

## THE LABOUR FORCE PARTICIPATION OF OLDER WORKERS The effects of pension and early retirement schemes<sup>1</sup>

### Introduction and summary

*Policy distortions are provoking unnecessarily early retirement*

Average effective retirement ages have declined in many OECD countries over the past three decades, and cross-country differences have become wide (Figure 1). Reversing this past decline would raise the labour force participation and employment of older workers. This in turn would ease the adjustment to ageing populations, curb age-related public spending and generate higher tax revenues to finance it.

- OECD research summarised in this note demonstrates that public pension systems and other social transfer programmes (such as unemployment, disability or special early retirement benefits) embody significant early retirement incentives.
- The paper argues that these schemes have played a major role in depressing employment at older ages, most prominently in a number of continental European countries.
- New empirical evidence indicates that a removal of such incentives could raise effective retirement ages appreciably. For instance, labour force participation rates of older workers could be increased by over 15 percentage points in most continental European countries.

### Retirement incentives embedded in pension and other transfer systems

*Several parameters of pension systems affect the retirement age*

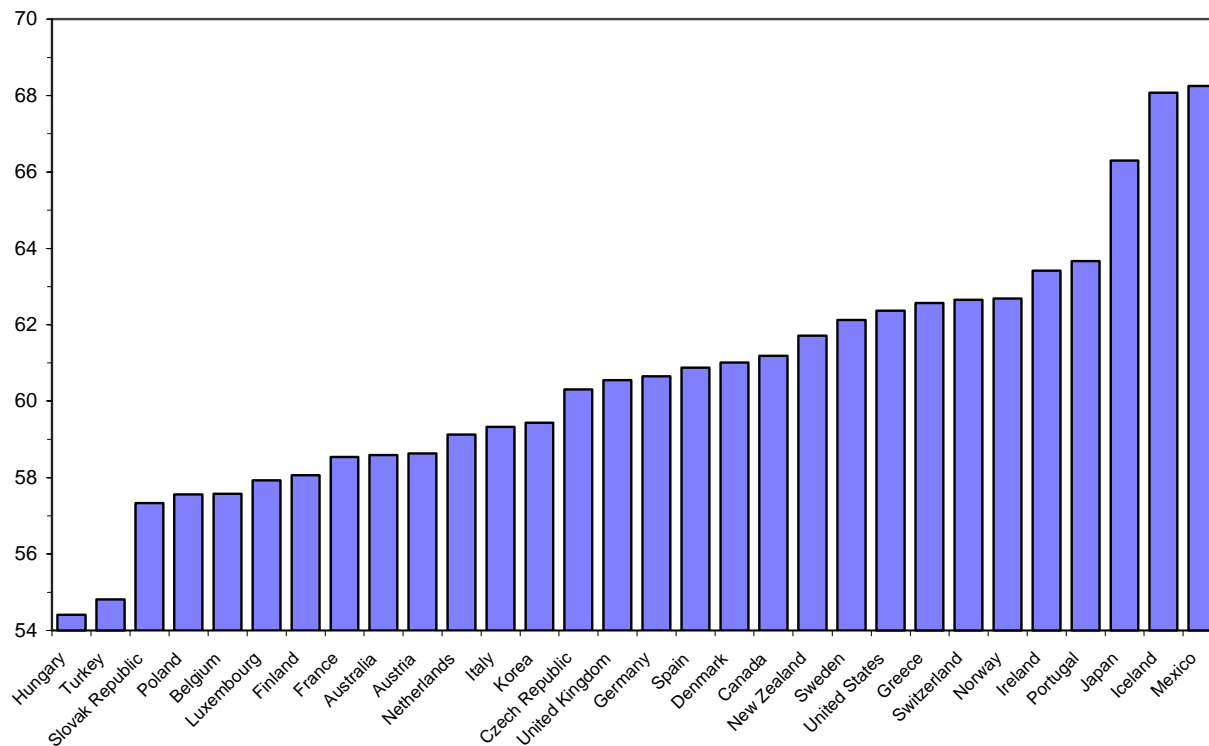
Three different characteristics of old-age pension systems affect the retirement decision of older workers: *i*) the age of entitlement to benefits; *ii*) the benefit level; *iii*) the expected gain — in terms of higher future benefits — from continuing to work instead of retiring, weighed against the cost of doing so in terms of foregone pensions and contributions paid. In the following, these different — but interdependent — parameters of pension systems are presented for 22 to 30 OECD countries.

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1. This paper is based on recent, more detailed OECD research (Duval, 2003).

Figure 1. Retirement ages vary widely in the OECD

*Estimated effective retirement age of older male workers in 2000*



Source: OECD.

***Standard and early ages of entitlement to old-age pension benefits***

***The age of eligibility to a pension is an important influence on retirement***

Many workers retire as soon as they reach the age of entitlement to a pension.<sup>2</sup> This “bunching” of retirement occurs partly because social practice induces retirement at “customary” ages.<sup>3</sup> Another reason is that retirement before the minimum age of eligibility, even if desired, is inhibited by existing borrowing constraints. Some people may also retire as soon as benefits are available because they do not take proper account of financial incentives to continued work embedded in pension systems. Finally, in some cases, individuals may not be permitted to continue working after the standard retirement age.

