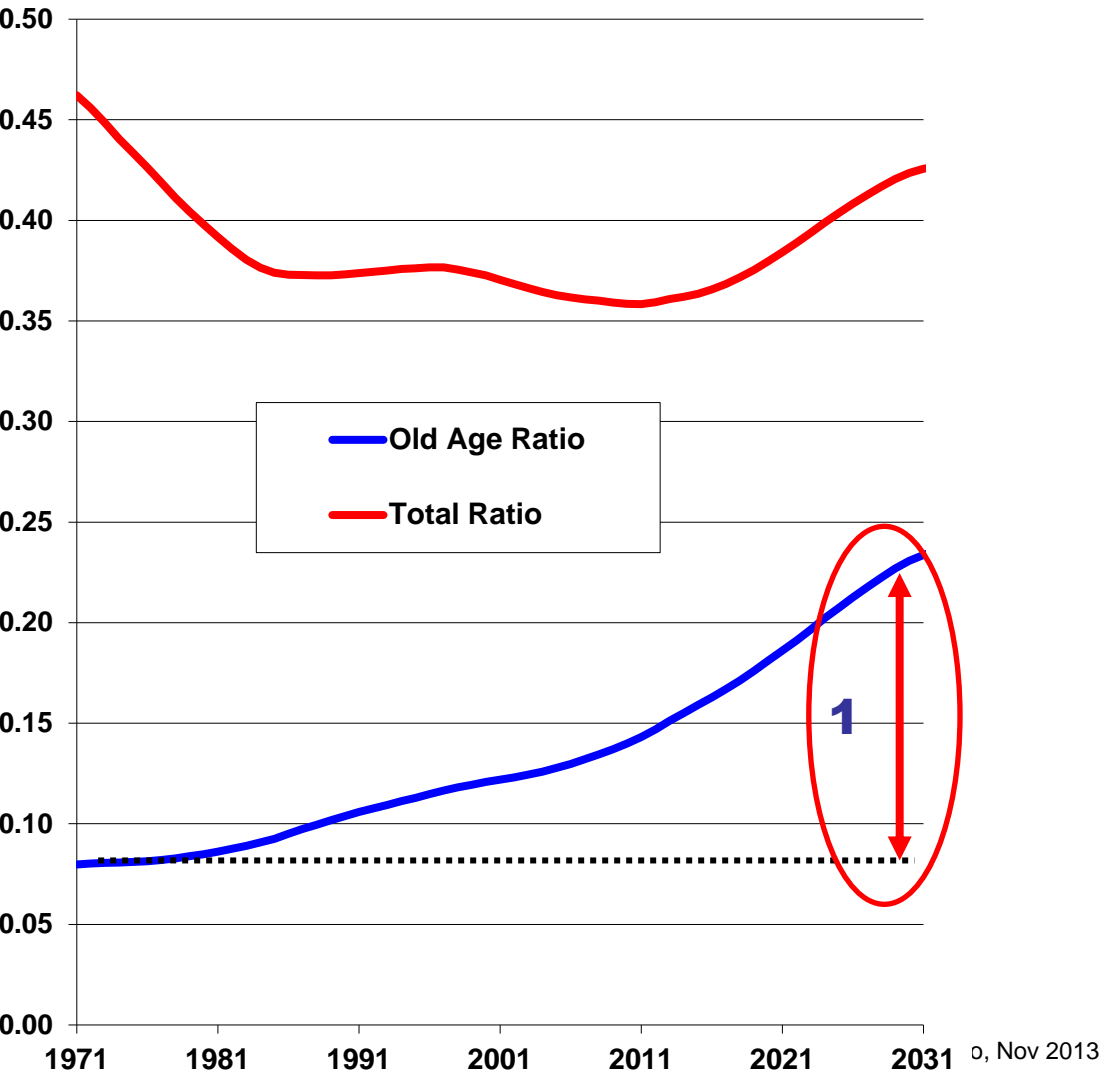
- demo-doom / "boomerangst" / "apocalypse no"
- definition of "adequacy"
- patterns by pre-retirement earnings
- patterns by birth cohort
- further pension observations
- health care cost tsunami?

Michael Wolfson, uOttawa

Pensons Meeting, Toronto, Jan 2015

2/3/2015

Alternate Views of the "Aging Burden"
(LifePaths estimates)

Demographic Ratios

Legend:
- **Old Age Ratio**
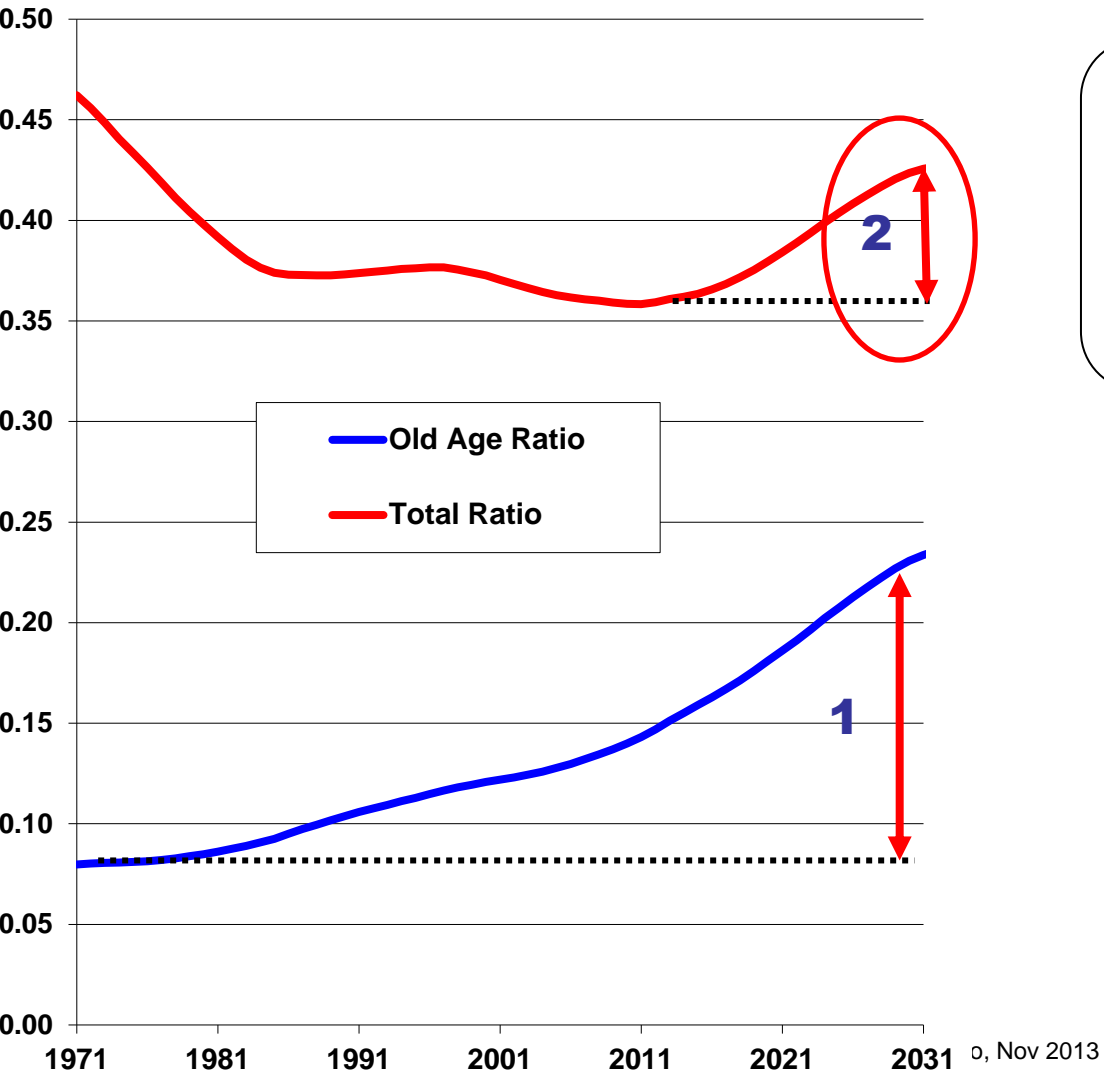- **Total Ratio**

1

conventional "body count" old age dependency ratio -- frightening

Alternate Views of the "Aging Burden"
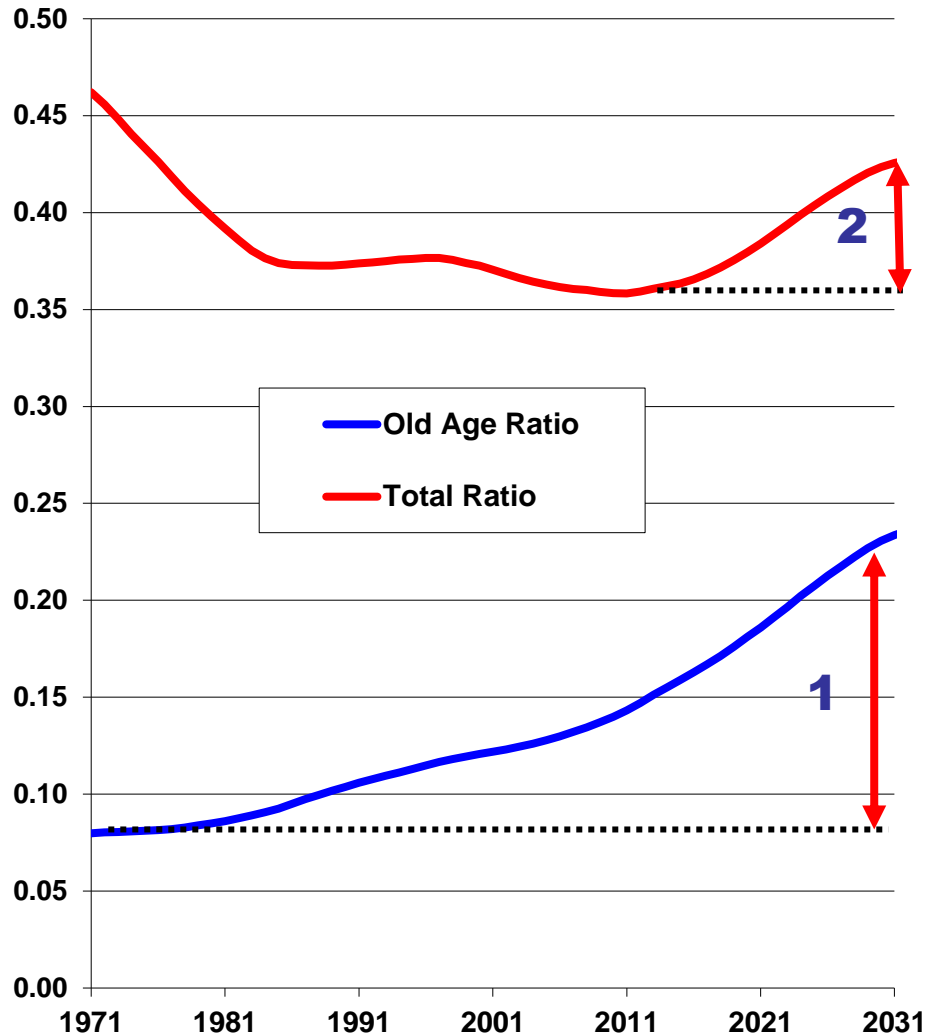## (LifePaths estimates)

