

Earnings related schemes: Design, options and experience



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Retirement-income systems: goal



□ Primary objective

- ensuring older people have a decent standard of living in retirement

□ Two interpretations

- 'Adequacy': ensuring older people meet a basic standard of living
- 'Insurance/forced savings': ensuring a reasonable standard of living in retirement relative to position before retirement

Objectives and measures



- Adequacy: an **absolute** measure of living standards
 - individual pension entitlement as a proportion of economy-wide average earnings
 - **pension level**
- Forced savings/insurance: a **relative** measure of living standards
 - individual pension entitlement relative to individual earnings when working
 - **replacement rate**

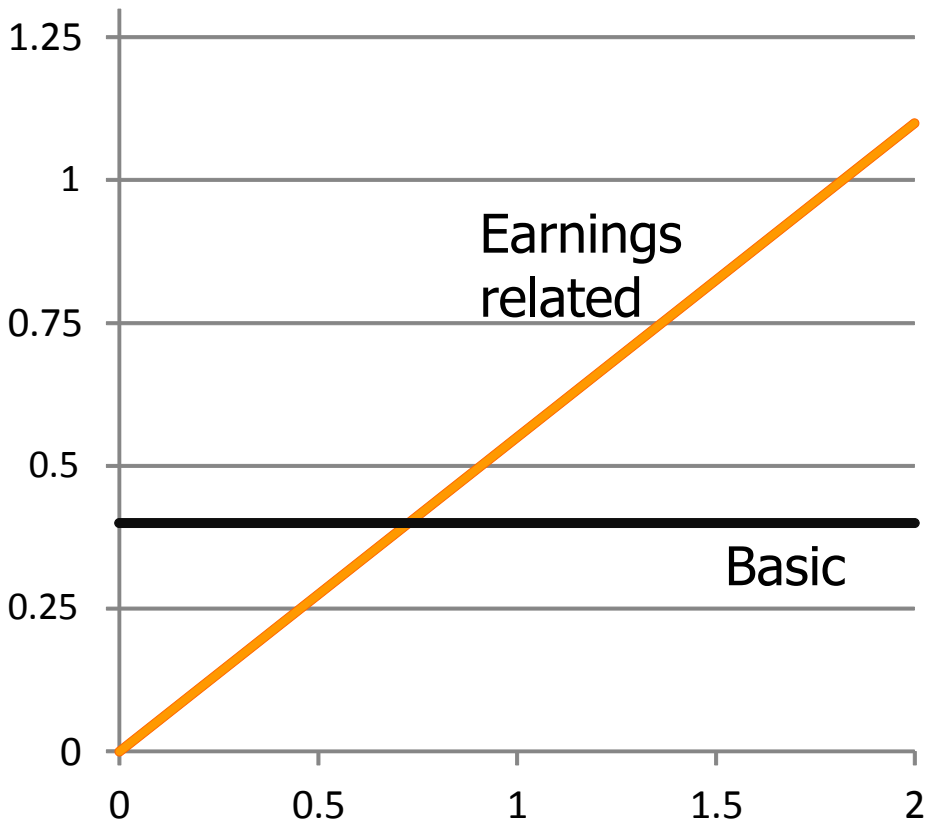
International experience



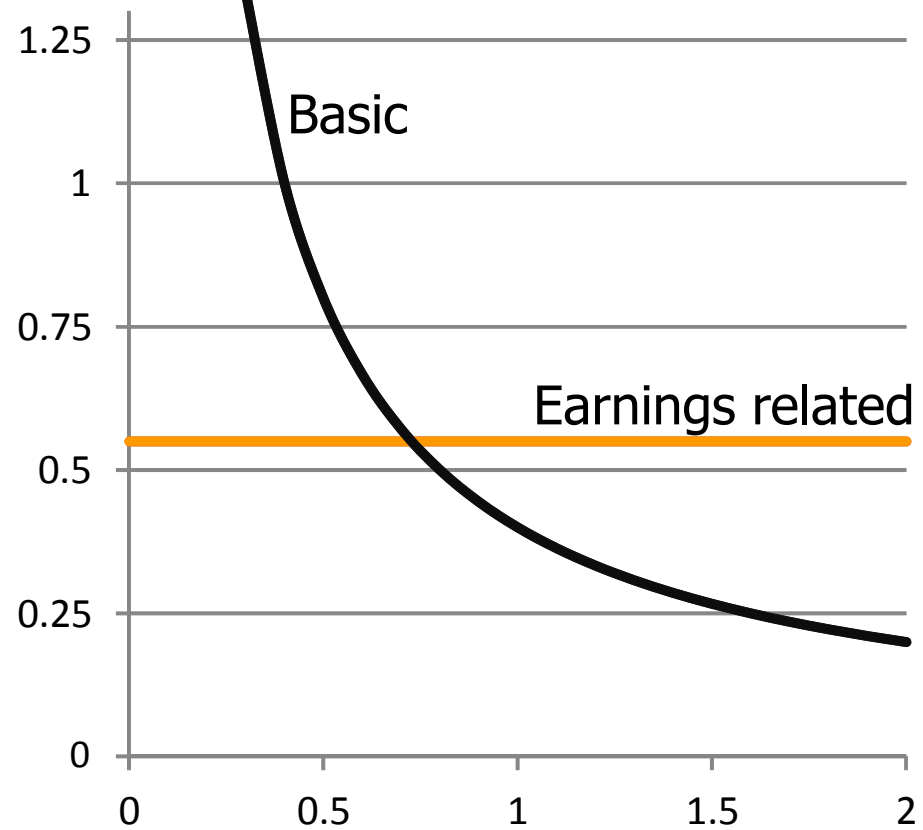
- Different degrees of emphasis on the alternative objectives of **adequacy** and **insurance/savings**
- Analysis of **mandatory** retirement-income provision
 - public and private
 - **voluntary**, private pensions also important
- Two benchmarks:
 - universal, flat rate benefit
 - constant replacement rate

