

## PART I

# Policy Issues

*This part of the report provides an in-depth look at the questions pension policymakers face today. It consists of four chapters.*

*The first examines the implications of the ongoing financial and economic crisis on pension systems. Which countries and which individuals are most affected? What can governments do to help and which policies should they avoid? The chapter presents data on the investment performance of private pensions.*

*The second looks at incomes and poverty of older people, examining trends over the past two decades. In many countries, the position of pensioners has improved relative to the population as a whole, but there remain pockets of old-age poverty. This chapter also takes a look forward, showing how changes in economies, societies and pension systems might affect incomes and poverty of today's workers when they reach old age.*

*The third sets the changes to pension systems announced in the period between 2004 and the end of May 2009. Nearly all OECD countries have reformed pensions in recent years, addressing issues of adequacy of retirement benefits, long-term sustainability of pension systems and the efficiency of retirement-income provision.*

*The final special chapter considers coverage of voluntary private pensions, looking at how this varies with age and earnings. The ongoing financial crisis has dealt a heavy blow to private retirement savings, but private pensions will remain part of the equation when providing for old age. This chapter evaluates five different policies.*



# 1. Pension Systems during the Financial and Economic Crisis

The financial crisis is rapidly turning into an economic and social crisis. Most OECD countries are already in recession and others will follow. Unemployment rates are rising around the world, while average earnings are beginning to fall. The financial crisis is having a profound impact on incomes during retirement, which are affected in a number of ways.

Private pension funds have been dealt a heavy blow: in the calendar year 2008, their investments lost 23% of their value on aggregate, or some USD 5.4 trillion. This means that many people have lost a substantial amount of their retirement savings, from pension plans and other assets. There is also a risk of individuals being doubly hit, by losing their jobs in addition to a large part of their savings. This problem is particularly serious for older workers, who not only encounter greater problems in the labour market if they become unemployed but also have little time to wait for their pension savings to recover.

But public pension schemes are affected too. Unemployment and lower earnings will reduce the contribution revenue of pay-as-you-go pension systems, making it more difficult for these schemes to deliver pension benefits. Some public pension reserve funds have also suffered major losses on their investments. The financial and economic crisis thus both highlights and exacerbates the more long-term structural problems faced by many countries' pension systems due to population ageing.

Section 1 of this chapter discusses which individuals' retirement incomes have been or will be affected by the financial and economic crisis. Section 2 looks more deeply into which countries' retirement income systems face the greatest challenges from the crisis. It examines how the scale of the impact depends on the national *design of pension systems* (including both public and private provision). It also explores the effect of the *way pension funds are invested*. Section 3 reviews the range of possible policy responses to mitigate the effects of the current crisis and to make the pension system more robust to future crises. Section 4 concludes.

## 1. Which groups are hardest hit by the crisis in pensions?

In order to assess the social impact of the crisis in the area of pensions, it is not sufficient to focus on pension funds alone. Average investment losses mask a wide range of effects on individual workers' and retirees' living standards. This chapter therefore focuses on *individuals* and their vulnerability in old age rather than on institutions, such as pension funds. It discusses the impact of the crisis for different groups of workers and pensioners, distinguished by a number of criteria, such as the age of the individual and the type of pension plan in which people are enrolled.

## Age

The most important factor is the age of the individual. Table 1.1 divides the population into three groups: i) people who have already retired; ii) those about to retire; and iii) younger and prime-age workers for whom retirement is a long way off. Table 1.1 shows the degree to which each age group is affected, ranging from strongly affected to a limited impact.

**Table 1.1. Degree of effects on retirement-income provision by age group and pension plan**

	Younger/prime-age workers	People near to retirement	Retirees
Strongly affected		Individuals in mature, private DC schemes (especially: <i>i</i> ) where exposure to riskier assets is greater; and <i>ii</i> ) where people are required to annuitise their balances at retirement)	Retirees who did not annuitise their DC balances at retirement (especially those with greater exposure to riskier assets)
Moderately affected		Individuals in mature, private DB schemes Public, PAYG systems with deficits	Retirees in plans with automatic benefit adjustments ( <i>e.g.</i> conditional indexation, balancing mechanisms, sustainability adjustments)
Less affected	Most individuals in this group	Individuals with recently established private DC schemes	Retirees who annuitised DC balances before the crisis  Most retirees with DB private pensions or public, PAYG benefits

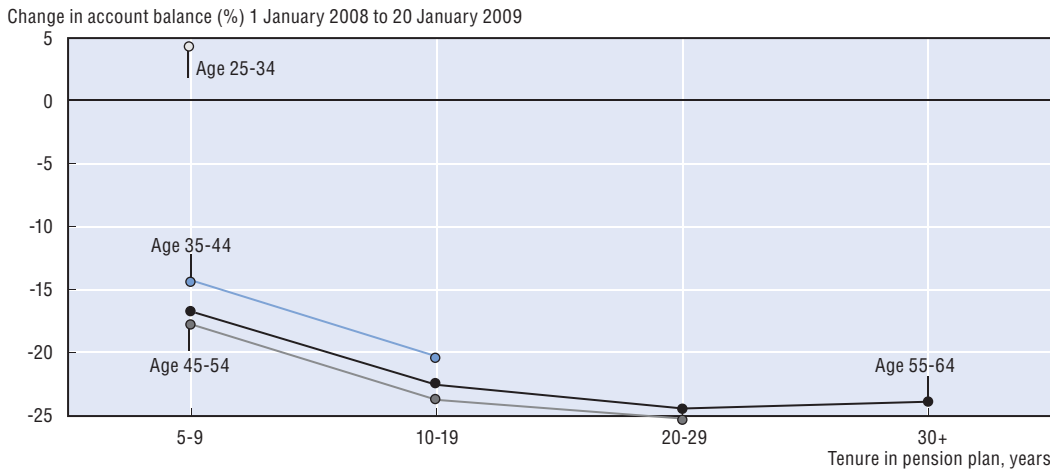
DB = defined benefit; DC = defined contribution; PAYG = pay-as-you-go.

The effects of financial and economic crisis can be expected to be smallest on younger and prime-age workers. Younger workers will have more time to rebuild their provision for old age once the economy recovers, though losses will obviously be greater the longer the recession lasts.

The balances in private pension accounts of younger workers are generally small and financial losses in absolute terms are therefore also small compared with other age groups. Figure 1.1 shows evidence of the change in account balances in 2008 for the main private, defined-contribution schemes in the United States: 401(k) plans, named after the relevant clause of the tax code. The change in balance is shown separately by age and the length of time individuals have been members of schemes. For 25-34-year-olds with at least five years in the plan, additional contributions made in the year outweighed investment losses, with balances increasing by nearly 5%.


The most acutely affected group in Table 1.1 is generally people who are near to retirement. Unlike younger workers, these people do not have enough time for markets to recover. This means that recent investment losses in private pension funds, public pension reserves and other savings may well not be recouped. Even postponing their retirement beyond the date that they had planned may only allow them to offset part of their loss. Figure 1.1 shows that the declines in account balances in private pensions in the United States were largest for the 45-54 year old age group, ranging from a loss of around 18% for people with short tenures to 25% for longer periods of coverage. At each tenure length, the fall in assets in account was a little lower for the 55-64 age group.

At the end of the age scale in Table 1.1 lie current pensioners. The degree to which the crisis affects this group depends on the composition of their old-age income. Public pensions are usually defined by a set of rules and the purchasing power of pensions is

Figure 1.1. **Change in balances of 401(k) plans in the United States in 2008**

Note: Data cover people with an account balance on 31 December 2008, drawn from the 21 million 401(k) participants in the database of the Employee Benefit Research Institute (EBRI) and the Investment Company Institute (ICI).

Source: VanDerhei, J. (2009), "The Impact of the Recent Financial Crisis on 401(k) Account Balances", Issue Brief, No. 326, Employee Benefit Research Institute, Washington DC.

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protected by automatic indexation arrangements. But in a number of countries, the crisis will have an impact on the level of public pensions as a result of automatic adjustment mechanisms which could result in lower benefits (see below). Private pension benefits in payment, too, are generally protected as occupational pension plans and annuity providers hold assets to back these benefits. The burden of rectifying shortfalls falls on other actors, such as employers, financial-service companies, government-backed guarantee programmes and plan contributors. But any voluntary retirement savings or housing assets that current pensioners were hoping to draw on during their retirement are, of course, hit by the crisis. For some current pensioners, losses in these assets are substantial and interest rates are at historic lows, which may mean much lower living standards in old age.

### **Type of pension plan**

The second main factor determining the impact of the crisis on pensions is the type of pension schemes that make up a country's pension system and individuals' provision for old age.

In *defined-contribution* plans, each person saves for retirement in an individual account and the value of pension benefits is determined by investment performance. Depending on their exposure to riskier assets, people near to retirement may have to lock in recent investment losses and may not have the time to wait for markets to recover before they need their pension income. Younger workers have smaller balances in their accounts, so investment losses will also be relatively small (in the context of their lifetime pension savings). Moreover, these losses will be recouped in a recovery and low prevailing asset prices mean that their current contributions should enjoy good returns in the future. For retirees who had a defined-contribution plan, the effect of the crisis depends on what they did with the accumulated balance in their account at the time of retirement. Many are protected because they used their pension assets to purchase an *annuity* before the crisis, locking in earlier investment gains and benefiting from a life-long pension payment. Others, however, did not buy an annuity or deferred the purchase and, depending on their portfolio, may have suffered large losses.

Private *defined-benefit* schemes have also seen the value of their assets decline. These schemes are the cornerstone of retirement-income provision in Iceland, the Netherlands and Switzerland. They are also significant sources of old-age income for workers nearing retirement in other countries, such as Canada, Ireland, Sweden, the United Kingdom and the United States. However, younger workers are much more likely in these latter countries to have defined-contribution plans (see Box 1.1).

#### Box 1.1. **The shift from defined-benefit to defined-contribution occupational pensions plans**

The shift from defined-benefit to defined-contribution plans started earliest in the **United States**. By 1980, 32% of active members of an occupational pension scheme were covered by a defined-contribution plan. This proportion doubled over the next 15 years to reach 64% by 1995, and grew further to 71% by 2003 (United States, Department of Labor, various years).

In **Canada**, Statistics Canada reports a decline in occupational-pension coverage since the early 1980s. One reason for this change is that many employers now offer group personal pensions (known as registered retirement savings plans or RRSPs) instead of traditional occupational plans. Furthermore, among those retaining occupational plans, defined-contribution schemes accounted for 24% of members in 2003 compared with 14% a decade earlier (Morissette and Johnson, 2003).

The proportion of workers covered by a private-sector defined-benefit pension scheme in the **United Kingdom** nearly halved, from 23% to 12% of the total workforce between 1988-89 and 2002-03. Some 42% of members in 2003 were in schemes closed to active members. A recent survey by the National Association of Pension Funds suggested that 25% of large schemes were considering closing their schemes to existing as well as new members.

In **Ireland**, the proportion of members of occupational scheme in the private sector covered by defined-contribution arrangements increased from less than 40% in 1999 to 50% in 2005 (Pensions Board, various years).

Finally, **Sweden** changed the largest occupational plan (for white-collar workers in the private sector) fully to defined-contribution from 2006. This follows an earlier shift to defined-contribution in the scheme for blue-collar workers.

In defined-benefit plans, pensions are, in theory, “defined” by a set of rules and should be paid whatever the fund’s performance. However, the fall in asset prices means that many plans are now in deficit: their liabilities to pay current and future pensions exceed the assets in the fund (plus the “asset” in the form of future employer and member contributions). Sponsors of defined-benefit plans may be in a position to fill the deficit with additional employer contributions whilst waiting for asset prices to recover. Nonetheless, as discussed in more detail below, some of the recovery may have to come from reducing the plan’s liabilities as well as increasing assets. In simple terms, this means cutting the benefits of future and even current retirees.

The financial part of the crisis has not directly affected most countries’ *public pensions*. First, only eight OECD countries have public pension reserves that were worth more than 5% of national income in 2007 (see OECD, 2009a, Chapter 3 and the indicator “Assets in private pension funds and public reserves” in this report). Secondly, the fund in the United States is invested entirely in government bonds, which make up over 80% of the portfolio of Korea’s

reserve and over 60% of Japan's. In contrast, the government bond share is 35-40% in Norway and Sweden and less than 20% in New Zealand and Ireland. The Irish pension reserve fund has been affected still more by the crisis, since the government has proposed to use this fund to recapitalise troubled banks. The government intends to take EUR 4 billion of the fund, plus EUR 3 billion due to be paid in 2009 and 2010. This total amounts to more than 40% of the assets in the fund at 31 December 2008. In return, the reserve fund will receive the interest on the preference shares issued by the banks to the government.

However, the economic crisis, that started with financial-market turbulence, will significantly affect public pension systems. OECD economies are entering a recession and unemployment has begun to rise in most member countries. The OECD's latest forecast for all member countries, issued on 31 March 2009, is that GDP will fall by 4.3% in 2009 and remain stable in 2010. Unemployment in the OECD reached a low point of 5.6% of the workforce in 2007, increasing to 6.0% in 2008. The projections show further, large rises to 8.4% in 2009 and 9.9% in 2010.

Slower growth will also put pressure on wages. This will reduce the tax and contribution revenues on which public pension systems rely. It might also have an effect on the benefits side, with more workers taking early retirement as a result of the difficult situation in labour markets. Expenditure on unemployment and disability benefits might also increase. Public budgets will be squeezed by increased demand for spending and reduced supply of revenues. A number of countries have responded to this pressure by cutting pension benefits (see the special chapter on "Recent pension reforms").

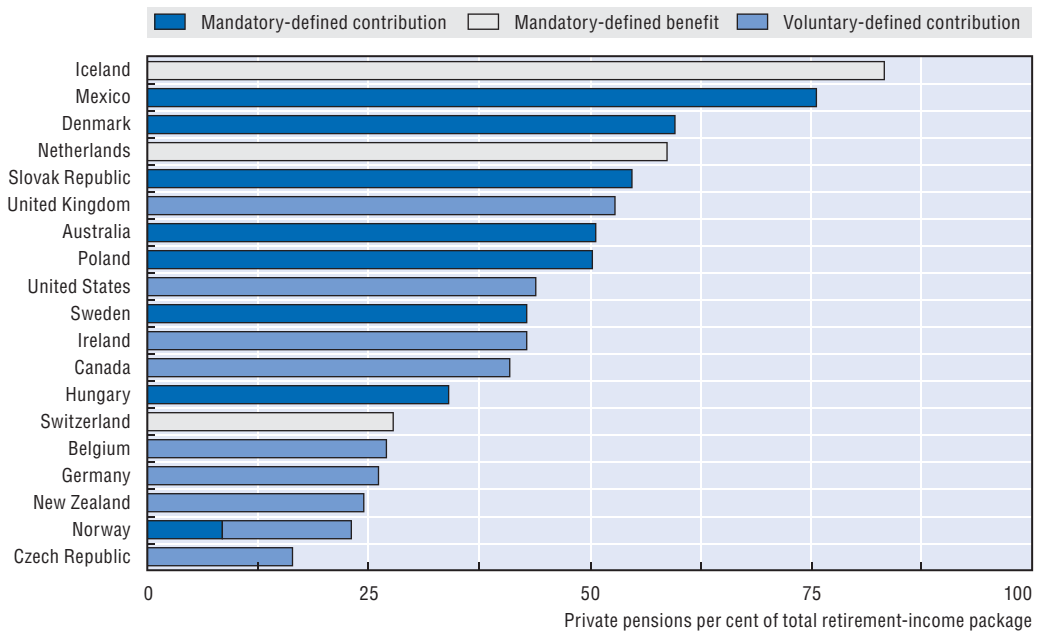
## 2. In which countries are pensions most affected?