2. See for instance Gruber and Wise (2002).

3. Lumsdaine *et al.* (1996).

***There are substantial differences in eligibility ages across OECD countries***

The standard age of eligibility to pension benefits differs substantially across OECD countries (Table 1). It is currently set at 65 years in most of them, but ranges for males from a low of 60 in a few countries (France, Korea, Slovak Republic and Turkey) to a high of 67 in Norway and Iceland (and is gradually being raised to that age in the United States). There is wider cross-country variance in standard retirement ages for females; they have typically been lower than for males, and countries are at different stages of a process of gradual convergence towards male levels. There are even greater cross-country differences in eligibility ages for early pensions, but their interpretation is not straightforward because they do not necessarily allow access to full pension.

***Eligibility ages have remained constant since the late 1960s in most countries***

In the majority of OECD countries, standard and — to a lesser extent — early retirement ages have remained constant since the late 1960s. In those countries where changes have occurred, a general pattern emerges of reductions in the 1970s and 1980s, followed by stability. One striking exception in the 1990s was New Zealand, which raised its standard retirement age from 60 to 65. This was accompanied by a sharp increase in the labour force participation (over 15 percentage points) and — even more so — employment of the 55-64 age group.

***Replacement rates***

***There are currently large differences in replacement rates across OECD countries***

Older workers may choose to stay in employment after reaching the age of entitlement to a pension if their benefits are not seen to be high enough.<sup>4</sup> Accordingly, an increase in pension benefits will push them to take advantage of pension entitlements. The most straightforward indicator of pension levels is the replacement rate, measured as the ratio of annual benefits to earnings just prior to retirement. For the purpose of this paper, *expected* replacement rates over a future five-year period are computed at ages 60 and 65. These figures are averages across stylised persons with different characteristics, and they refer to arrangements when recent reforms have been fully phased in.<sup>5</sup> The expected replacement rates at ages 60 and 65 differ noticeably across OECD countries (Figure 2). At age 60, they range from 0 in those countries where the earliest age of eligibility is at least 65 (including Austria,<sup>6</sup> Iceland, Ireland, Norway,<sup>7</sup> New Zealand,

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4. Disney (1996).

5. Replacement rates are calculated before tax and are computed for, and averaged across, six different stylised workers (corresponding to three earnings levels and two marital situations), under the main assumption that these persons enter the labour market at age 20 and have an uninterrupted full-time career in the private sector until retirement. Only mandatory or quasi-mandatory components of pension systems are incorporated. In addition, the figures refer to currently legislated pension systems. As a consequence, they incorporate all future effects of recently enacted reforms (*e.g.* Austria, France, Italy, Sweden), as well as the future maturation of certain components of pension provision (*e.g.* Australia, Korea, Norway to a lesser extent). See Duval (2003), Appendices 1 and 3, for details. For a presentation of net replacement rates (for 2003 systems only), see Casey *et al.* (2003).

6. This does not incorporate early retirement due to long insurance years, which can be accessed from age 61.5 with a 69.5 per cent replacement rate.

United Kingdom) to over 70 per cent in several countries where people can claim generous old-age pension benefits in their early 60s (such as Korea, Luxembourg, Netherlands,<sup>8</sup> Portugal). At age 65, replacement rates range from less than 40 per cent in Ireland and Norway to as high as 100 per cent in Hungary and Luxembourg.

***Replacement rates have risen in most OECD countries since the late 1960s***

Expected replacement rates rose in the vast majority of OECD countries between the end of the 1960s and the end of the 1980s. The rise at age 60 was mostly due to declines in entitlement ages to early pensions (increased eligibility), while at age 65 it was mainly caused by increased pension levels relative to earned income. By contrast, since the beginning of the 1990s expected replacement rates have stabilised (at age 65) or fallen (at age 60). However, these broad trends mask considerable differences across countries. While expected replacement rates remained fairly stable in some countries over the past three decades, they rose very significantly in others (Netherlands, Spain, Finland, Sweden (at age 60), Finland, Spain, Sweden and, to a lesser extent, Ireland and Norway (at age 65)), in particular at early ages.<sup>9</sup>

***Implicit taxes on continued work in old-age pension systems***

***When the costs of continuing to work exceed the benefits, an implicit tax on continued work arises***

When a worker reaches the age of eligibility to a pension, his retirement decision will depend not only on the current replacement rate but also on the expected gain – in terms of higher future benefits – if he or she stays in the labour force, weighed against the cost of doing so in terms of foregone pensions and contributions paid. If this cost is exactly offset by a rise in future pension benefits, the pension system is said to be “actuarially neutral”. By contrast, if this cost is not offset, there is an implicit tax on continued work.<sup>10</sup> Empirical evidence based on household panel data suggests that implicit taxes induce early labour market withdrawal.<sup>11</sup>

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7. This does not incorporate the early retirement (AFP) scheme, which can be accessed from age 62 with a 34.5 per cent replacement rate.
  8. In the case of Netherlands, the modelling at age 60 refers to a “typical” early retirement (VUT) scheme. However since the early 1990s these PAYG schemes have been progressively transformed into less generous, fully-funded, systems. As a result of these transformations, the current expected replacement rate at age 60 may be overstated.
  9. For further details, see Duval (2003).
  10. It is not clear *a priori* whether implicit taxes created by pension systems make people retire earlier or later (Mitchell and Fields, 1984). Changes in implicit tax rates on continued work are similar to changes in wages, i.e. they produce opposite income and substitution effects. An increase in the implicit tax — due for instance to a cut in the pension accrual rate — lowers the financial gain from postponing retirement, thereby reducing the opportunity cost of retiring earlier (negative substitution effect). At the same time, it provides lower income for each future year of work, thereby inducing later retirement (positive income effect).
  11. See for instance Lazear (1986) or Lumsdaine and Mitchell (1999).