Demographic Ratios

conventional "body count" <u>total</u> dependency ratio – not so frightening

conventional "body count" <u>old age</u> dependency ratio -- frightening
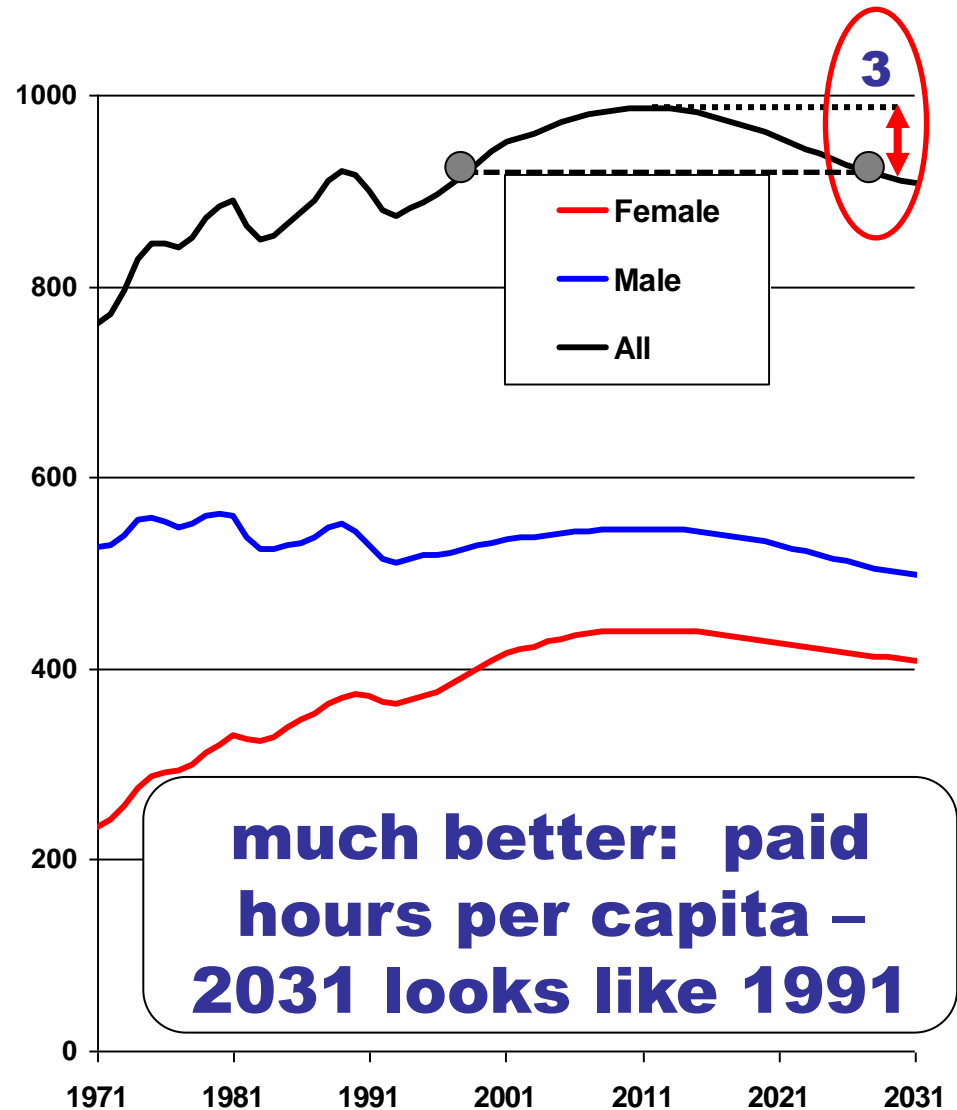
Alternate Views of the "Aging Burden"
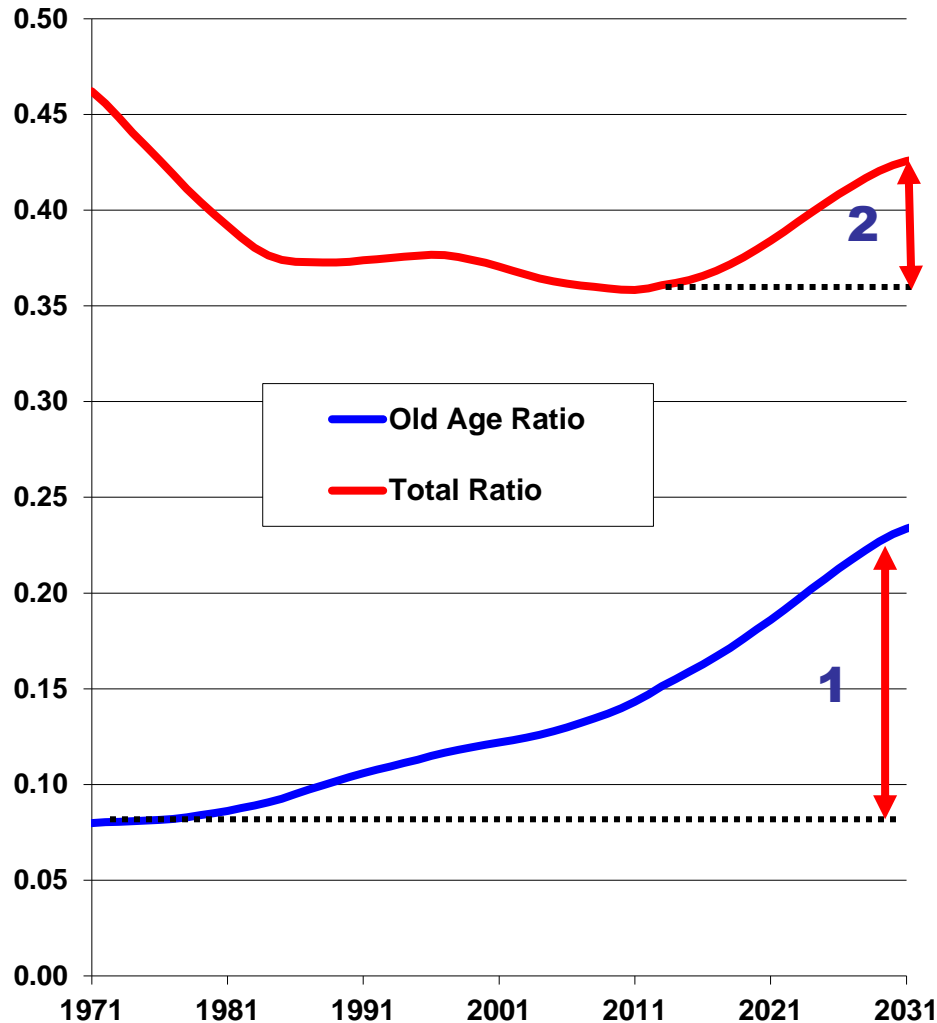**(LifePaths estimates)**

Demographic Ratios

- **Old Age Ratio**
- **Total Ratio**

Annual Paid Hours of Work / Person

- **Female**
- **Male**
- **All**

much better: paid hours per capita – 2031 looks like 1991

Alternate Views of the "Aging Burden"
(LifePaths estimates)

Demographic Ratios

Annual Paid Hours of Work / Person

Legend (left chart):
- Old Age Ratio (blue)
- Total Ratio (red)

Legend (right chart):
- Female (red)
- Male (blue)
- All (black)