OECD countries rely on a wide range of different mixes between public and private, funded and unfunded, and collective and individual pension arrangements. The impact of the financial and economic crisis on pension systems depends strongly on the mix a country has chosen. The larger the funded components are, the more pensions will be affected. And the more important individual pension arrangements are, in particular defined-contribution pension schemes, the stronger the impact on individual retirees.

### ***Private pensions and the retirement-income package***


Private pensions play a large and growing role in providing incomes in old age, a change largely driven by pension reforms over the past two decades.<sup>1</sup> Figure 1.2 illustrates the role of private pensions in the overall retirement-income package for a range of countries. As with the indicators of pension entitlements in Part II of this report, the data presented here are forward-looking, showing the structure of pension provision for workers entering the labour market today. In some countries, the position for new workers will look very different from the pattern for retirees in the next few years as the switch to mandatory private pensions has been relatively recent (see Box 1.2). The chart illustrates the percentage of total retirement incomes coming from private sources for people covered by private pensions: the public-sector component is simply the residual part up to 100%. (This includes resource-tested benefits, basic schemes, minimum pensions and public, earnings-related schemes.) Pension entitlements are calculated for workers earning between 50% and 200% of the economy-wide average and then a weighted average taken based on the distribution of earnings.<sup>2</sup>

Figure 1.2. **The role of private pensions in the overall retirement-income package by type of provision**



Note: Defined-benefit occupational pensions are mandatory in Iceland and Switzerland. They are “quasi-mandatory” in the Netherlands: industrial-relations agreements mean coverage is nearly universal. Defined-contribution plans in Denmark are part mandatory and part quasi-mandatory. Voluntary private pensions in Canada, Germany, Ireland, the United Kingdom and the United States are a mix of defined-benefit and defined-contribution plans. The results are shown for defined-contribution pensions in these cases because new labour-market entrants are much more likely to be covered by these schemes (see Box 1.1).

Source: OECD pension models; see also Whitehouse, E.R. et al. (2009), “Investment Risk and Pensions: Impact on Individual Retirement Incomes and Government Budgets”, Social, Employment and Migration Working Paper No. 87, OECD, Paris, for a detailed description.

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### Box 1.2. **The shift from public pensions to mixed public/private defined-contribution provision**

The United Kingdom encouraged members of the public, earnings-related pension scheme to switch to private pensions from 1988, a policy that was much more successful than expected in part due to “mis-selling” of personal pensions.

Hungary, Mexico, Poland and Sweden adopted the same policy in 1997-99 and the Slovak Republic in 2005. In most of these cases (except Mexico and Sweden), many workers had a choice of pension provision. In Poland, for example, all workers under age 30 and future labour-market entrants had to switch to the new mixed system (see Mattil and Whitehouse, 2009). Workers between age 30 and 50 could choose: around 90% of people in their early 30s chose to switch, compared with only around 10% of people in their late 40s. In Mexico, people already in the public scheme at the time of the reform are guaranteed that their benefit will not be lower than under the old system.

The result is that there will only be a few retirements of workers with defined-contribution schemes in Hungary, Poland and the Slovak Republic for another five to ten years at least. Moreover, in all cases workers will have spent substantially less than a full career in the defined-contribution plan, and so their balances will not be so large and most of their pension entitlements will come from public schemes.



The calculations cover eight countries with compulsory defined-contribution plans and three with mandatory (or near-mandatory) private, defined-benefit plans: Iceland, the Netherlands and Switzerland. Also included are nine countries where voluntary private pensions have broad coverage (see the indicator on “Coverage of private pensions” in Part II of this report) and data are available on average contributions paid to these plans (see the “Country profiles” in Part III). These comprise Belgium, the Czech Republic, Canada, Germany, Ireland, New Zealand, Norway, the United Kingdom and the United States.<sup>3</sup>

In most of the 11 OECD countries not shown in Figure 1.2, private pensions are not significant: in eight of them, assets held in private pensions are less than 5% of national income.<sup>4</sup> However, workers in all countries make voluntary savings for retirement outside of products labelled “pensions”. In some, such as France, life insurance has traditionally been used for long-term savings, and the assets that insurance companies hold have been affected negatively by the crisis. In many countries, people have invested heavily in housing, hoping to finance retirement by moving to a smaller primary dwelling or living on the rental income from other properties. Unfortunately, where this behaviour has been most widespread – Australia, Ireland, Spain, the United Kingdom and the United States – the house-price bubble has burst.

In the 19 OECD countries that appear in Figure 1.2, assets of private pension funds were worth more than 50% of aggregate national income before the crisis hit. The share of private pensions in the retirement income package for the 19 countries shown is just below 50%. It is highest in Iceland and Mexico, where most of future retirement incomes are expected to come from mandatory defined-benefit and defined-contribution plans, respectively.<sup>5</sup> The remainder reflects the government’s payment of resource-tested benefits and minimum pensions to workers with low earnings. Private pensions will also play the predominant role in a further six countries: Australia, Denmark, Iceland, the Netherlands, the Slovak Republic and the United Kingdom. Nearly all of these countries have public retirement-income provision that is heavily targeted on low earners. Interestingly, the United States shows a rather greater role for the public pension – known as social security – than in these other countries.

At the other end of the scale, typical contribution rates tend to be small: around 2%-4% in Belgium, the Czech Republic, Germany and New Zealand. In Norway, the mandatory contribution is 2%; while voluntary contribution rates are higher, they tend only to cover a slice of individual earnings. For Switzerland, it is important to note that the calculations cover the mandatory part of private pensions. Most employers offer higher benefits than the statutory minimum.<sup>6</sup>

The appropriate response to the impact of financial turmoil on pension funds clearly depends on the role these plans play in the overall retirement-income package. The political pressure for action will generally be greater, the higher countries rank in Figure 1.2. The degree of pressure, however, will depend on other factors. For example, Mexico, at the top of the scale, saw relatively small investment losses during 2008 due to conservative portfolios. In contrast, Ireland – in the middle of the scale – saw the largest losses.

### **Types of private pension provision**

As explained above, the impact of the financial crisis on retirement incomes is direct with defined-contribution plans but indirect with defined-benefit schemes. Figure 1.2 shows that eight OECD countries have mandatory or quasi-mandatory defined-contribution

pensions while in only three are private pensions near universally of the defined-benefit type. In six countries, private pensions are voluntary. Here, there is a mix of defined-benefit and defined-contribution provision. And it is a mix that has been shifting over time, as outlined in Box 1.1. The growing role of defined-contribution private pensions means that there is a more direct link between individual retirement incomes and investment performance: the investment risk is shifted towards individuals in their retirement.

### **Maturity of different pension schemes**

Figure 1.2 is based on a forward-looking analysis of pension entitlements, looking at the position of an individual entering the labour market in 2006. However, there is often a long lag between changes in pension systems and their impact on retirement incomes.

There are two key changes in retirement-income provision that imply that the position of younger workers will be significantly different from that of older workers. First, the shift from mainly public pension provision to mixed public/private defined-contribution arrangements is generally only a decade old and so recent retirees will have little or no defined-contribution entitlement (see Box 1.2).

Secondly, the change in private pensions from defined-benefits to defined-contribution is far from mature. In the United Kingdom, for example, the decline in coverage of defined-benefit occupational pensions is concentrated in the period since the early 1990s. Most schemes were simply closed to new members, so most retirees with occupational pensions retiring in the next decade or so will still mainly have defined-benefit entitlements. The shift was earliest and fastest in the United States and somewhat later and slower in Canada and Ireland (see Box 1.1).

### **Recent investment performance of pension funds**

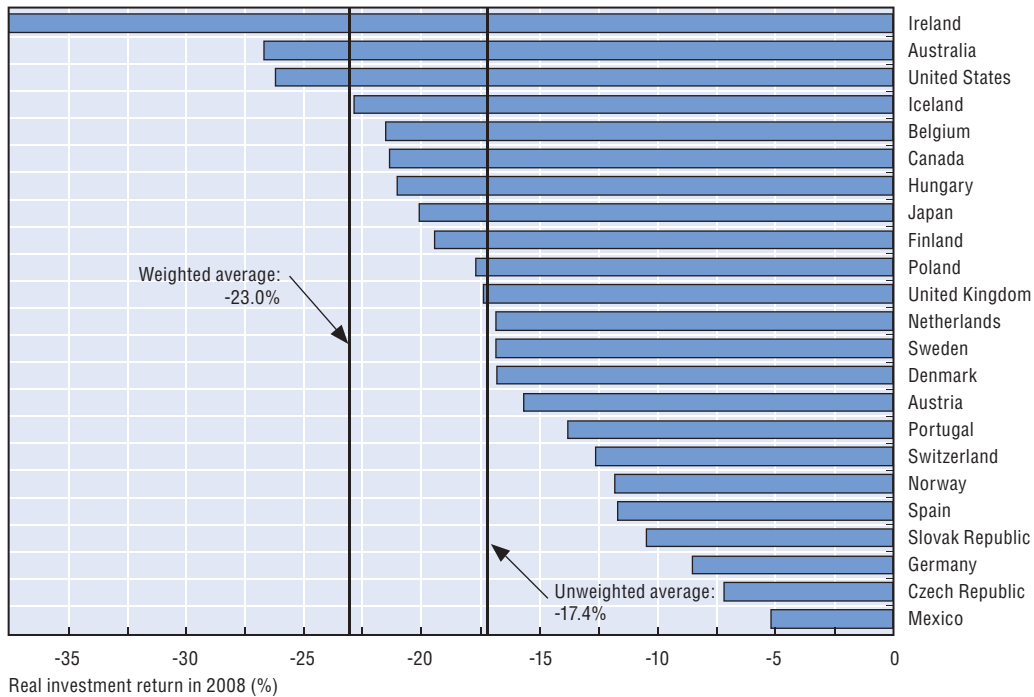
In 2008 as a whole, world stock markets (as measured by the MSCI index) fell by nearly a half and markets were much more volatile than in the past. In contrast, the world government-bond index (Citigroup) increased by around 7%. Property markets in many OECD economies weakened, in some cases dramatically. These assets, along with corporate bonds and deposits, account for nearly all of pension funds' investments. However, pension funds' portfolios differ significantly between countries and so their investment performance last year also varied between countries.

Figure 1.3 presents investment returns of pension funds in real terms (allowing for price inflation) for the 2008 calendar year. Data are shown for 23 OECD countries where private pension funds are large relative to the economy (with assets worth at least 4% of national income at the end of 2007, that is before the crisis gained momentum). The weighted average real return – of minus 23% – reflects the importance of the United States in the figures. The *unweighted* average (including each of the 23 countries equally) was minus 17%.

The United States, which accounts for around a half of all private-pension assets in OECD countries, showed the third largest decline: around 26%. Only Ireland, where the loss was nearly 38%, and Australia, with losses of 27%, showed a worse investment performance in 2008. In another five countries – Belgium, Canada, Hungary, Iceland and Japan – real investments fell by more than 20%.

At the other of the scale, losses were only around 10% in Germany, the Slovak Republic, Norway, Spain and Switzerland. They were smaller still in the Czech Republic and Mexico.


Figure 1.3. Pension funds' real investment returns, 2008



Note: Returns are shown only for countries where pension-fund assets exceeded 4% of gross domestic product (GDP) in 2007. Data are from official sources for Austria, Belgium, Finland, Hungary, Ireland, Mexico, Norway, Poland, Slovak Republic, Spain and Switzerland. Where data on actual pension-fund performance were not available, investment returns were estimated using data on pension funds' asset allocation and the returns on different asset classes. See OECD (2009a), *Private Pensions Outlook 2008*, footnote on p. 23.

Belgium: Data are for the year to end September 2008. Finland: data relate to the mandatory, public-sector occupational plans. Sweden: figures are for occupational schemes. Hungary and Slovak Republic: data are for mandatory private pensions only.

Source: OECD pension statistics.

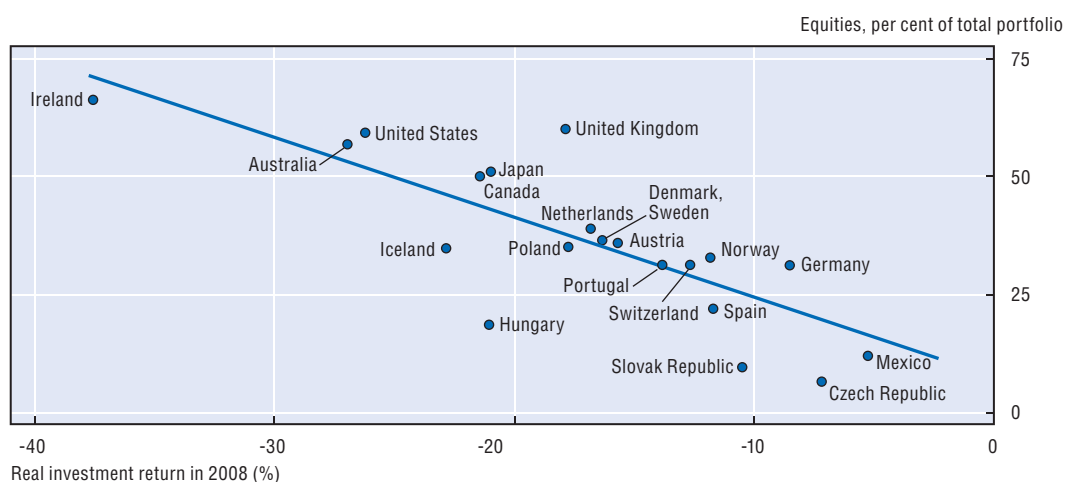
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The major reason for the pattern of investment returns between countries is the way that funds are invested. In countries with smaller losses, pension funds tend to be invested mainly in bonds, especially government bonds. In countries with larger pension-fund losses, there is a greater exposure to equities. This is illustrated in Figure 1.4, which plots the investment returns from Figure 1.3 against the proportion of the portfolio invested in equities. The latter is measured for 2007 to give an idea of the picture before the financial crisis hit: equities' portfolio share will obviously have declined along with stock markets.

