

Indexation in Pension Design

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WEAI Panel
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Pensions matter

- ‘The share of individuals aged 65 and above will increase from 8% of the total world population in 2015 to almost 18% by 2050, and from 16% to 27% in the OECD.’
- ‘Public pensions are often the largest single item of social expenditure, accounting for 18% of total government spending on average.’
- OECD Pensions at a Glance 2015, p.1, 178.

Public PAYGO Plans

Parametric changes between 2009 and 2017

- 19 countries increased the contribution rates in their PAYGO programs
- 37 increased the retirement age, and
- 32 adjusted the parameters of the benefits formula and cut back or froze old-age pension amounts in order to reduce fiscal costs.

Source: FIAP – International Federation of Pension Funds Administrators.

Primary difficulties for pension design

- **Diversity in labor market experiences, life expectancies, and family structures.**
- Economic and demographic risks to the system.
- Widespread imperfect consumer information and decision making.
- Asset supply responses to the nature of consumer demand.
- Costs of administration can be significant.
- **Government needs to be able to do a good job.**

Indexation in Pension Design

- Prices
- Wages
- Life expectancy
- Financial balance

Social Security Cost-Of-Living Adjustment, US

- Current law: CPI-W:
 - Consumer Price Index for Urban Wage Earners and Clerical Workers.
- Johnson: Chained CPI (C-CPI-U):
 - OACT estimates a decrease of 0.3 percentage point per year.
 - Increase benefits for all beneficiaries who have been eligible for at least 20 years.
- Larson: CPI-E:
 - OACT estimates an increase of 0.2 percentage point per year.

CPI, US

- the price data used to produce the CPI are collected from retail stores and not directly from households,
- as a consequence, it is impossible to investigate satisfactorily the two major aggregation issues:
 - To what extent does inflation or changes in living costs differ among the various economic and demographic groups?
 - And to what extent would a democratic index behave differently from a plutocratic one?

CPI, US

- The adjustment of observed price changes, to eliminate those that reflect changes in the quality of the goods purchased, raises conceptual and measurement issues.
- Even if there are no measurement problems, one would still have to decide how comprehensively the BLS should pursue the goal of quality adjustment.

At What Price? Conceptualizing and Measuring Cost-of-Living and Price Indexes,
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CPI, US

- A frequently cited example arises from improvements in specific medical procedures that reduce mortality.
- Intuitively, many people think it would be inappropriate to adjust the CPI for such quality improvements and thereby reduce the benefits paid to social security recipients to reflect the estimated monetary value of additional longevity resulting from improved medical procedures

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Indexed adjustments of defined benefits in payment

