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Policy Studies & Retirement Commission**



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Equity issues in pension design and pension reform: a comparative perspective

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Acknowledgements

- Draws on previous work with the OECD - Queisser, Whitehouse, and Whiteford (2007) ['The Public-Private Pension Mix in OECD Countries'](#); Whiteford and Whitehouse (2006) ['Pension Challenges and Pension Reforms in OECD Countries'](#), and [Growing Unequal](#) (OECD, 2008), as well as OECD, [Pensions at a Glance](#) (2009).

Issues and Outline

- Population ageing and policy responses raise issues of inter-generational and intra-generational equity
- Pension systems in OECD countries – structures and outcomes
- Pension reforms
- Apparent equity implications of pension reforms
- Conclusions – what equity issues are important to consider in pension reform?

Some equity issues

- The theme of this conference is intergenerational equity; what constitutes equity is contestable. The paper discusses equity issues in the design of systems of retirement income, first by considering the current architecture of different systems and the outcomes associated with these design features, and then by looking at the reforms that have been introduced in different countries over the last twenty years, and assessing their potential effects on equity outcomes.
- The fact that different countries have pension systems that differ significantly in design and apparent outcomes implies that equity has a number of dimensions and can be evaluated in different ways. While many of these systems share broad common characteristics, they also have distinctive individual features. Thus, there are a range of possible answers as to what constitutes an equitable system.

Some equity issues

- There are a number of alternative ways of looking at the equity of outcomes, including the level of replacement incomes relative to the population generally or to the previous pre-retirement incomes or earnings of individuals or older households as well as income poverty rates. Sustainability is a key feature of intergenerational equity.
- Public pensions are only one component of the package of resources that households enjoy in retirement, and that there are likely to be systematic inter-relationships between different components of the retirement income resource package in different countries. Not all of these components are necessarily taken into account in standard comparisons of outcomes in retirement. It is therefore important to take a comprehensive approach to assessing outcomes, where this is possible.

Some equity issues

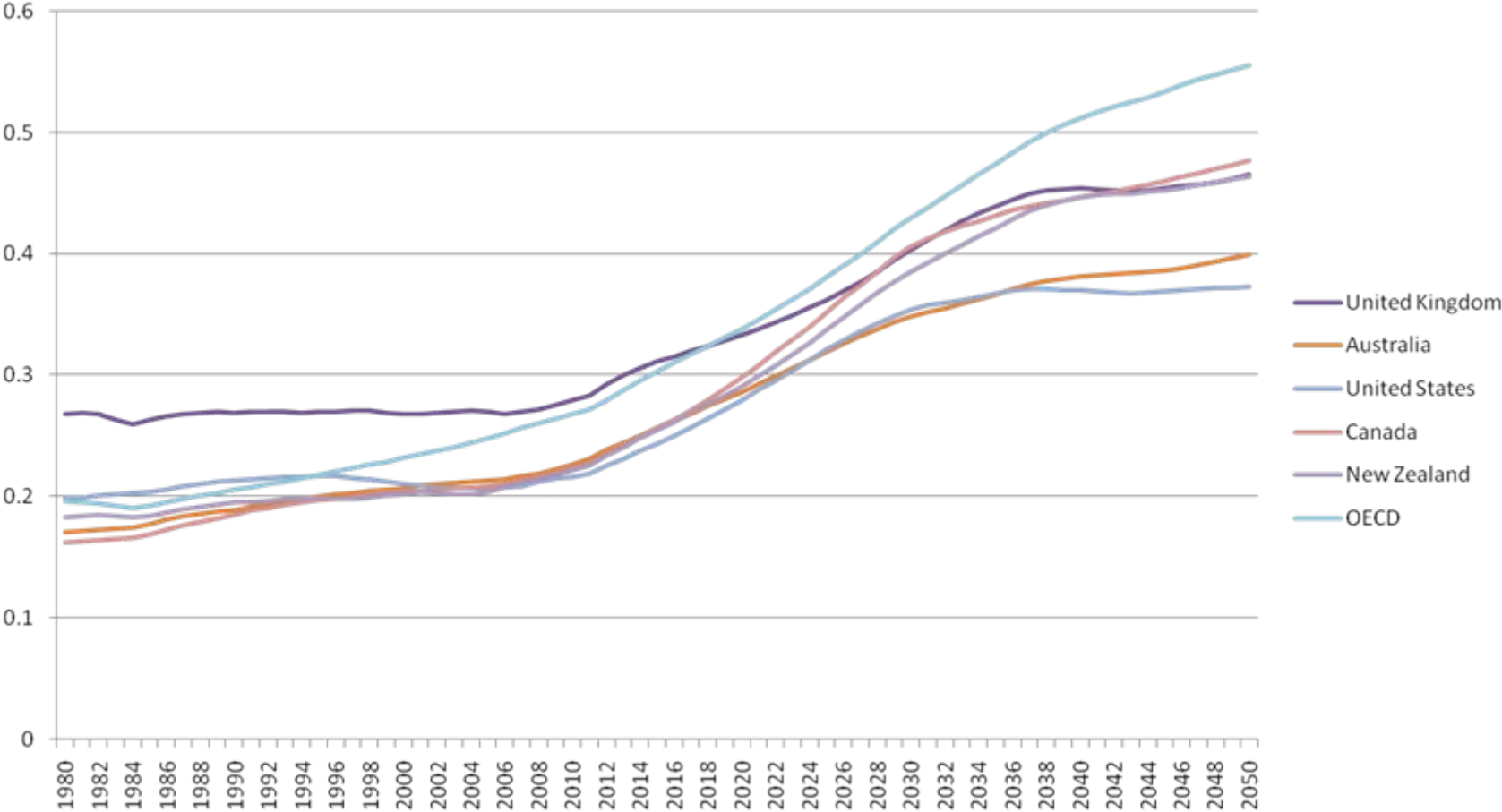
- In comparing the wellbeing of different generations, a considerable degree of complexity arises because at any point in time the population is comprised of a number of over-lapping generations. Furthermore, within any generation people will live for different lengths of time.
- The wellbeing of an individual can be defined as lifetime wellbeing.
- But, definition of the lifetime wellbeing of particular individuals can be problematical because of variations in individual life-lengths. Should an individual with a longer expected life and a low level of consumption per period be considered as well off as one with a shorter expected life and a high level of consumption per period?
- Intergenerational equity can be contrasted with intra-generational equity, the latter being concerned with the distribution of income within a generation. Following this view, income is redistributed on equity grounds so that all citizens should enjoy some minimum standard of material well being irrespective of their capacity to generate income.

Goals of Public Pension Provision

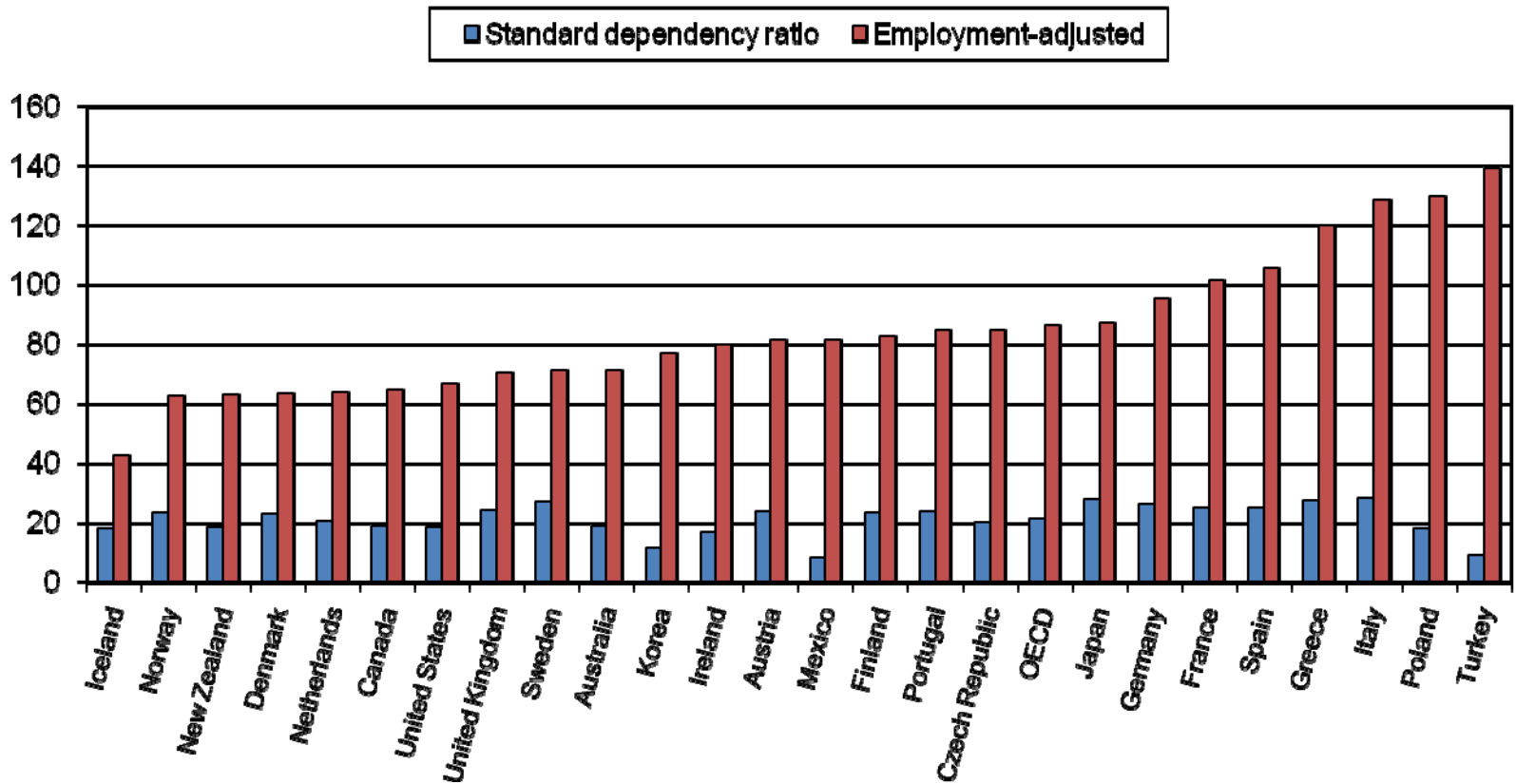
- **Primary goals:** The delivery of adequate, affordable, and sustainable pension benefits:
 - Guaranteeing an adequate minimum income in retirement (anti-poverty objective)
 - Facilitating income replacement (income maintenance objective)
- **Secondary goals:** To minimise negative impacts (e.g. labor market and savings)