There is clearly a very strong relationship. Ireland has both the largest losses and the largest proportion invested in equities: two-thirds of the portfolio. Both equity shares and losses were also relatively high in Australia and the United States. Canada, Japan and the United Kingdom, all with large equity holdings of 50% or more of assets, did not perform as badly.


Most of the countries with the smallest losses in 2008 had bond-dominated portfolios: the equity share was just 6-12% in the Czech and Slovak Republics, Germany and Mexico, for example. However, it is important to bear in mind that over the long term, equities have delivered larger (albeit riskier) returns, an issue discussed in more detail below.

Figure 1.4. **Pension funds' real investment returns in 2008 and equity exposure in 2007**



Note: Where pension funds invest in mutual funds, the asset split of mutual funds from the Institutional Investors database is used to allocate these investments to different assets classes. See also notes to Figure 1.3.

Source: Equity portfolio share from OECD (2009a), *Private Pensions Outlook 2008*, Figure 2.12 and Table 2.8; Australian Prudential Regulatory Authority (2007), *Insight: Celebrating 10 Years of Superannuation Data Collection*; International Financial Services London (2009), *Pension Markets 2009*; The Pensions Regulator (2008), *The Purple Book: DB Pensions Universe Risk Profile*.

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These investment losses directly affect individual defined-contribution pension accounts; however, they have also profoundly affected the finances of defined-benefit pension schemes. Many private, defined-benefit schemes are in deficit: their current and future pension liabilities are larger than the assets that they hold. This is measured by the “funding ratio”, that is, the assets of the fund relative to pension liabilities.

- **Belgium and Finland:** between the end of 2007 and the end of 2008, average funding ratios fell from around 130% to 115%.
- **Ireland:** in December 2008 the aggregate funding ratio was 75%, compared with 120% a year earlier.
- **Netherlands:** the funding ratio for *nominal* pension benefits fell from 144% at the beginning of 2008 to around 90%-95% in early 2009, according to the Department of Social Affairs. (This does not allow for inflation adjustment either of pensions in payment or the accrued rights of workers: see below.)
- **Switzerland:** funding ratios were 116% on average at the end of 2007 but had fallen to 102% by the end of 2008.
- **United Kingdom:** average funding levels sank to 76% in February 2009, compared with 97% a year earlier and 118% at their peak in June 2007 (Pension Protection Fund, 2009).
- **United States:** the average funding ratio in 100 large schemes fell from 109% to 78% in 2008, according to Watson Wyatt, a large consulting firm.

Financial market performance in 2009 to date has not provided any comfort for members of private pensions or for pension-fund managers. Nearly all major stock markets fell further although the world index on 21 May was up 6.4% at the start of the year. Unlike 2008, bond markets have also fallen, primarily on fears of the effects of fiscal-stimulus packages on government debt. The loss to 21 May is 2.3%.

### ***Automatic stabilisers and old-age safety nets***

The overall impact of the crisis on retirement income depends on the automatic stabilisers and anti-poverty safety nets built into countries' pension systems. Most countries have provisions that help prevent retirees from falling into poverty in their old age, which may buffer the impact of investment losses on retirement income for some people.

Most public retirement-income programmes – basic pensions and earnings-related schemes – will pay the same benefit regardless of the outcome for private pensions. However, many resource-tested schemes interact with the value of private pensions. In Australia and Denmark, for example, most current retirees receive resource-tested benefits. The value of these entitlements increases as private pensions deliver lower returns, protecting much of the incomes of low- and middle-earners. The withdrawal rate of the benefit against other income sources is currently 40% in Australia and 30% in Denmark. In Australia, for example, each extra dollar of private pensions results in a 40 cent reduction in public pension. Conversely, a dollar less in private pensions results in 60 cents more from the public pension. More than 75% of older people in Australia and around 65% in Denmark receive at least some benefit from resource-tested schemes.

The proportion of older people receiving such resource-tested schemes is also relatively high in Canada, Ireland and the United Kingdom (20-35%). Low earners will have their overall pensions protected by resource-tested programmes.<sup>7</sup> In all these cases, the public retirement-income programmes act as “automatic stabilisers”, meaning that some or most retirees do not bear the full brunt of the effect of the financial crisis on their income in old age.

However, not all resource-tested schemes use incomes from private pensions in calculating entitlements. The value of the guarantee pension in Sweden, for example, currently received by more than half of retirees, depends only on the value of the public, earnings-related scheme (which has a notional-accounts formula). Losses in private pension savings are thus not compensated for Swedish pensioners.

A second automatic stabiliser of net retirement incomes, faced with investment risk, comes through the personal income tax.<sup>8</sup> In most OECD countries, pensions in payment are taxable. An average earner could expect to pay about 30% of his or her pension in tax in Denmark and Sweden. In Belgium, Germany and Norway, the average earner would pay about 20% of retirement income in taxes and this figure is around 15% in Hungary and Poland. If investment returns turn out to be poor, then governments will collect less in taxes on pensions. The result is that individuals' net retirement incomes will fall by less than the decline in pension funds' asset values.<sup>9</sup> In contrast, pensions are not taxable in the Slovak Republic and special credits, allowances and reliefs for pension income or for older people mean that only retirees with very large incomes from voluntary pensions would pay much in income tax in Australia, Canada, Ireland, the United Kingdom and the United States.

Putting these two effects – taxes and resource-tested benefits – together, automatic stabilisers have much the largest effect in Denmark. The dampening effect on net retirement incomes is also substantial in Belgium, Poland and Sweden and is large in the United Kingdom and the United States.

### **Automatic adjustment of pension benefits**

Three OECD countries – Canada, Germany and Sweden – have mechanisms in place that will automatically adjust benefits to ensure the solvency of the public pension scheme. These could be termed “automatic destabilisers” as they have the reverse effect of the automatic stabilisers described above. Although they protect the finances of the pension scheme, they do so at the cost of varying individual retirement incomes. In each case, the adjustment comes primarily through the indexation of pensions in payment. However, current workers’ accrued benefits can also be affected. A similar mechanism operates in the defined-benefit occupational pension plans in the Netherlands (see Box 1.3 for a discussion).

These automatic adjustments – if they are not overridden – might result in reductions in real benefits for current pensioners. This is due to a mix of the effect of the financial crisis on investment and the impact of the economic crisis on earnings and employment. Lower pension benefits might operate against any economic stimulus to maintain consumption during a recession (see below). A temporary suspension of these adjustments is already in place in Germany and other countries might want to follow suit. However, this would be more difficult in the Netherlands, since these adjustments relate to funded, defined-benefit occupational plans (see the discussion on regulating issues below).

However, it is unfair to single out these four countries: other countries’ retirement-income systems face the same fiscal and financial constraints. It is just that they do not have *automatic* mechanisms to adjust pension entitlements in such bad times.

## **3. Policy responses: what to do and what not to do**

Since the onset of the financial and economic crisis, all OECD countries have been responding to rising unemployment and increasing social distress by taking a range of measures to help both individuals and institutions under stress. This section discusses the various areas of intervention and makes recommendations for short-term measures to stabilise retirement incomes and pension systems without losing sight of the longer-term needs for structural change. Demographic pressures and population ageing have lost none of their threat and urgency, even as the immediate crisis has moved to the forefront of all discussions.

### **Labour-market policies**

Labour markets are already weakening and unemployment is expected to rise significantly as the economic crisis continues. The OECD’s latest forecast for all member countries, issued on 31 March 2009, is that unemployment will increase from 6.0% of the workforce in 2008, to 8.4% in 2009 and 9.9% in 2010.

Experience of past recessions suggests that the impact of weaker labour markets is felt most strongly by people at either end of the age spectrum. Young workers find it difficult to find a job when they leave education. Younger and older workers are often the first to lose their jobs as companies cut back and they are most vulnerable to long-term unemployment. When it comes to retirement incomes, however, younger workers have a long career ahead to make up for any shortfalls. But this is not true of older workers. This section examines how their retirement incomes might be affected by periods of unemployment.

Governments have often relaxed the rules or administration for early retirement or disability benefits in past recessions. This had two objectives: first, to protect the incomes of older workers who lose their jobs and are unable to find another; and, secondly, to limit

### Box 1.3. Automatic adjustment of pension benefits

In **Canada**, there is a review of the financial sustainability of the earnings-related scheme every three years. The scheme is partially funded: the reserve is not designed to cover the entire liabilities but to smooth the required contribution rate over time and, in particular, to prepare for the impact of the large “baby boom” cohort reaching retirement age. If the scheme is deemed to be unsustainable, the law requires a freeze in nominal pensions and an increase in the contribution rate (of half the increase needed to reach solvency) for a three-year period until the next review. Any impact of the economic crisis on solvency would be shared between current retirees and current contributors. However, provincial finance ministers have the power to take alternative action to achieve solvency.<sup>1</sup>

**Germany** introduced a “sustainability factor” into its public-pension scheme – which is based on pension points – from 2005. The size of the adjustment to the value of pension points depends on a measure of the dependency ratio: that is, the ratio of the number of “standardised” beneficiaries relative to the number of contributors. The dependency ratio is “equivalised”: it takes into account that high-earning contributors pay more into the scheme than low earners.<sup>2</sup> The adjustment affects the change in the pension-point value. This means that pensions in payment will not be fully indexed to earnings growth, although a safeguard clause rules out reductions in *nominal* benefits. It equally affects all current workers and pensioners, since the accrued rights and future accruals also be proportionately reduced or increased. In the parlance of this report, both “indexation” and “valorisation” are affected (see the first section of Part III for a definition and discussion of national provisions). The rosy economic outlook at the time of the decision meant that the government promised increases 0.6 to 0.7 percentage points greater than specified in the rules in 2008 and 2009. The fiscal and financial effects of the crisis (and the electoral cycle) mean that such generosity may not be repeated.

The “balance mechanism” in the notional-accounts scheme in **Sweden** also affects both current and future pensioners (i.e., indexation and valorisation). Pensions in payment are indexed to earnings growth minus the “growth norm” of 1.6%. Current workers’ notional accounts are awarded a notional interest rate equal to the growth of average earnings. The scheme’s solvency is tested by comparing the assets and liabilities of the scheme. The assets comprise the value of a buffer fund, currently worth around four times annual expenditures,<sup>3</sup> plus the present value of the flow of contributions (see Settergren, 2001). The liabilities are the present value of the flow of pensions due to current retirees and current workers. If the measure of assets falls below liabilities, the indexation of pensions in payment and the notional interest rate are both reduced until solvency is restored. The ratio of the two reached a low point of 1.0014 in 2004 and remained just over one until 2007. In 2008, however, this has fallen to 0.9672. Under the rules, pension benefits of current and future retirees should be cut to restore the balance.

In the **Netherlands**, occupational pension plans can also adjust indexation and valorisation to help restore solvency. Nearly all occupational plans remain defined-benefits (unlike other countries, such as the United Kingdom and the United States, discussed above). In the past few years, most schemes have moved from a final salary base for calculating pensions to lifetime average earnings, which means that valorisation has a large effect on individuals’ entitlements. The same rate is generally applied to adjust accrued pension entitlements of workers and pensions in payment. Schemes are now required to state their objective for this rate and most plans have opted for a link to earnings, either in their industrial sector or in the economy as a whole.<sup>4</sup> The regulations strongly protect *nominal* benefits of both workers and pensioners. However, there is a less strict requirement for reserves to cover indexation and valorisation, and a series of large plans have this year announced increases less than their stated policy would allow.<sup>5</sup> The Central Planning Bureau has estimated that then loss for workers in their 50s (from indexation cuts and contribution increases) will be around 10% of pension benefits, with smaller losses for younger workers. However, the regulator has allowed pension funds longer to reach solvency and so cuts in indexation might be delayed (see the discussion of “Regulating defined-benefit plans” in Section 3 below).

1. Office of the Superintendent of Financial Institutions Canada (2007) and Brown (2008) offer a full analysis.

2. For a detailed description, see Börsch-Supan and Wilke (2006).

3. OECD (2008), “Pension markets in focus”, *Financial Affairs Division Newsletter*, No. 5, December, Figure 11.

4. See Bikker and Vlaar (2006).

5. This reduction comes on top of indexation in the period 2003-06 that fell 3% behind wage growth and 2% behind price inflation as pension funds recovered from the 2000-02 stock-market crash (Dutch Central Bank, 2007).

the increase in the rolls of registered unemployed. However laudable the short-term objectives, the long-term impact on labour markets is negative. For example, these policies were widely adopted during the recession of the early 1980s. The result was that employment rates remained low well after economies had recovered. The main reason was that these policies proved very difficult to unwind.<sup>10</sup> So far however, governments have resisted the temptation to adopt such policies.

In countries with large and relatively mature defined-contribution pension systems – the United States being the main example – people may wish to work longer to repair their retirement savings. Working longer will help in three ways: first, adding extra contributions; secondly, reducing the number of years of retirement that the pension must finance; and, thirdly, perhaps allowing time for recovery in asset values. However, this may be too optimistic. Older workers may find it very difficult to work longer, because they lose their jobs and, as unemployment rises, are unable to find another. Furthermore, 2009 has so far seen further declines in asset prices and any recovery might be too far in the future to make a difference.

### **Old-age safety nets**

The financial and economic crisis highlights and exacerbates the issue of safety-net benefits in retirement for workers with low earnings and career gaps. Figure 1.5 shows net replacement rates for full-career workers with earnings of half the national average. (The net replacement rate is the individual pension entitlement, net of any taxes and contributions, divided by individual earnings, again in net terms: see the discussion of the indicator in Part II.)

Spain has the same net replacement rate for low earners as the OECD average: 82%. In six countries, the net replacement rate for low earners is above 100%, meaning that net income is higher during retirement than when working. However, net replacement rates are less than 60% in Germany, Japan, Mexico and the United States. Bearing in mind that this calculation is for a low earner, the earnings being replaced are already half of the economy-wide average: old-age safety-nets in these countries are relatively weak.

Once a spell of late-in-life long-term unemployment or early retirement is also factored in, retirement incomes can be lower still. With weaker labour markets, many older workers may be forced to retire early or suffer long-term unemployment. The special chapter on “Recent pension reforms” shows that Belgium, Finland, France, Korea, Spain and the United Kingdom have recently decided to improve old-age safety nets (not included in these calculations). Some other countries, which have weak old-age safety nets, should also consider action.

