The Actuarial Profession
making financial sense of the future

**Pensions, benefits and social security colloquium 2011**

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# Getting the Balance of State and Private Provisions Right

25-27 September 2011

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# Presentation

- Mandatory / voluntary aspects of retirement income systems
- Pension risks sharing
- Tier 2: a tool to hedge risks
- Retirement is expensive and will become even more expensive in the future

# What is society expecting from its retirement system?

**A mixture of public / private and voluntary / mandatory pensions that results in:**

- **Affordable** and **sustainable** system
- Intergenerational **equity**
- **Solidarity:** society protects all individuals and collectively ensures a basic level of assistance/standard of living for low-income retirees
- **Responsibility**: retirement income security is a shared responsibility between the government, society, employers and individuals
- Maintain standard of living after retirement
- Proper interaction with labour market: incentives to remain in the labour force and flexibility in work-to-retirement transition.

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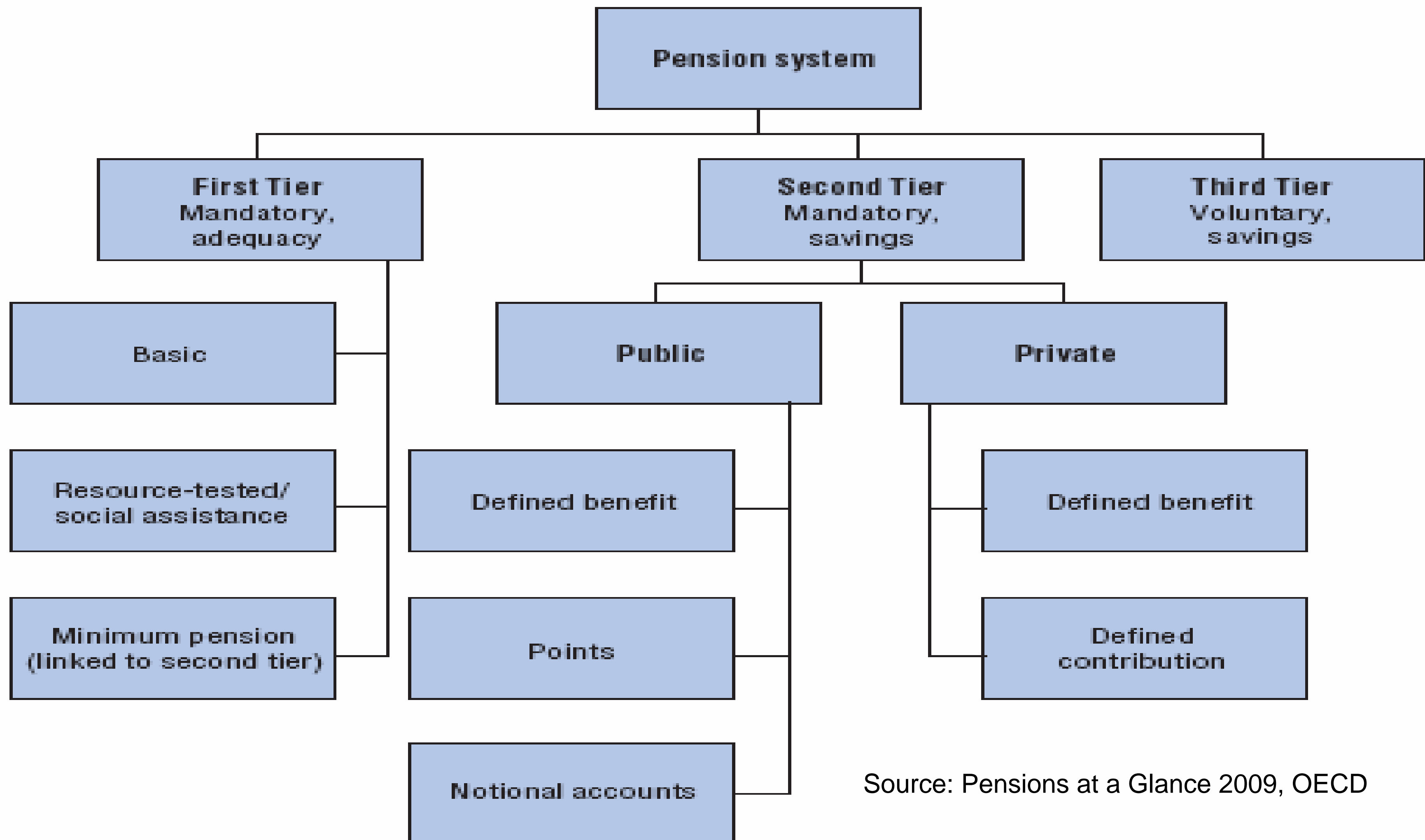
# Three-tiered retirement income system concept includes public and private schemes