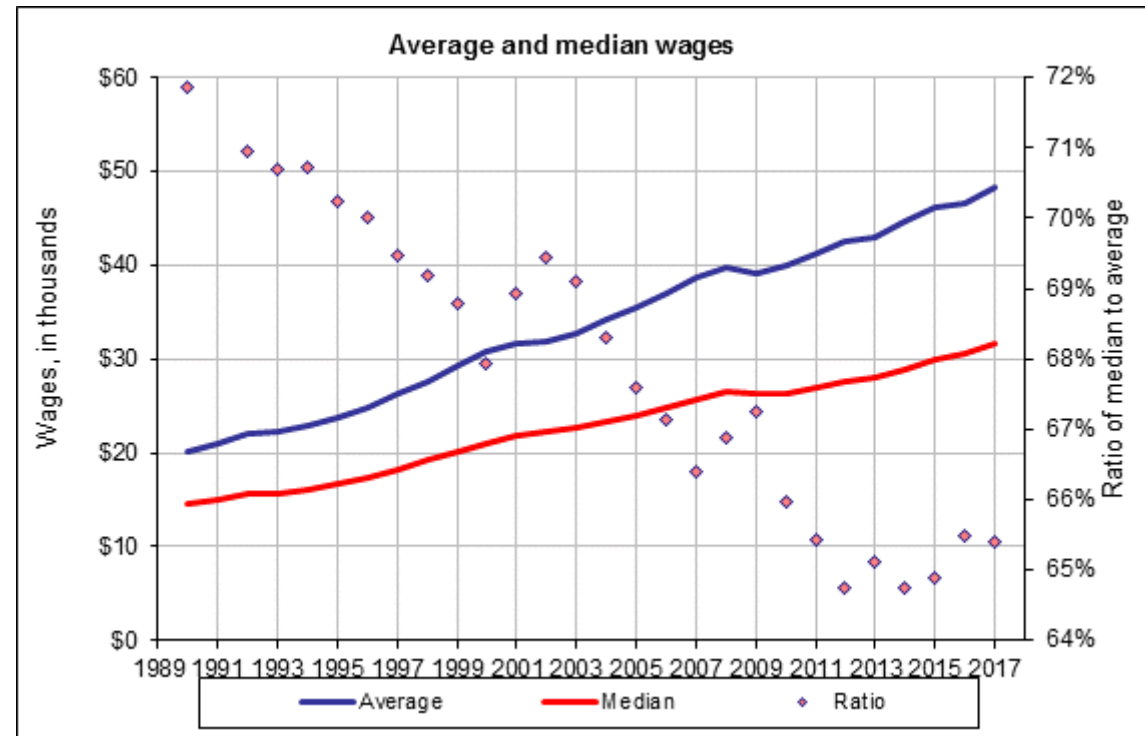
- Price changes:
 - Canada, France, USA.
- Wage changes minus a constant:
 - Norway, Sweden
- Mix of price and wage changes:
 - Finland, Switzerland
- Includes adjustment for financial balance:
 - Canada, Germany, Spain, Sweden
- Source: OECD, Pensions at a Glance 2015: OECD and G20 indicators.

Adjustments of benefits in payment, Italy