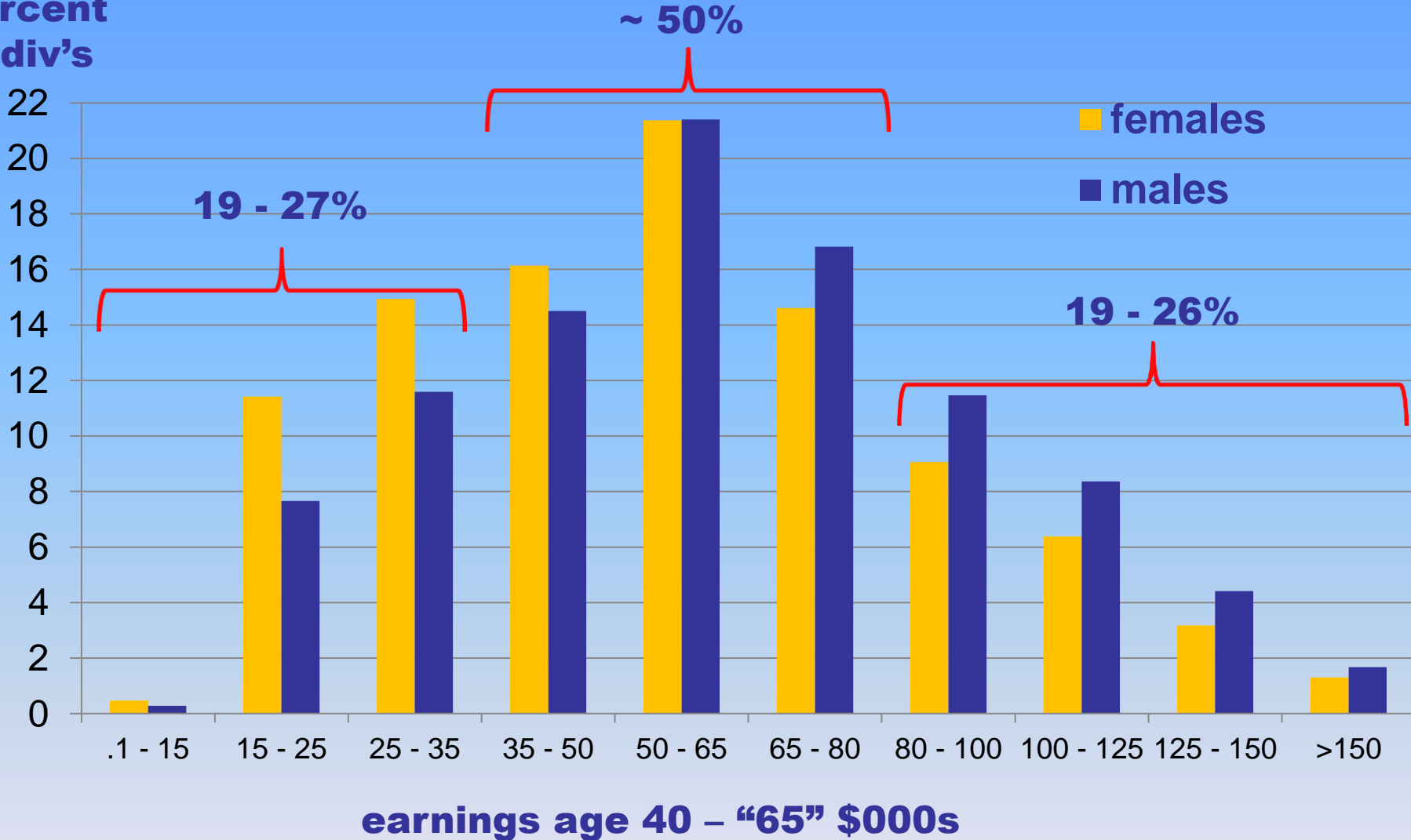**compare paid hours per capita in other OECD countries**
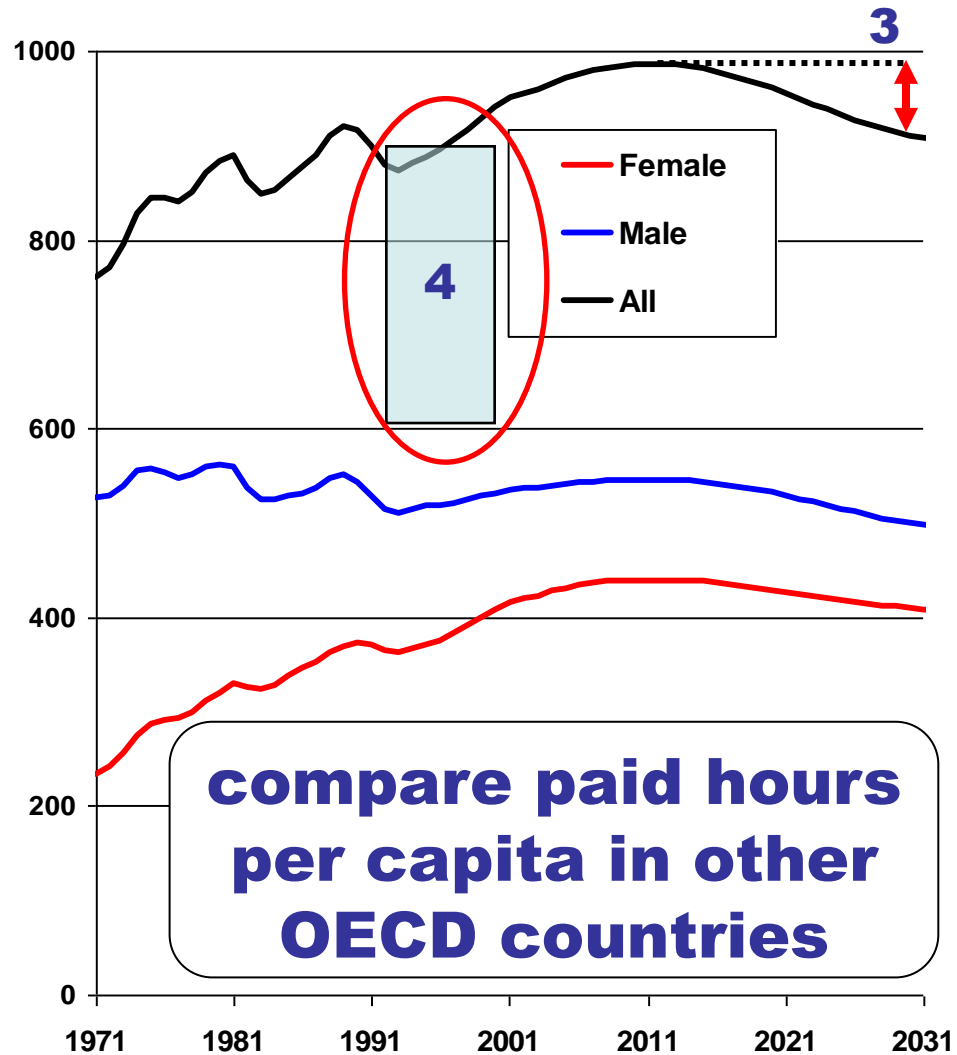
Criteria for an Adequate Retirement Income System

- avoid <u>poverty</u> / "low income"

- support <u>continuity</u> of consumption / maintenance of living standards into retirement

- provide "safe" pensions = reduce <u>uncertainty</u>, or at least share risks fairly among individuals, employers, fellow employees, and taxpayers

- <u>sustainable</u> = consistent with reasonable economic growth, and fair between generations

n.b. continuity of consumption is primarily an issue for middle incomes

Prime Age (40 – "65") Earnings*

percent indiv's

~ 50%

19 - 27%

19 - 26%

■ females
■ males

earnings age 40 – "65" $000s

x-axis categories: .1 - 15, 15 - 25, 25 - 35, 35 - 50, 50 - 65, 65 - 80, 80 - 100, 100 - 125, 125 - 150, >150

* both spouses, equivalized, includes employer payroll tax and RPP contributions, wage indexed

Queens Pensions Aug 2011

2/3/2015

"Net Replacement Rate (RR)" Defined

- not all RRs are the same!

- conventional RR: after tax (easy to compute) income at age 65 / age 50 (say) for single individual

- far better RR: ratio of post-retirement "consumption possibilities" to those prior to retirement

- norm or objective: 100%; i.e. ability and likelihood of maintaining pre-retirement living standards after retirement

- "consumption possibilities" ≡ gross income less income and payroll taxes less savings plus dis-saving (i.e. running down assets), adjusted for changes in family size over the life cycle

Replacement Rate (RR) Adequacy – Basic Accounting

	Pre-Retirement	Post Retirement
add	earnings	public pensions
		RPP, RRSP and RRIF "income"
	imputed rent on owned home	imputed rent on owned home
		net withdrawals of home equity
subtract	income and payroll taxes	income taxes
	RPP and RRSP contributions	
	mortgage principal payments	
divide	EAU (= equivalence scale)	EAU (= equivalence scale)
result	"consumption" pre-retirement	"consumption" post-retirement
when	average over many years < 65	ages 70 and 80

not included: social assistance, work-related expenses, consumer durables, other investments, business assets, inheritances, gifts inter-vivos
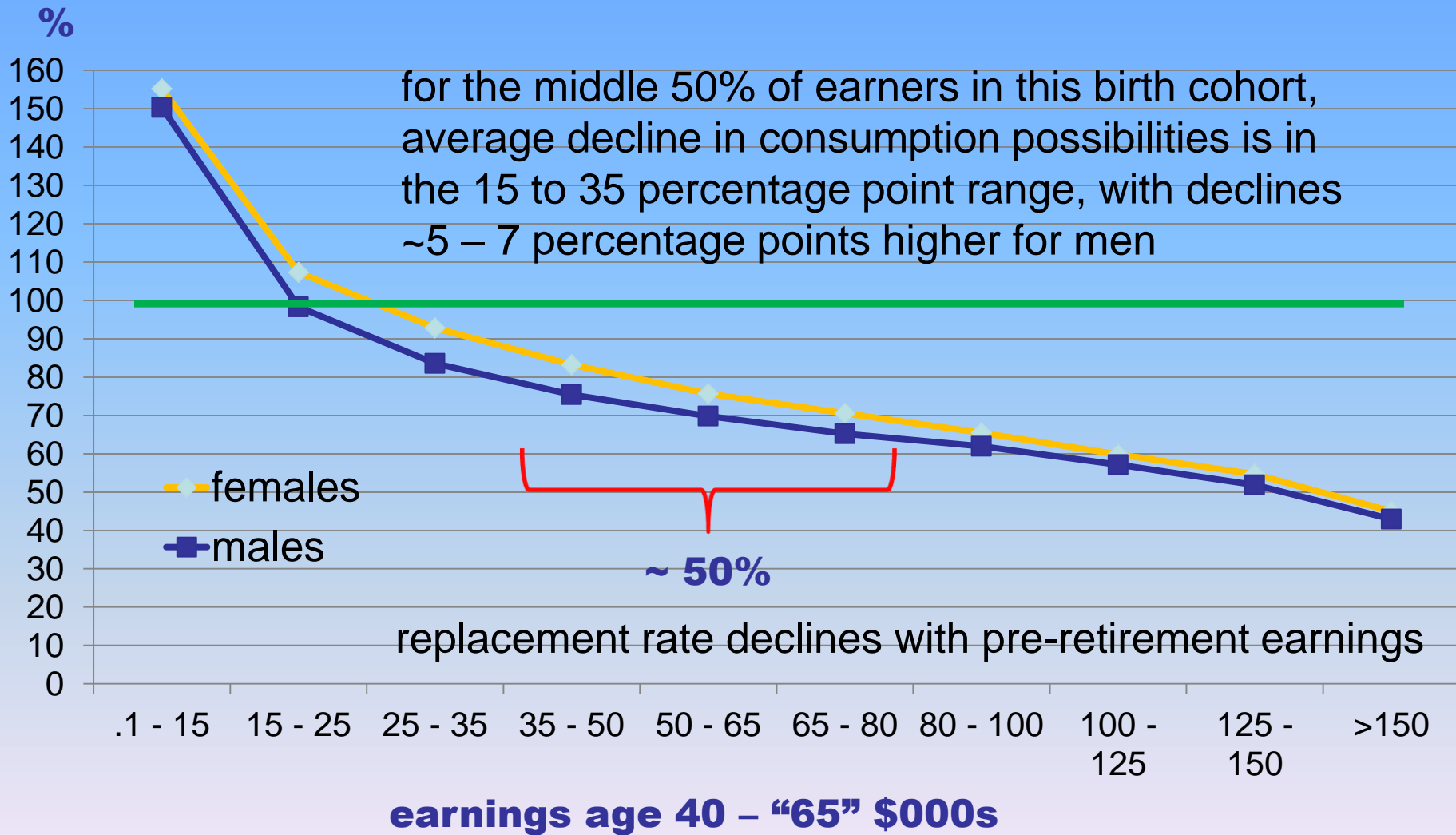
Gross versus Net Replacement Rates