Source: Pensions at a Glance 2009, OECD



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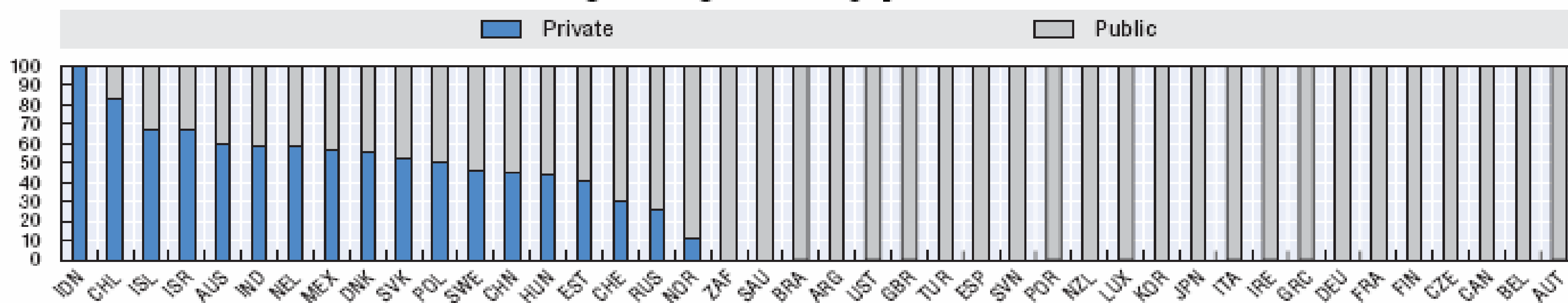
# In a majority of countries public pensions represent a significant part of mandatory pensions

- Tier 1 is a necessary component of the pension system
  – Even if some countries have changed radically their retirement income systems, the recent reforms have reinforced Tier 1 pension ( e.g. Latin American countries)
- Tier 2 offers flexibility of public/private arrangements with private arrangements mainly being defined contribution plans



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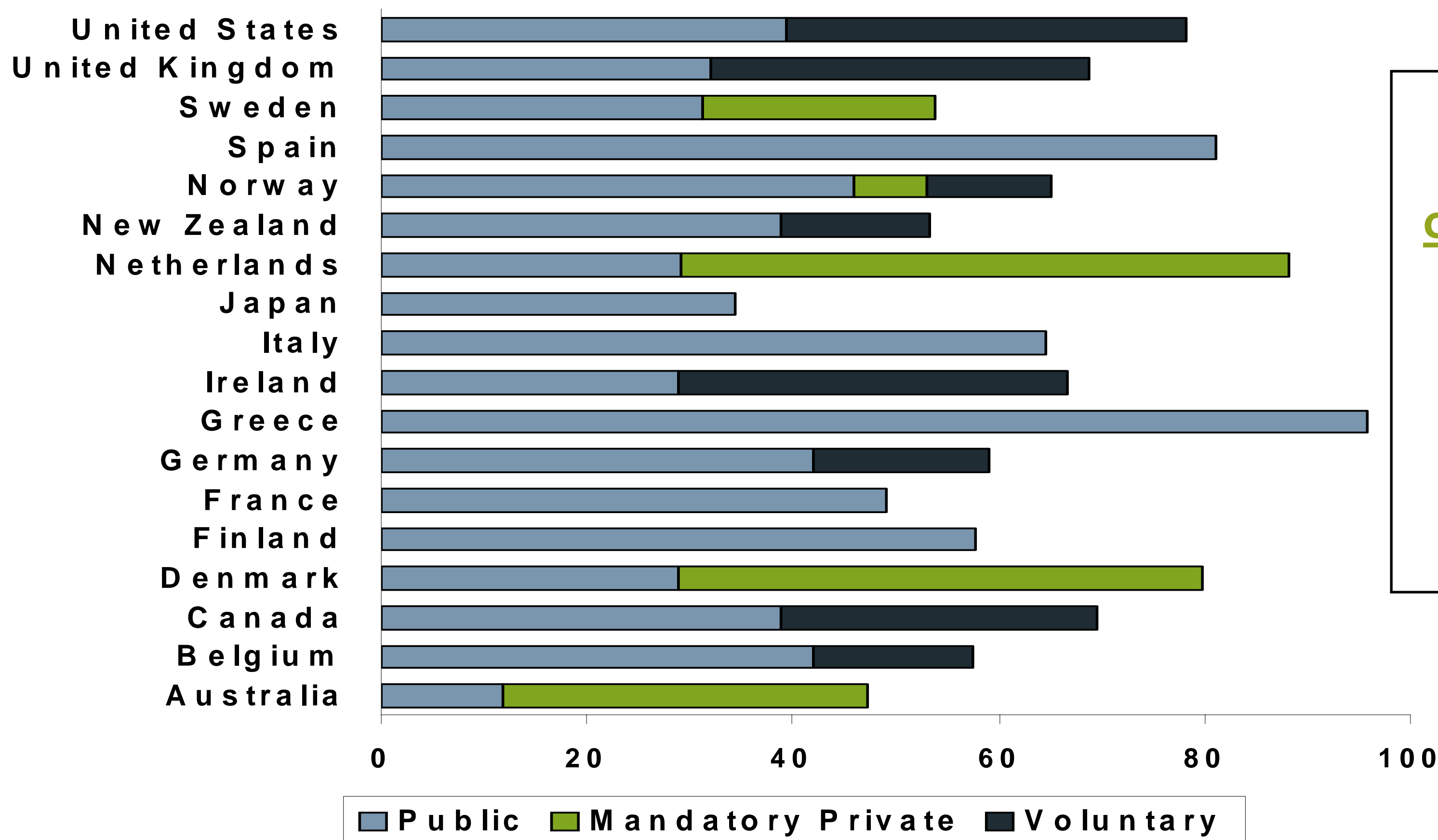
# Voluntary private pensions' importance depends on the structure of the mandatory pension package