Benchmarks

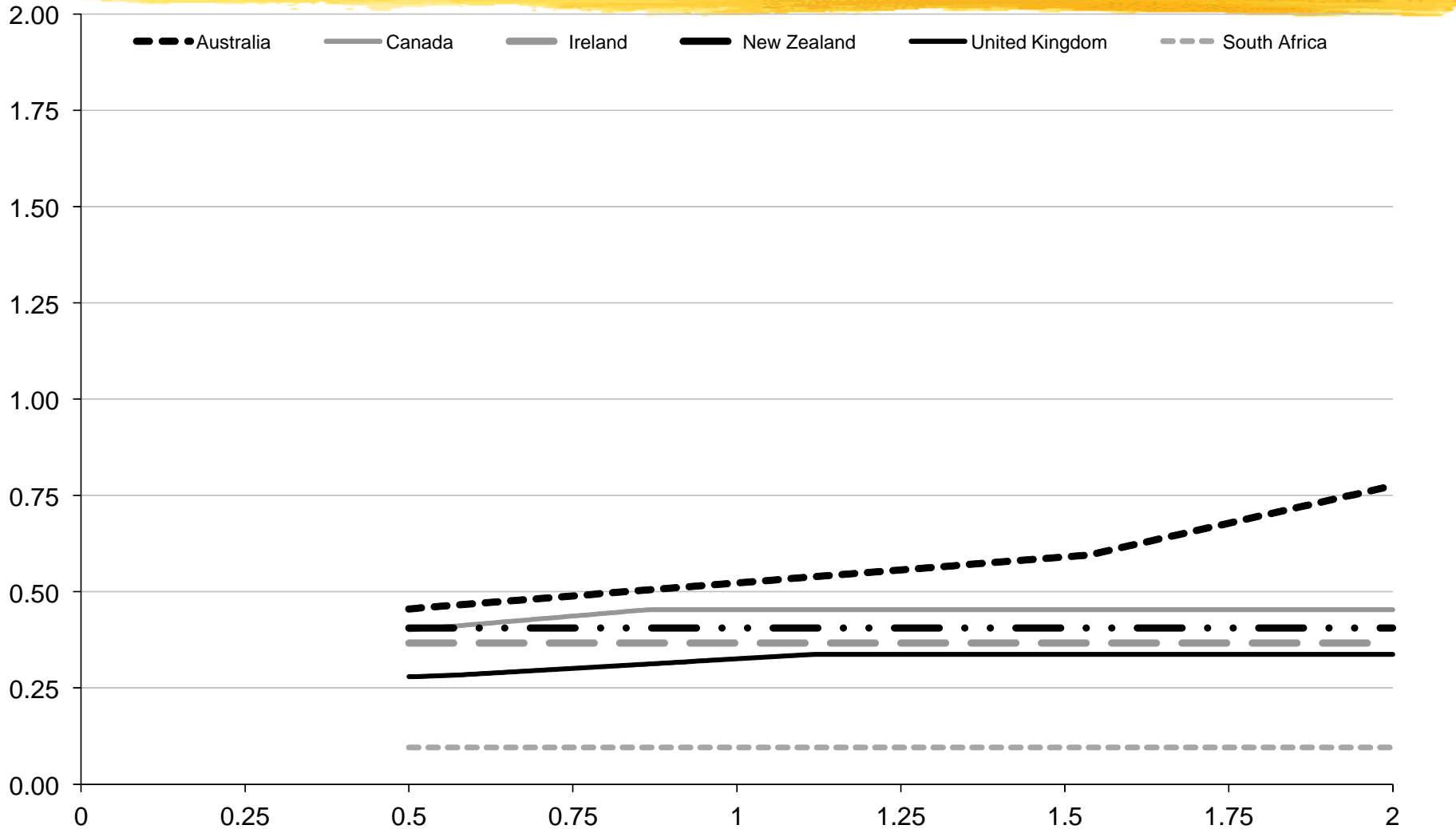
Relative pension level