females   **males**

n.b. all incomes, not just middle
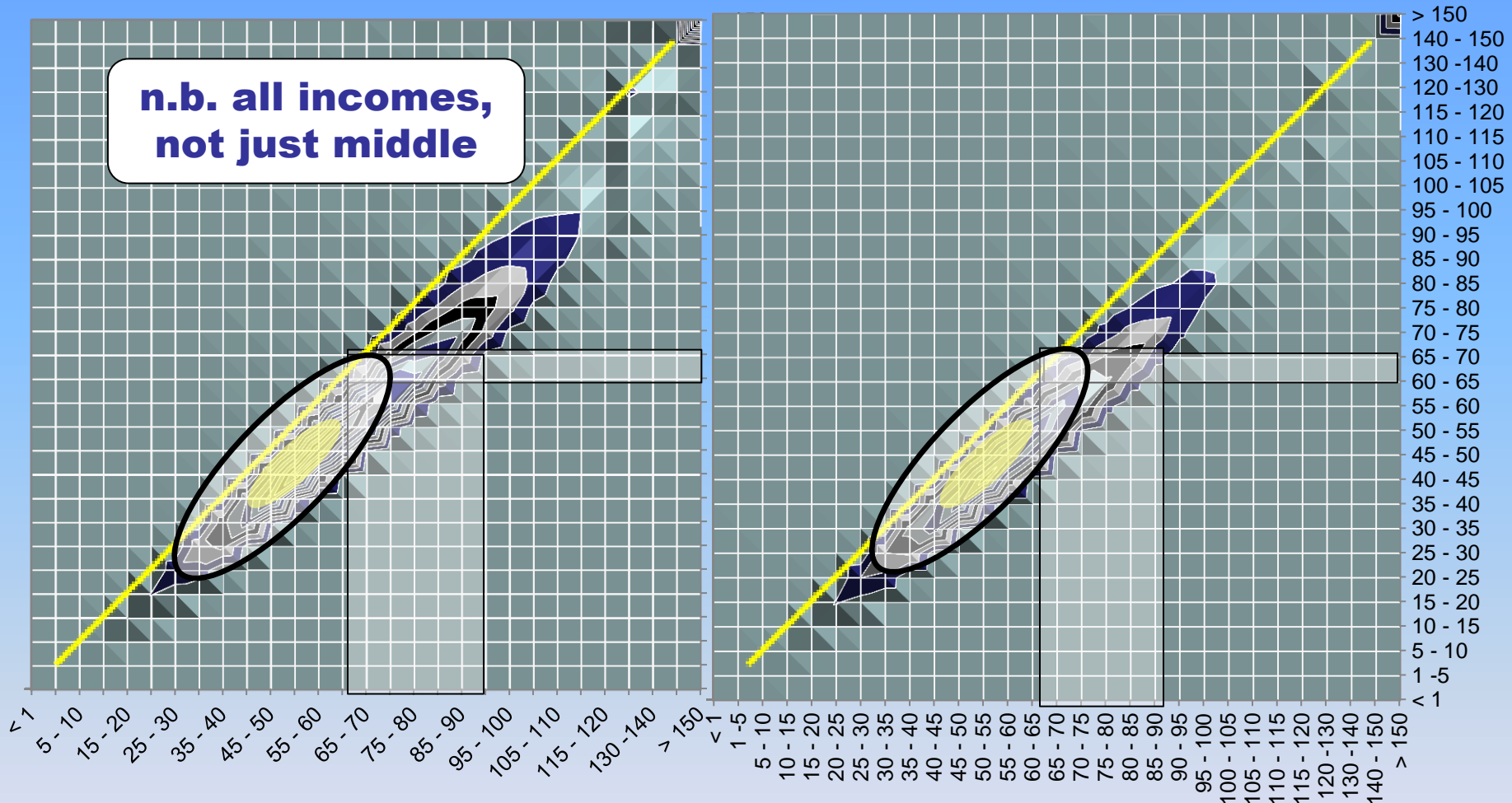
for realistically heterogeneous populations, a 60 to 70% **gross** RR translates into a 60 to 100% **net** RR, so that gross RRs are a poor proxy; better to do analysis directly in terms of net RRs
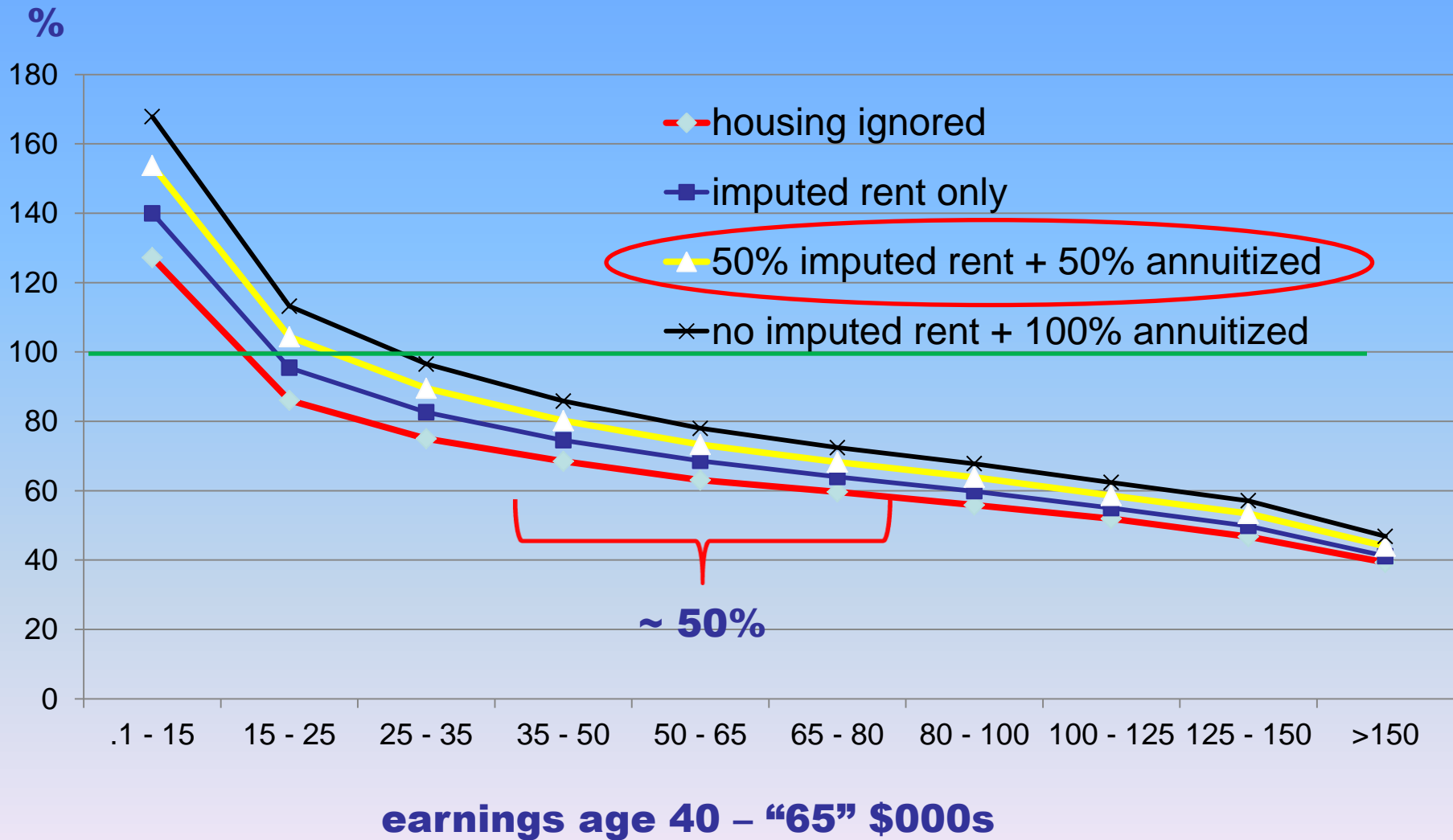
Average Net Replacement Rates by Prime Age Earnings – Main Result (1960-65 cohort)

%

for the middle 50% of earners in this birth cohort, average decline in consumption possibilities is in the 15 to 35 percentage point range, with declines ~5 – 7 percentage points higher for men

females

males

~ 50%

replacement rate declines with pre-retirement earnings

earnings age 40 – "65" $000s

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Sensitivity Analyses: RR Adequacy is *Not* a Simple Concept (if carefully analyzed)

- specific age ranges used for pre-and post-retirement
- how incomes are updated
- assumptions re value of owner-occupied housing
- long-run growth rate of real average wages
- trends in RPP coverage / RRSP contributions
- which birth cohort
- treatment of family size variations over life cycle
- immigration patterns
- labour force participation especially at older ages
- trends in *health-adjusted* life expectancy

Average Net Replacement Rates by Prime Age Earnings – by Home Ownership

%

- housing ignored
- imputed rent only
- 50% imputed rent + 50% annuitized
- no imputed rent + 100% annuitized

~ 50%

earnings age 40 – "65" $000s

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Average Net Replacement Rates
no housing, males, age 70, by earnings base and discounting

earnings age 40 – "65" $000s

Queens Pensions Aug 2011
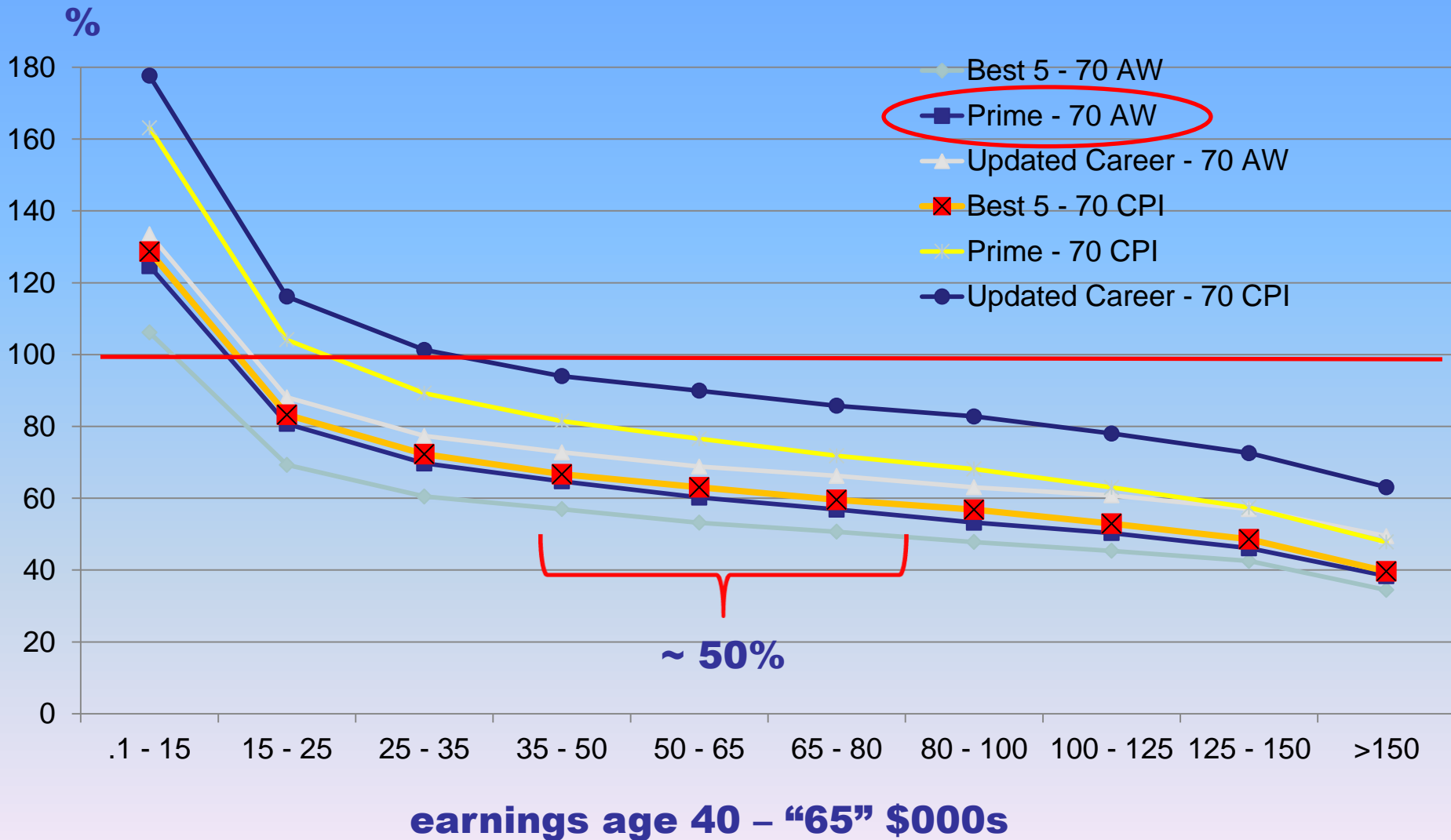
Projections by Birth Cohort