**Coverage by voluntary occupational private schemes:**

US: 33%

UK : 49%

Italy: 8%

France: 4%

Canada: 34%

*Source: OECD Pensions at a Glance 2011*



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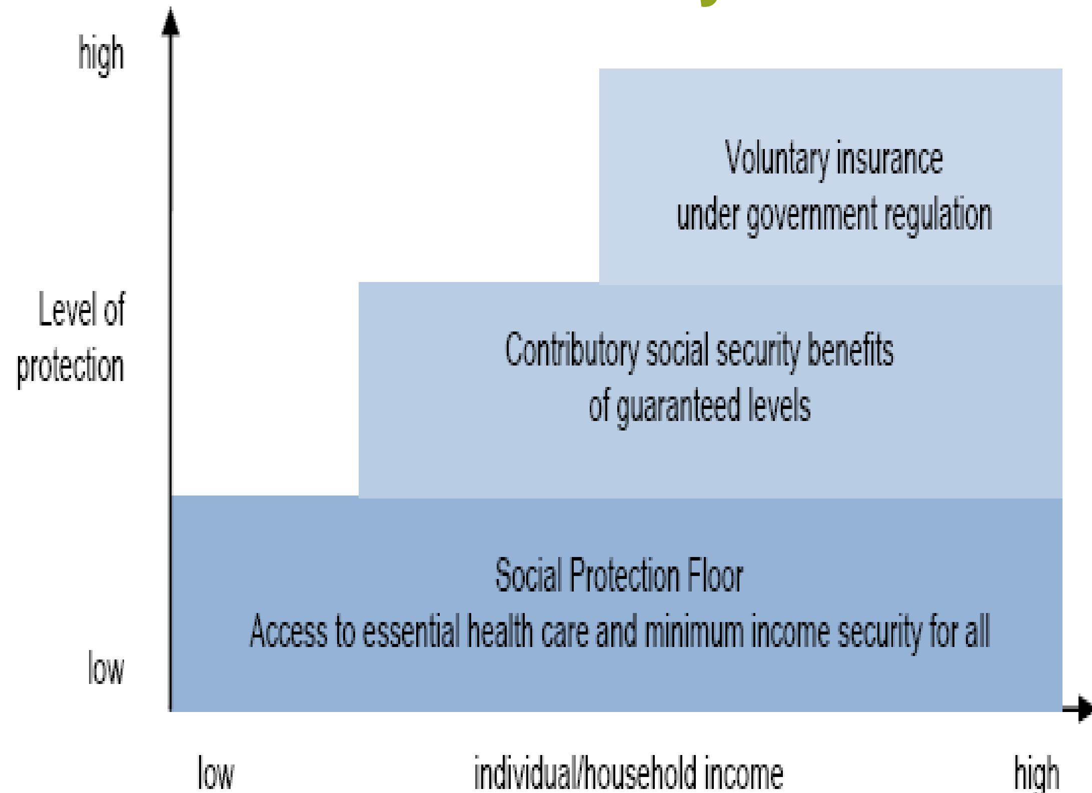
# Society's role in providing retirement income

- Society is responsible for
  - Providing a minimum level of retirement income for all
  - Redistribution of income through the retirement system
  - Education on the need to plan and save for retirement
- Society is **not** fully responsible for providing a reasonable retirement income to **all** individuals
- ILO Convention No.102: those with lower than average income should have a total replacement rate of at least 40% (pensions from all sources) if contributions have been paid for at least 30 years.