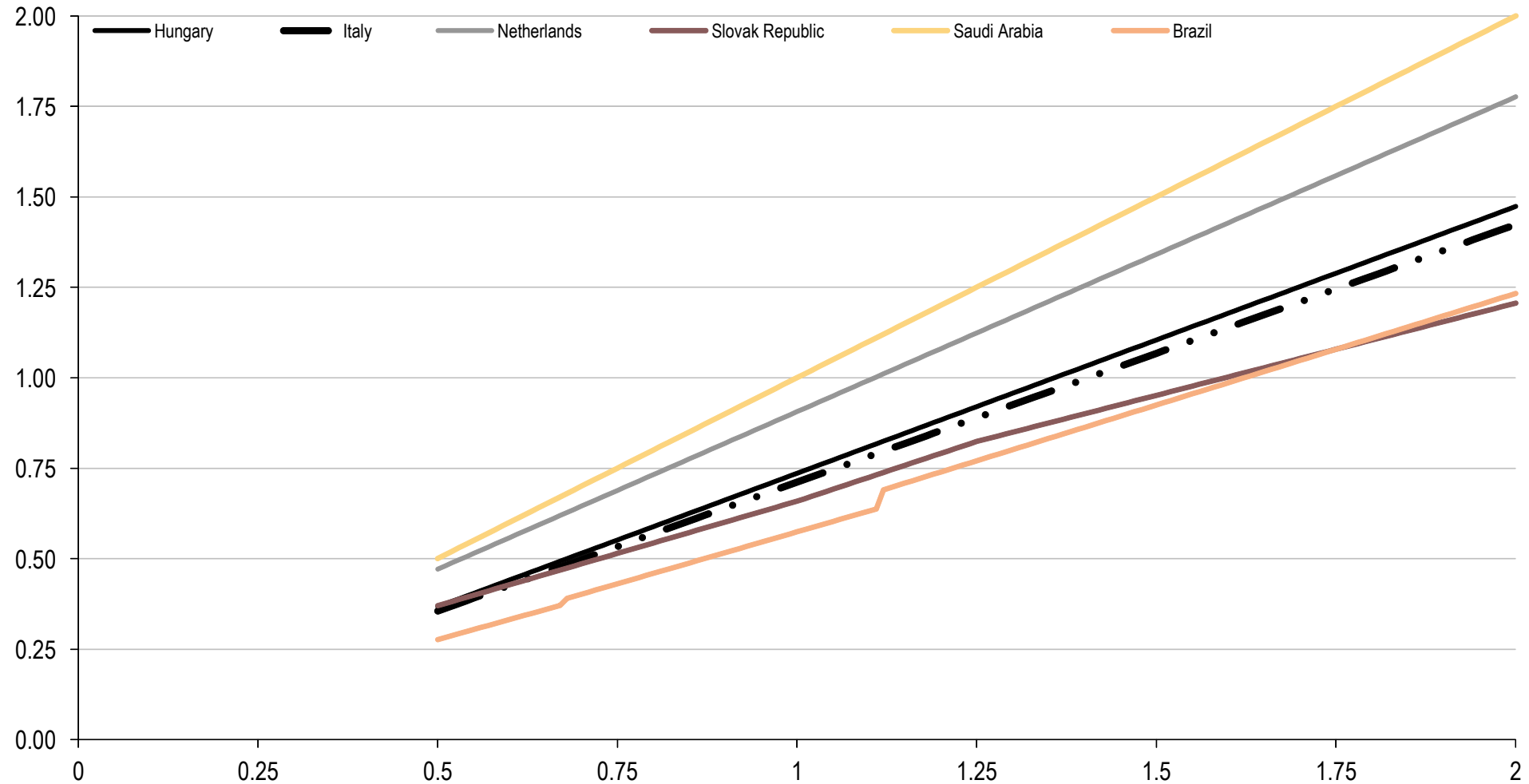
Replacement rate