Table 1. Standard and early ages of entitlement to old-age pension benefits

	Males								Females			
	Early				Standard age				Standard age			
	1969	1979	1989	2003	1969	1979	1989	2003	1969	1979	1989	2003
Australia	..	..	..	55	65	65	65	65	60	60	60	62.5
Austria	..	..	..	..	65	65	65	65	60	60	60	60
Belgium	60	60	60	60	65	65	65	65	60	60	60	63
Canada	..	..	60	60	66	65	65	65	66	65	65	65
Czech Republic	..	..	..	58.5	..	..	..	61.5	..	..	..	59.5
Denmark	..	..	..	..	67	67	67	65	67	67	67	65
Finland	..	..	60	62	65	65	65	65	65	65	65	65
France	60	60	..	..	65	65	60	60	65	65	60	60
Germany	..	63	63	63	65	65	65	65	65	65	65	65
Greece	..	..	60	60	60	60	65	65	55	55	60	65
Hungary	..	..	..	..	..	..	60	62	..	..	55	62
Iceland	..	..	..	65	67	67	67	67	..	..	..	67
Ireland	..	65	65	65	70	66	66	66	70	66	66	66
Italy	55	55	55	57	60	60	60	65	55	55	55	65
Japan	60	60	60	60	65	65	65	65	65	65	65	65
Korea	..	..	..	55	..	..	60	60	..	..	60	60
Luxembourg	62	62	60	60	65	65	65	65	62	60	65	65
Mexico	..	..	..	..	..	65	65	65	..	65	65	65
Netherlands	..	62	60	60	65	65	65	65	65	65	65	65
Norway	..	..	..	..	70	67	67	67	70	67	67	67
New Zealand	60	..	..	..	65	60	60	65	65	60	60	65
Poland	..	..	..	..	..	..	..	65	..	..	..	60
Portugal	..	..	..	55	65	65	65	65	65	62	62	65
Slovak Republic	..	..	..	..	..	..	..	60	..	..	..	57
Spain	..	60	60	60	65	65	65	65	55	65	65	65
Sweden	63	60	60	61	67	65	65	65	67	65	65	65
Switzerland	..	..	..	63	65	65	65	65	62	62	62	63
Turkey	60	..	..	..	65	55	55	60	55	50	50	55
United Kingdom	..	..	..	..	65	65	65	65	60	60	60	60
United States	62	62	62	62	65	65	65	65	65	65	65	65

## Notes:

Early ages of entitlement to old-age pension benefits are not indicated in the table when similar to standard ones or when not available.

*Australia*: minimum retirement age (i.e. at which superannuation savings can be drawn) will increase to 60 over the period 2015-2025. standard age for women to be increased from age 62.5 to age 65 between 2003 and 2013.

*Austria*: early age of eligibility does not incorporate special early retirement for long insurance years, which will be progressively phased out (following the 2003 reform) but could still be accessed from age 61.5 in 2003 (60 in 1969, 1979 and 1989). Standard age for women to be increased from age 60 to age 65 between 2024 and 2033.

*Belgium*: standard age for women scheduled to rise to age 65 by 2009.

*Czech Republic*: standard and minimum retirement ages are scheduled to rise gradually to reach age 62 for men and age 61 for women (with no children) in 2007.

*Greece*: standard age is 62 for men and 57 for women who first started to work before 1992.

*Iceland*: early retirement age in 2003 is still 67 for the basic pension. However most occupational pension schemes, which are progressively maturing, set the minimum retirement age at 65.

*Italy*: minimum retirement age is the minimum age of eligibility to a seniority pension, also equal to the minimum retirement age in the new pension system. Standard age is 60 (instead of 65) for women who first started to work before 1996

*Korea*: standard age scheduled to rise from age 60 to age 65 between 2011 and 2033.

*Luxembourg*: early age of eligibility does not incorporate the special early retirement scheme ("pré-retraite"), which can be accessed from age 57 with 40 years of contribution.

*Norway*: early age of eligibility does not incorporate the special early retirement (AFP) scheme, which can be accessed from age 62 in 2003.

*Poland*: standard age is 55 for women with 30 years of insurance.

*Slovak Republic*: standard age for women varies between 53 and 57 according to number of children raised.

*Switzerland*: standard age for women will be 64 in 2005.

*Turkey*: standard age is 55 for men and 50 for women who first started to work before 1990.