- born 1945-50 = turning 65 in 2010-2015
- recall: net replacement rate is a ratio, consumption possibilities after retirement / before
- numerator trends – downward, e.g. CPI vs wage indexing, declining RPP coverage
- denominator trends – upward, e.g. real wage growth, declining family size, increasing female labour force participation
- resulting ratio trends – downward
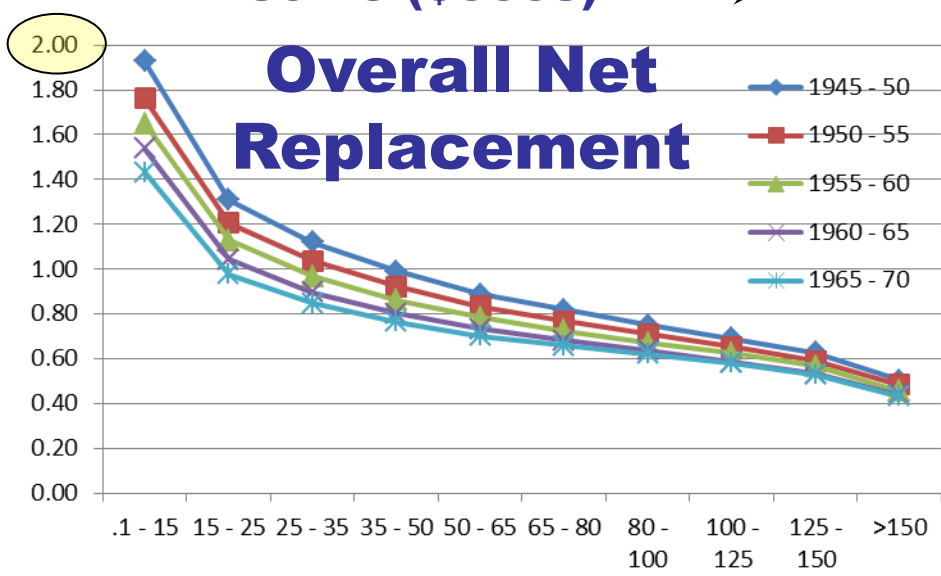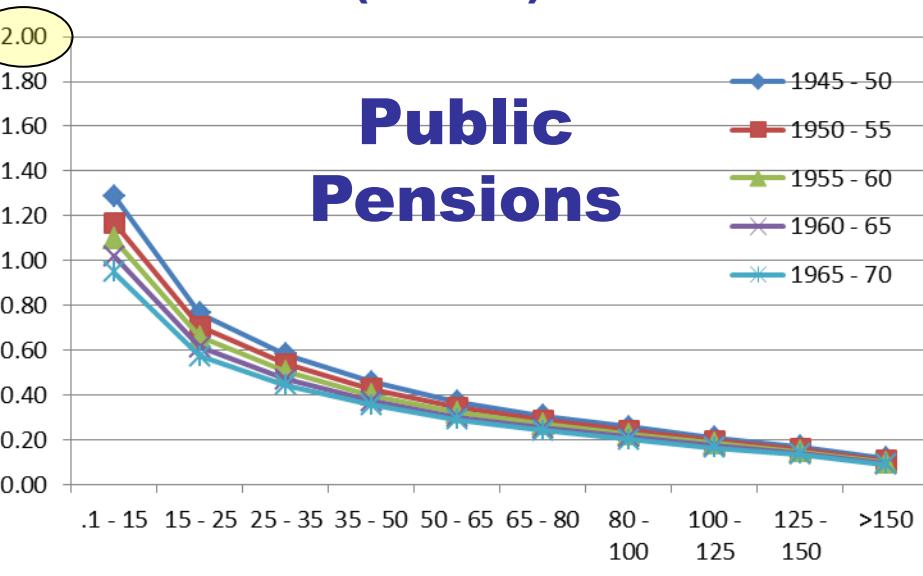
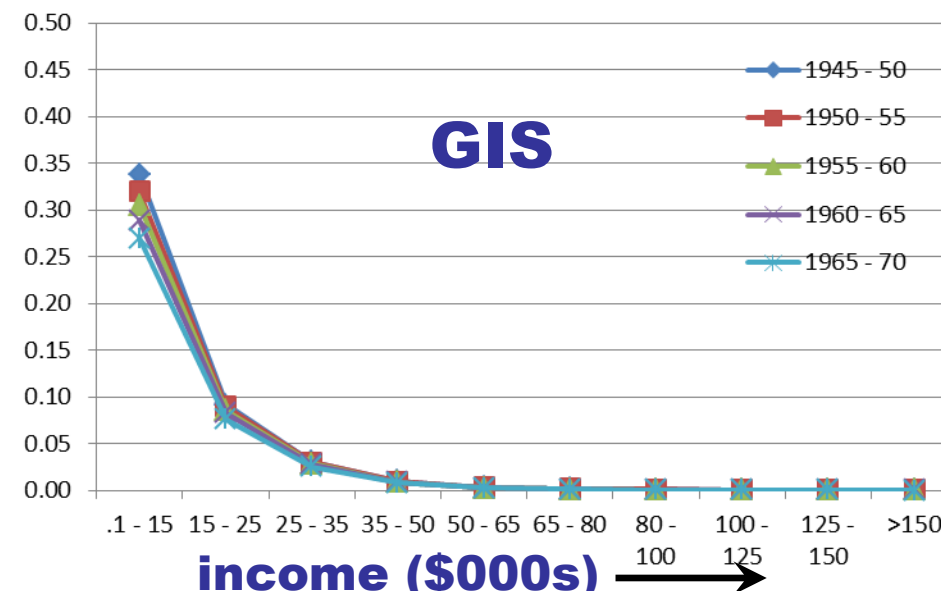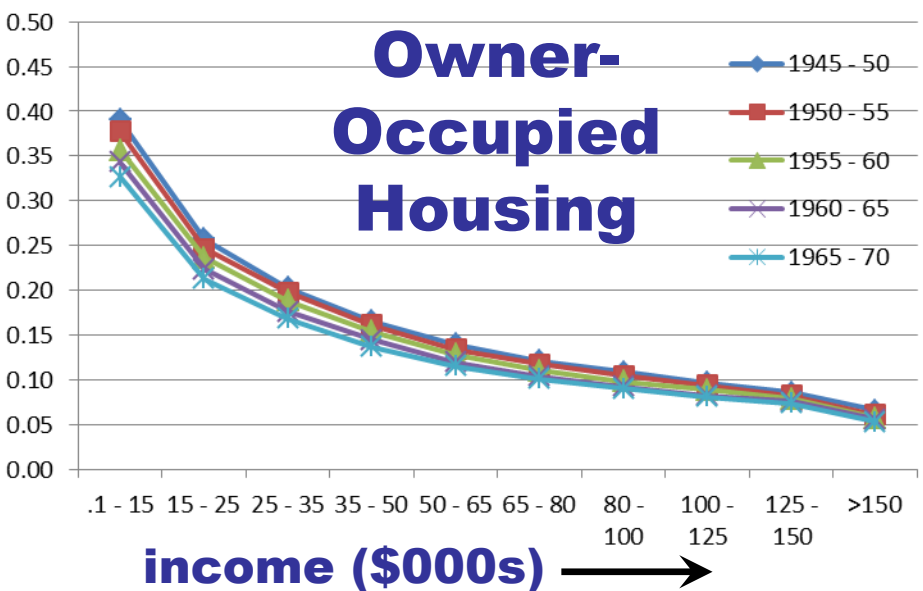# Net Replacement Rates (RRs) by Income Source and Birth Cohort

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RRs by Income Source, Birth Cohort, and Pre-Retirement Income