Indexation is progressive: lower pensions are indexed more generously than higher pensions.

Source: OECD, Pensions at a Glance 2015: OECD and G20 indicators.
http://dx.doi.org/10.1787/pension_glance-2015-en

Median and Mean Earnings, US



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Mandatory annuitization, Sweden

Inkomstpension (NDC)

- Quasi-actuarial, and adjusted for the balance ratio

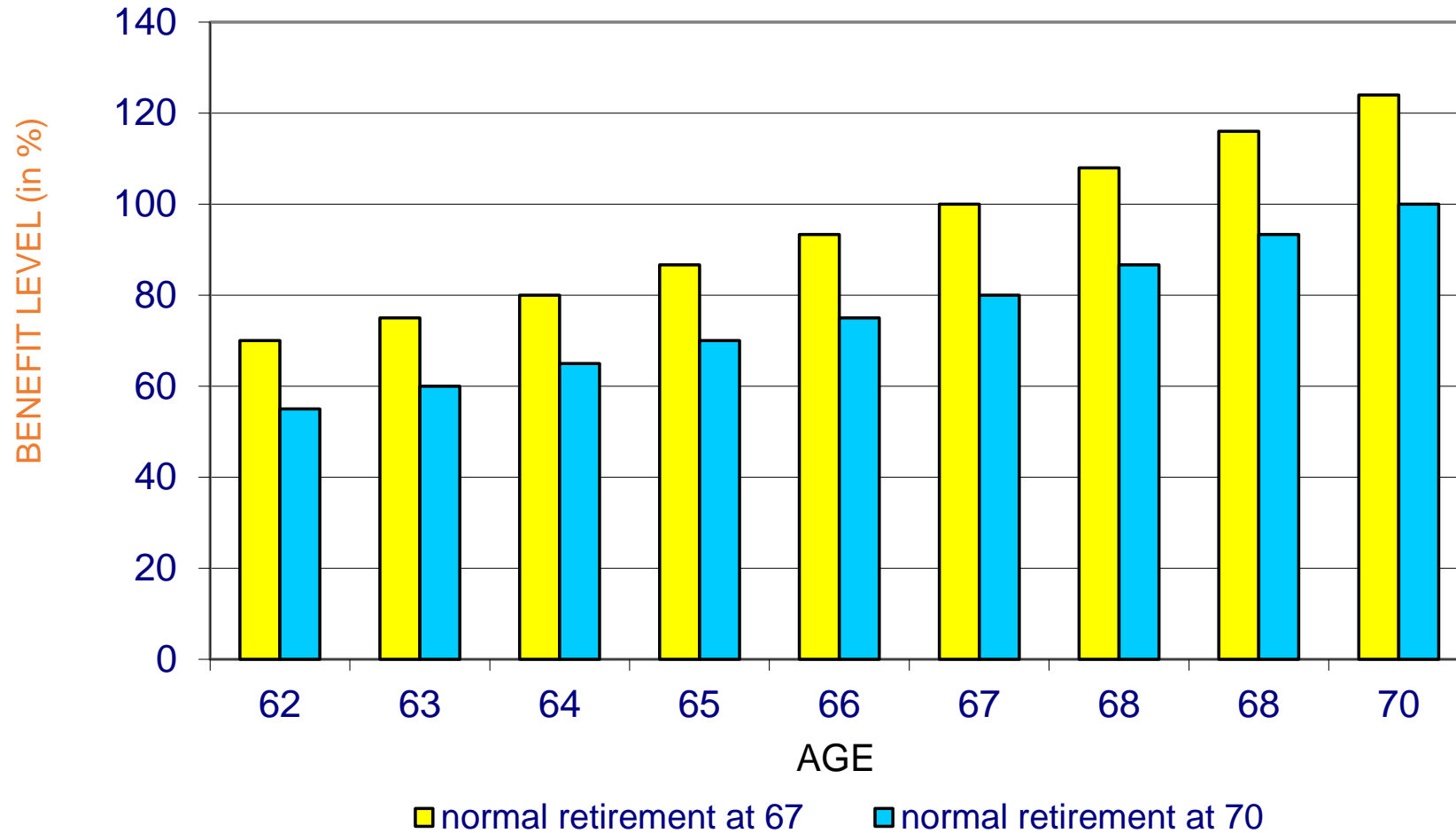
Premium pension (DC)