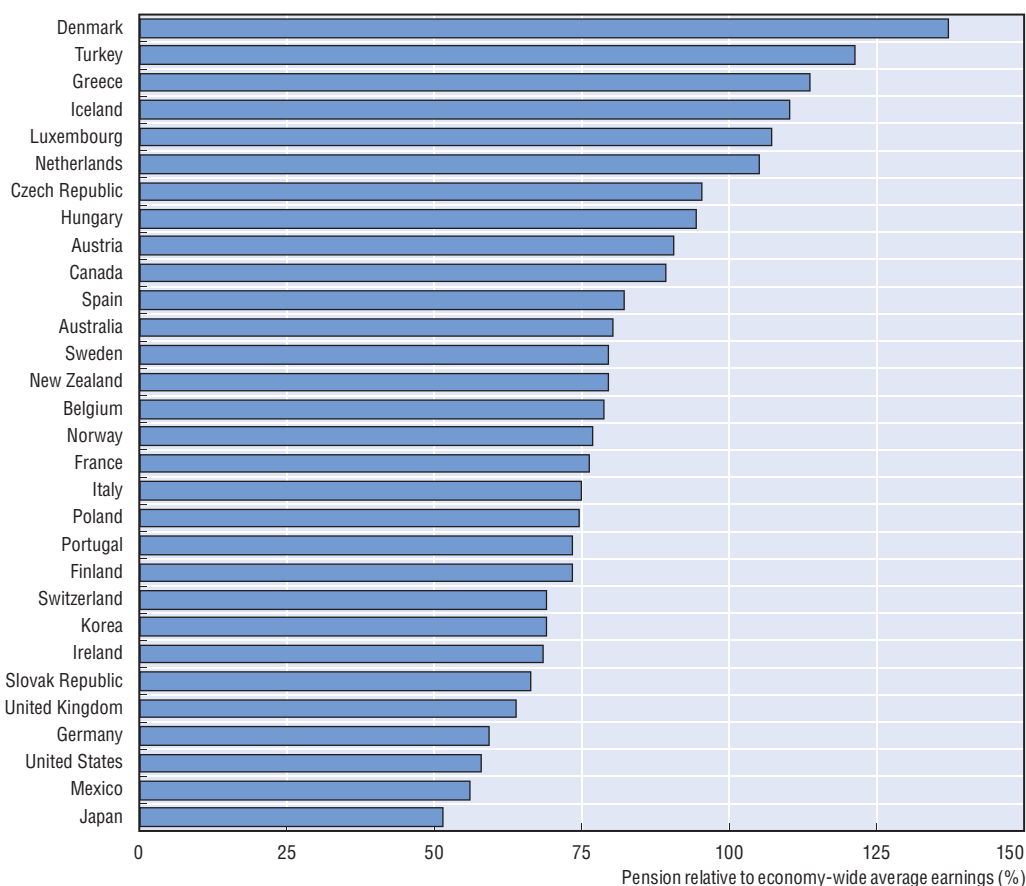
### **Pensions are a long-term issue**

The year 2008 was undoubtedly a bad one for pension funds – see Figure 1.3 – and 2009 has, so far, provided little comfort. Many individuals have understandably lost confidence in private pensions and some policymakers have begun to question the wisdom of the growing role of private pensions in most OECD countries in the past two decades. While not dismissing the genuine hardship faced by some individuals – especially those close to retirement – it is important to remember that pensions are a long-term policy issue.

Analysing 25 years of data on investment returns for the G7 major economies<sup>11</sup> and Sweden, a simulation shows a real annual return of 5.5% for bonds and 9.0% for equities over the 45-year horizon of a full career’s pension savings. Table 1.2 shows the results of the simulation for a “balanced” portfolio: half in equities and half in bonds. The portfolio is assumed to remain unchanged over the career. (Results for different portfolios are shown



Figure 1.5. **Old-age safety nets: net replacement rate for full career workers**  
Percentage of individual net earnings



Source: OECD pension models.

StatLink  <http://dx.doi.org/10.1787/635312665655>

Table 1.2. **Distribution of simulated future investment returns and replacement rates**

	Percentile of distribution								
	10	20	30	40	50	60	70	80	90
Rate of return	3.2	3.8	4.3	4.7	5.0	5.4	5.7	6.2	6.7
Replacement rate	32.2	36.8	41.2	45.2	48.6	53.5	57.6	65.3	74.2

Note: Based on unisex mortality rates of the OECD average projected for 2040. Assumes a contribution of 10% of earnings over a 45-year term.

Source: D'Addio, A.C. et al. (2009), "Investment Risk and Pensions: Measuring Uncertainty in Returns", Social, Employment and Migration Working Paper No. 70, OECD, based on Thomson Financial Datastream information.

in Box 1.4). The results allow for differences between market returns and those achieved by individuals on their pension savings, due to administrative charges, costs of converting accumulated balances into annuities, etc.<sup>12</sup> As a result, the average (median) return in this simulation is 5.0%, which compares with the 7.3% average over the last 25 years.

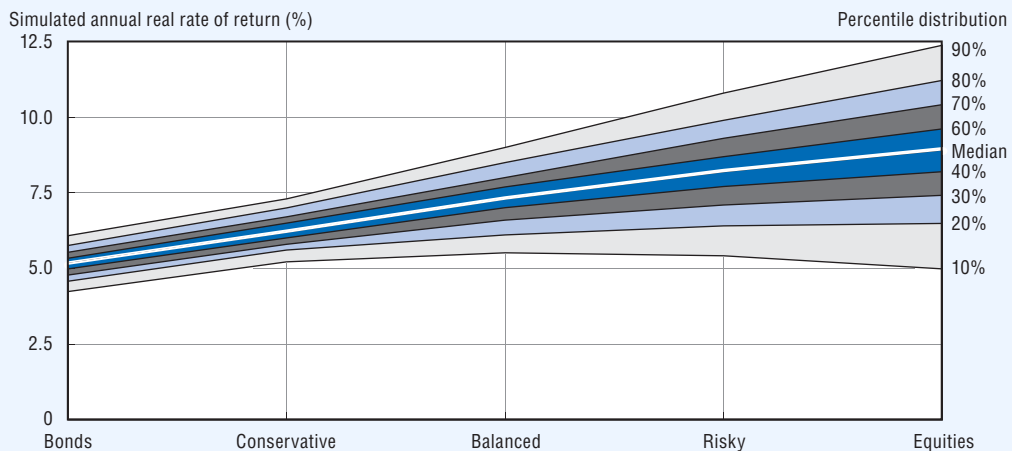
### Box 1.4. Long-term investment performance of different types of assets

The data in Figures 1.3 and 1.4 showed that countries where pensions are invested conservatively – in government bonds, for example – saw much smaller losses in 2008 than countries where equities play a more important role in pension portfolios.

The following analysis assesses the effects of investment performance over the lifetime of contributors, rather than focusing on investment outcomes for a single year. It is a simulation of a 45-year pension investment based on analysis of around 25 years of data for eight countries, ending in 2006.\* Note that the results in the text differ because the returns used there take account of administrative charges, etc. The key results are shown in Figure 1.6. The chart presents the range of simulated returns over the long horizon of pension savings. It focuses on the two key assets in pension funds' portfolios: equities and government bonds. At the left- and right-hand ends of the horizontal scale, returns are shown for equities and bonds. In between are three portfolios – here called “conservative”, “balanced” and “risky” – that mix the two different assets in different proportions.

The white line in Figure 1.6 shows the median real return: half of the time returns will be above this level, and half the time below. This is 7.3% for a balanced portfolio, half-and-half in equities and government bonds. It is higher – 8.9% – for equities and lower – 5.2% – for bonds. The shaded areas of the chart show the likelihood of different outcomes, based on past experience. With a balanced portfolio, real returns are expected to be 5.5% a year or less 10% of the time. Equally, they are projected to exceed 9.0% a year also 10% of the time. The shaded areas fan out as the equity share in the portfolio increases, reflecting the greater volatility in returns on the stock market than on government bonds.

Figure 1.6. Distribution of simulated annual average investment returns



Note: Simulation based on historical data on returns for eight OECD countries: the G7 plus Sweden. Conservative portfolio is assumed to be 25% invested in equities, balanced 50% and risky, 75%. The remainder is assumed to be invested in government bonds with a range of maturities.

Source: D'Addio, A.C. et al. (2009), “Investment Risk and Pensions: Measuring Uncertainty in Returns”, Social, Employment and Migration Working Paper No. 70, OECD, based on Thomson Financial Datastream information.

StatLink  <http://dx.doi.org/10.1787/635328886382>

\* The modelling involves complex time-series econometrics. First, a Generalised Autoregressive Conditional Heteroskedasticity (GARCH) process is estimated using monthly historical returns on equities and bonds (including both changes in asset values and income from dividends and interest). Secondly, a Filtered Historical Simulation method is applied to the results to project the range of future outcomes. The results presented here are based on 10 000 simulations. See D'Addio, A.C. et al. (2009) for details.

The analysis also investigates the scale of risk and uncertainty over investment returns. In the worst 10% of cases, for example, returns are expected to be just 3.2% a year or less. In the best 10% of cases, annual returns are 6.7% or more (upper line of Table 1.2).

There is an important *caveat*: the simulations are based on around 25 years of data, but the series analysed only reaches to the end of 2006. The more recent period includes both substantially negative returns on equities *and* much greater volatility. However, the equity market crash of 1987, included in the data, saw prices fall as much as 2008. Also, the end of the technology-stock bubble, which led to substantial stock-market falls in 2000-02, is in the time period covered.

The range of long-term investment returns does not appear very large. However, compounding these returns over the long time horizon involved in retirement saving has a huge effect. This is shown in the lower line of the table, which shows the replacement rate at these different levels of return. The model assumes a full career of contributions at 10% of individual earnings each year. The accumulation of retirement savings is converted into a flow of pension payments based on OECD average mortality rates projected for 2040. The result is presented as a replacement rate: the ratio of pension in retirement to earnings when working.

The replacement rate with the average (median) rate of return from this contribution of 10% of earnings is 49%. This means that half the time the replacement rate would be higher, and half the time, lower. However, in the worst 10% of cases, the replacement rate is 32% or less. The best 10% of cases yield a pension worth 74% of earnings. This range of 32-74% is very broad. It encompasses a “comfortable” retirement and “borderline old-age poverty”.

### **Investment choice**

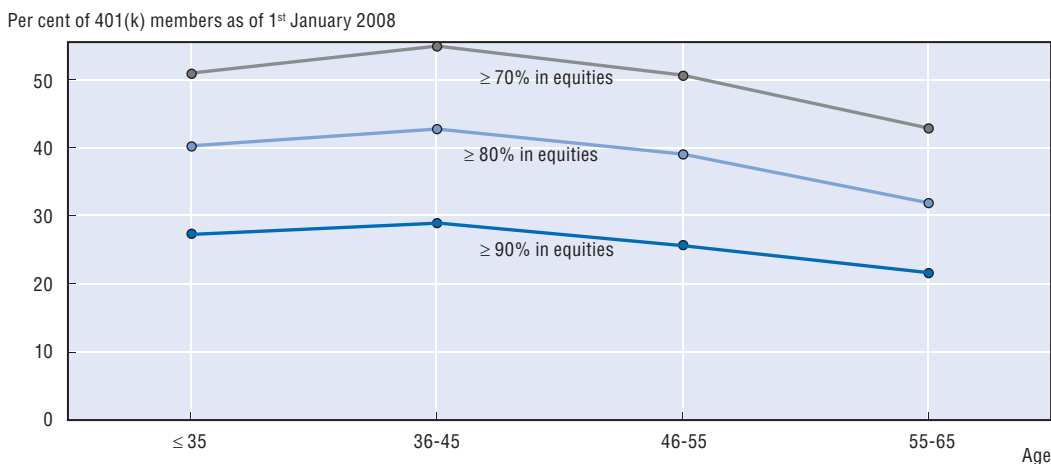
Individuals can choose their investment portfolio in most defined-contribution pension plans. In Australia, for example, around 85% of people are members of a scheme with investment choice, typically among five different funds. However, individuals are now free to choose among different pension providers: the menu of investments in retail funds averages 58. There has also been an expansion in choice in the most common defined-contribution arrangement in the United States. In the late 1970s, only 16% offered investment choice but by 1994 this had already climbed to 94%. More than half of schemes now offer five or more different kinds of investment. Each provider in Mexico and the Slovak Republic is required to offer a small range of funds with different risk-return characteristics. As a result of the crisis, Poland has recently announced plans to introduce a similar choice of investment portfolio.

For defined-benefit as well as defined-contribution plans, pension-fund investment regulations have been liberalised over the past decade. For example, only 12 OECD countries still set quantitative limits on equity investments. Even these are set at relatively high levels, an average of 52% of portfolios.<sup>13</sup> This allows pension fund managers to diversify their portfolios.

The investment choices that people have made will have important implications for the effect of the crisis on their pensions. Figure 1.4 explored this issue at the aggregate level: comparing pension funds’ overall performance with the proportion of overall assets invested in equities. The analysis that follows looks at *individual* investment choices and their policy implications.


Figure 1.7 shows that individuals in the United States tend to shift away from equities towards less risky investments as they approach retirement. For example, around 55% of 36-45-year-olds hold more than 70% of their portfolios in equities, falling to 43% of people aged 56-65. The portfolio share of equities of this group of older workers, close to retirement, seems very high: more than one in five hold more than 90% of their 401(k)s in equities. Of course, it is impossible to assess the riskiness of people's financial decisions as a whole: they may, for example, hold lower-risk deposits and bonds outside of their 401(k)s. But it is a worrying indication: these workers close to retirement will have seen their pension savings significantly eroded relative to the minority who held most of their portfolios in lower-risk assets.

Figure 1.7. **Percentage of 401(k) plans in the United States invested in equities by age**



Note: Data cover drawn from the 21 million 401(k) participants in the database of the Employee Benefit Research Institute (EBRI) and the Investment Company Institute (ICI). The total proportion invested in equity is calculated as the sum of equity funds, holdings in the individual employer's stock and the relevant portion of mixed investment options (such as balanced and target date funds).

Source: VanDerhei, J. (2009), "The Impact of the Recent Financial Crisis on 401(k) Account Balances", Issue Brief, No. 326, Employee Benefit Research Institute, Washington DC.

StatLink  <http://dx.doi.org/10.1787/635332670337>

What are the implications of this type of investment behaviour for policy? Should people be restricted in their choices to prevent them from having their old-age savings wiped out? Or should this be an individual decision and a risk to take at people's own discretion?

It is appropriate that people direct pension savings towards less risky investments as they near retirement (and thus the moment when the retirement savings will need to be drawn). This is a well established finding of the finance literature.<sup>14</sup>

At the least, therefore, government should encourage individuals to adopt this strategy. This shift, often called lifecycle investing, can reduce investment risk over the career without the sacrifice of financial returns from a broader portfolio at younger ages. Indeed, it would be sensible that this shift be automatic and that it should be the *default* option. Using a lifecycle approach as a default puts investments on "automatic pilot" and is especially useful for individuals who do not want to manage their portfolio actively (probably the majority). Such a policy can be adopted while preserving individual choice between portfolios with different risk-return characteristics (for the minority who do want to take their own investment decisions).