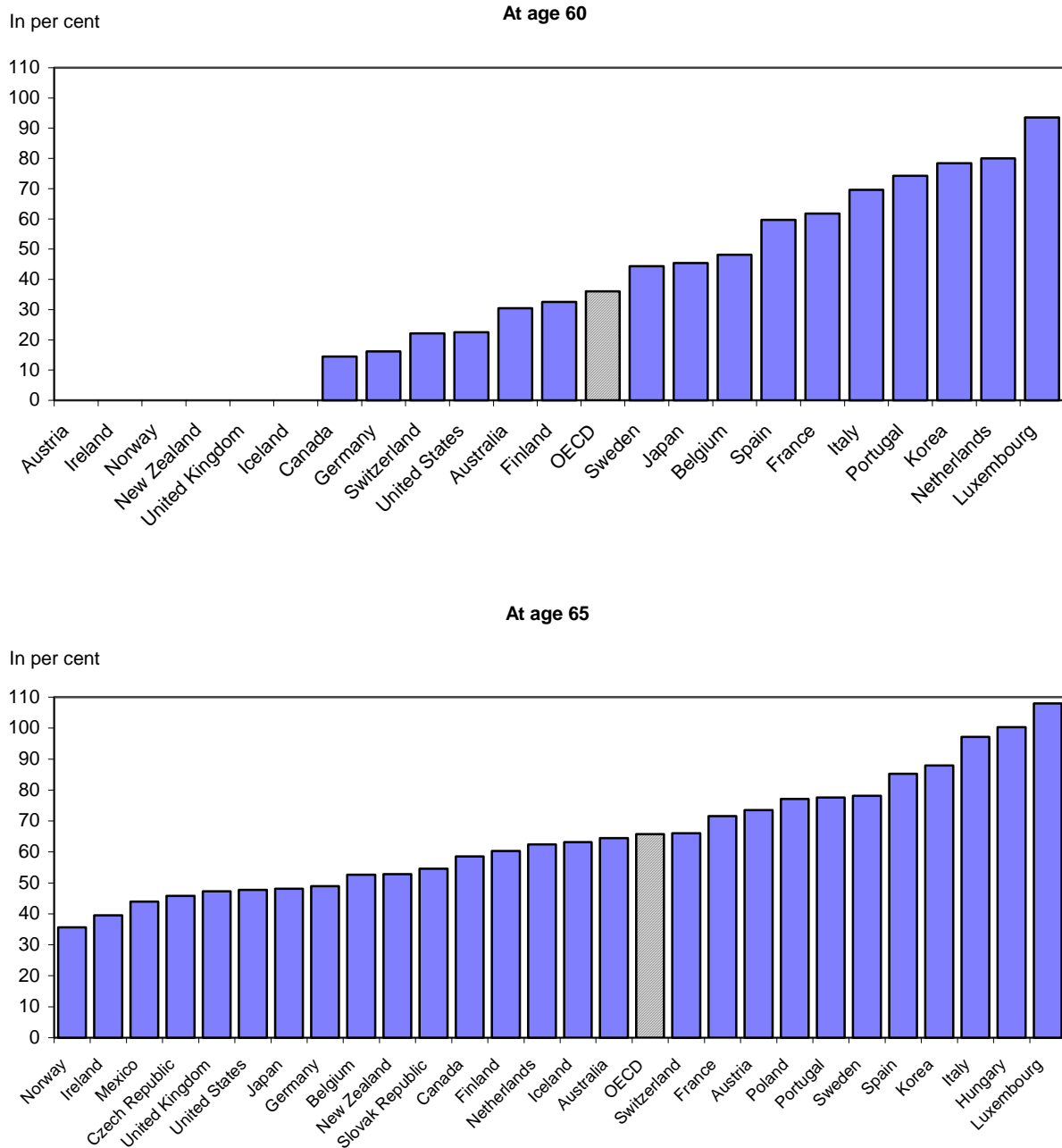
*United Kingdom*: standard age for women will rise from age 60 to age 65 over 2010-2020 period.

*United States*: standard age for both men and women scheduled to rise to age 67 over 2000-2022 period.

Source: U.S. Department of Health and Human Services, *Social Security Programs Throughout the World*, various issues

Figure 2. **OECD countries provide noticeably different replacement incomes**

*Expected replacement rates over next 5 years in current old-age pension systems<sup>1</sup>*



1. Average across 6 situations (3 earnings levels and 2 marital statuses).  
 For the Netherlands, the calculations at age 60 is based on a "typical" VUT scheme.

Source: OECD.

***Implicit taxes often tend to rise as individuals age, and differ widely across OECD countries***

OECD calculations<sup>12</sup> show that implicit taxes on continued work created by pension systems are fairly small at early ages, but have a clear tendency to rise as individuals age (Figure 3). The average implicit tax rate across 22 OECD countries is found to be below 5 per cent at age 55, while it is above 30 per cent at ages 60 and 65.<sup>13</sup> The dispersion is very large across OECD countries, especially at high ages. These differences usually match fairly well — though not perfectly — those in expected replacement rates: countries with high replacement rates often also have large implicit taxes on continued work. This reflects the fact that when replacement rates are high, the cost to a worker of choosing to continue to work instead of drawing his benefits is also high. Broadly speaking, implicit taxes are high in Continental European countries (with a few exceptions) compared with Nordic and English-speaking ones as well as Japan.

***After rising for two decades, implicit taxes have declined in a number of countries since the early 1990s***

Like expected replacement rates, albeit to a lesser extent, implicit taxes on continued work rose through the 1970s and the 1980s, but have started to stabilise and even decline in some cases since the early 1990s.<sup>14</sup> Increases were large in some Continental European countries compared with English-speaking and Nordic countries, primarily for people in their early 60s. These observations are consistent with historical labour force participation patterns, *i.e.* with trend declines in older workers' participation being stronger in Continental European countries and having flattened out since the early 1990s.