## ILO Social Security Staircase




Source: Social Security for social justice and a fair globalization. Recurrent discussion on social protection (social security) under the ILO Declaration on Social Justice for a Fair Globalization (ILC.100/VI), International Labour Organization, 2011.

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# Pension risks do not affect retirement income tiers the same way

**Some of the risks affecting pension systems are:**

- Low participation in higher tier
- Financial illiteracy
- Longevity risk
- Retirement risk: *Earlier than expected retirement*
- Funding Risk: *Expected cash flows are insufficient to meet pension obligations*
- Investment risk: *Investment returns less than expected*
- Market risk: *Market failure*

**Proper management of risks through plans design could help to provide adequate retirement income at affordable cost**

# Failure of Tiers 2 and 3 to produce adequate retirement income puts pressure on Tier 1

- Tier 1, being the society's safety net, is adversely affected by any shortcomings in higher tiers:
  - Low participation in higher tiers and financial illiteracy
  - Transfer of the majority of risks by Tiers 2 and 3 to individuals, instead of risks pooling
- Tier 1 pensions are generally financed through general revenues, so higher reliance on Tier 1 pensions means higher cost for a society
- Tiers 2 and 3 designs should aim at
  - Increased coverage by earnings-related schemes (e.g. auto-enrolment feature of New Zealand' KiwiSaver)
  - Diversified designs and financing: mixture of defined benefit and defined contribution plans, PayGo and pre-funding, public and private.

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# More pension systems share longevity risk among stakeholders

- Increase in pensionable age
  - Harmonization of pensionable age for all tiers
- Automatically linking pensions to life expectancy:
  - Mandatory DC plans fully pass the longevity risk to individuals
    - Periodic mandatory annuitization (e.g. by installments during several years before retirement) and developed annuity markets that are able to provide affordable annuitization options could mitigate impact on individuals
  - Notional DC plans
  - DB benefits linked to life expectancy
  - Qualifying conditions linked to life expectancy
- Defined benefit to defined contribution shift in Tier 3
- Linking benefits levels to life expectancy must have limits
  - Low earners may be pushed to social assistance programmes.