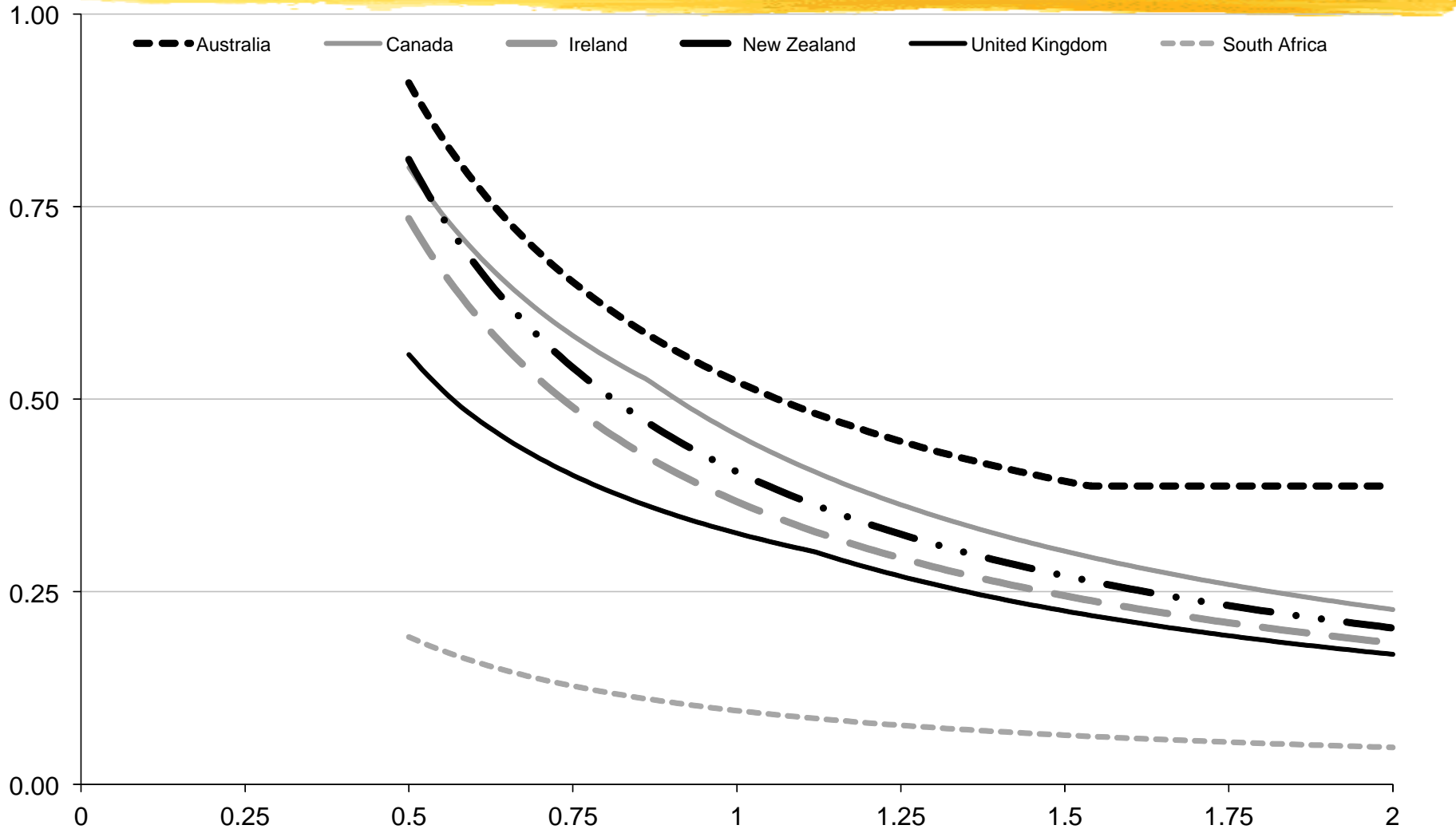
Relative pension levels: adequacy emphasis