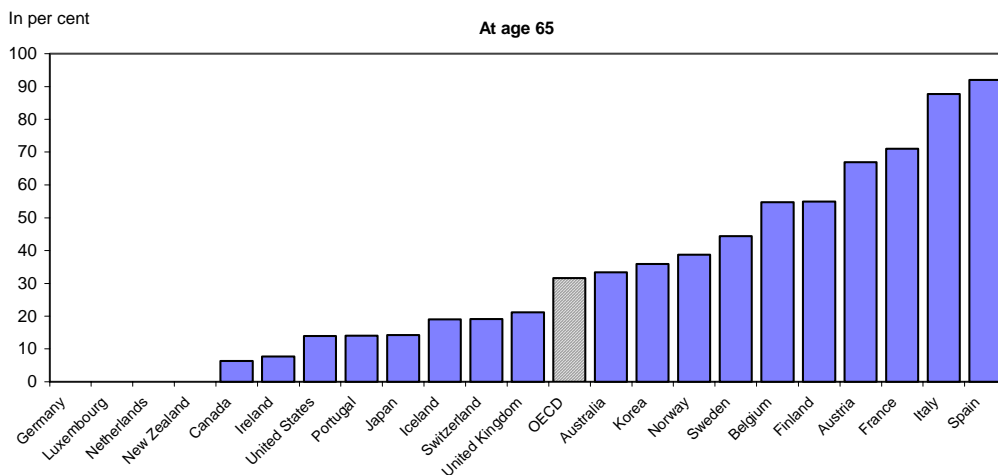
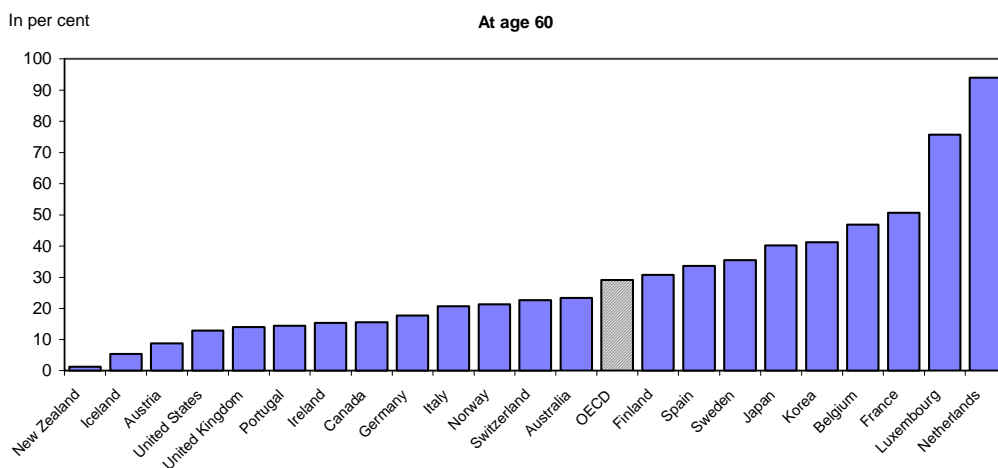
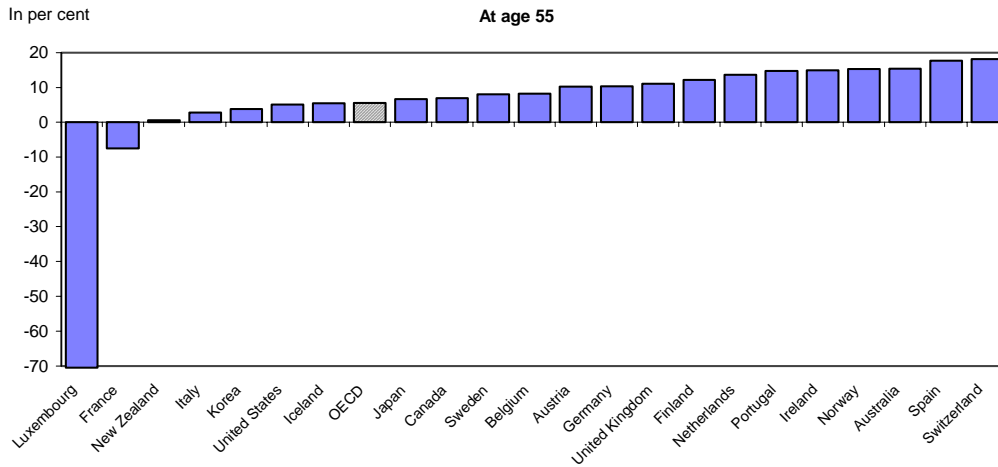
#### ***Implicit taxes on continued work in other social transfer programmes***

***Various social transfer programmes have been used as pathways into retirement***

In many OECD countries, older workers have relatively easy access to various social transfer programmes other than old-age pensions. This has enabled many of them to withdraw from the labour market before the early age of entitlement to old-age pension benefits. Schemes that allow such early withdrawal include special early retirement provisions as well as unemployment-related and disability benefits.<sup>15</sup> They often entail high implicit taxes on continued work, for two main reasons: replacement rates are usually high; and rights to ordinary pensions continue to accrue for those in the schemes even if, in some cases, at a reduced rate.

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12. These implicit tax rates are based on the same assumptions used to compute expected gross replacement rates, but they are computed only for one stylised worker (single worker with average earnings). An additional hypothesis is the following. When making his decision to withdraw from the labour market or to continue to work, the individual is assumed to expect constant economy-wide real earnings if choosing to work. While this has no impact on implicit tax rates in flat-rate schemes, it tends to over-estimate them in earnings-related ones, all the more so as the reference period for earnings used in the benefit formula is long (*e.g.* the “new” pension system in Italy). See Duval (2003), Appendix 2, for details.
13. Implicit tax rates at age 65 are actually higher than at age 60 in the majority of OECD countries. Nevertheless they are very low in those countries where it is possible to combine work with the receipt of a full or reduced pension (see Duval, 2003, Appendix 2), which lowers the OECD average (*e.g.* Canada, Germany, Luxembourg, Netherlands, New Zealand).
14. For further details, see Duval (2003).
15. Blöndal and Scarpetta (1998), Casey *et al.* (2003).