Dependency ratios are projected to increase from around 2011

Population 65 and over to population of working age, 1980 to 2050

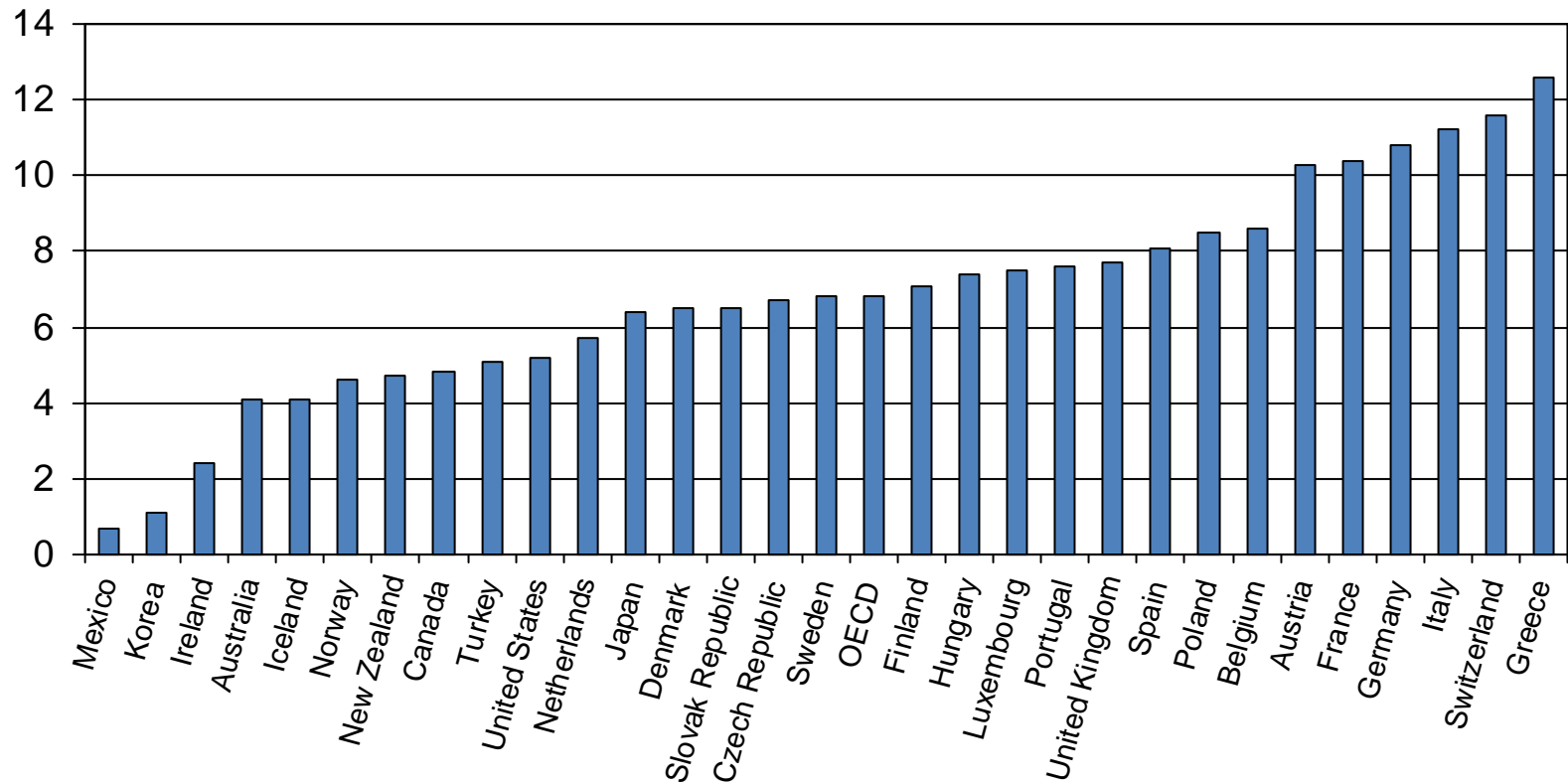


Real “dependency” depends on employment



Wide variation in spending on retirement pensions

% of GDP, 2005



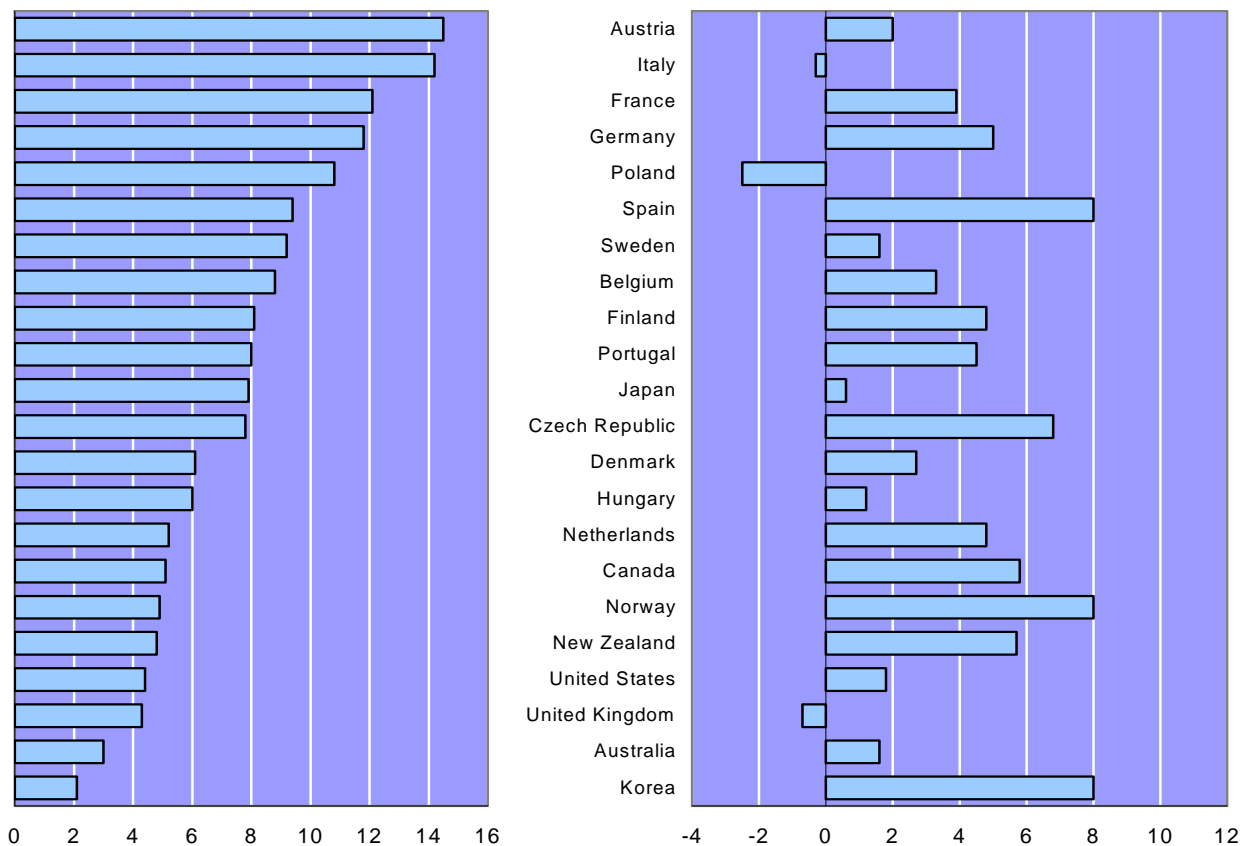
... and, pension spending will increase in most countries

Figure 3: Public expenditure on old-age pensions in OECD countries, 2000-2050^a

Levels as a percentage of GDP, changes in percentage points

Levels in 2000

Change between 2000 and 2050



a) For France, the estimates refer to the period 2000-2040.

Source: National source for Austria and OECD Economic Outlook (n° 69-2001).

Total pension “effort” can differ from public pension spending

Country	Public % of GDP	Private % of GDP	Total % of GDP	Direct tax (%)	Indirect tax (%)	Tax expenditures % of GDP	Civil Servant pensions
Australia	3.2	3.0	6.2	0.03	9.8	1.8	0.5 *
Austria	12.4	0.6	13.0	17.0	16.2	0.1	3.3**
Denmark	5.3	2.2	7.5	27.2	25.7	..	1.2*
Japan	7.0	3.1	10.1	0.01	6.4	0.6	1.0 *
New Zealand	4.4	..	4.4	16.0	14.3
UK	5.3	4.7	10.0	3.3	13.7	1.0	2.1 *
USA	5.4	3.8	9.2	3.6	4.3	1.2	0.9 **

* Counted in private spending; ** counted in public spending.

PENSION SYSTEMS DESIGN

Structure of pension systems

- The pension systems of OECD countries vary widely: in the way benefits are calculated, whether they are publicly or privately managed and the target level of benefits.
- The first tier includes redistributive components that are designed to ensure that pensioners achieve some absolute, minimum standard of living compared with the population as a whole. Second-tier programmes are defined as those with an insurance or savings role: these are designed to maintain a certain standard of living during retirement relative to the individual's earnings when in work.

Structure of pension systems

- All OECD countries have safety nets to prevent old-age poverty, here called first-tier schemes. There are four generic types: social assistance; separate, targeted retirement income programmes; basic pensions; and minimum pensions within earnings-related plans. All are mandatory and publicly provided.
 - The benefits of basic schemes are either flat rate, with the same amount paid to each retiree, or depend only on the number of years of work (but not on earnings). Entitlement does not vary with the level of other pension income. Ten OECD countries including New Zealand have a basic pension scheme that plays an important role in providing retirement incomes. .
 - Targeted plans pay a higher benefit to poorer pensioners and reduced or zero benefits to better-off retirees. There are three ways of targeting. First, benefits can be pension-income tested (where the value depends only on the level of pension income a retiree receives). Sweden's guarantee pension is an example. Second, benefits can be broader-income tested (reducing payments if, for example, a retiree has income from savings) or third, broader means-tested (reducing the pension to take account of both income and assets). Australia's age pension is an example of a means-tested scheme. There are 13 OECD countries where targeted retirement-income programmes are significant.
 - Minimum pensions — like pension-income-tested, targeted plans — aim to prevent pensions from falling below a minimum level. But the institutional set-up and eligibility conditions are different. Minimum pensions are defined here as those which form part of the rules of second-tier, earnings-related pension provision. Usually, retirees must have paid contributions for a minimum number of years in order to receive this benefit. Minimum credits in earnings-related schemes, such as those in Belgium and the United Kingdom, also belong to the first tier: pension entitlements for workers with low earnings are calculated as if the worker's earnings had been higher.