### **Benefit choice**

As discussed above, holders of annuity contracts were less affected by the crisis as their retirement income was already safely locked in and guaranteed until the end of their lives. People with defined-contribution pensions are often required to buy an annuity at the time of retirement. A high equity exposure of the fund just before retirement risks much lower living standards after a financial crisis. In such a case, restrictions on investment choice – limiting it to lower risk options – may be appropriate for people nearing retirement.

Countries should also reconsider mandating individuals to annuitise the balance in defined-contribution at a specific time or age. This risks locking in low asset values, with lower benefits throughout retirement. Some already allow “phased withdrawals”, where a defined part of the fund balance can be withdrawn each year. Others might also adopt this more flexible approach. Ireland, for example, will allow retirees to draw a lump sum from their pension accounts but defer annuity purchase with the balance for up to two years.

However, phased withdrawals are not without their own risks: as with people near to retirement, some restriction of investment choice of people after retirement is needed. Furthermore, the rules determining the amount that can be withdrawn each year must be careful to avoid leaving people in penury in very old age. Governments should also explore a combination of phased withdrawals with a “deferred” annuity, to be bought at the time of retirement, which only pays out once individuals reach an advanced age (between 75 and 85 years, for example).

For the short-term, then, governments may wish to relax mandatory annuitisation temporarily until asset prices recover. But for the long term, annuities should be encouraged to protect people from a range of uncertainties: investment risk, longevity risk (outliving retirement savings) and, with indexed annuities, inflation risk.

### **Pension-plan choice**

The financial-market turmoil and the losses incurred in private pensions have already led to pressures to allow people to switch back into the public scheme.<sup>15</sup> One example is the Slovak Republic. A six-month window was offered between January and June 2008 for people to opt back into the state scheme. The window for opting back has subsequently been extended, although in the first half of 2008 only 6% of members of the private plans chose to switch back.

This low take-up might result from inertia, but it could also indicate that people value the diversification of retirement provision that private pensions bring. Some 60% of Slovak workers actively chose the defined-contribution pension option at the time of reform. More significant for the long-term development of the Slovak pension system is a potential reduction in the flow of new contributors. It is no longer compulsory for labour-market entrants to join the private funds. Here, inertia might work in the opposite direction, reducing the numbers choosing private pensions. Since the decision is, on current rules, irreversible, this will have long-term effects on the retirement incomes of new labour market entrants.

There has been much discussion of allowing individuals to opt back into public pensions in other countries that adopted mandatory private pensions, most notably in central and eastern Europe. (Argentina went much further and nationalised its private pension funds: see Box 1.5.)

### Box 1.5. Nationalising private pensions: Argentina

The government of Argentina nationalised its mandatory private pension funds, worth USD 30 billion (EUR 23 billion), in October 2008. The government presented this asset-grab to the public as a way of protecting contributors from alleged mismanagement amid the global financial crisis. But it is clear that an important motive was to replenish the government's coffers at a time when large repayments of public-sector debt were about to fall due.

The economic significance of this policy is not as large as might appear at first sight. This is, first, because Argentina maintained a large public pension, unlike other countries in Latin America such as Chile and Mexico (see Whitehouse, 2007). Secondly, much of the assets of the pension funds were already invested in non-marketable government debt.

Nonetheless, this policy shift is clearly destructive of stability and sustainability of retirement-income provision.

These policies undermine the stability of the pension system. First, demand for policy changes will simply recur. Although in the current gloom it may seem blindly optimistic, if investment returns were to be plus rather than minus 25% in a couple of years' time, people might wish to switch back to the private scheme with retrospective effect.

Secondly, if people are able to buy back their public pension rights using the diminished asset values in their private plans, this will give a short-term boost to the public finances as the funds are transferred. Many cash-strapped governments would welcome this short-term gain. But the cost to public pension spending will be greater in the medium- and long-term than the short-term gain.

The motivation for these changes has primarily been the fiscal crisis that has resulted from the economic and financial turmoil. It is unsurprising that governments wish to plug deficits with the revenues from contributions that go into private pensions. A more sensible way of achieving this goal is temporarily to reduce the contribution going into private pensions. Although no OECD country has adopted this strategy, it will be used in Latvia and Lithuania, for example.

### ***Informed choice***

The financial crisis has also brought issues of investor information and financial education to the centre of the debate again. Most individuals are not well informed about pensions, lacking both general facts about the pension system's structure and specific data on their own pension entitlements. This applies to pension systems of all types.

Private pension plans often place greater responsibility on individuals for planning their retirement income than public programmes. For example, people might need to choose between a range of competing pension managers or between different investment portfolios. And in many pension reforms, individuals had a choice over whether to join the defined-contribution pension scheme or to remain in a public, earnings-related scheme (see Box 1.2 above).

Effective disclosure by providers and broad-based financial education programmes can help people make informed choices about their retirement provision. This is highlighted in the current crisis, when the risk is that people make decisions based on short-term conditions that have negative implications over the long term. The crisis has clearly undermined public confidence in private pensions, bringing with it the risk that people will be more reluctant than ever to save for old age.

## Public guarantees

Should governments bail out individuals' pension accounts in the same spirit as the public rescue of banks? As noted previously, governments already stand behind many countries' occupational, defined-benefit schemes. The discussion that follows focuses on defined-contribution plans. (The one case of a bail out in practice – in Israel – is discussed in Box 1.6.)

### Box 1.6. Anatomy of a pension bail out: Israel

Israel's government will compensate workers near to retirement who lost money in voluntary occupational pension schemes (of three different types, known as provident funds, executive insurance plans and budgeted pension funds). Workers must be aged 57 or older to qualify and have money invested in uninsured funds. The guarantee will apply to pension balances up to USD 350 000 and cover losses up to half of that figure.

The government expects that around 200 000 people could eventually benefit (equivalent to around 15% of the population currently aged over 55). The total cost is estimated at around USD 37 billion, spread over 13 years, worth around 23% of annual gross domestic product (GDP).

However, the compensation is limited to losses made since November 2008, so it is more of a guarantee against future losses than a bail out of pension funds to compensate for the impact of the financial crisis so far.

Israel has broad coverage of occupational pensions, which are mainly DC, with a single fund for all workers and no investment choice. Assets of private pension funds were worth 33.6% of GDP in 2007 (OECD, 2009a, Figure 2.25).

The case for government intervention rests critically on the design of the retirement-income system. It is weaker in countries where there is a sizeable public pension. Where people have investment choices – particularly where there is a default that shifts to less risky assets as people near retirement – there is also less of an argument for intervention.

Working in the opposite direction, governments may have a moral, if not a statutory, duty to help where defined-contribution pensions are mandatory rather than voluntary and annuitisation at retirement is obligatory.

A direct bail out, paying money into people's pension accounts, could prove to very expensive. Also, this cost would come at a time when the public finances are being squeezed by recession and economic-stimulus packages. The OECD expects that average government net borrowing in member countries will increase from a low point of 1.3% of gross domestic product (GDP) in 2006 to 7.2% in 2009 and 8.7% on 2010. These forecasts, issued on 31 March 2009, already show the public finances in one of their poorest states ever seen in peacetime. Moreover, in the short term at least, the money from a bail out of pension accounts would go into savings and so would provide little support for domestic demand during the recession.

In contrast, providing support to the retirement savings of those most affected by the crisis through the public pension system would have the advantage of spreading the cost over time. The payments would be made over the period of an individual's retirement rather than in one go either now or at the time of retirement. This would also allow for greater efficiency and flexibility: support could be targeted on low-income retirees, for example.

There is also a risk of moral hazard resulting from a direct bail out of pension funds. This is because the expectation of a bail out *next time* something goes wrong will encourage people to behave more riskily once the current crisis is over.

A bail out would make most sense for people who are close to pension age. However, this poses great political difficulties. If it were restricted, say, to people within a few years of normal pension age, then workers just slightly younger than the cut-off age would feel cheated. Similarly, retirees who annuitised their pension only recently, locking in financial-market losses, would complain if their contemporaries who kept their money in financial markets were to be compensated.

For these reasons, *ad hoc* guarantees of investment returns or compensation for losses in asset values should be avoided. Issues of equity and the fiscal impediments to paying money directly into pension funds, mean that governments should instead rely on their public-pension schemes to ensure that negative returns on pension funds over one year do not translate into widespread old-age poverty for one generation of retirees. Paying any compensation as a public pension benefit spreads the cost over the period of retirement of the individuals involved, reduces political tensions and alleviates problems of moral hazard.

### **Pension systems and engineering economic and financial recovery**

Pension systems might play a part in helping recovery from the crisis. First, public pensions could be beneficiaries of fiscal measures to stimulate the economy. Secondly, many countries have large accumulations in private pension plans and public reserves. Thirdly, private pension funds continue to play an important role in financial markets as long-term investors.

Public pensions are part of economic stimulus packages that have been announced in some countries. In the **United Kingdom**, for example, additional payments of pensioners of at least GBP 110 have already been made and indexation of the basic pension and the pension credit, targeted on the low-income elderly, will be more generous, the latter at a cost of GBP 300 million a year in 2009-12.<sup>16</sup> The economic stimulus in **Australia** also includes extra payments to pensioners. A one-off payment of AUD 1 400 was paid to single pensioners and AUD 2 100 to couples in December 2008. The **United States** will pay USD 250 to all recipients of public pensions in May 2009 at a cost of USD 13 billion. **Greece** has also made a one-off payment to people on low incomes, including pensioners, of between EUR 100 and EUR 200. **Belgium, France** and **Spain** have all announced additional increases in minimum pensions. In Spain, for example, the increase is 6.4%.

In all these cases, the additional help will be worth most to low-income pensioners, which should help reduce old-age poverty. In Australia, for example, poverty of older people is more than double that of the population as a whole and the old are also more likely to be poor in Greece (see the special chapter on “Incomes and poverty of older people”). Other countries with high rates of old-age poverty might also consider additional short-term payments to older people as part of economic-stimulus packages. Some less orthodox policies of ensuring that fiscal stimulus supports domestic demand are explored in Box 1.7.

The second role for pension in engineering economic recovery is using the assets in pension funds and reserves to support demand. In an ideal world, of course, these assets would be strictly ring-fenced and preserved solely for providing income in retirement. But the current situation is far from ideal.



### Box 1.7. Economic stimulus, domestic demand and consumption

A potential problem with fiscal and monetary stimulus is that people use the money to save to repair their balance sheets. This undermines the effect on consumption, and so, on domestic demand. Japan has, in the past, experimented with handing out “shopping vouchers” as a way of maintaining levels of consumption during a recession. Vouchers for low-income households will form an important part of Korea’s stimulus package. Since the poverty rate of older people in Korea is 45% – compared with less than 15% for the population as a whole – people of pension age are likely to be major beneficiaries. (See the special chapter on “Incomes and poverty of older people” in this report.) Italy has issued 0.5 million “social cards” to older people and families with children on low incomes. The card is worth EUR 40 a month towards basic goods and services.

The concept of these voucher programmes, which are designed to ensure that the stimulus money is spent rather than saved, has a long history. One proposal during the great depression of the 1930s aimed to increase consumption by a paying flat monthly amount to retirees aged 60 and over. The payment would be made in bills with a colour coding to ensure that their value expired and so they would be spent by the fifth day of the next month. The Townsend plan, named after its founder, a physician from California, rapidly gained momentum after the doctor wrote an extended letter to the editor of a local newspaper. A nationwide organisation, under the alliterative slogan “peace and prosperity thru pensions” soon developed. The introduction of social security (public pensions) by the Roosevelt administration in 1935 is widely credited to this campaign (Amenta, 2006).

Townsend’s plan failed to be adopted for two main reasons. First, the amount of the flat-rate pension was very high. Secondly, it was to be financed by a national sales tax which was felt to favour large, vertically integrated corporations. Nevertheless, it shows one way of ensuring that a fiscal stimulus increases domestic demand, which is particularly significant for most Asian economies, both inside and outside the OECD.

**Australia** permits people to use their private pension savings to avoid foreclosure on their houses when mortgage payments are in arrears. Access to the pension accounts is controlled to ensure that all other options for dealing with mortgage arrears have been exhausted. It is difficult to argue that people should have ring-fenced retirement savings while losing their homes.

Early access to account balances in the “special pension” plan will be allowed in **Denmark**. Balances are relatively low – DKK 14 600 or USD 2 600 – because the contribution rate is just 1% of earnings and contributions have been suspended since 2004. The government expects around a quarter of people to withdraw their balances.

**Iceland** will allow people to access their retirement savings in occupational plans beyond those needed to finance the mandatory replacement rate. They will also be able to use funds generated from voluntary contributions to relieve financial distress.<sup>17</sup> The Ministry of Finance (2009) estimates that around ISK 75 billion will be accessible, equivalent to more than 5% of GDP. The replacement rate from the mandatory private pension in Iceland is well above the OECD average, and so there is no harm to adequacy of retirement incomes from allowing access to these additional retirement savings.

In the **United States**, around 90% of members are allowed to take loans from their 401(k) accounts. In 2007, only 18% of those eligible had taken a loan and the average size was only 12% of the account balance (VanDerhei et al., 2008). Both figures have remained fairly constant over time despite cyclical fluctuations in the economy. Detailed analysis suggests

that this facility is used responsibly: loans drawn from retirement-savings accounts are not large and they are repaid (see Kusko *et al.*, 1998; and General Accounting Office, 1997). The law requires repayment with interest at market rates, otherwise the loan is treated as an early withdrawal and subject to tax penalties. Early withdrawals are allowed, without fiscal penalty, in carefully defined cases of severe hardship. But much the greatest “leakage” of earmarked retirement savings happens when people changes jobs. Approximately two-thirds of people do not “roll over” their 401(k) balances into another pension plan, despite the tax penalty, although these are typically small balances (two-thirds of assets are rolled over).

**Norway**, with the second largest sovereign wealth fund in the world, will tap these reserves to finance a fiscal stimulus package worth a total of 2.3% of GDP. The reserve, known as the Government Pension Fund – Global, may also be used to bail out banks. Norway’s bank recapitalisation has so far cost 13.8% of GDP, the second largest relative to national income in the world. **Ireland**, which will also use its pension reserves to pay for bank recapitalisation (see above) has so far spent close to the average of the G20 countries of 5.3% of GDP.<sup>18</sup>

Again, in an ideal world these reserves would be ring-fenced to provide for the future costs of ageing in terms of pensions and healthcare expenditure. In practice, bank recapitalisation is going to hit the public finances hard. It is difficult to see much economic difference between governments using these reserves or issuing bonds to pay the costs: the public sector’s overall financial position is unchanged. The main worry is that this sets a precedent, and the reserves are continually tapped whenever governments are short of cash, leaving the coffers bare as the financial pressures of ageing get stronger.