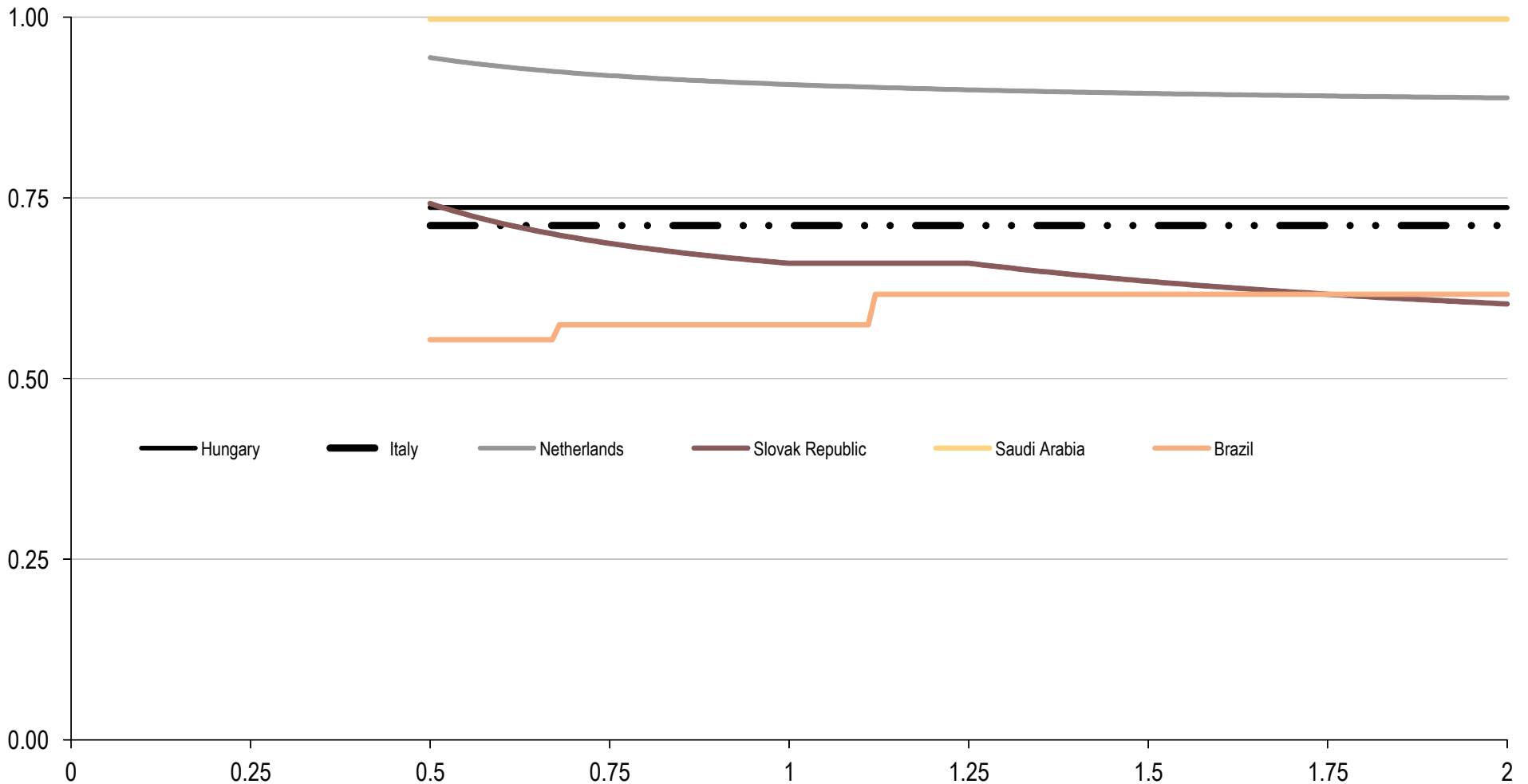
Relative pension levels: insurance emphasis



Replacement rates: adequacy emphasis



Replacement rates: insurance emphasis



Source: OECD

Pensions at a Glance

Benefit design



Retirement-income target



- What should be the replacement rate objective?
 - family support in old age
 - non-pension income (*e.g.*, other savings, work)
 - consumption needs in retirement are lower (*e.g.*, costs of work, no children to support)
 - taxes and social contributions are lower during retirement
- A replacement rate in the pension system of less than 100% means that the same living standard can be maintained during retirement

Retirement-income target



- Ideal replacement rates are higher for low-income workers than for higher-income
- For high-income workers
 - ▣ a ceiling on earnings that are eligible for pension benefits
 - ▣ at the lower end of the international 'norm' (around 125-200%) of average earnings is appropriate
- For low-income workers
 - ▣ use 'adequacy' schemes to boost replacement rates

Types of insurance scheme



□ Earnings-related:

- pension value depends on number of years of contributions and individual earnings
- variants: pure defined benefit (DB), notional accounts, points

□ Defined contribution:

- pension value depends on contributions paid in and investment returns that they earn

Some equations

□ Defined benefit

AUT, BEL, CAN, CZE, FIN, GRC, HUN, ISL,

JPN, KOR, LUX, NLD, PRT, SVN, ESP, GBR, USA

□ Points

EST, FRA, DEU, SVK

□ Notional accounts

ITA, NOR, POL, SWE

□ Two identities

$$DB = \sum_{i=0}^R w_i (1+u)^{R-i} a$$

$$PP = \sum_{i=0}^R \frac{w_i v_R}{k_i} = \sum_{i=0}^R \frac{w_i v_i}{k_i} (1+x)^{R-i}$$