The first tier

- Most countries rely on one primary instrument to prevent old-age poverty, but there are cases where there is a combination of several schemes. Looking at the overall combination, the average safety-net retirement benefit from all the relevant first-tier schemes is around 27% of national average earnings (across all 30 OECD countries in 2009).
- Finland, Germany, Hungary, Japan and the United States provide the lowest benefits (relative to national living standards), providing benefits worth one fifth or less of average earnings.
- Eight other countries including Australia provide benefits that are less than one quarter of average earnings (using the OECD measure of earnings).
- At the other end of the spectrum, New Zealand's basic pension provides the highest gross benefit in the OECD at 39 per cent of average earnings, although Denmark, Greece, Canada, Ireland, and Luxembourg all provide benefit packages worth above one-thirds of average earnings

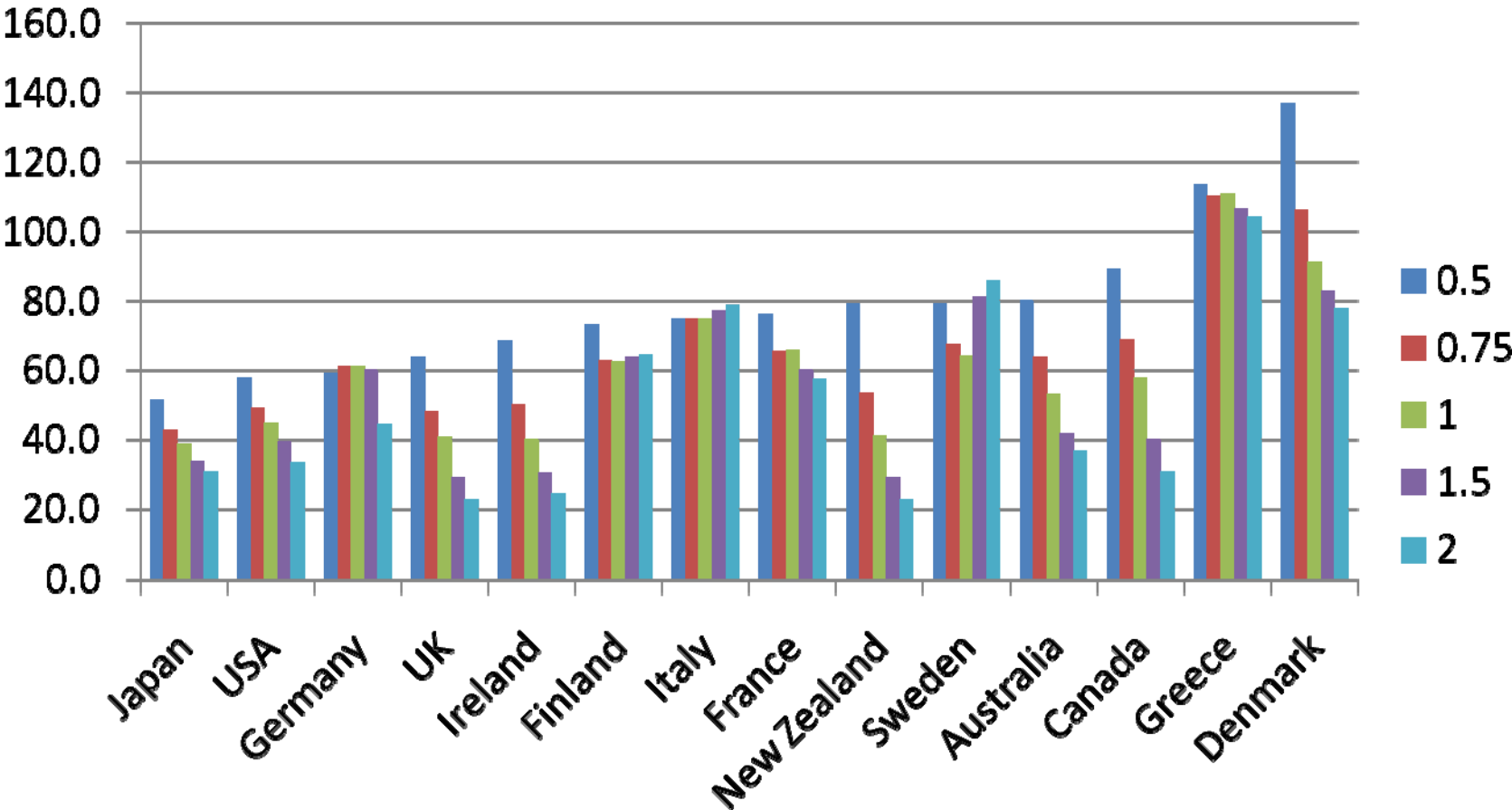
The second tier

- The second tier plays an insurance or savings role. It aims to ensure that retirees have an adequate replacement rate (retirement income relative to earnings before retirement), not just a poverty-preventing, absolute standard of living. Like the first tier, it is mandatory.
- However, there is a mix of public and private provision of these benefits. Among the 30 OECD countries in 2009, only Ireland and New Zealand do not have second-tier schemes, relying mainly and wholly on basic pensions for mandatory retirement-income provision.

The second tier

- 19 OECD countries have public, defined-benefit (DB) plans, the most widespread type of second-tier pension. In DB schemes, the amount a pensioner will receive depends on the number of years of contributions made throughout the working life and on some measure of individual earnings from work.
- Defined-contribution (DC) plans are the second most common kind of second-tier pension. In these schemes, workers have individual accounts in which contributions are invested. The accumulated capital from contributions and investment returns is then usually converted into an income stream at retirement. These plans are typically managed privately, by financial-services companies, employer-run or industry-wide pension funds. Australia and Mexico have only DC schemes in the second tier. In other countries with DC pensions – such as Hungary, Poland, and Sweden – the DC schemes are a complement to public, earnings-related pension schemes.
- Finally, some countries have earnings-related schemes that do not follow the ‘traditional’ DB model. First, there are points systems: French occupational plans and the German, Norwegian and Slovak public schemes. Workers earn pension points based on their individual earnings for each year of contributions. At retirement, accumulated pension points are multiplied by a pension-point value to convert them into a regular payment.
- Italy, Poland and Sweden have notional-accounts schemes, a third variant of an earnings-related plan. Contributions are recorded and they earn a notional interest rate, linked to a macroeconomic variable. At retirement, the accumulated notional capital in each account is converted to a stream of pension payments using a formula based on life expectancy at the time of retirement.

Net replacement rates vary by earnings levels



Pension eligibility ages

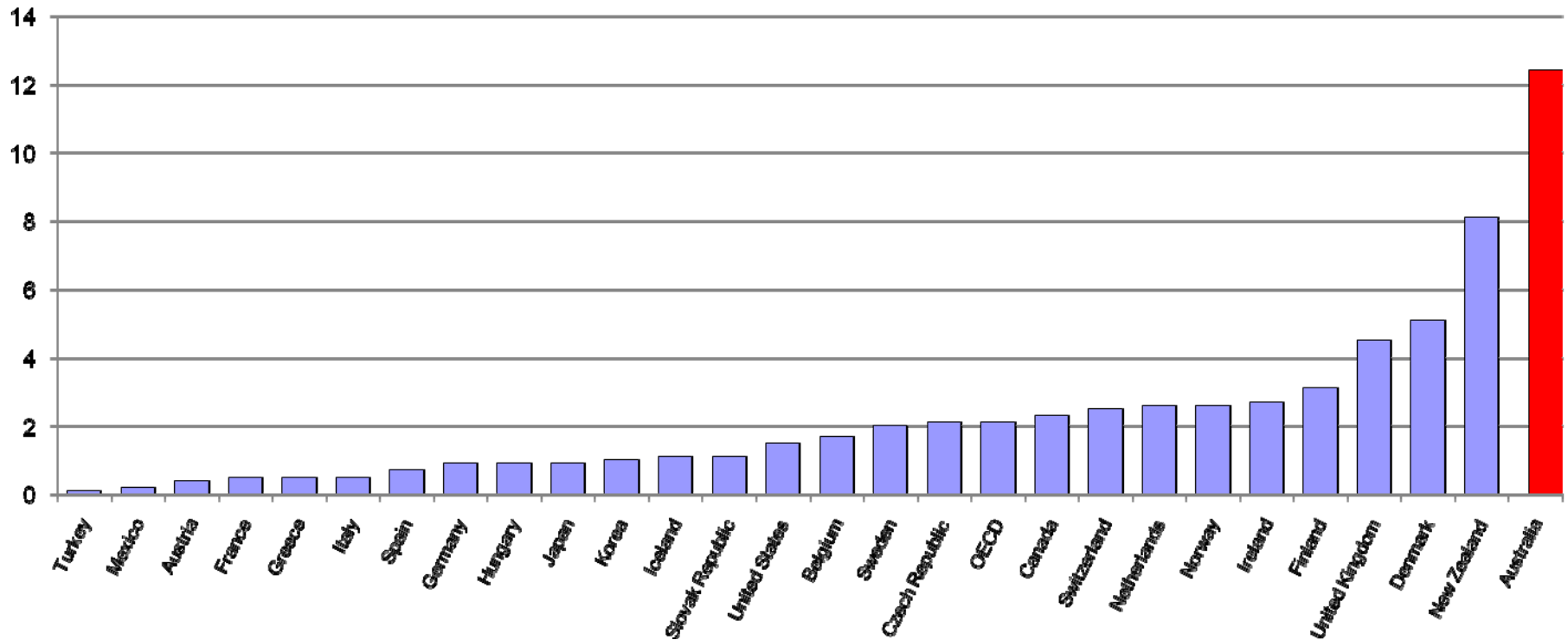
- The majority of OECD countries (21) have a standard pension eligibility age of 65 for men or are moving towards this age.
- Pension eligibility ages for women are currently sometimes lower, but they will generally be equalised gradually with those of men (Australia, Belgium, Hungary and the United Kingdom, for example).
- Iceland, Norway and the United States stand out as already having a standard pension age of 67, but Australia and Germany are moving towards 67 and the United Kingdom towards 68.
- At the other extreme, France, Hungary and the Slovak Republic are the only countries that have a normal retirement age of 61 or 62 (although legislation to change the pension age in France is currently under consideration).
- Just over half of OECD countries also still have special provisions for early retirement.

Welfare state design – Bismarck or Beveridge? Piggy Bank or Robin Hood?