Thirdly, pension funds might be able to play a role in stabilising financial markets. Private pension plans generally have very small liquidity needs (to pay benefits and cover administrative expenses) relative to their total assets under management and compared with other institutional investors. Pension funds also have long investment horizons. The main exception to the rule of low liquidity needs and long horizons comes from defined-benefit plans that are closed to new members. These are often running down assets to pay benefits. They are significant in countries such as the United Kingdom and the United States where the shift to defined-contribution plans has been most rapid (see the discussion in Box 1.1 above).

Pension funds will generally, therefore, not need to sell assets at the low prices currently prevailing to meet their liabilities since they can rely on a continual flow of contributions and investment income. However, this depends on the way pension funds, particularly defined-benefit plans, are regulated (which is discussed in the following section). Developments in accounting and regulatory standards, particularly those that force pension funds and sponsoring companies to recognise low prevailing asset values, might limit pension funds’ role in helping to mitigate financial turmoil.

### **Regulating defined-benefit plans**

Governments generally impose funding or solvency rules on defined-benefit, occupational schemes. These rules, typically policed by independent supervisory agencies, are designed to ensure that the assets currently held in the pension fund will be sufficient to meet the stream of future liabilities, mainly in the form of pension payments to current and future retirees. The funding rules have been tightened in recent years in a number of countries. Indeed, some sponsoring employers are still making additional contributions to make up for shortfalls created during the decline in financial markets in 2000-02.

A common response to the current crisis has been to extend the “recovery periods” during which defined-benefit pension plans must restore their solvency. This makes sense in a recessionary environment, where company profitability is declining and access to credit is heavily restricted. Companies’ cash-flows are already being strangled and so forcing employers to increase contributions to their underfunded pensions may only make matters worse. It may even threaten the solvency of sponsoring companies, which is obviously not in the interest of beneficiaries.<sup>19</sup>

The regulator in the **Netherlands** has extended recovery periods from three to five years, although it has stuck to the deadline of 1 April this year for outlines of schemes’ recovery plans. Recent proposals to increase the pension age are, in part, designed to reduce the adjustments needed to contribution rates and indexation of pensions in payment and accrued retirement benefits of workers (see also Box 1.3). In **Ireland**, the regulator has adopted a range of measures to help insolvent occupational schemes: i) extra time for filing recovery proposals; ii) longer periods for recovery plans, of ten years or more where appropriate; iii) taking account of voluntary employer guarantees. The government has also recently announced plans to protect workers with accrued pension rights when occupational plans are wound up due to insolvency of the employer. A temporary easing of funding requirements for employer-sponsored pension plans was included in the Pension Protection Act in the **United States**. In **Canada**, the authorities are considering an increase in solvency refinancing periods from five to ten years. In **Norway**, the implementation of a requirement to hold additional reserves against increasing life expectancy has been deferred from three to five years’ time. Finally, concerned at a forced sale of equities at a bad time, **Finland** will also suspend some solvency requirements until the end of 2010.

Some countries are also reconsidering recent changes in the standards for valuing pension-fund assets, particularly the introduction of “fair-value” or “mark-to-market” methods that, among other things, use discount rates that take account of both the maturity of pension liabilities and the current level of market interest rates. For example, pension funds in Denmark will be allowed to calculate solvency on the basis of a return to “normal” conditions. A similar policy has been adopted in Finland and is being discussed elsewhere. However, the regulator in the Netherlands has so far resisted pension-industry pressure to change the interest rate used to discount future pension liabilities.

However, it is critical that these policies – especially the extension of recovery periods – is clearly time-delimited and does not become a permanent weakening of funding regulations. The ultimate effect of this would be to reduce the protection of workers’ incomes in retirement. The presence of pension guarantee funds<sup>20</sup> also means that public money is at risk.

#### 4. Conclusions: security through diversity<sup>21</sup>

It is a time of sinking asset prices, shrinking economic output and rising unemployment in nearly all OECD countries. The short-term political pressures on governments to respond are huge. But it is important to resist expedient reactions that threaten the long-term stability and sustainability of retirement-income provision. It is also crucial to keep in mind that the long-term challenges to pension systems arising from demographic change and population ageing have not gone away. The short-term pressures have only aggravated these long-term problems.

The financial crisis means that *investment risk* is at the forefront of the minds of both the public and policymakers. But it is important to remember that there is a range of risks and uncertainties that affect pensions. This is because they are long-term contracts. Much can change in the 40 or more years between the time people enter the labour market, and so the pension system, and when they retire.

Public pensions, for example, impose the risk that governments (or rather voters) change their minds about what is a reasonable retirement income and pay lower pension benefits than expected. Taxpayers will be both fewer in number and more reluctant to part with their money if the financial crisis turns into a prolonged and severe economic downturn. Problems in the real economy will also affect retirement incomes as a result of higher unemployment and lower wages.

The problems for private pensions arising from the financial turmoil are not a sufficiently good reason for replacing private pensions with public provision. Many countries are already in a weak fiscal position which is projected to worsen further as economies slow. The emerging costs of population ageing on healthcare, as well as pension systems, mean that such a policy would threaten medium- and long-term sustainability of the public finances.

The best approach to pension provision is to use a mixture of sources of retirement income, including both public and private, as well as the two main forms of financing (pay-as-you-go and funded pensions). Relying solely or largely on one source in the face of different kinds of risk is imprudent.

The OECD has long advocated *diversified* retirement-income provision, arguing that “diversity has many virtues” (OECD, 1998). The report on *Maintaining Prosperity in an Ageing Society* went on to say that “each of the elements of the system has its own strengths and weaknesses and a flexible balance among them not only diversifies risk but also offers a better balance of burden-sharing between generations”.<sup>22</sup>

There are economic, demographic, financial and social uncertainties in pension systems and for individuals. It is clear that the best approach for an individual – and, by extension, for a government seeking to do the best thing for its citizens – is to use a mixture of ways of providing retirement incomes. Diversity of pension provision is the best way to deliver security in old age. The current crisis has not devalued this message.

## Notes

1. OECD (2007a), Martin and Whitehouse (2008), and Queisser et al. (2007) provide a detailed discussion of these reforms.
2. See the discussion of the indicators of “Weighted averages: pension levels and pension wealth” and “Structure of the pension package” in Part II of this report.
3. It is important to note that there is substantial variation in contribution rates between individuals. For example, lower earners and younger workers tend to contribute less on average.
4. For the other three countries that are not covered in Figure 1.2 – Japan (private pension assets worth 20.0% of GDP), Portugal (13.7%) and Spain (7.5%) – information is not available on typical scheme rules. Nevertheless, the assets of these private pensions are lower than most of the countries shown in Figure 1.2. See the indicator of “Assets in private pension fund and public reserves” in Part II of this report.
5. However, workers already in the labour market at the time of the Mexican reform will continue to have most of their pensions paid by the government: see the special chapter on “The pension gap and voluntary retirement savings” in this volume.

6. Unfortunately, data are not available on typical rules to enable the OECD to model these entitlements.
7. See Box 2.1 below and Pearson and Whitehouse (2009) on the coverage of resource-tested schemes among retirees.
8. See Keenay and Whitehouse (2003a and b) for analysis of the role of the tax system in old-age support.
9. Whitehouse *et al.* (2009), Table 4, provides detailed data. This paper also analyses the impact of taxes on net retirement incomes with different investment returns.
10. OECD (1996, 2008) and Ebbinghaus (2006) provide a detailed analysis. See OECD (2009b) for a comprehensive picture of the impact of the crisis on labour markets and social policy.
11. Canada, France, Germany, Japan, Italy, the United Kingdom and the United States.
12. See D'Addio *et al.* (2009), Sections 6-9, for a discussion.
13. The tightest restrictions on equity investments are in Korea and Mexico (30%) and Germany and Norway (35%); see OECD (2009a), Figure 2.18. In some countries, pension managers must offer a range of funds with different risk-return characteristics. The equity limit for the central or balanced fund is used to compute the cross-country average.
14. Put simply, younger workers generally have few assets other than their human capital (*i.e.* their future earnings). It is optimal for them to hold assets with a low correlation with their projected wages. For older workers, the position is reversed. As they approach retirement, their human capital diminishes but they will tend to have built up financial assets in private pensions or wealth in the form of the flow of future public pension entitlements. See, *inter alia*, Jagannathan, and Kocherlakota (1996) and Samuelson (1998a and b).
15. When countries shift part of their pension provision from public pay-as-you-go schemes to private pensions, a number of policy issues are raised. A critical one is the extent to which current and future workers should be allowed, encouraged or forced to switch to the private defined-contribution plans: see Box 1.2 above for a discussion.
16. First, a GBP 60 payment was made in January 2009, equivalent to bringing forward the indexation from April to the start of the year. Secondly, the basic pension is now uprated by the higher of the growth in the retail prices index (RPI) or 2.5%. The RPI shows deflation in December 2008 and January 2009 and is expected to remain negative for most of the year. This means that the basic pension will increase in real terms. Thirdly, the winter-fuel payment for pensioners increased by 25% to GBP 250 (with additional support for over 80s).
17. Individuals are allowed to contribute up to 4% of their earnings into a voluntary individual account. Employers will typically then pay in up to 2% of earnings.
18. However, the International Monetary Fund (2009) expects the Norwegian government to recoup 98% of this investment, compared with only 52% for Ireland.
19. There is worrying evidence from the Netherlands that riskier companies (smaller firms, those with high leverage) also have riskier investments in the defined-benefit plans that they sponsor (that is, a higher equity share in portfolios). See Davis *et al.* (2007).
20. These include the Pension Protection Fund in the United Kingdom and the Pension Benefit Guaranty Corporation in the United States.
21. "Security through diversity" – the slogan of the pension-reform process in Poland in the mid-to-late 1990s – remains apposite. See Chlon *et al.* (1999).
22. This conclusion is well-supported in the finance literature. For example, Merton (1983) set out why diversification between pay-as-you-go financing and funding is optimal using portfolio theory. The model was further developed in Bodie *et al.* (1992) and extended to include inflation risk in Heeringa (2008).

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## 2. Incomes and Poverty of Older People

Most of the analysis in *Pensions at a Glance* is forward-looking, in the sense that it assesses the future pension entitlements of today's workers. This special chapter<sup>1</sup> complements that analysis by examining the retirement incomes of today's pensioners. It asks: how does the current generation of older people fare compared with today's working-age population?

Pension policy-making involves balancing two objectives. The first is to provide adequate levels of retirement incomes to ensure that people are not at risk of poverty in their old age. This is particularly significant for people who had persistent low earnings, long periods in temporary or part-time jobs or broken careers due to unemployment or caring responsibilities. These groups are unlikely to have built up much benefit entitlement in public, earnings-related or private schemes.

The second objective is to ensure that pension incomes do not depart from the living standards individuals achieved during their working lives. Canada, Ireland, New Zealand and the United Kingdom, for example, place all or most emphasis on the goal of adequacy. Hungary, Italy, Poland and the Slovak Republic, in contrast, are countries that base their retirement-provision around a strong link between earnings when working and pension during retirement.<sup>2</sup>

Section 1 of this special chapter looks at incomes of older people (aged over 65) and compares them with population incomes. These measures of income are comprehensive, in the sense that they cover all sources of cash income and all groups of people. For older people, for example, they include benefits from public and private pensions and resource-tested benefits, as in the modelling of individual benefits in the analysis of pension entitlements presented in the indicators of "Pension entitlements" in Part II of the report. But they also take account of the returns on non-pensions savings and, earnings or income from self-employment, which play a significant role in supporting the "younger" old (aged 66-75) in many OECD countries. All people of working age are included in the calculation of population income, including those not in employment.

Section 1 presents overall incomes of older people and illustrates how these vary with age and between different types of households (single people and couples, for example). It also sets out data on the sources of incomes on which older people draw and how this differs between countries. Finally, the position of older people in the mid-2000s is compared the mid-1980s to explore trends in retirement incomes.

Section 2 focuses on low-income pensioners, presenting data on old-age poverty in OECD countries. The prevalence of poverty is also compared between men and women, different age groups, various household types and over time. Section 3 investigates the distributional role of the state: the effect that public benefits and taxes have on disposable

incomes. Section 4 looks forward to explore how the patterns of incomes and poverty of older people might change in the future as a result of social and economic change, and pension reforms. Section 5 concludes and looks at the policy implications of the chapter's main findings.

## 1. Incomes of older people

Incomes are measured from the data in national household surveys,<sup>3</sup> carried out in the mid-2000s, and calculated as follows:

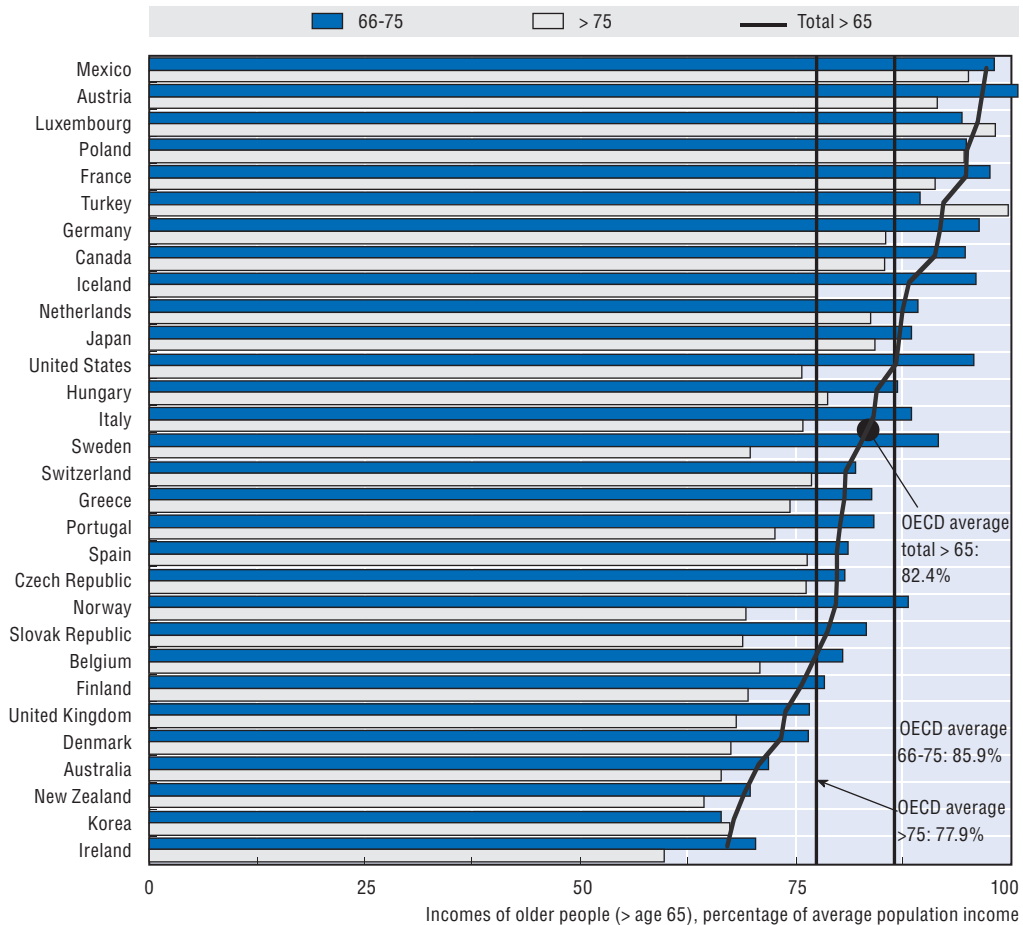
- Incomes include earnings, self-employment income, income from capital (dividends, interest, etc.), rental income and public transfers (such as retirement, family, unemployment, housing and disability benefits).
- The measure used is “disposable” income. This is income net of personal income taxes and social security contributions.
- Incomes are aggregated on a household basis. This is because members of the same household are assumed to share their resources – the most obvious example being the accommodation itself – and it is often difficult to attribute some kinds of income (such as income from savings) to individuals. This approach implicitly assumes that income is shared equally among the members of the household.
- Total household income is then divided among the individual(s) that make up the household. This is done on an “equivalent” basis, meaning that household incomes are adjusted for differences in household size. The old adage says that “two can live as cheaply as one”. This is not entirely true, but there are undoubted “economies of scale” for households of more than one person. The OECD’s adjustment effectively says that two people can live as cheaply as 1.4 people living alone.