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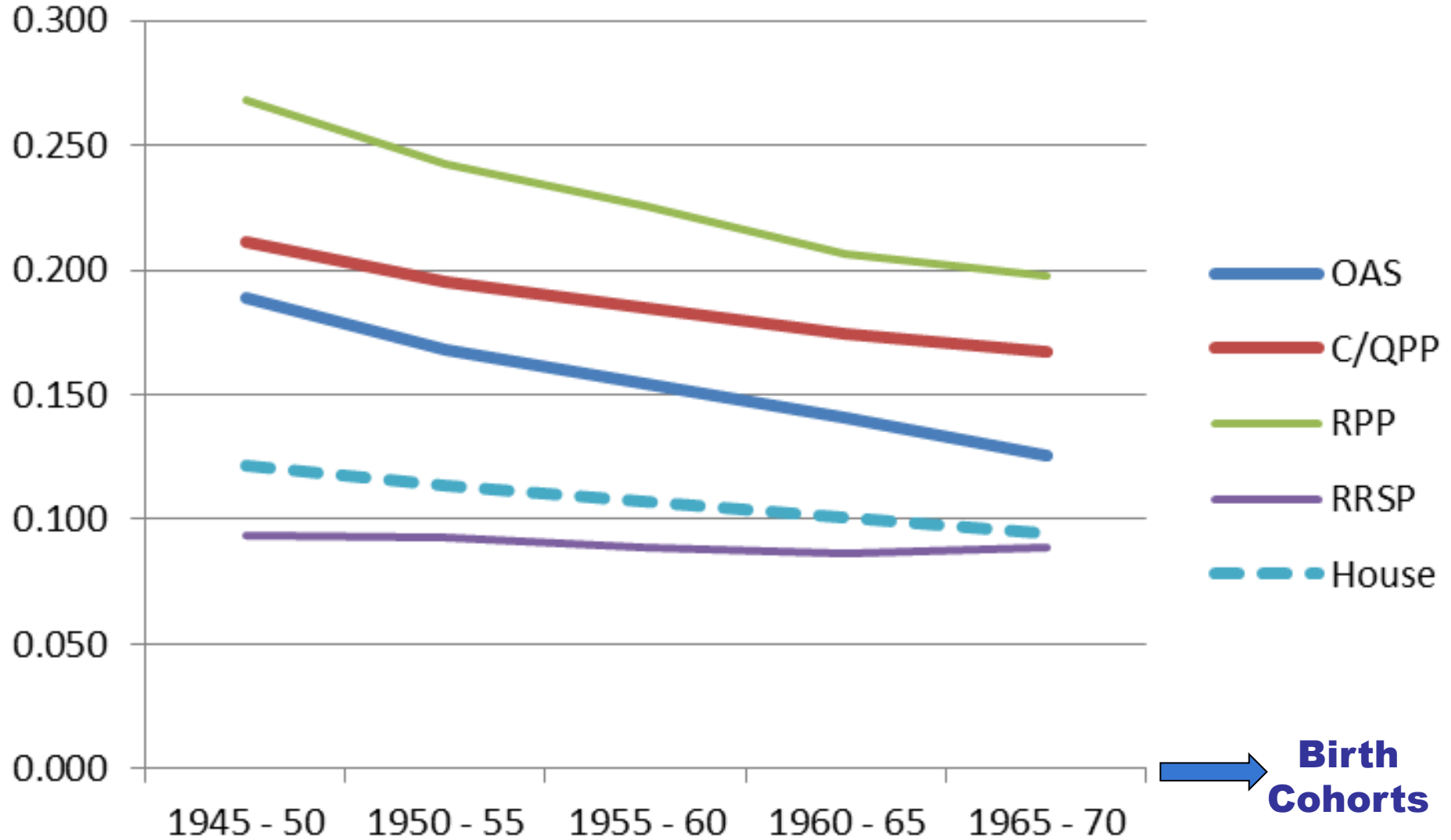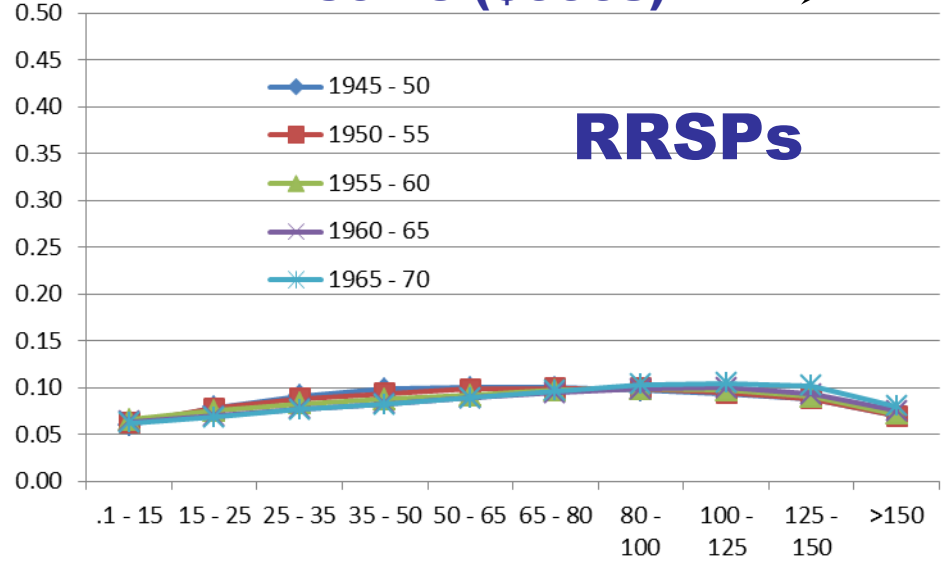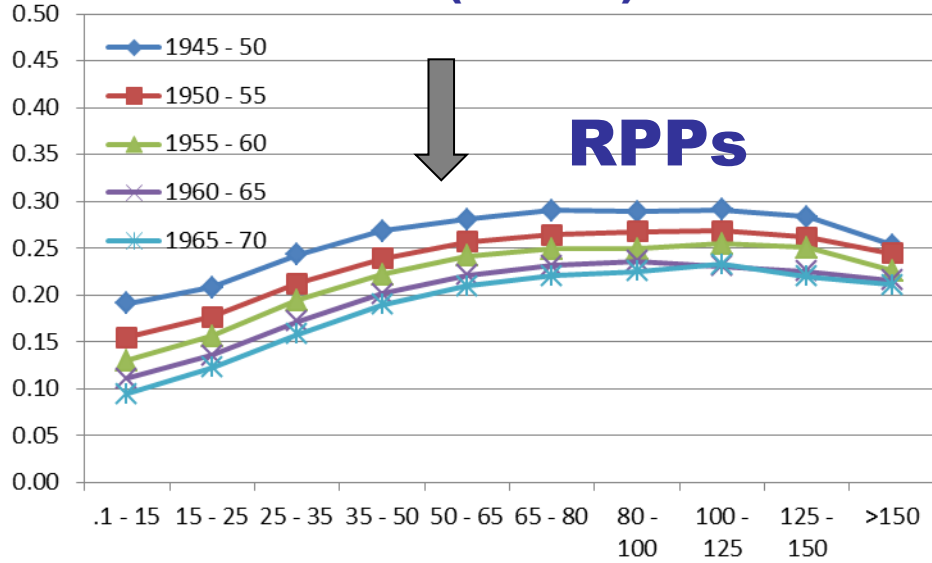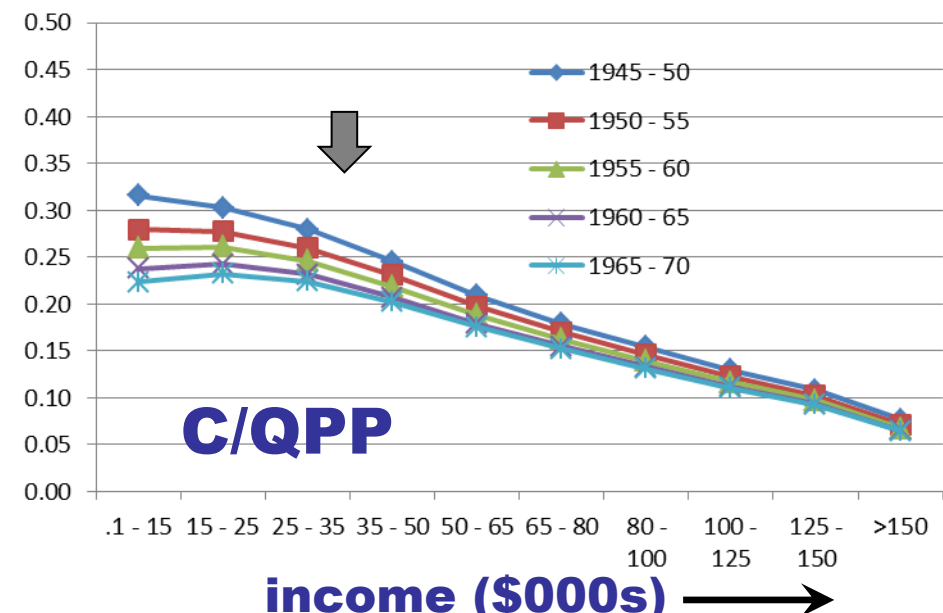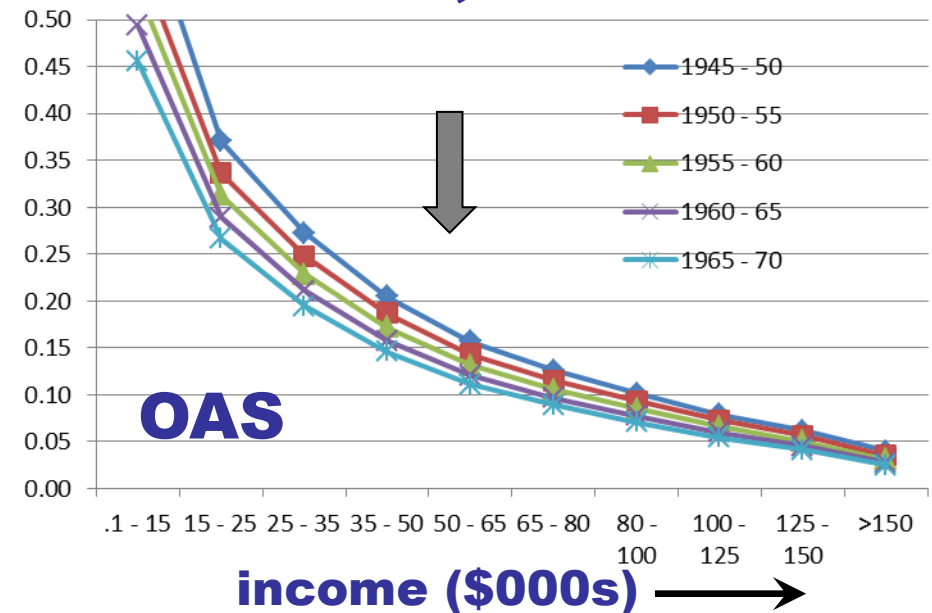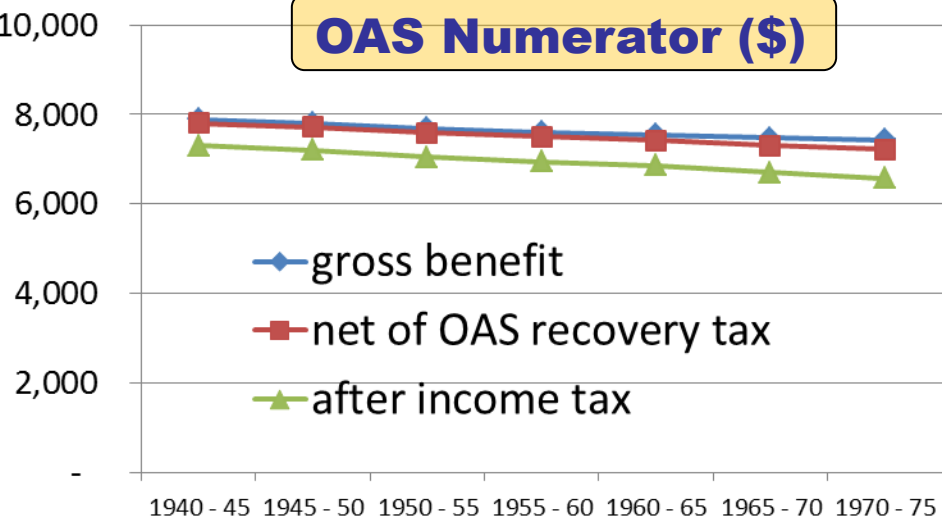
RRs continued, by Income Source, Birth Cohort, and Pre-Retirement Income