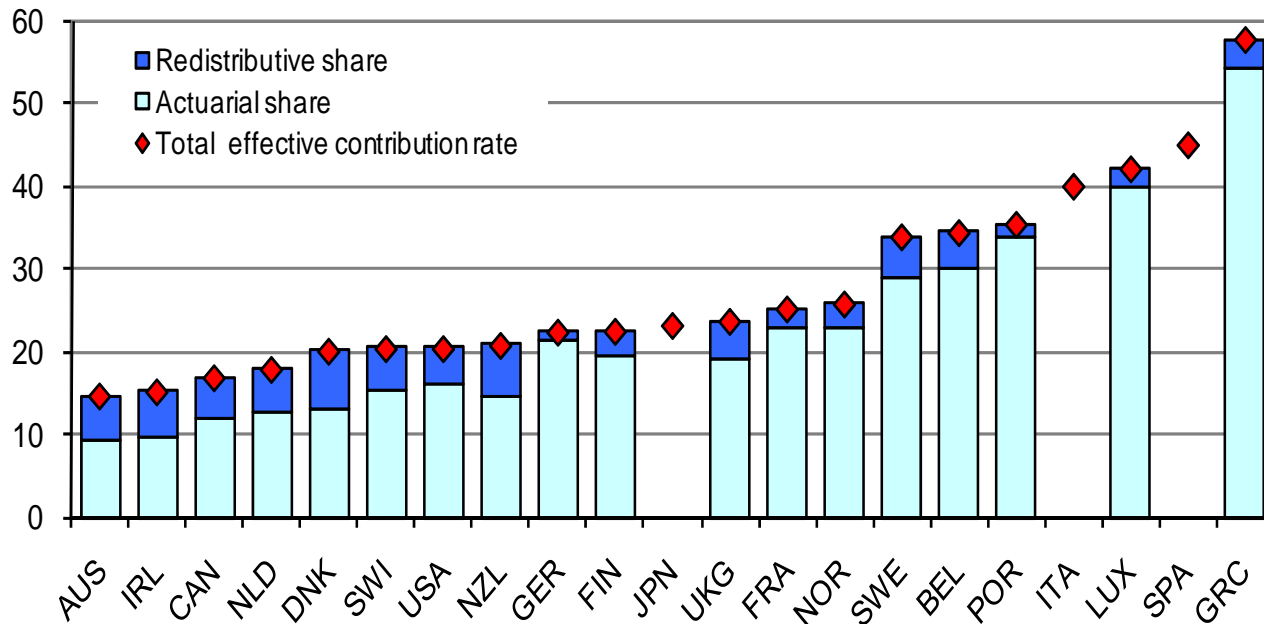
- The design features of social protection differ in important respects - two of the most important features relate to the *funding* – i.e. the different ways in which programmes are financed – and *structure* of benefits – i.e. the relationship between benefits received and the past or current income of beneficiaries.
- Redistribution can be between rich and poor (Robin Hood) or across the lifecycle (the piggy bank) – risk insurance (against unemployment, disability, sickness etc.), savings (for retirement).
- All welfare states are a mix of the two, but the mix varies.
- Other types of redistribution – notably between men and women and also across regions.
- Behavioural effects may undercut redistribution; private provision also redistributes across the lifecycle.
- Point in time, static analysis implicitly treats all measured redistribution as if it were between rich and poor.
- Taking account of redistribution across the life course, the level of redistribution between rich and poor is less than it appears, but is still strongly associated with progressivity of benefit structure.

Australia and New Zealand have the most progressive benefit systems in the OECD

Ratio of benefits received by poorest quintile to benefits received by richest quintile, total population, 2005

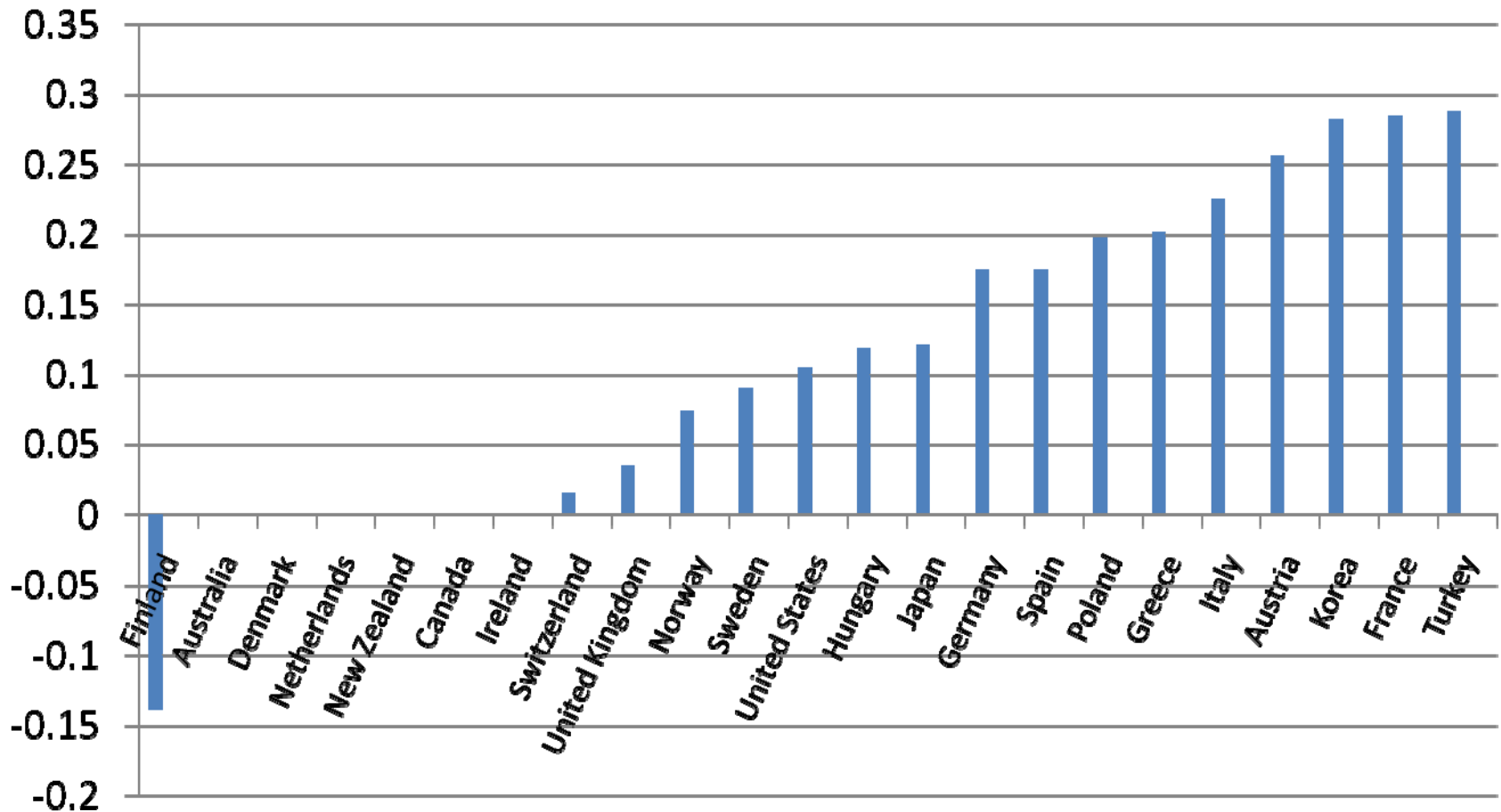


Contribution rates to public pensions, redistributive and actuarial components



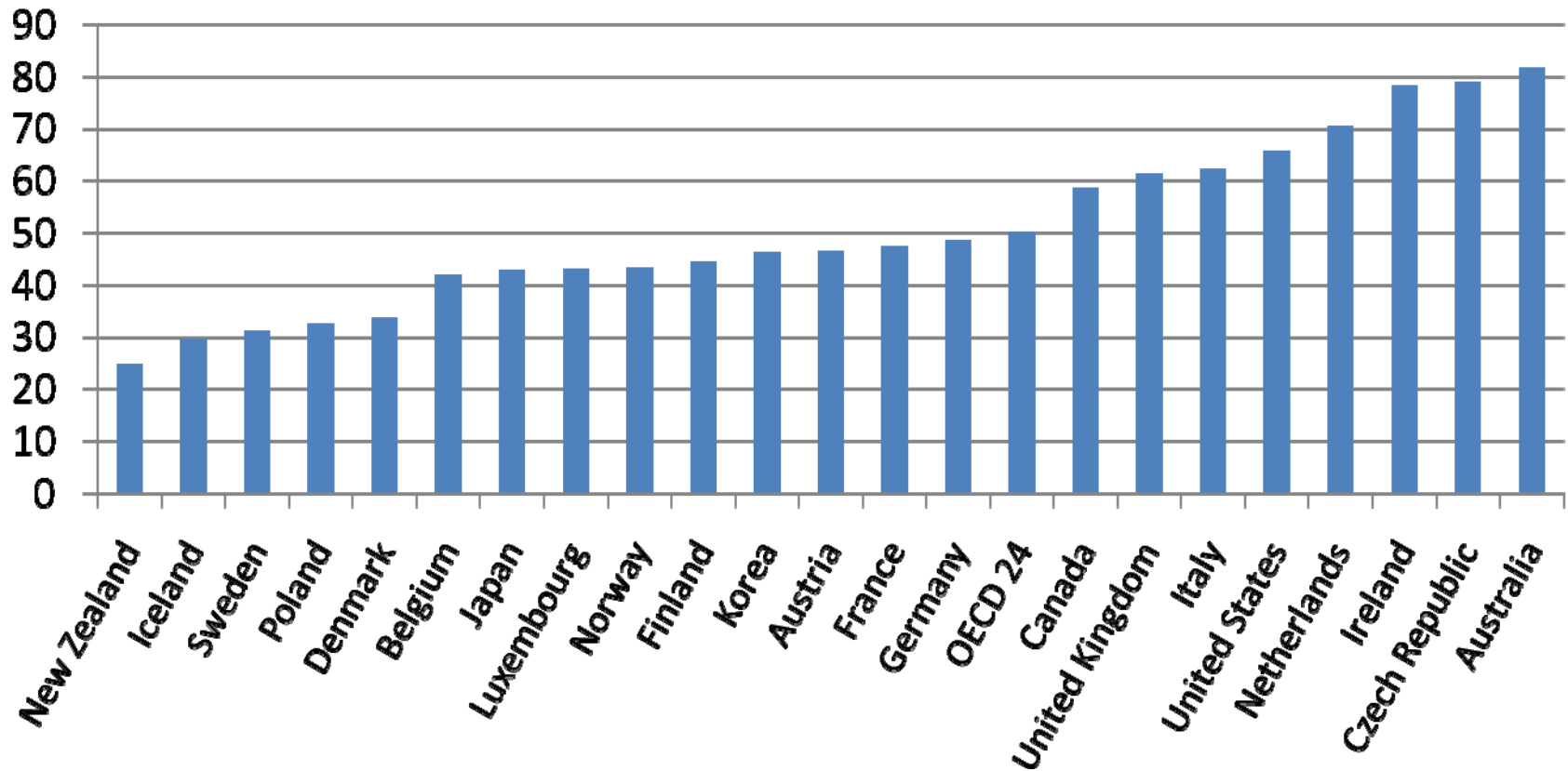
The progressivity of public pensions varies widely

Concentration coefficients, benefits for retirement age households, 2005



Australia has the most progressive direct taxes on pensioner households in the OECD – New Zealand, the least progressive