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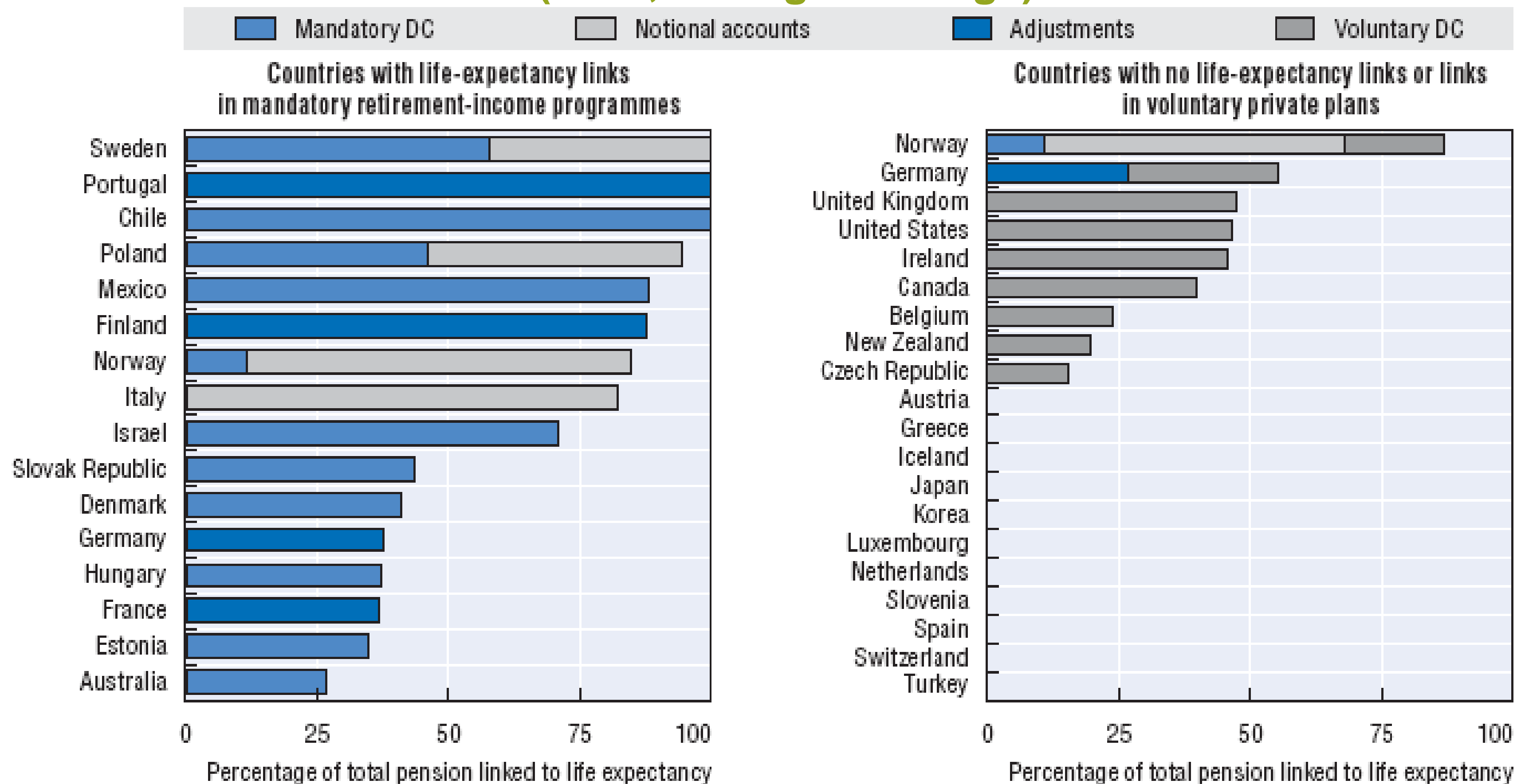
# Different retirement systems transfer different amount of longevity risk to beneficiaries

## Percentage of pension entitlement linked to life expectancy (male, average earnings)




Note: a pure DC benchmark would show a link of 100%, while a pure DB would show no link at all.

*Source: OECD Pensions at a Glance 2011*

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# Retirement risk could be hedged by removing incentives to retire early

## Increases in pensionable age must be combined with the mechanisms that ensure an increase in effective retirement age

- Early retirement provisions need to be actuarially neutral (all Tiers)
- Longer participation in the labour force should be encouraged and rewarded
  - Canada Pension Plan: significant increases in pension for every year worked after age 60
  - Social policies helping older workers to find and retain jobs
- Measures allowing for disabled workers' rehabilitation and return to workforce
- Tier 3 pensions adequacy could be compromised if workers are forced to retire due to employer failure/restructuring/downsizing
  - Portability between Tier 3 arrangements need to be facilitated.


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# Uncertainty of future investment returns and market shocks could hurt pension levels

- The impact of investment risk on retirement income depends on the structure of retirement package

| Country | Net Pension Replacement Rate* (% of individual earnings, average earner) | | | Impact of investment risk on retirement income |
|---|---|---|---|---|
| | Public | Mandatory DC | Voluntary DC | |
| Chile | 4.6% | 59.7% | - | Very High |
| Australia | 14.8% | 44.1% | - | High |
| Ireland** | 31.3% | - | 40.7% | Moderate |
| Norway | 52.4% | 8.0% | 13.6% | Low |

- Assets allocation for funded plans should reflect risk tolerance of plans' stakeholders (e.g. life-cycle plans).

** Estimates from OECD, Pensions at a Glance 2011*

*** Irish voluntary occupational pension schemes cover over half of employees*

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# Funding of pension arrangements – do not put all your eggs in the same basket!

**Diversification of funding approaches moderates pension system's sensitivity to changes in economic and demographic environments and to shocks**

- With generally Tier 1 funded as PayGo and Tier 3 being fully funded, design of Tier 2 gives a tool for moving the whole system to a bigger or smaller degree of pre-funding
  - Define a balance for Tier 2 between DC (fully funded) and DB components
  - The optimal degree of funding of the DB component of Tier 2 depends on the relation between the rate of return on investments and the rate of increase in wages (implicit rate of return on PayGo schemes)
- Other considerations in choosing a degree of pre-funding include development of country's financial market, the degree of risk that the system is willing to pass to individuals, and the generosity of benefits that do not depend on market returns.