$$NA = \sum_{i=0}^R \frac{w_i c}{A} (1+n)^{R-i}$$

if $u = x = n$

then $a = v / k = c / A$

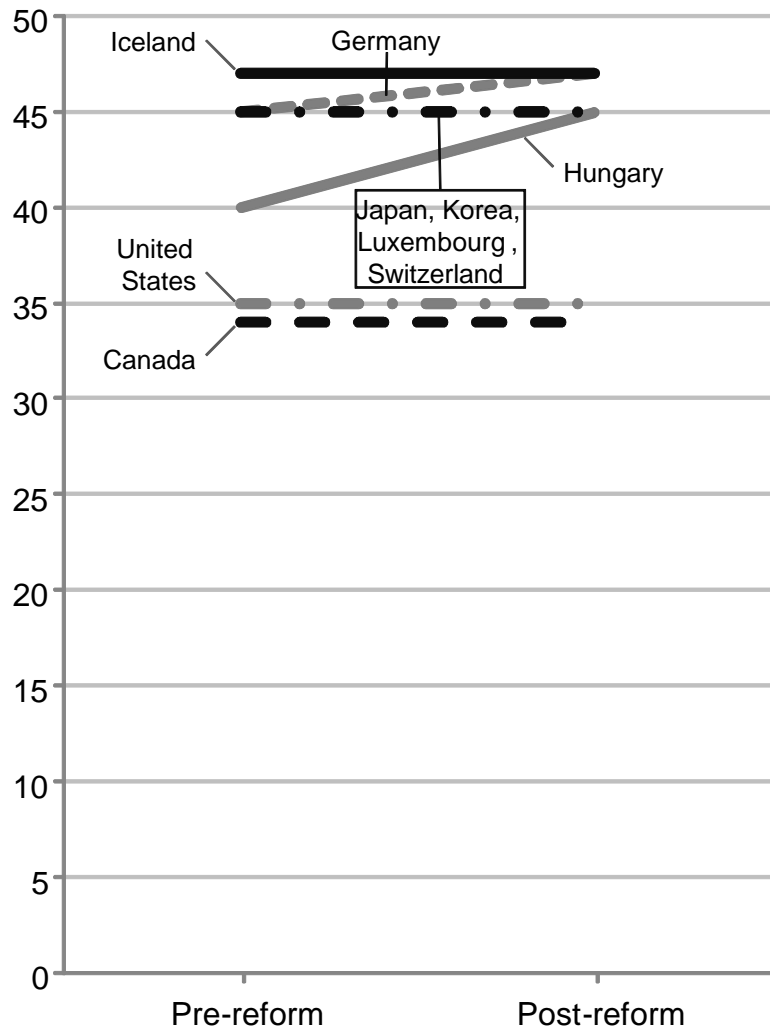
Defined-benefit schemes: Earnings measure



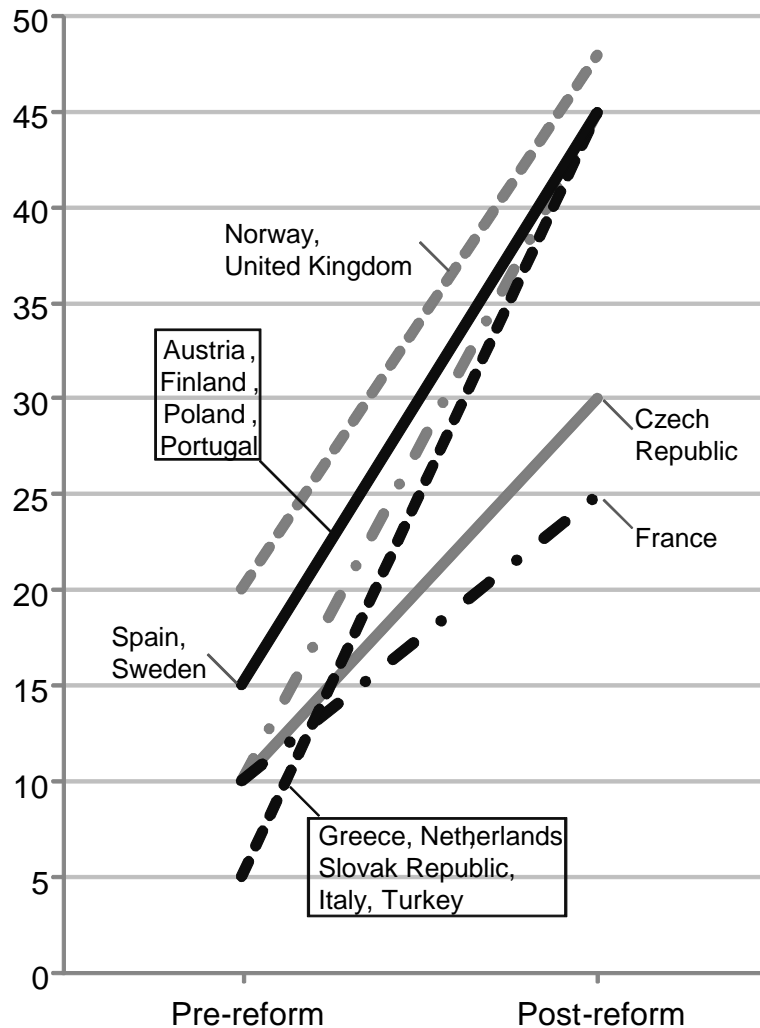
- 'Final' salary used to be very common
 - but now many countries moved to lifetime average salary
- Explanations:
 - improved record-keeping
 - computerisation makes lifetime calculations easier
 - final salary no longer needed to protect against effects of inflation between earning rights and retirement
- Problems of final-salary schemes:
 - distributional effects
 - strategic manipulation
 - costs
 - retirement incentive