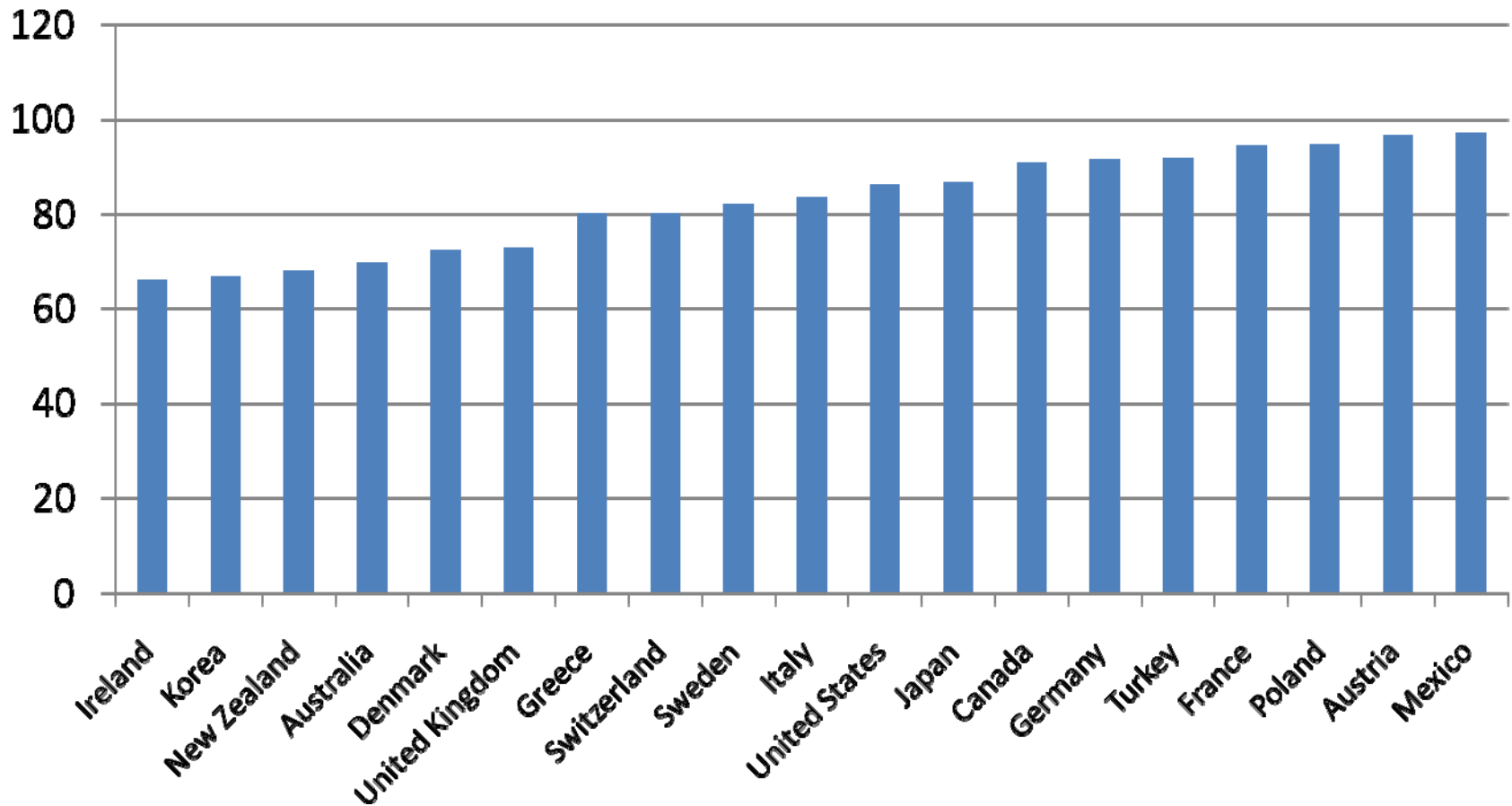
Concentration coefficient of direct taxes for retirement age households, 2005



SELECTED OUTCOMES

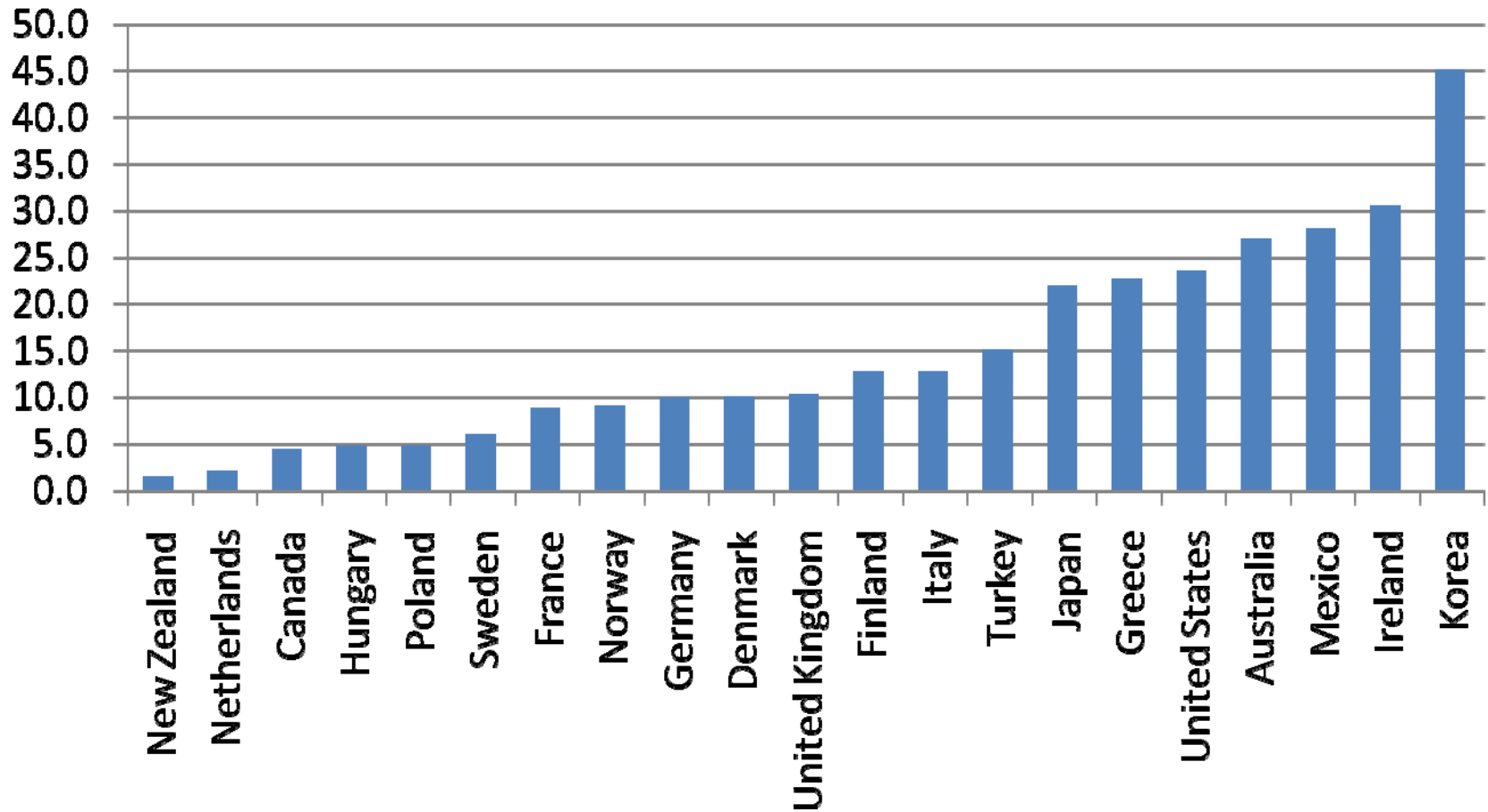
Relative incomes of older people vary widely

Average equivalent disposable income as % of population mean, 2005



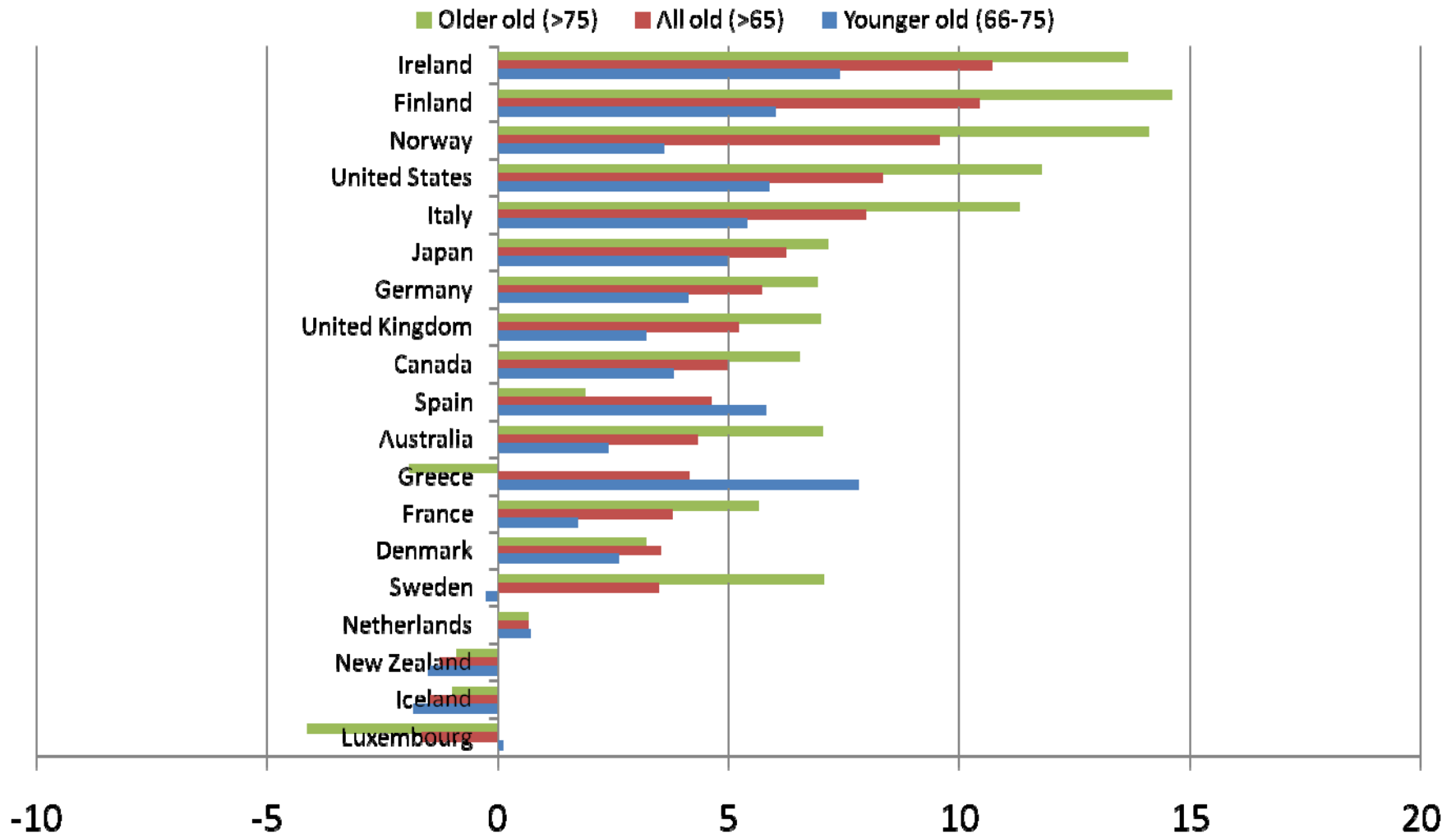
Poverty rates also vary widely

% of people over 65 years with incomes less than half median equivalised income, 2005