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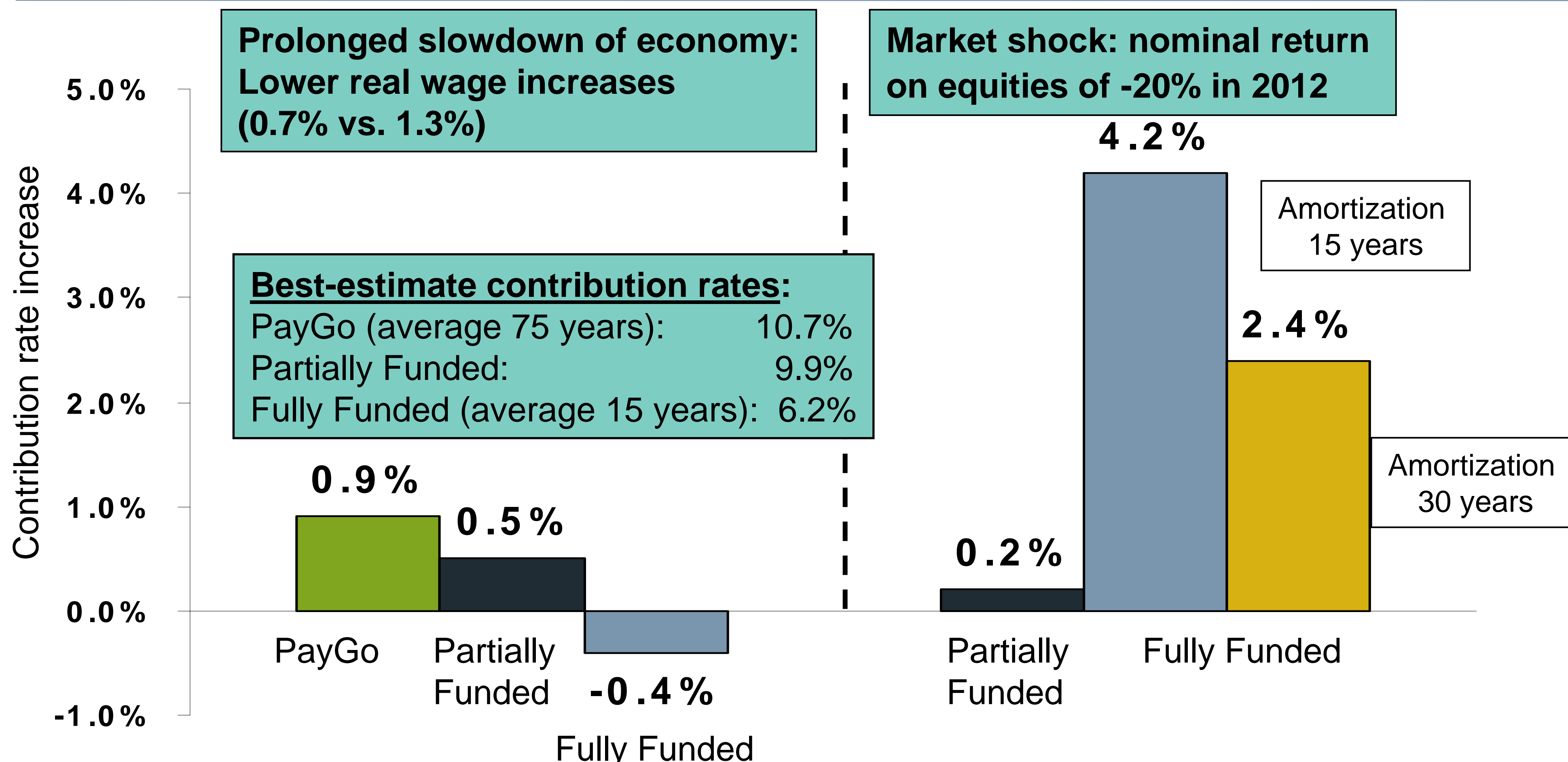
# Canada Pension Plan (Tier 2): Partial funding mitigates economic, demographic and investment impacts




For PayGo and partial funding the impacts are shown over the 75 years, while in the case of full funding the impact depends on a chosen amortization period.