- Traditional insurance-with-profit annuity: a nominal guaranteed monthly amount with possible monthly supplement, which may vary from year to year.
- Retain accumulated balance in the fund. The value of the pension account is divided by an annuity divisor, based on forecasts of future life expectancy.

Defined benefits, Germany

- Pension point value is indexed to gross wage growth with two adjustments, a “contribution factor” for changes in the contribution rate and a “sustainability factor” with changes for the dependency ratio – the number of standardized pensioners in relation to the number of standardized contributors.
- Source: OECD (2015), Pensions at a Glance 2015: OECD and G20 indicators.
http://dx.doi.org/10.1787/pension_glance-2015-en

BENEFIT LEVELS WITH AGES FOR FULL BENEFITS (NORMAL RETIREMENT AGES) OF 67 AND 70



Revised Edition

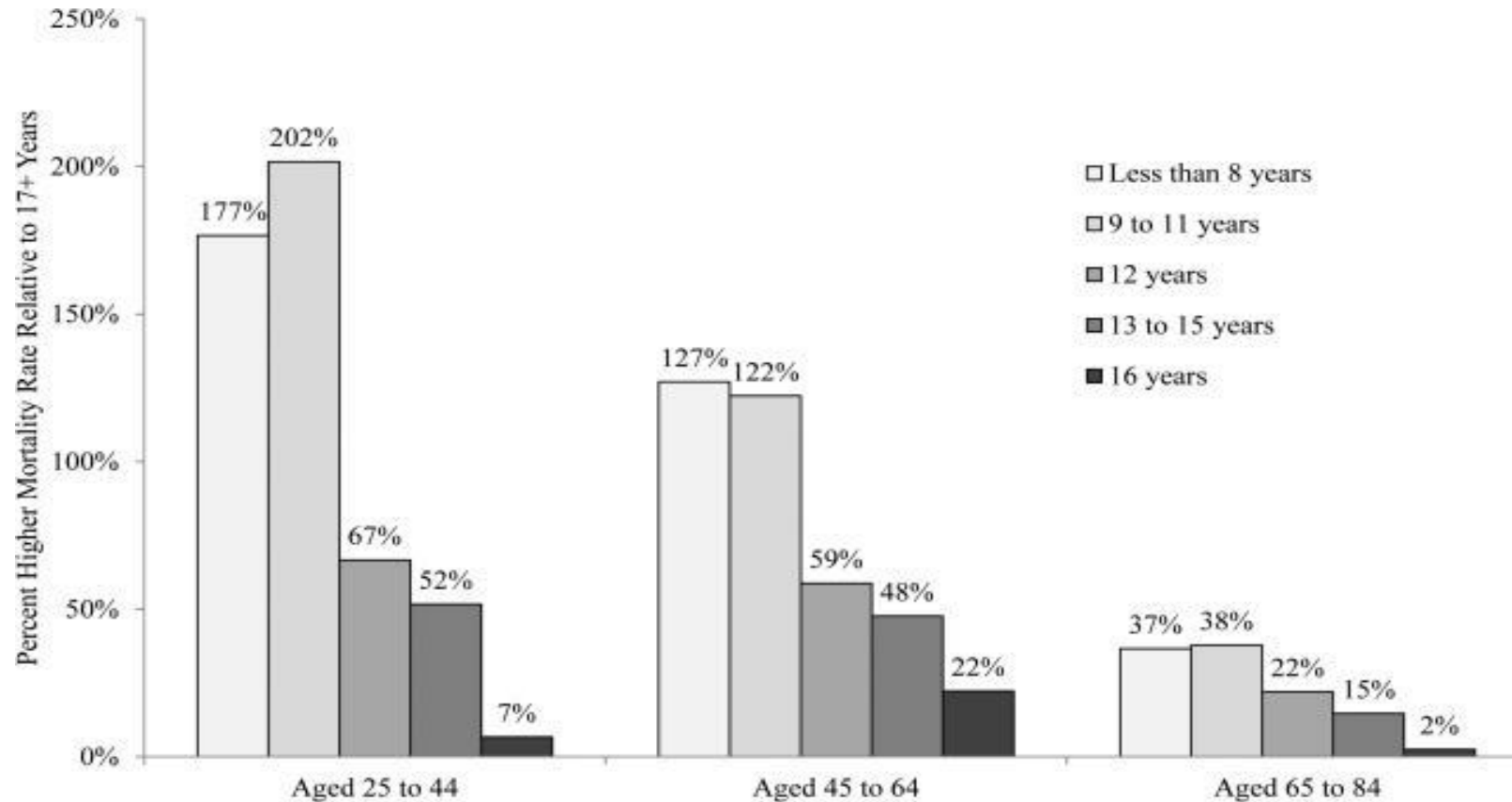
SAVING SOCIAL SECURITY

A
Balanced
Approach

Peter A. Diamond

Peter R. Orszag

Mortality Rate Differences Relative to Persons with 17+ Years of Education, U.S. Women by Age



Source: Robert A. Hummer and Joseph T. Lariscy, "Educational Attainment and Adult Mortality," in *International Handbook of Adult Mortality*, ed. Richard G. Rogers and Eileen M. Crimmins (NY: Springer, 2011)

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Insufficient rates provisions of Base Canada Pension Plan
serve as a safety net in case of political impasse

If the minimum contribution rate is higher than the
legislated contribution rate

AND

if the federal and provincial finance ministers cannot
reach an agreement

THEN

Contribution rate increased by $\frac{1}{2}$ of excess over three
years

Benefits frozen until next review (3 years).

How Risk is Shared: New Brunswick Hospitals' plan (Canadian Union of Public Employees Local 1252)

Funded ratio below 100 percent for two years in a row
or the plan fails to meet the risk management goals:

1. Increase contributions up to 1 percent of earnings, split evenly between workers and the employer.
2. Change the rule for calculating early retirement benefits, for those not currently eligible for such benefits, to a full actuarial reduction.
3. Reduce “base benefit” accrual rates for future service up to 5 percent.
4. Reduce base benefits for all members in equal proportion until the plan meets the goals.

Pension systems

- Chile
 - Solidarity pillar
 - Individual accounts
- Netherlands
 - Noncontributory (AOW)
 - Contributory industry plans
- Sweden
 - Guarantee pension
 - Inkomstpension
 - Premium pension