Gender poverty gaps

Difference in poverty rates for men and women by age



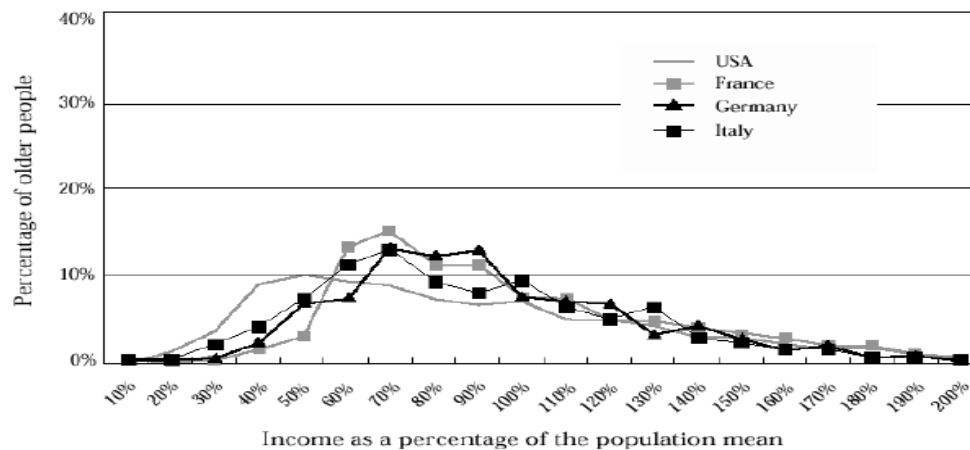
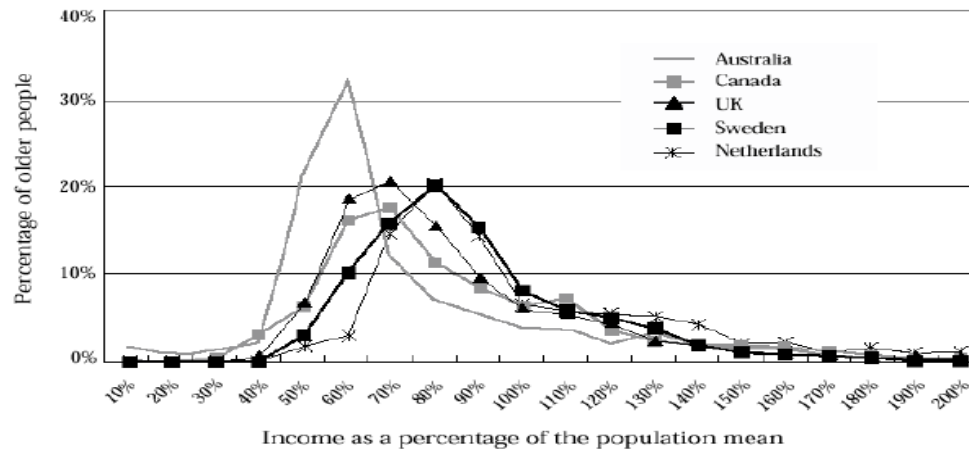
Some apparent paradoxes

- Average incomes of people over 65 are high in Mexico , but poverty is high.
- Average incomes of older people are low in Australia, New Zealand, Korea and Ireland, but poverty is high in Korea, Ireland and Australia and very low in New Zealand.
- Ireland and New Zealand have broadly similar systems, but the gender poverty gap is very wide in Ireland, and apparently pro-female in New Zealand.

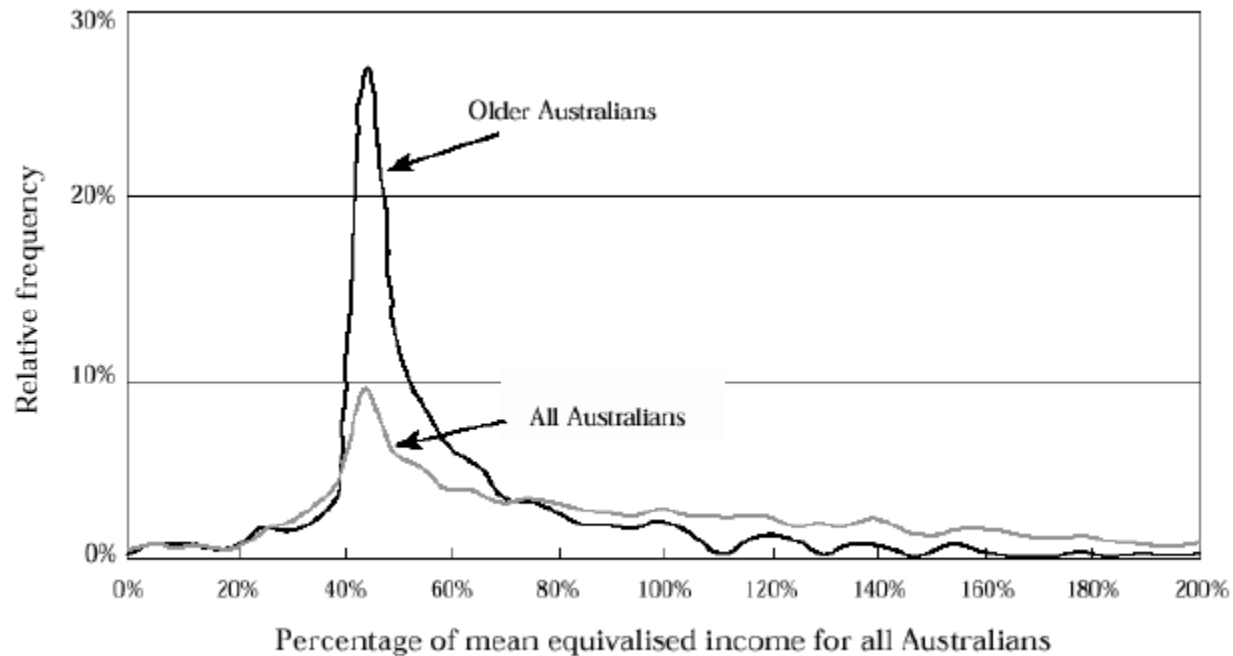
Some apparent paradoxes

- Therefore, the distribution of income matters
- Also, results are sensitive to poverty lines
 - Australia has more households between 40% and 50% of median incomes than any other country, while New Zealand has more between 50% and 60% than any other country
- Results are sensitive to measures of income and the composition of resource packages

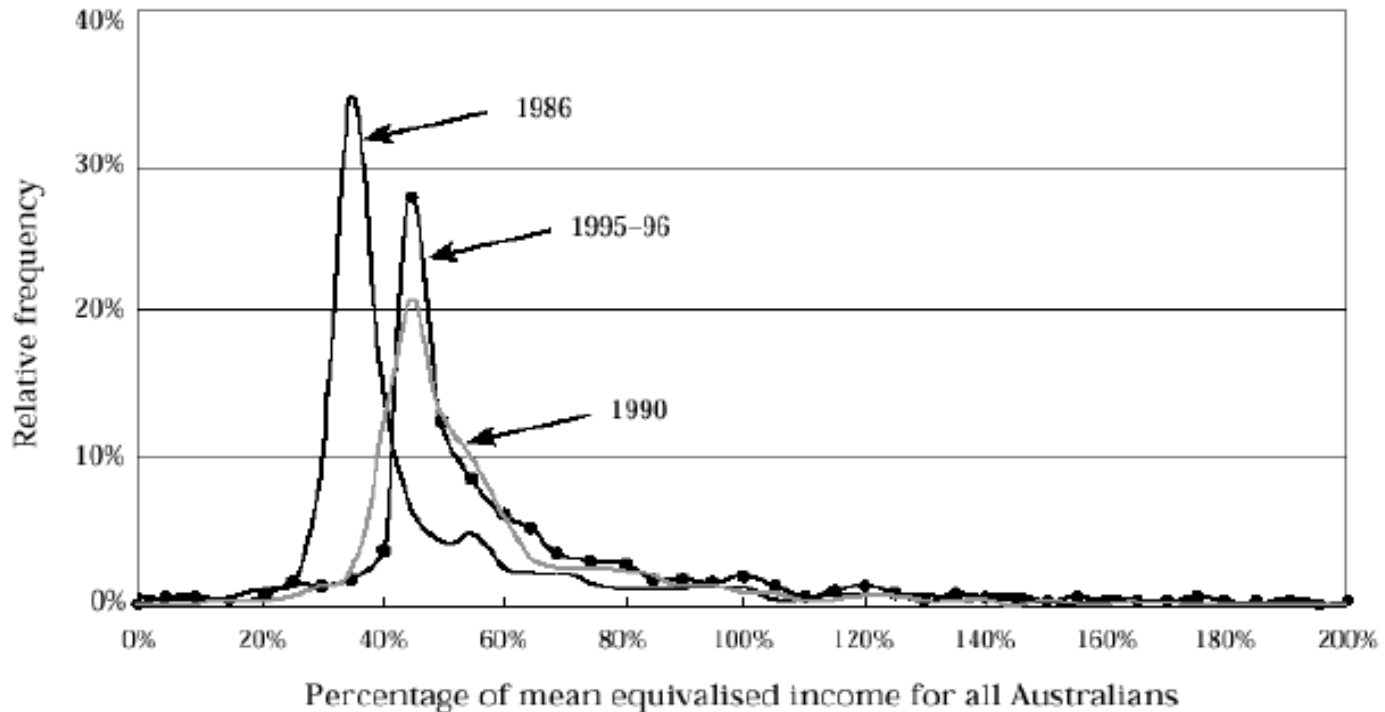
Different pension structures are associated with different income distributions in retirement



The cash incomes of older Australians are highly concentrated around the pension level