Intuition – OAS, Earnings, and Ratio by Birth Cohort as Simulated by LifePaths
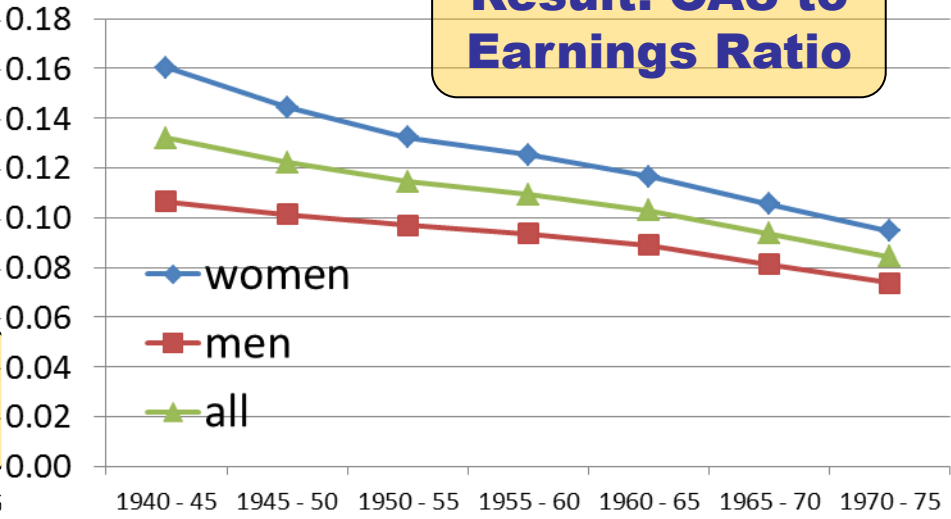

OAS Numerator ($)

- gross benefit
- net of OAS recovery tax
- after income tax

birth cohort →

Earnings Denominator ($)

- women
- men
- all

Result: OAS to Earnings Ratio

- women
- men
- all

- Equivalized OAS at age 70
- Best 15 years earnings pre-retirement
- Birth cohorts from 1940-45 to 1970-75 = turning age 65 in 2005-2010 to 2035-2040

Will Canada's Retirement Income System be Adequate – in Terms of <u>Net</u> Replacement Rates?

- about <u>half</u> of the "baby boom" population (those born between 1945 and 1970)

- <u>in the middle</u> 50% of the earnings distribution for their prime working age years (i.e. ages 40 to 65)

- can <u>expect a decline</u> in their NET replacement rate (RR) / consumption possibilities after retirement

- of <u>at least one-quarter</u>

- and this situation will <u>continue to deteriorate</u>

(see: http://www.irpp.org/pubs/IRPPstudy/IRPP_Study_no17.pdf)
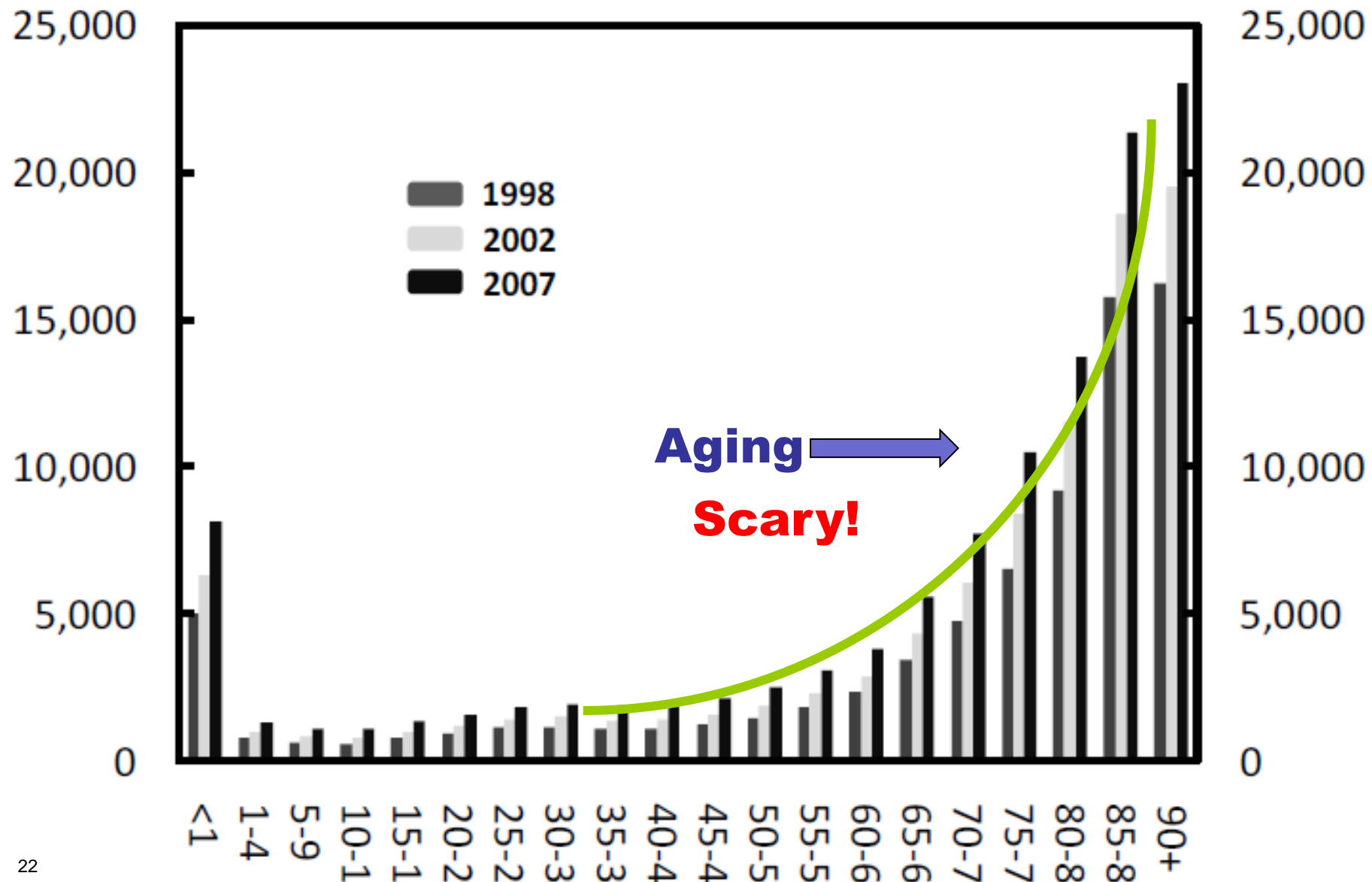
Further Observations

- <u>phase-in</u> is crucial: it will take almost half a century for fully pre-funded C/QPP expansion to become fully mature, well after the growing shortfall in RR adequacy

- fiscal sustainability is obviously important; a more rapid phase-in of expanded C/QPP benefits can be accompanied by offsets, especially <u>increases in the age of entitlement</u>

- <u>appropriate risk sharing</u> is fundamental; we know enough to do much better than only CPI indexing to protect against inflation – public pensions can also be "indexed" to longevity, dependency ratios, and real economic growth rates (even if negative!)