Incomes of older people, aged over 65, were, on average, 82.4% of population incomes in the mid-2000s.<sup>4</sup> There is significant variation between OECD countries. Average income of all over 65s, shown in Figure 2.1 by the black curve, is highest in Mexico and Austria, at around 97% of population incomes. This compares with just 66% in Ireland. Other countries with relative low incomes of older people – between two-thirds and three-quarters of the population average – are Australia, Denmark, Finland, Korea, New Zealand and the United Kingdom. At the opposite end of the scale, France, Luxembourg and Poland all have older people’s incomes of around 95% of the national averaged equivalent household disposable income. Near to the OECD average figure of 82.4% are Hungary, Italy, Sweden, Switzerland and the United States.

There is some relationship between the incomes of older people and public expenditure on old-age benefits, especially when account is taken also of differences between countries’ demographic situation.<sup>5</sup> A 10% increase in public pension expenditure is associated with a 1.5 percentage point increase in older people’s relative incomes. The precise design of retirement-income systems also has an effect. For example, Australia, Ireland, New Zealand and the United Kingdom all have low relative incomes for old people and mandatory old-age provision that is focused on adequacy rather than replacing a certain level of former earnings. But the same is true of Canada and the United States, which have above average old-age incomes relative to the population. Austria, France, Luxembourg and Poland have – for the current generation of retirees, at least – large public, earnings-related pensions and they have among the highest relative incomes in old age. But Finland and Spain have a similar pattern of pension entitlements and yet relative


Figure 2.1. **Relative incomes of older people**

Equivalent household disposable income, mid-2000s



Note: Countries are ranked by the relative incomes of all aged over 65.

Source: OECD Income Distribution Database; see OECD (2008), *Growing Unequal?*, Figure 2.4.

StatLink  <http://dx.doi.org/10.1787/635374185482>

incomes of older people are below the OECD average. Korea's low old-age incomes are primarily because the public pension scheme was only introduced in 1988, so current retirees have little or no entitlements.

What are the implications of these results (based on equivalent disposable incomes) for a comparison of living standards in retirement compared with those during working life?<sup>6</sup> There are other factors that need to be taken into account when interpreting the statistics. First, retirees do not have to pay additional costs associated with working: commuting, clothing, meals, etc.<sup>7</sup> Secondly, housing costs can be very different for people of pension age than for those of working age. Many or most people of pension age in OECD countries own their own homes. Unlike people of working age, older home owners have generally paid off their mortgages.<sup>8</sup> Thirdly, older people generally have greater financial assets than people of working age. Although the income from dividends and interest on these assets is taken into account in measuring disposable income, the value of the assets is not. Many people draw down these financial assets to support consumption in retirement.<sup>9</sup> Finally, the focus on cash incomes ignores in-kind transfers in the form of publicly provided goods and services, such as healthcare, housing and social services,

which can be particularly important for older people.<sup>10</sup> All of these effects on the relative economic well-being of older people are, unfortunately hard to capture. But they must be borne in mind when interpreting the statistic that older people have incomes of 82.4% of the population on average in OECD countries.

### **Do the “older old” have the lowest incomes?**

The bars in Figure 2.1 show the results separately for two different groups of older people: aged 66-75 and aged over 75. On average across the OECD, the “younger” old have incomes of nearly 86% of the population average while, for the “older” old (aged 75+), this figure is just 78%. Nevertheless, there is a significant variation in the pattern. The largest age differences in pensioners’ incomes are found in Iceland, Ireland, Norway, the Slovak Republic, Sweden and the United States. The older old have *larger* incomes than the younger old in Korea, Luxembourg and Turkey and only slightly lower in Mexico and Poland.

There are many reasons why relative incomes of the older old are lower than those of the younger old. First, there is a *cohort* or generational effect. Nearly all OECD countries have some form of earnings-related pension provision. When the over 75s retired, their wages were on average somewhere around 10%-25% lower in real terms than average earnings when the 66-75 age group retired. This will be reflected in earnings-related benefits. Where real earnings have been growing very rapidly in recent years – in Ireland and Spain, for example – there will be larger age differentials in relative incomes. This is one of the main reasons for the large differences between incomes of the two age groups in Ireland and the Slovak Republic, for example.

Secondly, there is a pure *age* effect due to the way pensions in payment are indexed to allow for changes in costs and standards of living. (The cohort effect comes from the fact that pensions of new retirees are growing in line with age growth; the age effect occurs because of the way the relative value of the pension evolves after retirement.) Indexation policies and practices have changed over time (see below). However, most OECD countries now index pensions in payment to prices, protecting the purchasing power of pensions in payment. Again, however, countries that have seen rapid increases in real earnings – such as Ireland, the Slovak Republic and Spain – will also have seen a strong decline with age in relative incomes during retirement.<sup>11</sup> In contrast, Luxembourg, indexes pensions to average earnings. This policy is one reason why incomes of the oldest old are *higher* than those of the 66-75 age group.

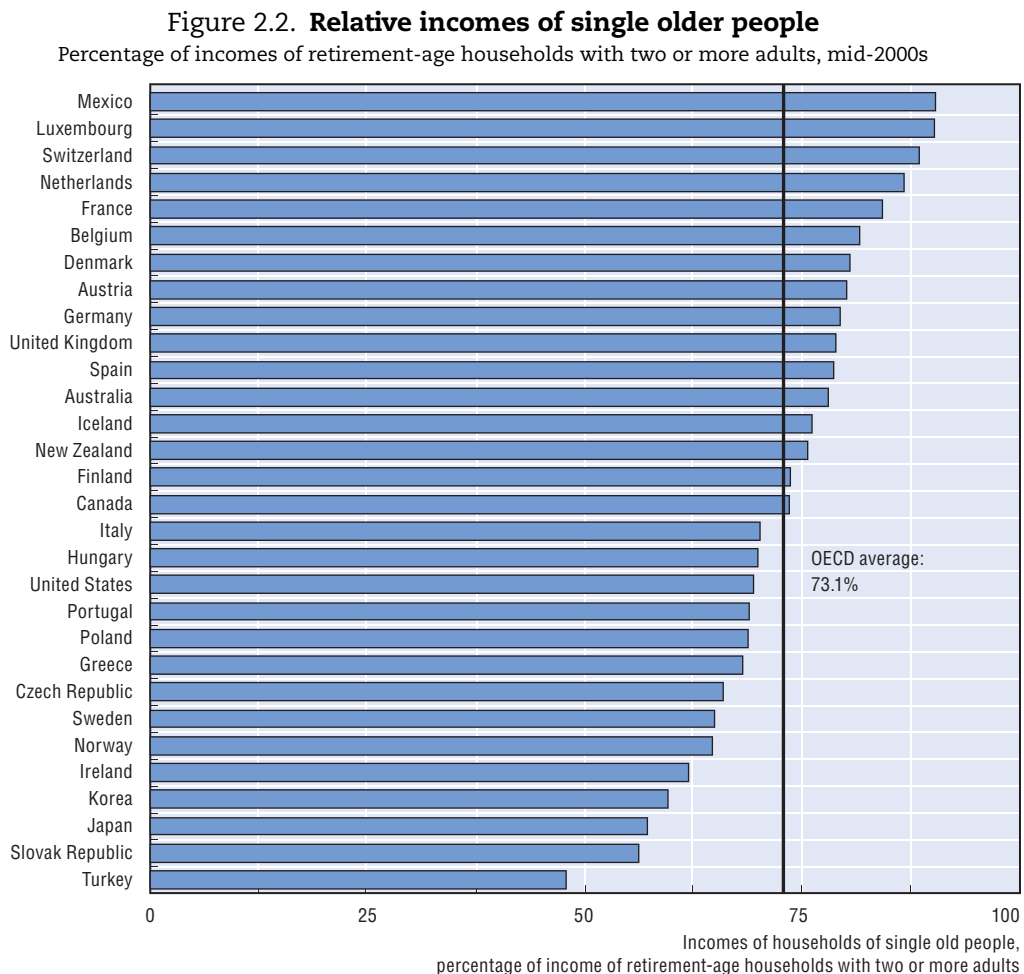
Thirdly, there is a *compositional* effect. For obvious reasons, the group of the older old consists mainly of people with systematically longer-than-average life expectancy. Women, for example, are expected to live 5.7 years longer than men.<sup>12</sup> Women therefore predominate among the old, making up 53% of 66-75 year olds and 60% of the over 75s on average in OECD countries. They will tend to have lower pensions in their own right than men, because of lower wages, shorter working hours and longer breaks in their careers. Many, of course, will be widows, and so their circumstances will depend on the provisions for survivors’ benefits. The largest age differences in old-age incomes (in Iceland, Norway, Sweden and the United States) are probably due mainly to the rules for survivors’ pensions (see below).

Another compositional effect arises because richer people tend to live longer than poorer people do.<sup>13</sup> In higher-income OECD countries, this effect is rather small and socio-economic differences in mortality during retirement are much smaller than for people of

working age. Nevertheless, the fact that poorer men tend to die earlier than most women and richer men means that there are many widows at older ages who were married to men with low pensions and so they have low survivors' benefits. The impact of socio-economic mortality differentials is greater in lower-income OECD countries. In Turkey, for example, people with low incomes in their working lives were often not covered by the pension system. So, as richer people live longer, more of the over 75s have a pension entitlement, hence the significantly higher incomes of over 75s than the 66-75 age group. Similar effects are at work in Korea and Mexico.

### **How does income differ between single pensioners and couples?**

The discussion of incomes by age has shown that a large part of the differences are likely to be because women, especially widows, predominate among the older old. Figure 2.2 compares the incomes of households headed by a single adult aged over 65 with that of households, headed by someone aged over 65, with two or more adults. It is important to remember that these household income figures have already been equalised to allow for the different costs of living of households of different sizes. For example, a single pensioner with an income of around 70% of that of a couple would, on



Source: OECD Income Distribution Database; see OECD (2008), *Growing Unequal?*, Figure 2.4.

StatLink <http://dx.doi.org/10.1787/635414738676>

the OECD's measure, be deemed to have the same level of economic well-being, as measured by equivalent income. In this example, therefore, the single person would be shown at 100% on the scale for relative equivalent income.

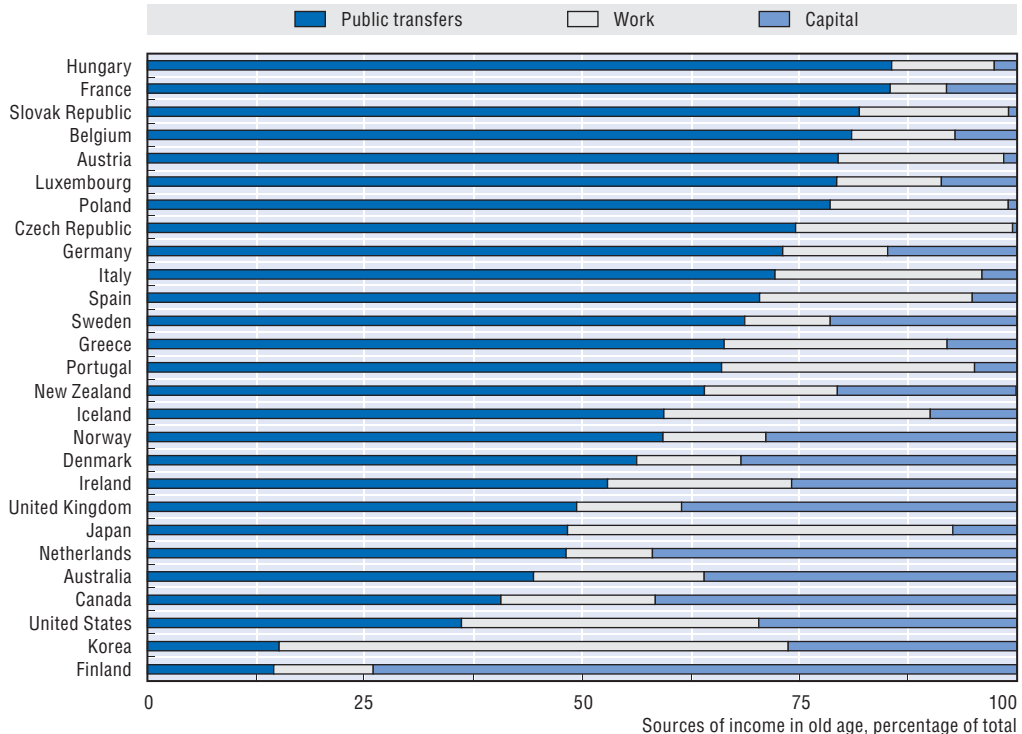
Single pensioners have fairly good incomes relative to couples in Luxembourg, Mexico, the Netherlands and Switzerland. This is due to a mix of relatively generous survivors' benefits and other protection for non-working spouses and indexation policies (as discussed above). In contrast, single pensioners fare rather badly in eastern European countries, Japan, Korea, Ireland and two of the Nordic countries – Norway and Sweden – for the reasons discussed above.