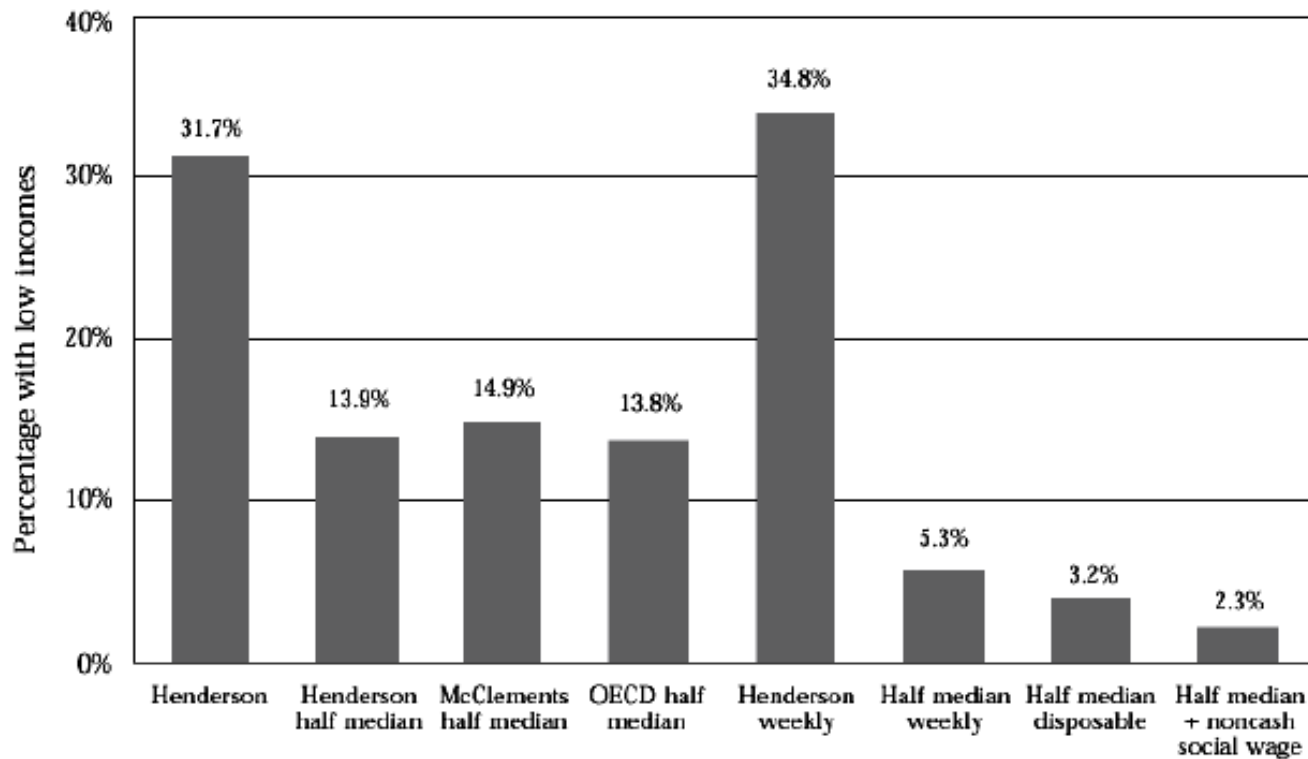


The cash incomes of older Australians are highly concentrated around the pension level and are highly variable



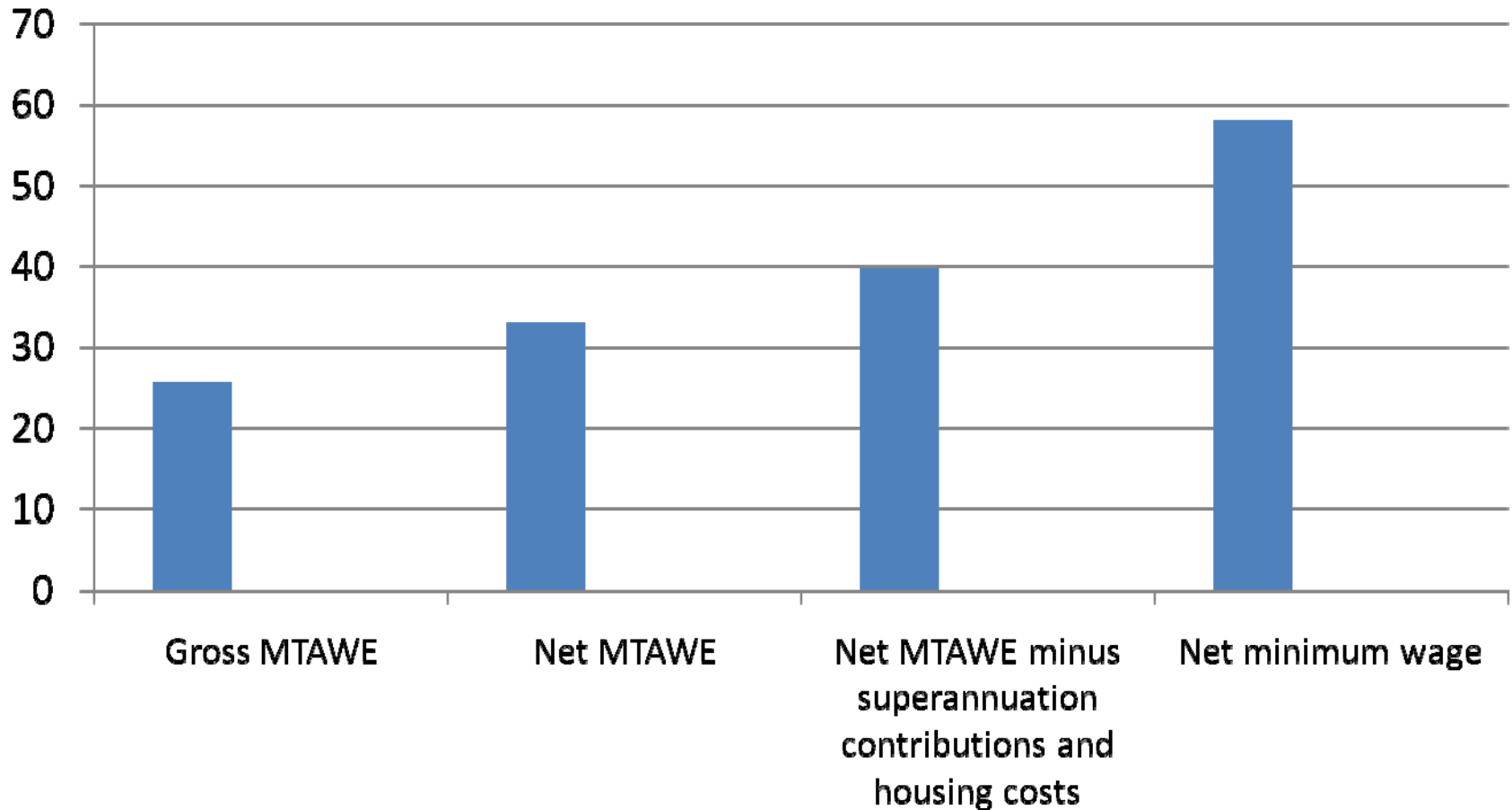
Poverty rates vary by the poverty line, equivalence scales and income concept

Poverty rates among single pensioner households in Australia, mid-1990s



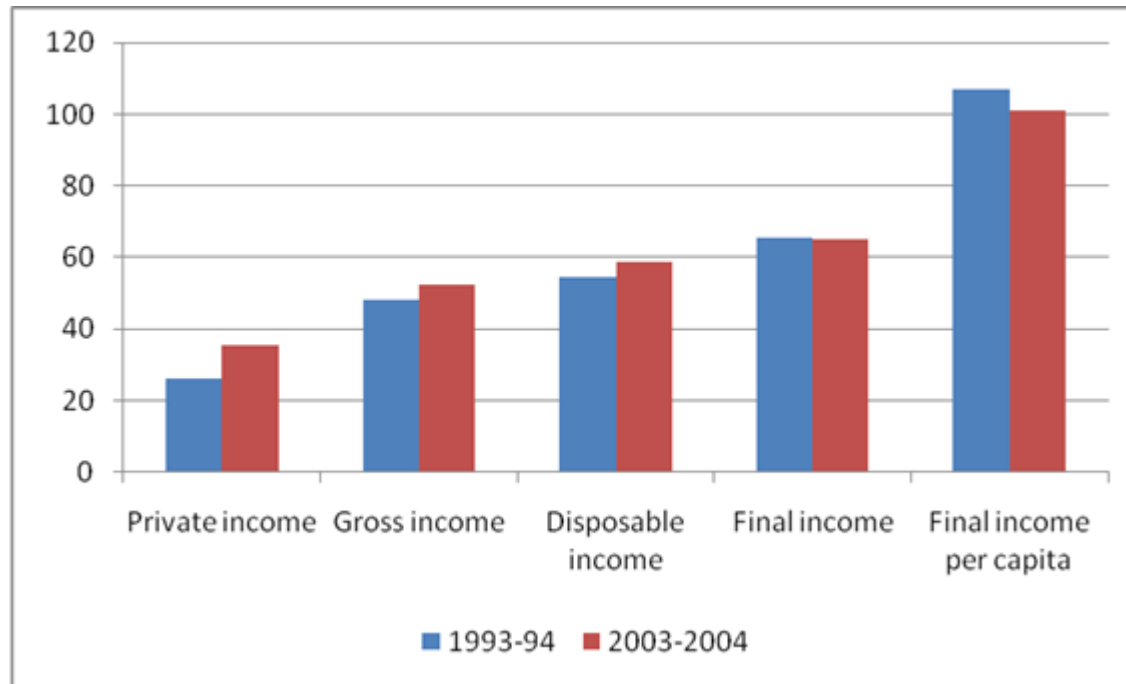
Replacement rates vary by the measure used

Single age pension, Australia, 2008



Replacement incomes vary by the income concept used

Income of households with reference person 65 years and over relative to all households, Australia



International comparisons are influenced by the income concept used

- Frick and Headey (2009) find:
 - The median equivalised cash disposable income (PPP adjusted) of older Australians is 84% of the German level and the Gini coefficient is 12% higher;
 - Adding imputed rental income, median equivalised incomes are the same, and the Gini coefficient is 8% higher;
 - Median equivalised private household wealth (PPP adjusted) is 2.1 times as high in Australia as Germany, and the Gini coefficient is 4/5ths the German level;
 - Median equivalised public and private wealth of retired households in Australia is 97% of the German level and the Gini coefficients are the same.

PENSION REFORMS IN OECD COUNTRIES

Options for Reform

- Main options are a sub-set of combination and changes in benefit type (DB/DC), funding (UF/FF) and administration (public/private):
 - Parametric reforms
 - Notional Defined Contribution (NDC) reform
 - Full privatization
 - Public pre-funding of DB or DC
 - Multi-pillar pension reform

Parametric Reforms

- Leaving the benefit structure unchanged but adjust parameters
- Could potentially go a long way, but has shortfalls:
 - Often not fully done because not time-consistent/credible
 - Labor market distortions on somewhat reduced and financial market effects small
 - Dealing with aging long-term announced changes in system parameters which are politically not attractive
- Reform attempts in Austria, France, Spain, etc.

NDC Reform

- Makes the underlying financial relationship explicit and transparent, but remains unfunded
- Introduced in Latvia, Poland, Sweden and Italy
- Many attractive features, including:
 - Reduction in distortion of labor supply and retirement decisions
 - Allows easy harmonization between schemes
 - Easy build-up of independent women rights
 - Easy way of dealing with increasing life expectancy
- But areas of concern remain, including:
 - Choice of notional interest rate, remaining life expectancy or minimum pension age
 -
 - Political games such a crediting contributions not paid
 - Administration of reserve fund

Public Pre-funding of DB or DC

- Keeps or adjusts benefits structure, and partially pre-funds for better coping with aging
- Two main objectives
 - Improving inter-temporal budget position of government
 - One fund for better risk pooling and reduction in administrative costs
- Past experience in developing and developed countries not good
- Recent changes and approaches in e.g. Canada, Ireland, New Zealand encouraging but too soon to tell.

Pension reforms – some examples

- ***Changes in the number of years used in benefit calculation.*** Individual earnings are measured in different ways: measures include earnings in the last (few) year(s) of employment, earnings over a number of best years, or life-time earnings. In the past, the last few years of earnings were commonly used to calculate public pension benefits. Today, many countries have moved towards the use of life-time earnings.
- ***Changing the valorisation of past earnings.*** Pension benefits have also been made less generous through changes in ways in which past wages enter into the benefit calculation. In many public pension systems, past earnings are re-valued to take account of changes in living standards between the time pension rights accrued and the time they are claimed. Some countries have recently moved from earnings to price-valorisation or to a mix of wages and prices. Changes in valorisation can strongly influence benefit levels, since prices tend to rise more slowly than wages.