Figure 3. **Financial incentives to continue working decrease as individuals age**  
*Implicit tax rates on continued work over next 5 years in current old-age pension systems <sup>1</sup>*



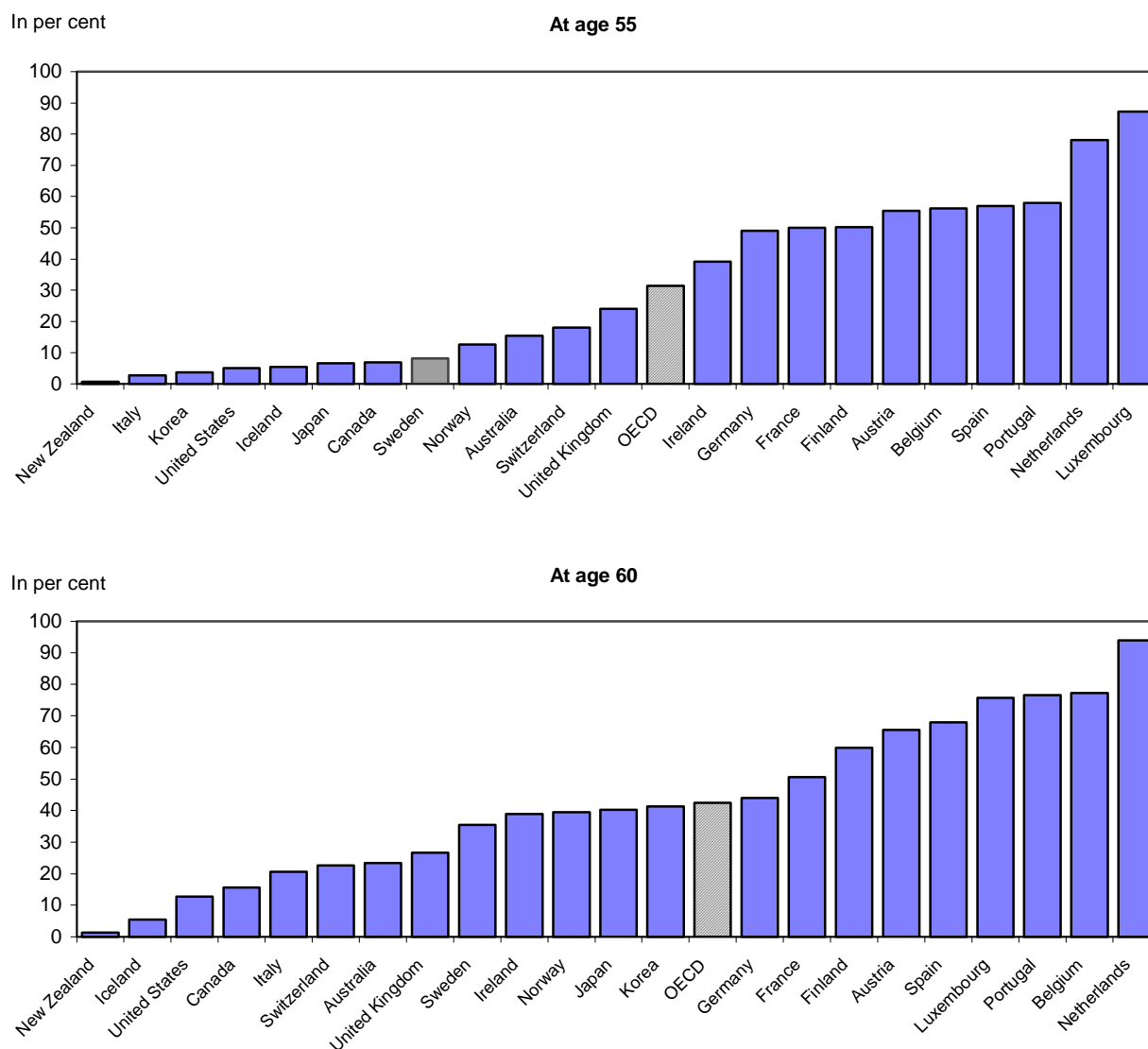
1. Single worker with average earnings.

Source: OECD.



Figure 4. Older workers face high implicit tax rates

*Implicit tax rates<sup>1</sup> on continued work over next 5 years in current social transfer programmes<sup>2</sup>*



1. The implicit tax rate on continued work refers to an "early retirement route". The latter is modelled as the unemployment benefits / assistance pathway into retirement with the exception of Ireland, where the modelling refers to the pre-retirement allowance, and Luxembourg, where disability benefits were considered given their widespread incidence among pensioners. In those countries where it is considered that no early retirement scheme can be widely used to withdraw from the labour market before the minimum pensionable age (Australia, Canada, Iceland, Italy, Japan, Korea, New Zealand, Norway, Sweden, Switzerland and United States) the retirement scheme considered in the chart is simply the "regular" old-age pension system. Similarly, at those ages when people are entitled to an old-age pension (e.g in France at 60), the retirement scheme considered in the chart is the "regular" old-age pension system rather than an early retirement scheme.

2. Single worker with average earnings.

Source: OECD.

***The resulting retirement incentives are very strong in some countries***

No attempt is made here to be comprehensive in the coverage of these programmes.<sup>16</sup> Rather, in order to provide a rough assessment of early retirement incentives arising from them, implicit tax rates on continued work are computed for a “typical early retirement route”.<sup>17</sup> These calculations take into account that a person will eventually move onto old-age pensions. In other words, they combine implicit taxes arising from old-age pension schemes and other transfer programmes into a single implicit tax rate which sums up retirement incentives embedded in the social system. The results underscore the strong incentives to retire in many countries. In particular, at age 55, when old-age pension schemes on their own do not provide strong retirement incentives (Figure 3), the overall implicit tax rate averages almost 30 per cent across OECD countries (Figure 4). At the same time, the dispersion of implicit tax rates in the “early retirement route” is very large. Like for old-age pensions, overall implicit tax rates rose throughout most of the 1970s and the 1980s. This was especially the case at age 55, as early retirement schemes were created and/or became more generous. However, this expansion has come to a halt since the early 1990s, and has even been reversed in some countries (e.g. Sweden or Finland more recently).