Expenditures by Age Group

(Dollars per capita)
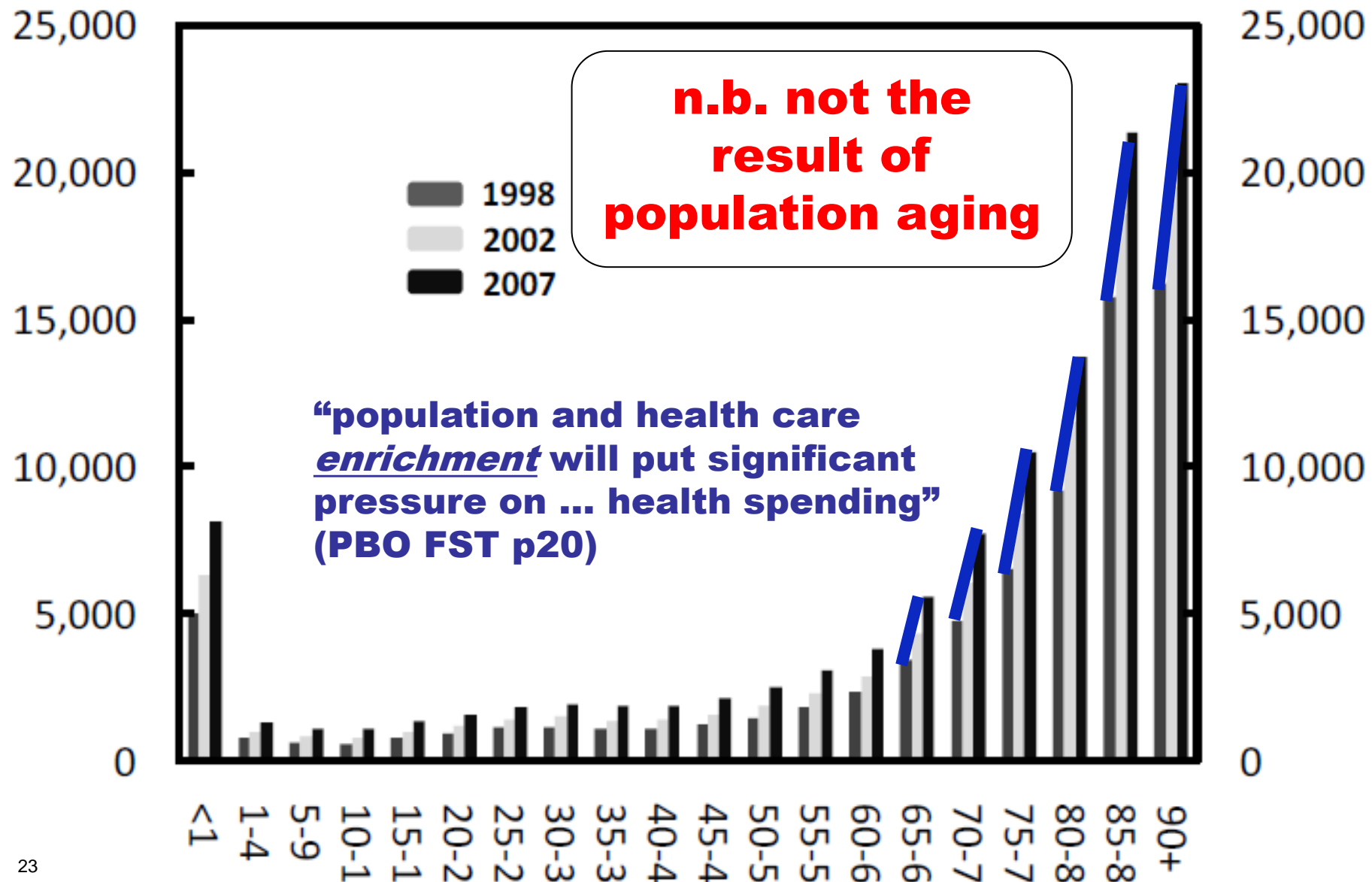

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Expenditures by Age Group

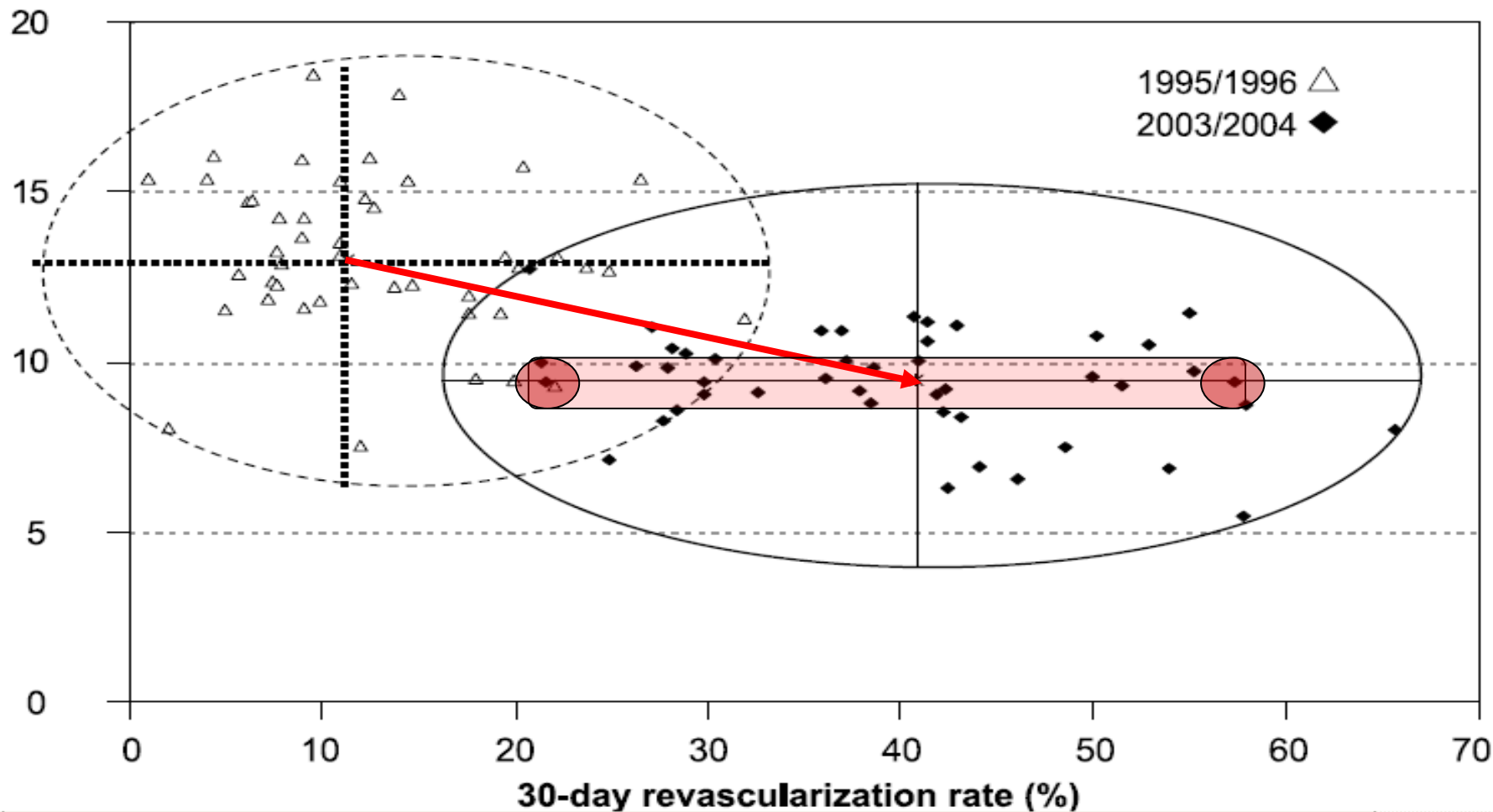(Dollars per capita)

Legend: 1998, 2002, 2007

n.b. not the result of population aging

"population and health care *enrichment* will put significant pressure on … health spending" (PBO FST p20)
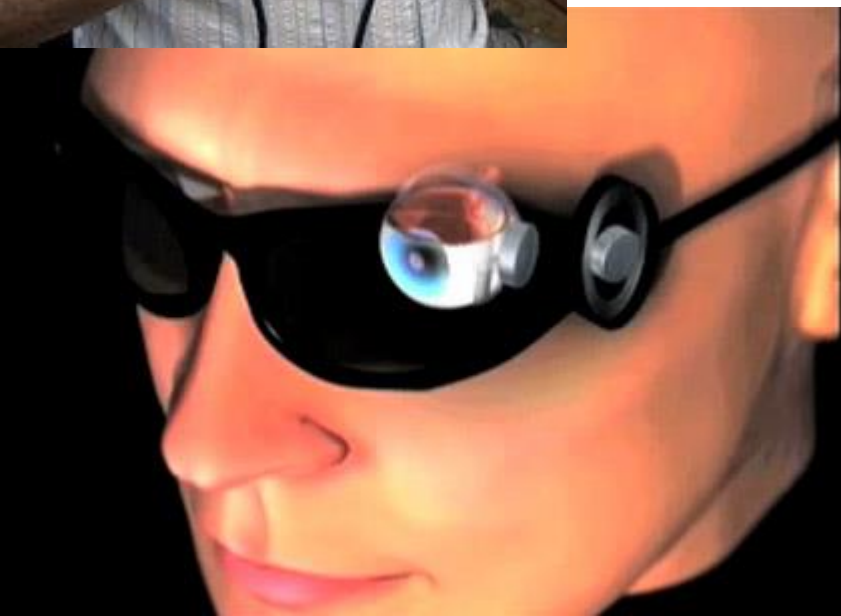
Heart Attack Survival in Relation to Treatment by Health Region, Seven Provinces
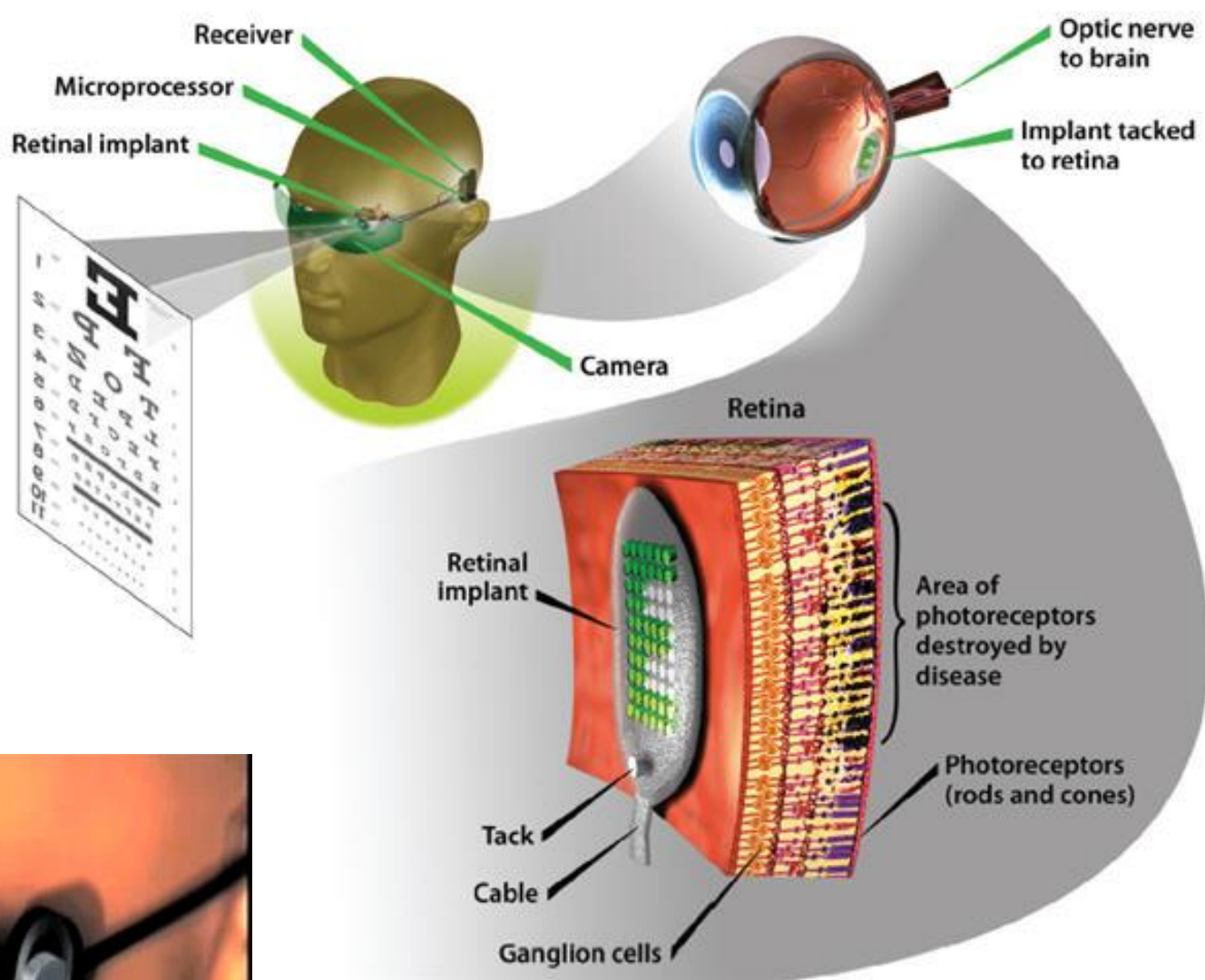
Exoskeletons = Mobility Prostheses

**Artificial Retinas...
Boundary Between
Health Care / Cure and
Health Enhancement?**

Shades of Grey, Toronto

RIP LifePaths 1988 - 2014

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