Earnings measures

Number of years of earnings in pension calculation



Number of years of earnings in pension calculation



Benefit design: Indexation



- Indexation:
 - automatic adjustment of pensions in payment to reflect changes in costs of living or standards of living
 - **not** the arbitrary result of annual negotiation
 - without adjustment, purchasing power of pension can decline quickly: indexation ensures adequacy in a dynamic sense
- Few countries had automatic adjustments until the 1970s
 - then, high inflation led all industrialised countries to adopt automatic indexation

Benefit design:

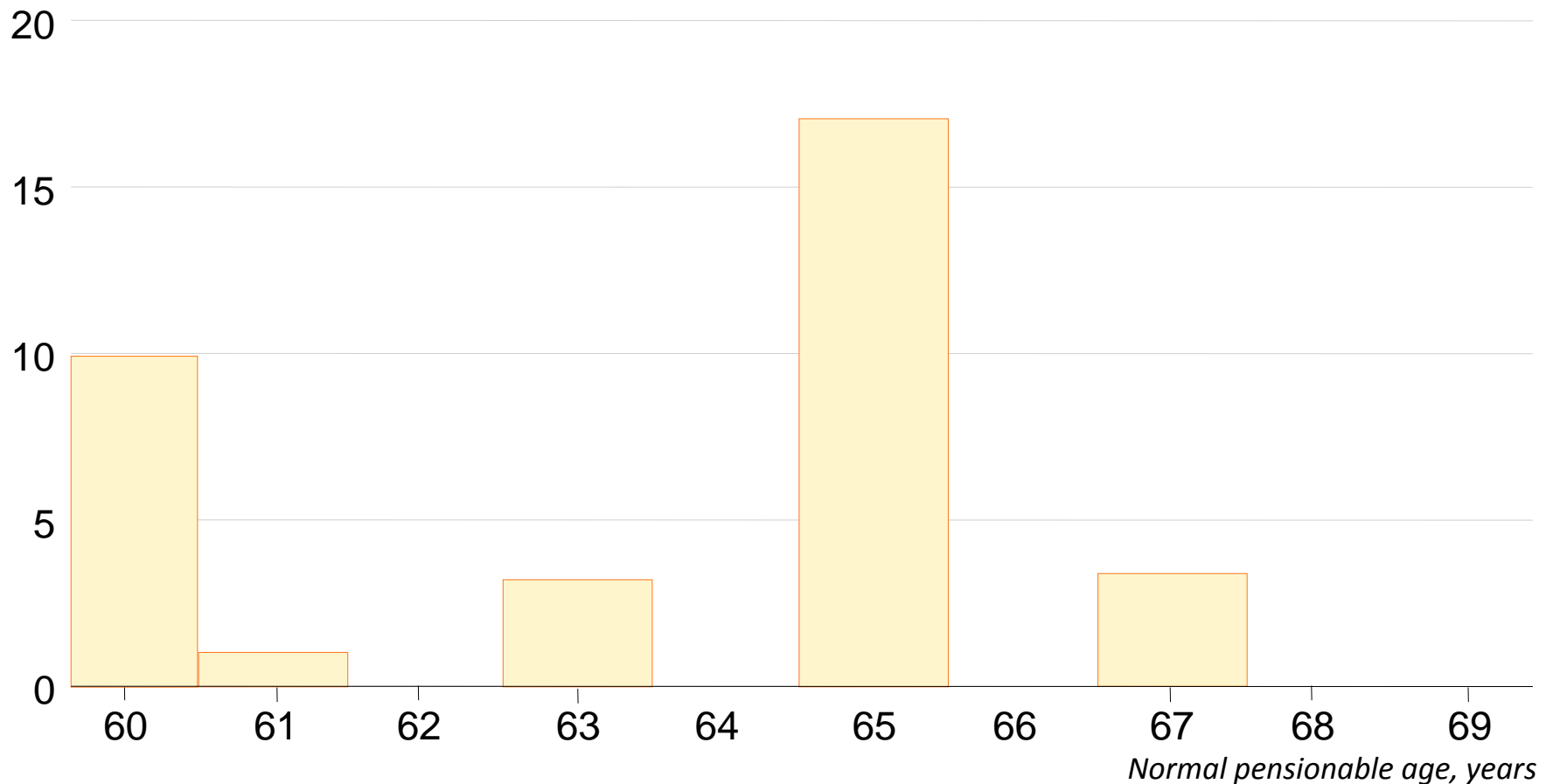
Pension eligibility age



- All pension systems have a 'normal' pension eligibility age (even if people often retire earlier)
- There are no guiding principles as to what this should be
- Therefore, examine what other countries do
 - 'normal' pension eligibility age
 - life expectancy at that age