**Retirement incentives strongly affect labour market participation of older workers**

***The implicit tax on continued work is a key summary indicator of retirement incentives...***

The implicit tax on continued work is a key summary indicator of retirement incentives embedded in pension systems and early retirement schemes. This is not only because it represents the balance between economic costs and benefits of continued work but also because it captures some of the effects of eligibility ages and the level of benefits. Thus, the higher the replacement rate, the higher is the implicit tax on continued work. Similarly, the higher the minimum pensionable age, the lower is the implicit tax on continued work before this age. As a result, there is a good reason for focusing primarily on implicit taxes on continued work when assessing participation effects of retirement incentives embedded in pension and other retirement-income schemes.

***... and is strongly correlated with labour market withdrawal across countries...***

To illustrate the effects of retirement incentives, Figure 5 plots, for successive five-year age spans, the fall in male labour force participation — a measure of labour market withdrawal — against the corresponding implicit tax on continuing working for five more years.<sup>18</sup> The significant and strong correlation between retirement incentives and labour force participation of older workers suggests that financial incentives have a sizeable impact on retirement behaviour. Both labour

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16. For more comprehensive coverage for 15 OECD countries, see recent OECD work by Casey *et al.* (2003).

17. For further information, see footnote 1 in Figure 4.

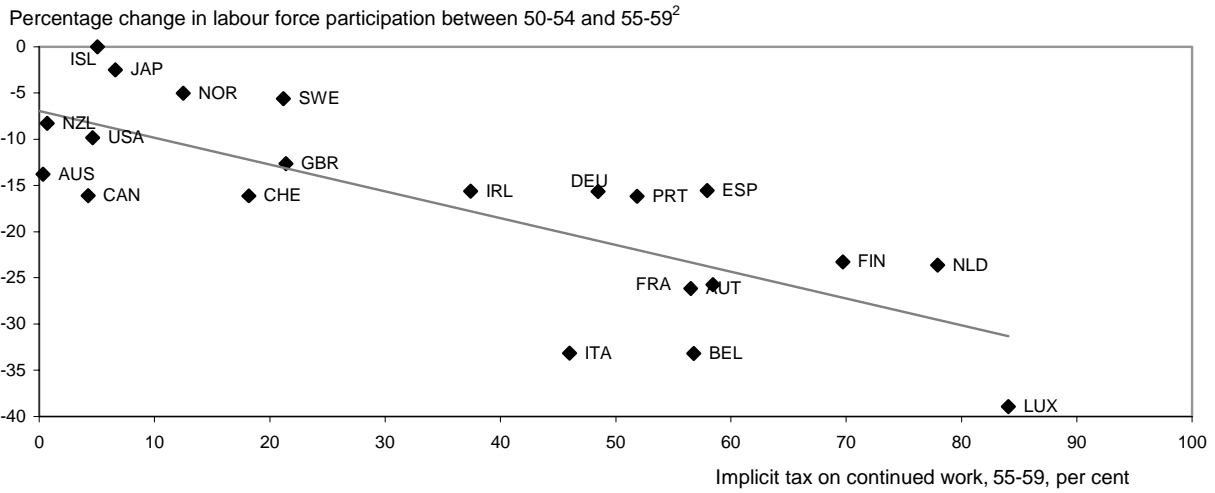
18. As already noted, the “early retirement route” simply corresponds to retirement via the normal old-age pension system when no alternative, more generous, pathway into retirement is accessible.

market withdrawal and implicit taxes are generally higher in Continental European countries than in Japan, Korea, English-speaking and Nordic countries.

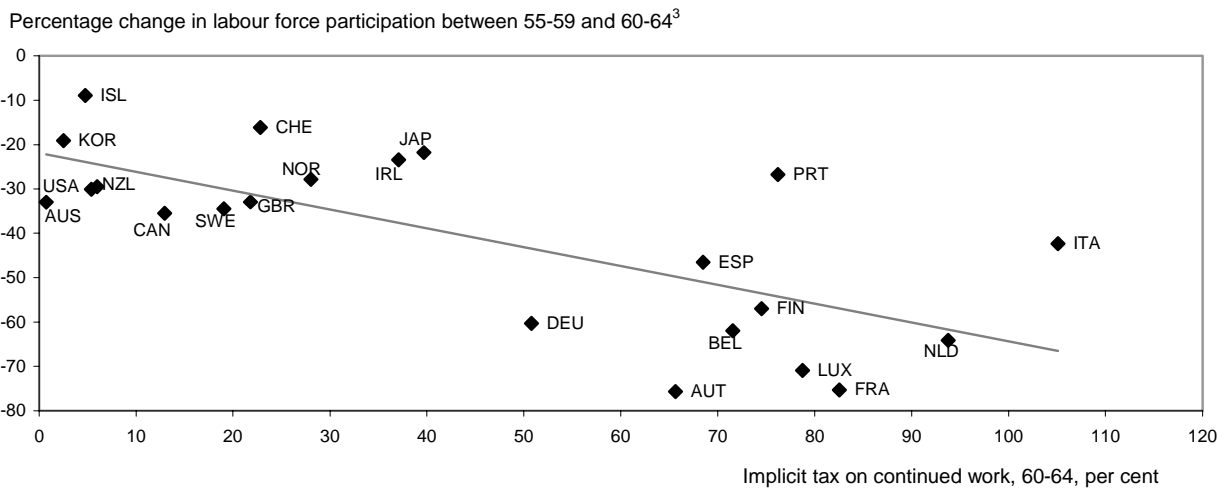
Figure 5. High implicit taxes encourage labour market withdrawal

Fall in male labour participation between two consecutive age groups and implicit tax rates on continued work, 1999<sup>1</sup>

Panel A.