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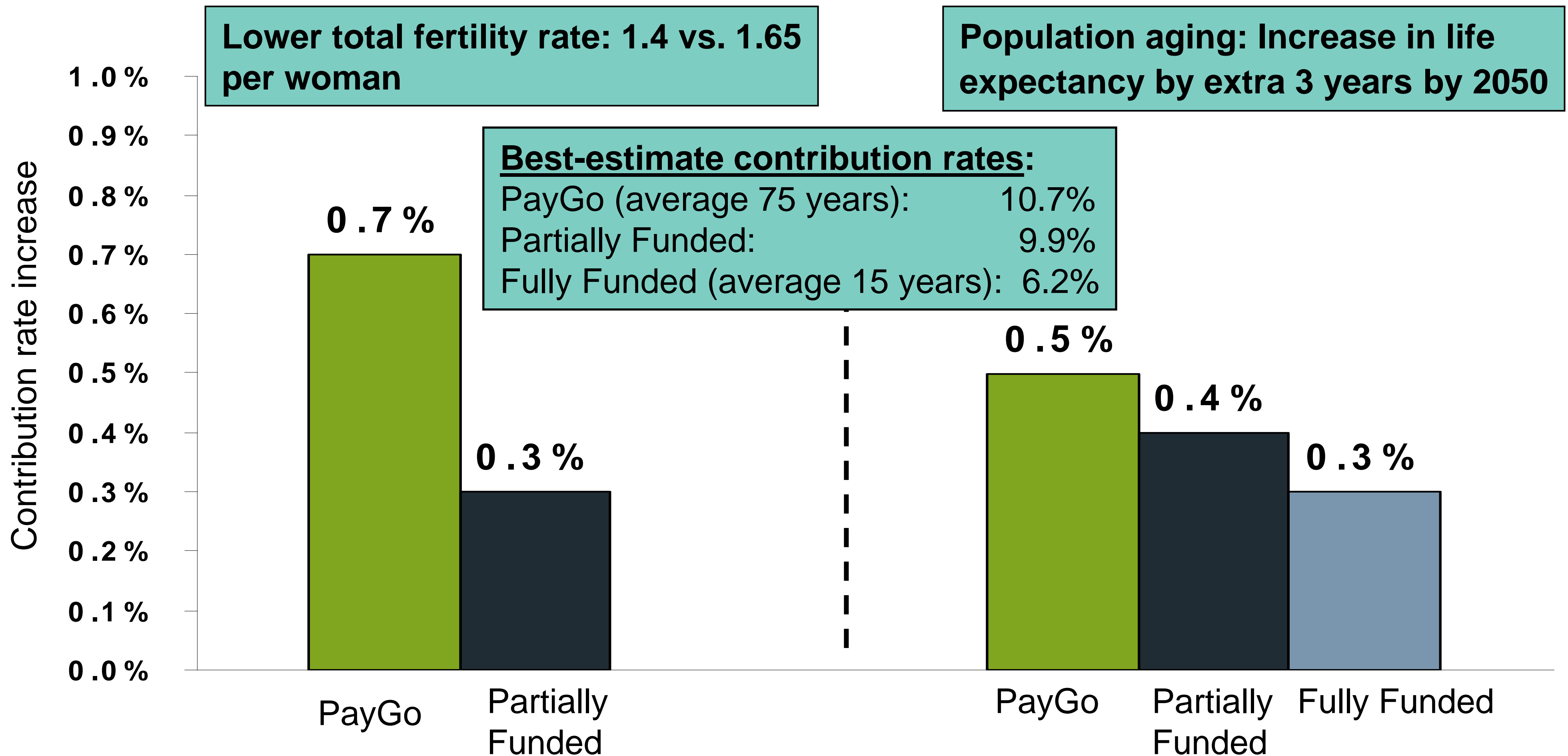
# Canada Pension Plan (Tier 2): Partial funding mitigates economic, demographic and investment impacts (cont'd)




Fertility does not impact full funding rate. Contribution rates under all three financing methods are impacted by increases in life expectancy.



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# If we live longer, does it mean we should work longer?

- No matter if it is a fully funded or a PayGo plan, no matter if it is a DB or a DC solution, no matter if it is a national public scheme or a private pension plan, the fact is that increased longevity will continue to put pressure on the financing of pension plans
- Challenges also come from uncertainty in projection of future mortality rates, differences in mortality between countries as well as within the same country.

| | | *Life Expectancy at Age 65 (years)* | | | |
|---|---|---|---|---|---|
| | | | Projection for 2050 by percentile of distribution of projected mortality rate | | |
| | | Baseline 2010 | 25th | Median | 75th |
| Men | OECD | 16.9 | 20.4 | 21.0 | 21.6 |
| | CPP25 | 18.8 | 20.3 | 21.9 | 23.4 |
| | ***Diff.*** | ***1.9*** | ***-0.1*** | ***0.9*** | ***1.8*** |
| Women | OECD | 20.5 | 24.3 | 24.9 | 25.5 |
| | CPP25 | 21.6 | 22.0 | 23.9 | 25.8 |
| | ***Diff.*** | ***1.1*** | ***-2.3*** | ***-1.0*** | ***0.3*** |