Pension reforms – some examples

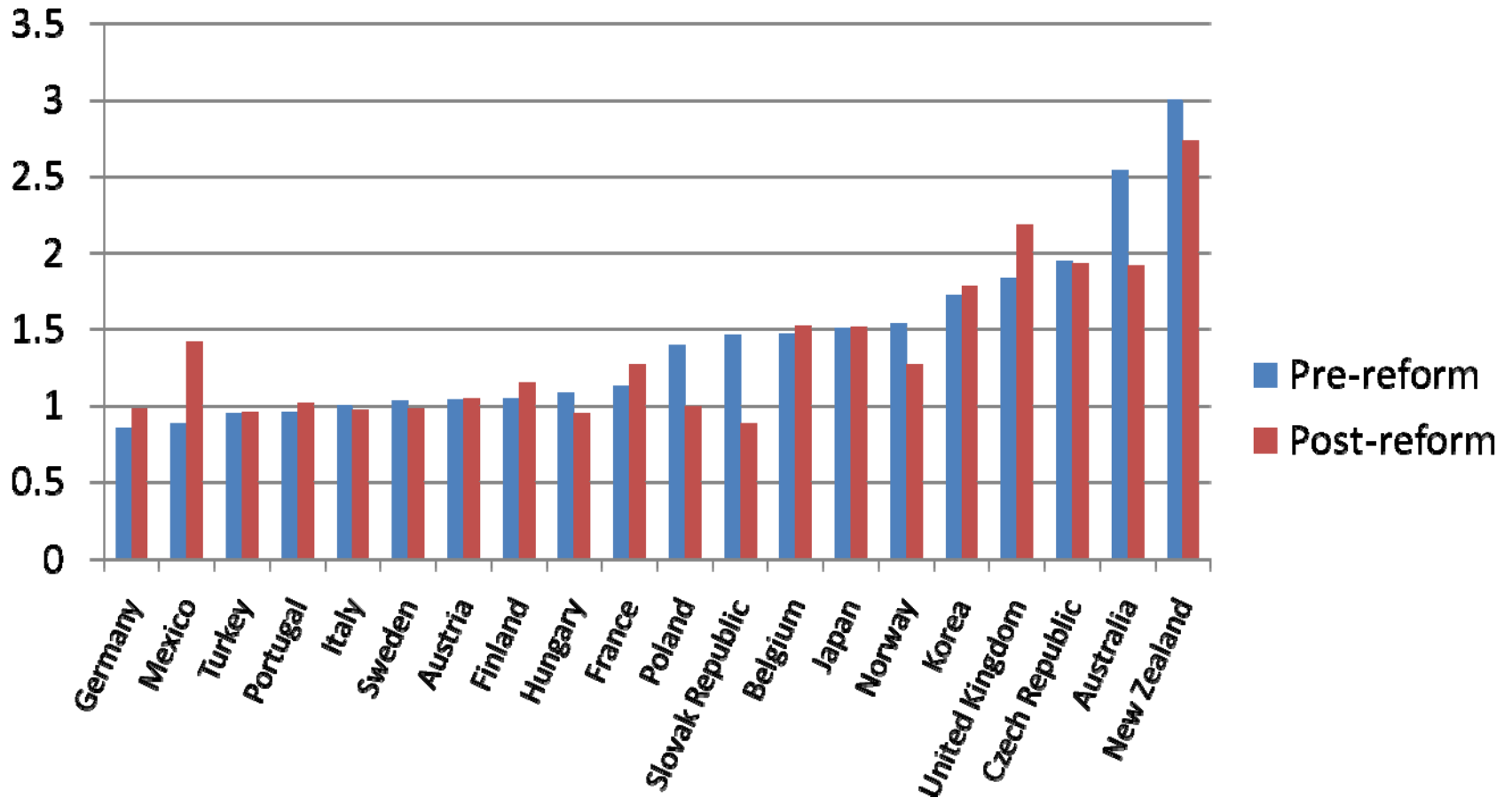
- ***Changing indexation of pensions in payment.*** Some countries have moved from indexation to earnings towards full or partial indexation to prices. This means the purchasing power of pensions is preserved, but pensioners are not participating in increasing living standards enjoyed by workers. When poverty thresholds are set in relation to household income, price indexation leads to higher relative poverty rates among pensioners as the economy grows.
- ***Linking pensions to higher life expectancy.*** Several countries have changed benefit formulae to include a factor reflecting increases in life expectancy at retirement. Incorporating such a factor is particularly simple in the notional account systems that have been introduced in recent years in some countries. Explicit links between life expectancy and pension benefits have also been introduced in defined benefit systems. The impact of these measures has varied depending on the parameter chosen, but have generally lowered the amount of public pension benefits paid to current and future generations of retirees.

Pension reforms – changing retirement incentives

- Increasing pension age for women – Australia, Austria, Belgium (private sector), Hungary, Portugal, Switzerland, United Kingdom
- General increases in retirement ages - Czech Republic, Greece, Japan, Korea, New Zealand, Sweden, USA
- Adjusted retirement incentives – Australia, Austria, Belgium, Denmark, Finland, France, Germany, Italy, Portugal, Spain, Sweden, United Kingdom

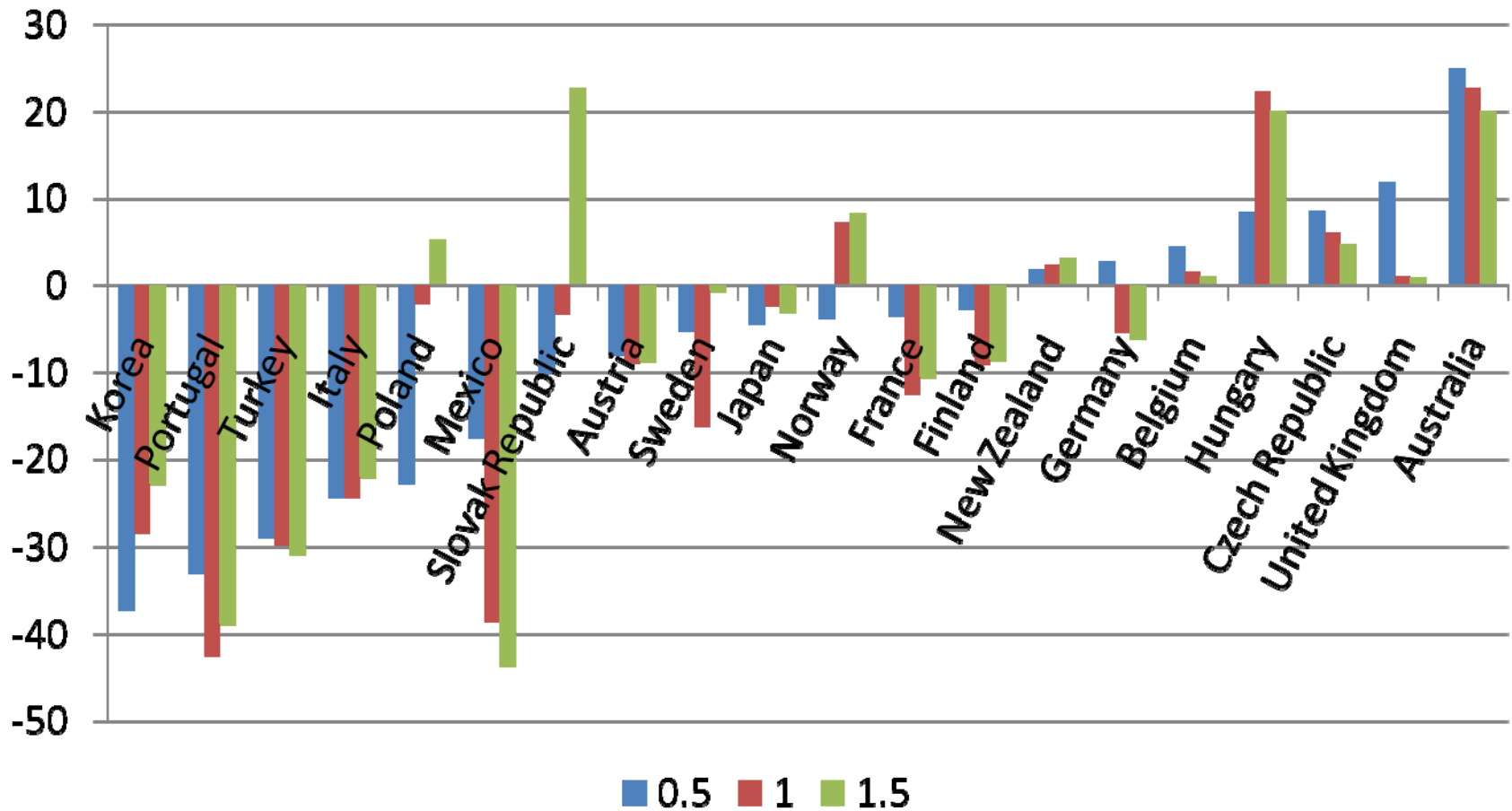
Effects of pension reforms

Change in ratio of pensions for low earners (0.5 average) to pensions for upper middle earners (1.5 average)



Effects of pension reforms

Change in levels of net replacement rates for low earners, average earners and upper middle earners



Equity – some comments and questions

- The assessment of equity in structures, outcomes and reforms is complex and depends on measurement approach and particularly resource concepts.
- Reforms to expand the role of private pensions can apparently reduce progressivity yet still significantly boost retirement incomes of the lowest paid (especially women).
- It is possible to “overshoot” – some reforms to promote financial sustainability threaten to severely reduce adequacy of payments.

Equity – some comments and questions

- Some issues should be addressed through other means?
 - Raising pension ages could be argued to disadvantage lower earners who have lower life expectancies, but is the appropriate solution to maintain eligibility age or address disparities in health and life expectancy?
 - Improving the relative incomes of older women could be addressed through special provisions to recognise time out of the labour force, but this may reinforce gender patterns of employment and care; is it more appropriate to facilitate higher labour force participation?

Equity – some comments and questions

- What might the future bring?
 - Many of the determinants of the future situation of older people have already been in the process of long-term change
 - Increased employment rates of women could be expected to boost the future retirement incomes of these groups when they reach retirement age
 - But inequality in market incomes of people of working age has widened in many countries since the mid-1970s due to widening wage dispersion, growth of lone parenthood and increasing polarisation of household incomes.
 - These challenges mean that strong safety nets will continue to be required.

Conclusions

- Reform proposals need to build on existing systems and be sensitive to specific country context.
- NDC systems tend to have good incentives to continue employment, but so do systems with basic pension, and mandatory or quasi-mandatory pillars.
- Careful design of first pillar or of means of guaranteeing minimum incomes is important, and complexity should be avoided.