Panel B.



1. Implicit tax rates are calculated for a single worker with average earnings in 1999. In some cases, the results differ from those presented in Figure 4, which refer to currently legislated systems. These differences reflect either policy changes that took place after 1999 (e.g. Finland, France) or the future implementation of measures that were already legislated but had not yet come into effect in 1999 (e.g. the future maturation of the Superannuation Guarantee Scheme in Australia, the transition from the "old" to the "new" pension system in Italy).

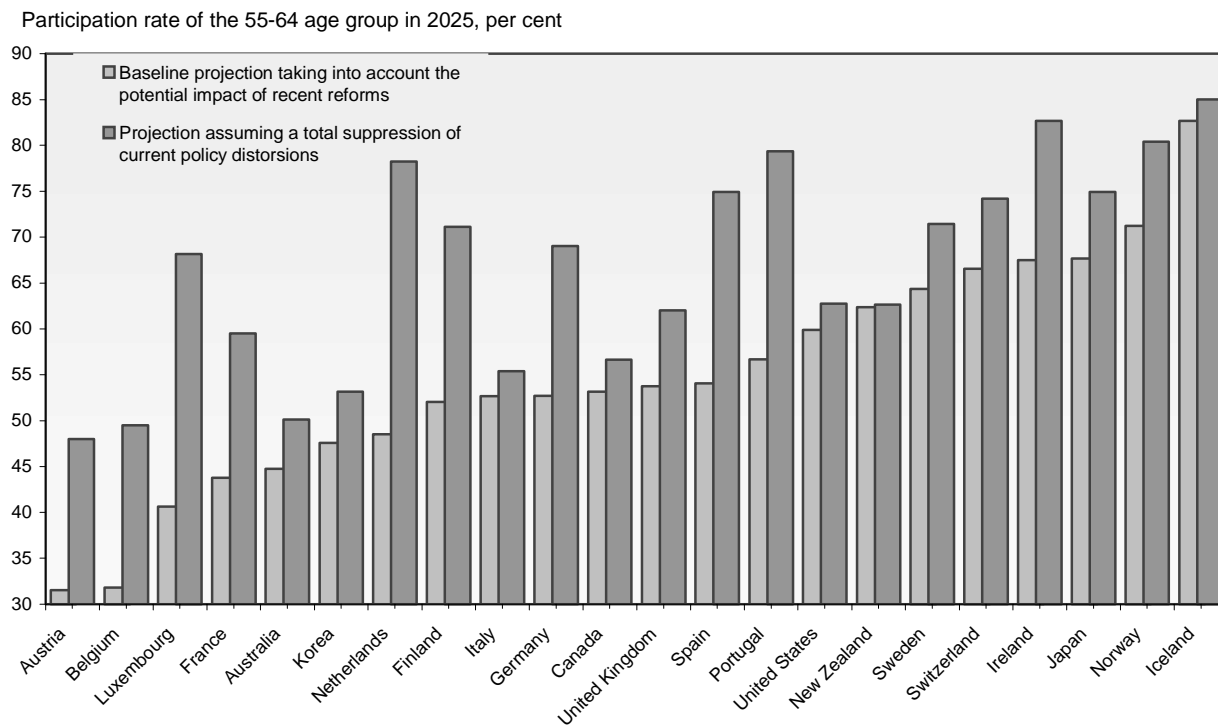
2.  $(Pr55-59 - Pr50-54) / Pr50-54$ , per cent.

3.  $(Pr60-64 - Pr55-59) / Pr55-59$ , per cent.

Source: OECD.

Figure 6. Removing implicit taxes could encourage participation

Projected labour force participation rates of the 55-64 age group in 2025 under different scenarios



Source: OECD.

### Conclusion

Current old-age pension systems and other social transfer programmes induce older workers to anticipate their retirement decision. Suppressing these incentives — particularly in a number of continental European Countries where they are strong — would delay retirement and help alleviate the burden of ageing.

The most straightforward step towards reducing incentives for early withdrawal from the labour force is to close early pathways into retirement, for three main reasons: *i*) it would leave older workers in their late 50s and early 60s facing only the — significantly lower — retirement incentives embedded in old-age pension systems; *ii*) reforming old-age pension systems could well have fairly small participation effects unless the access to early retirement schemes for people without special needs is removed; and *iii*) early pathways into retirement reflect the vestiges of a mistaken, and ultimately unsuccessful, attempt to deal with rising unemployment in the 1970s and 1980s by reducing the size of the labour force. It should also be borne in mind that reforming only some pathways into early retirement is likely to be ineffective because workers may leave the labour market *via* other schemes.

Nevertheless, suppressing early retirement schemes would not eliminate early retirement incentives, because these also arise from old-age pension schemes, especially in some (mostly continental European) countries and at high ages. Elimination of these incentives would require the value of pension benefits to be adjusted in case of anticipated and deferred retirement. While such adjustments currently apply in a number of OECD countries, they are insufficient to generate actuarial neutrality.<sup>19</sup>

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19. In particular, many PAYG schemes do not provide actuarial bonuses for deferred retirement beyond the standard age, and where they exist, they usually do not rise enough with age to compensate for increasing mortality risks.

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