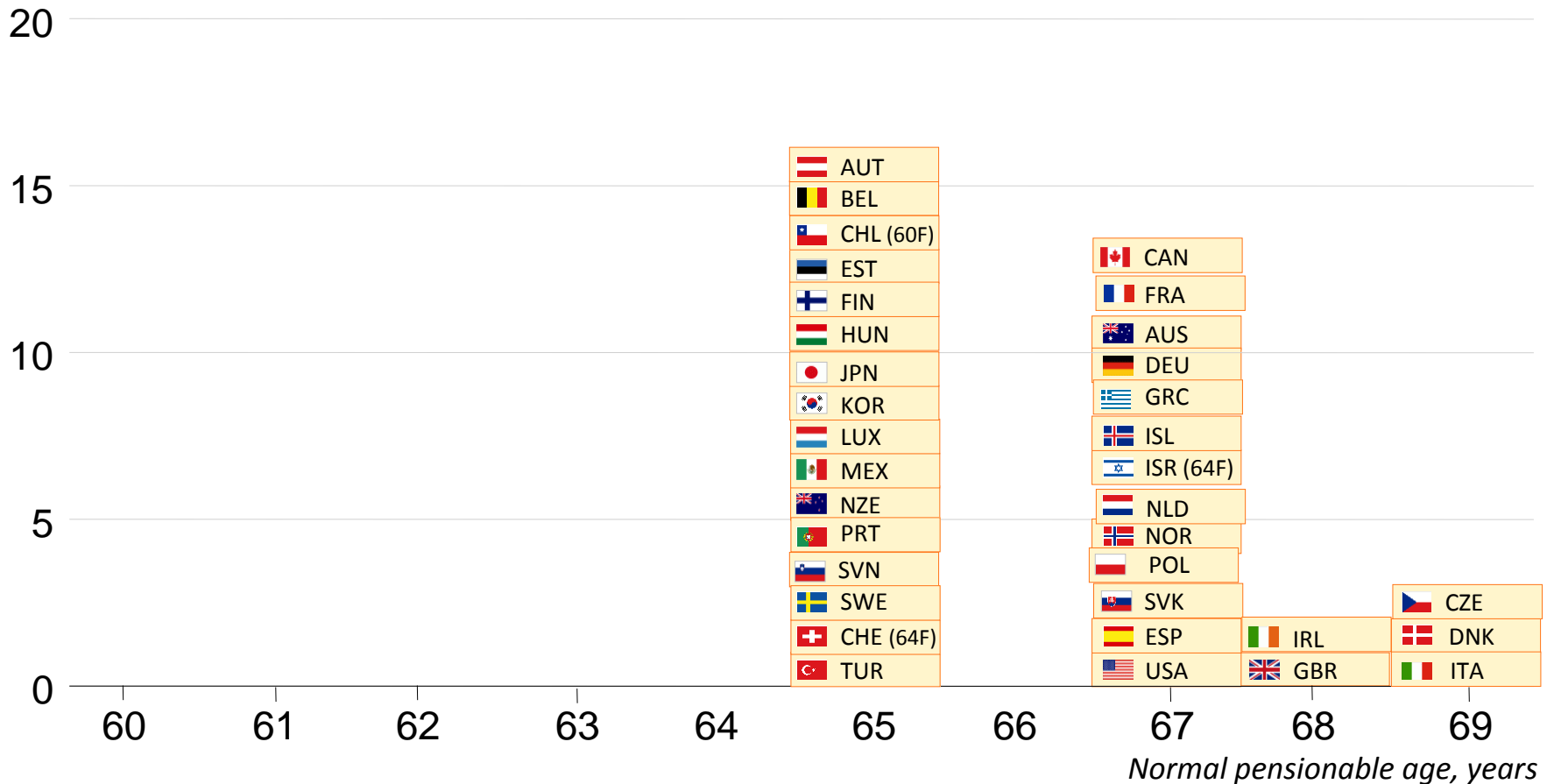
Pension eligibility ages: year 2000

Number of OECD-34 countries



Pension eligibility ages: after reform

Number of OECD-34 countries



Pension eligibility age



- Normal pension eligibility age should depend on life expectancy
 - across countries
 - in one country over time
- Flexibility in retirement may be desirable
- But benefits for early and late retirees need to be adjusted to reflect the longer/shorter period for which they are paid

Financing pensions



- A general principle:
 - 'Adequacy' pensions should be paid for from the central government budget
 - 'Insurance' pensions should be self-financing, that is paid for out of contributions from individual members and employers
- In defined-contribution, 'insurance' pensions this is simple to achieve
 - the contributions made by or on behalf of each individual member will automatically equal the benefits that he or she receives

Principles of pension design



- Adequacy
 - ensure that all older people, regardless of their career history, have enough money to survive
- Self-financing
 - insurance/forced savings benefits should be financed wholly from contribution revenues without support from the central budget
- Secure
 - pensions promises are sustainable and affordable
 - pensions are protected against inflation
- Transparent
 - people know what they can expect in retirement income
- Efficient
 - administration is effective and costs are as low as possible
 - avoids distorting economic choices (*e.g.*, savings and retirement decisions)
 - limits opportunities for 'gaming' the system