*Source of OECD figures: OECD Pensions at a Glance, 2011*

# Risk management for private DB plans could be used to contain plans' cost

- The cost of traditional DB plans is affected by increases in longevity, low interest rates environment, and market volatility
  ➡ shift from DB to DC plans in many countries
- If the DB plans are to survive, modified designs are necessary
- Example: recommendations of Lord Hutton report (UK, March 2011) for public service schemes
  - Replace final average design with career average revalued earnings (CARE) design
  - Increase the member's Normal Pension Age in the new schemes so that it is in line with UK State Pension Age
  - Fixed cost ceiling for sponsors contributions along with the default mechanism of cost sharing with employees, if needed.
- Some tools of risk management: asset-liability management, dynamic asset allocation, liability-driven investments.


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# OECD: work longer, help the most vulnerable, and save more

- Future uncertainty regarding major pension risks as well as recent financial and economic crisis force us to re-examine current pension solutions and search for new ones
  - Extensive pension system reviews, debates and reforms in many countries (e.g. UK, Canada, France)
- There is no magical recipe and designs will vary depending on countries' objectives, as well as demographic and cultural profiles
- "Taking the long view, a *diversified* pension system – mixing public and private provision, and pay-as-you-go and pre-funding as sources of finances – is not only the most realistic prospect but the best policy." *OECD, Pensions at a Glance 2011*


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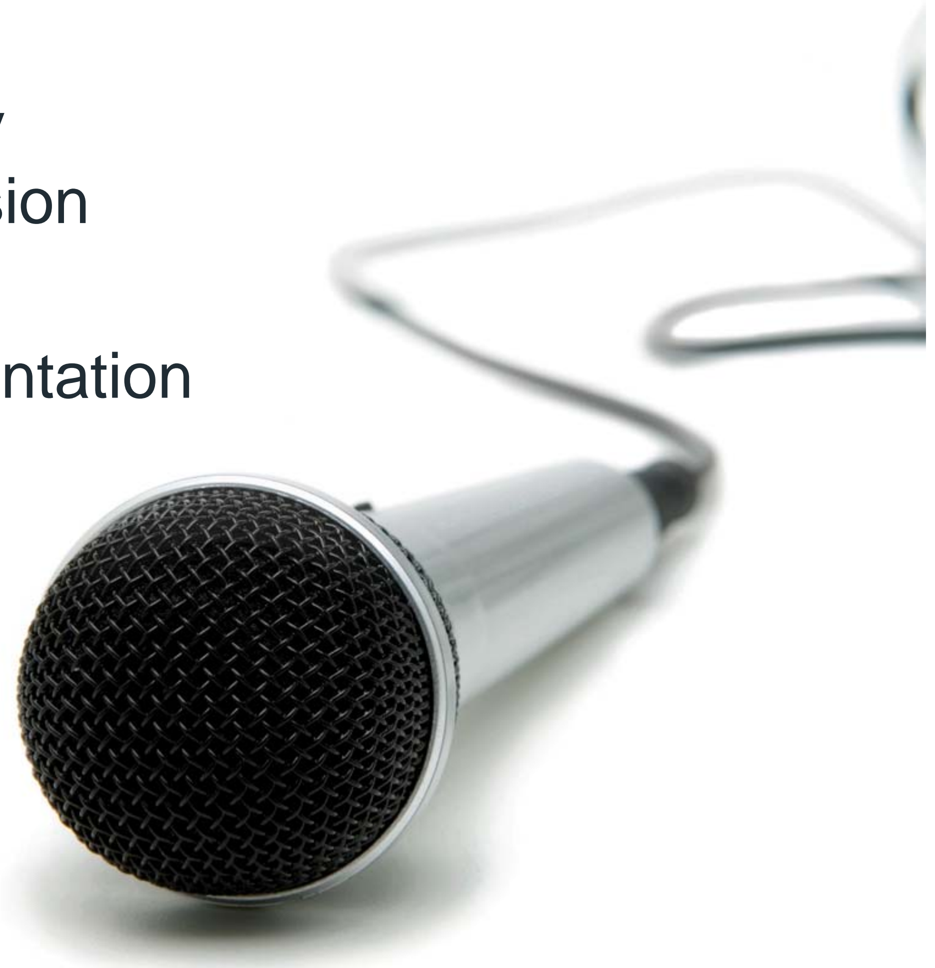
# Questions or comments?

Expressions of individual views by members of The Actuarial Profession and its staff are encouraged.

The views expressed in this presentation are those of the presenter.





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