### What are the sources of older people's incomes

Public transfers – in the form of earnings-related pensions, resource-tested benefits, etc. – make up 60% of older people's incomes on average in the 27 OECD countries shown in Figure 2.3. The over-65s are most reliant on the state for their incomes in France and Hungary: 85% of their incomes come from public transfers. Around three-quarters or more of old-age income is also state-provided in Austria, Belgium, the Czech and Slovak Republics, Luxembourg and Poland.

At the other end of the spectrum, public transfers are just 15% of average old-age income in Finland. However, this is because the mandatory occupational plans are here included as capital income, whereas the national accounts and *Pensions at a Glance* treat

Figure 2.3. Sources of incomes of older people  
Percentage of household disposable income, mid-2000s



Note: Income from work includes both earnings (employment income) and income from self-employment. Capital income includes private pensions as well as income from the returns on non-pension savings.

Source: OECD Income Distribution Database.

StatLink  <http://dx.doi.org/10.1787/635426478286>

these schemes as part of the public sector. The share of old-age income derived from public transfers is also very low in Korea: this is because the public pension scheme was only established in 1988. Public transfers also provide less than half of old-age income in Australia, Canada, Japan, the Netherlands, Switzerland,<sup>14</sup> the United Kingdom and the United States.

In the east-Asian OECD countries, work – employment and self-employment – provides a very large proportion of income of the over 65s: 44% in Japan and 59% in Korea. Income from work also accounts for around a quarter or more of old-age incomes in another six OECD economies: the Czech Republic, Greece, Iceland, Portugal, Spain and the United States. In some of these countries, this probably reflects the fact that many people have not had full contribution histories in the public pension scheme and so keep on working to make up for these gaps. In Iceland and the United States, the normal pension age is above age 65. In contrast, income from work (employment and self-employment) accounts for less than 10% of older people's incomes in France, the Netherlands and Sweden.

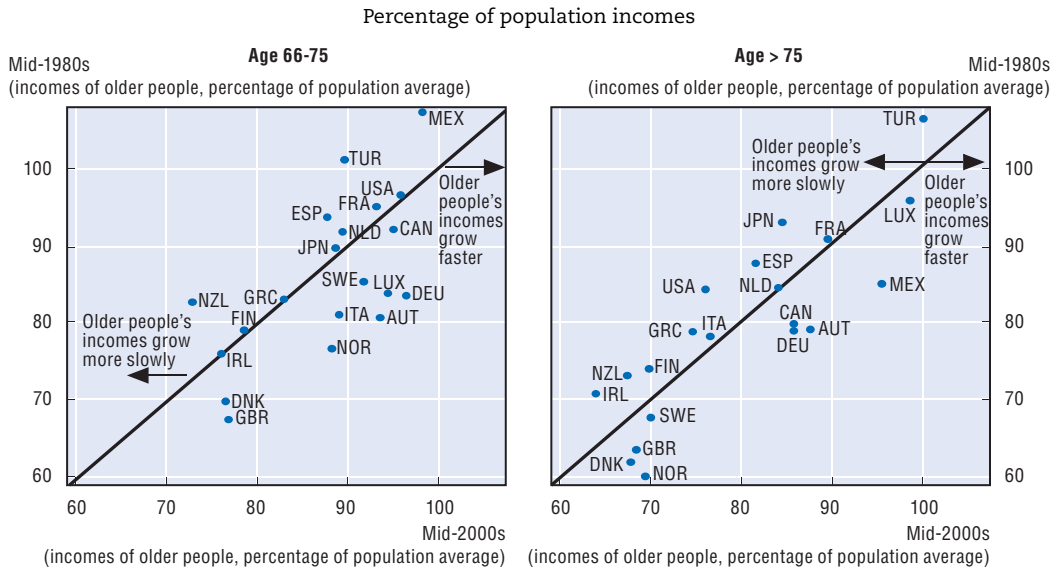
Income from capital – mainly in the form of private pensions – plays the largest role in providing old-age incomes in Australia, Canada, Denmark, the Netherlands, the United Kingdom and the United States (Finland apart, for the reasons set out above). In these countries, capital income accounts for around 30% or more of older people's incomes.

It is important to bear in mind that Figure 2.3 refers to average values for older people as whole. However, the composition of incomes varies enormously across the income distribution: poorer older people derive income almost exclusively from public transfers, while private pensions and other capital income play a more significant part only among richer pensioners.<sup>15</sup> As the role of the latter income sources in retirement income provision has been growing, this may give further impetus to rising inequality of incomes in old age. (The redistributive role of taxes and public benefits in different countries is analysed in detail in Section 3 below.)

### ***How have older people's relative incomes been changing?***


In nine OECD countries, incomes of older people increased relative to those of the population as a whole between the mid-1980s and the mid-2000s. This is illustrated in Figure 2.4, which shows relative incomes of older people in the mid-2000s (on the horizontal axis) compared with the position in the mid-1980s (on the vertical axis). Results are presented for the 20 OECD countries for which data are available in both time periods. In countries to the right of the 45° line, older people's incomes grew faster than those of the population as a whole. In those to the left, pensioners did not share proportionately in increasing prosperity. The results are again split into two age groups.

The largest increases in relative incomes of 66-75 year olds were in Austria, Germany and Norway: around 11 percentage points. There were also significant increases – of 6-9 percentage points – in Denmark, Italy, Luxembourg and the United Kingdom. Relative incomes of the 66-75s fell behind the growth in population incomes in 11 countries, although the falls were relatively small in Finland, Greece and Ireland. The largest falls between the mid-1980s and mid-2000s were in Mexico and Turkey, but this was from a very high starting point. In New Zealand, 66-75 year olds had incomes of 84% of the population income in the mid-1980s but just 73% in the mid-2000s: the second lowest in the OECD (Figure 2.1).

Figure 2.4. **Income trends: mid-1980s to mid-2000s**

Note: Data for the mid-2000s refer to around 2000 for Austria, Ireland and Spain. In Turkey, real incomes fell by 15% for the total population, by 20% for age 75+ and by 25% for age 66-75. In Japan, real incomes increased overall but fell slightly for the group aged 75+.

Source: OECD Income Distribution Database; see OECD (2008), *Growing Unequal?*, Figure 2.6.

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Turning to the older age group, incomes of the over 75s also grew in nine OECD countries relative to the change for the population as a whole. At these ages, Austria, Germany and Norway also saw large increases in average incomes. The gains in Canada, Denmark, Sweden and the United Kingdom were nearly as large. In contrast with the fall in relative incomes for 66-75 year olds over time, incomes of the over 75s grew more rapidly in Mexico. The incomes of over 75s in Ireland, Japan, New Zealand, Spain, Turkey and the United States fell substantially behind the increase in incomes of the population as a whole.

An important explanation for these trends in older people's incomes lies in the maturing of pension systems. The cohort of pensioners in the 1980s entered the labour market in the 1920s and 1930s, when retirement-income provision was much more limited. Most public pension schemes along the lines of today's provision were established in the post-war era: in the late 1940s in Australia, France, Ireland, Switzerland and the United Kingdom, for example. Others were more recent: Austria, Belgium, Japan, Finland, Greece, Italy and the Netherlands established new pension systems in the 1950s and Belgium, Canada and Sweden in the 1960s. This means that older people in the mid-1980s had often spent half or less of their careers covered by these pension schemes. Earnings-related schemes of their current form were established in the 1970s in Mexico and the United Kingdom. It is notable that most of the countries that introduced current pension systems most recently show strong increases in relative incomes of older people over time in Figure 2.4.

The timeline for the introduction of public pension is echoed in the evolution of private pensions in countries where coverage is broad today. In Australia, Canada, Ireland, the United Kingdom and the United States, voluntary occupational schemes grew rapidly in the number of their members in the 1950s and 1960s. Private pensions were made mandatory in Australia in 1992 and, in Switzerland, in 1982.



A change in policy and practice over time comes from the adjustment of pensions in payment. Many OECD countries saw a period of strong real increases in pensions in payment that, more recently, came to an end. In France and Germany, for example, real pensions more than doubled between 1960 and 1978. In other countries, the period of strong increases in real benefits ended later: in the early and mid-1980s in Canada, Italy, New Zealand and the United States and the mid-1990s in Japan (Whitehouse, 2009). Indexation policies have a greater effect on older pensioners. Of these countries, the impact of changing indexation policy on retirement incomes is clearest for Japan, New Zealand and the United States, but less so for France and Italy. In Canada and Germany the effect has been offset by other economic factors and changes in pension systems.

## 2. Old-age income poverty

The question of what constitutes “poverty” has generated a huge debate, one which is unlikely ever to be resolved. For the “purposes” of international comparison, the OECD treats poverty as a relative (rather than an absolute) concept. It is relative in two senses of the word. First poverty is measured against a yardstick dependent on median household incomes. Secondly, the poverty thresholds are country-specific, so poverty is measured against prevailing norms for living standards in a particular country at a particular time. This means that a person classified poor in a prosperous OECD country will have a higher income than many of the non-poor in other countries that are less prosperous overall. The general approach of measuring poverty relative to a proportion of median income, adopted by the OECD for its cross-country analysis, is widely used elsewhere: for example, in the rates of poverty risk in the framework of the European Union’s social reporting system.

Most of the analysis in the *Growing Unequal?* report (OECD, 2008), sets the threshold for poverty at 50% of median, equivalised household disposable income. People with incomes below this level are counted as “income poor”.<sup>16</sup>

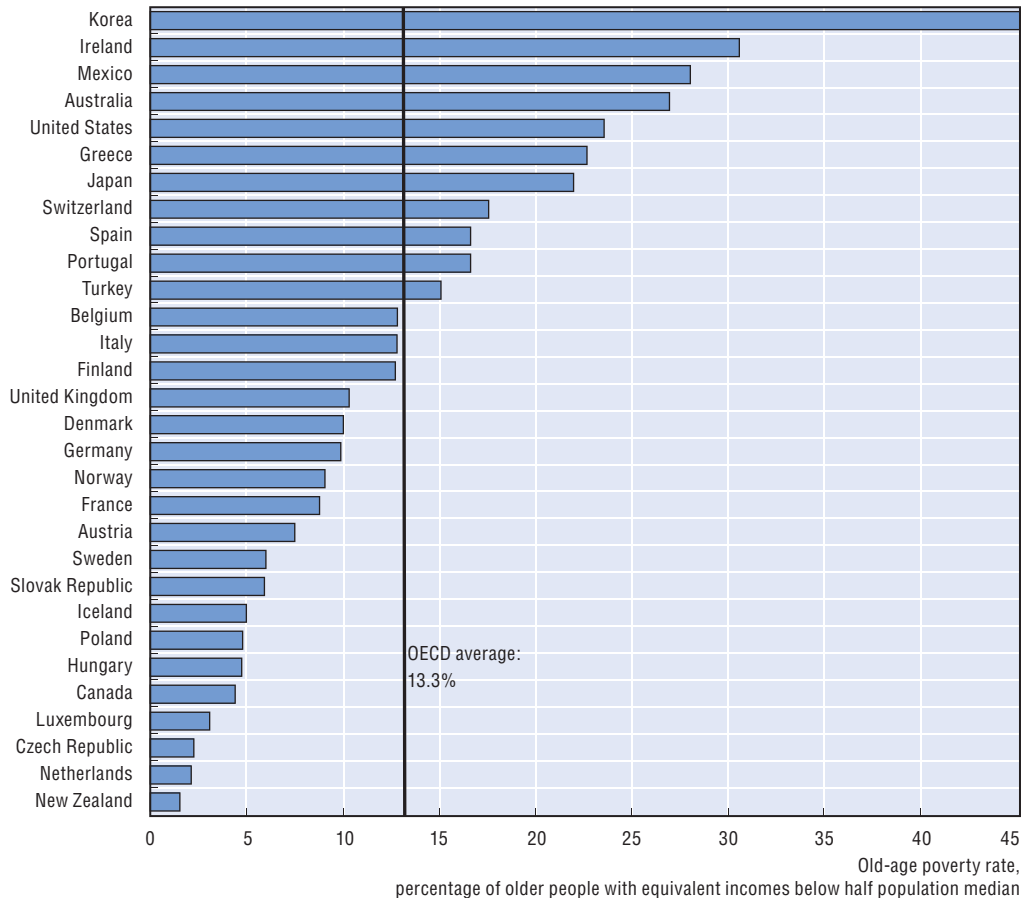
In the mid-2000s, 13.3% of older people (aged over 65) were income poor on average in OECD countries. The old-age poverty rate was much the highest in Korea, at 45% (see Figure 2.5). Other countries with a high poverty rate for older people – above 20% – are Australia (27%), Greece (23%), Ireland (31%), Japan (22%), Mexico (28%) and the United States (24%). There is a group of countries clustered a little above the average for OECD countries: Portugal, Spain, Switzerland and Turkey, with 15-18% of older people living in poverty. Just below the OECD average are Belgium, Finland and Italy. The eight countries with the fewest poor old people – with income poverty rates of less than 5% – are Canada, the Czech Republic, Hungary, Iceland, Luxembourg, the Netherlands, Poland and New Zealand.

One of the main drivers of differences in old-age poverty rates is the level at which old-age safety-net benefits are set. In Australia, for example, the full age pension in 2005 was AUD 12 700 a year, lower than the poverty threshold of AUD 14 770 for a single person.<sup>17</sup> The difference between the two is larger in Ireland: EUR 8 870 for the basic pension and EUR 10 775 for the poverty threshold. In both countries, there are many people clustered around the income level of these programmes, which are 86% of the poverty threshold in Australia and 82% in Ireland. This explains why these countries have among the four highest old-age poverty rates.


In contrast, the basic pension in New Zealand, of NZD 16 100 a year in 2005, was much higher than the poverty threshold of NZD 13 040 for a single person. In the Netherlands, the basic pension was just a little under the poverty threshold of EUR 11 500 in 2005. Given

Figure 2.5. **Old-age income poverty rates, mid-2000s**

Percentage of over 65s with incomes of less than half median equivalised population incomes



Source: OECD Income Distribution Database; see OECD (2008), *Growing Unequal?*, Table 5.3.

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that coverage of these schemes is near universal (because they are residency-tested), it is unsurprising that old-poverty rates are the lowest in these two countries. (Box 2.1 provides more detailed data on the level and coverage of basic, resource-tested and minimum retirement benefits.)

### **Are older people more likely to be poor?**

One explanation for the pattern of old-age poverty described above may lie in the fact that incomes are distributed less equally in some countries than others during working lives and that this persists into retirement. Figure 2.8 compares rates of income poverty of older people (on the vertical axis) with those of the population as a whole (horizontal axis). Thus, countries above the line have higher old-age poverty than the population as a whole. In countries below the line, the old are less likely to be poor. There is indeed a strong, positive correlation between old-age and general poverty, but there remain many cross-country differences in the relationship between the two.<sup>18</sup>

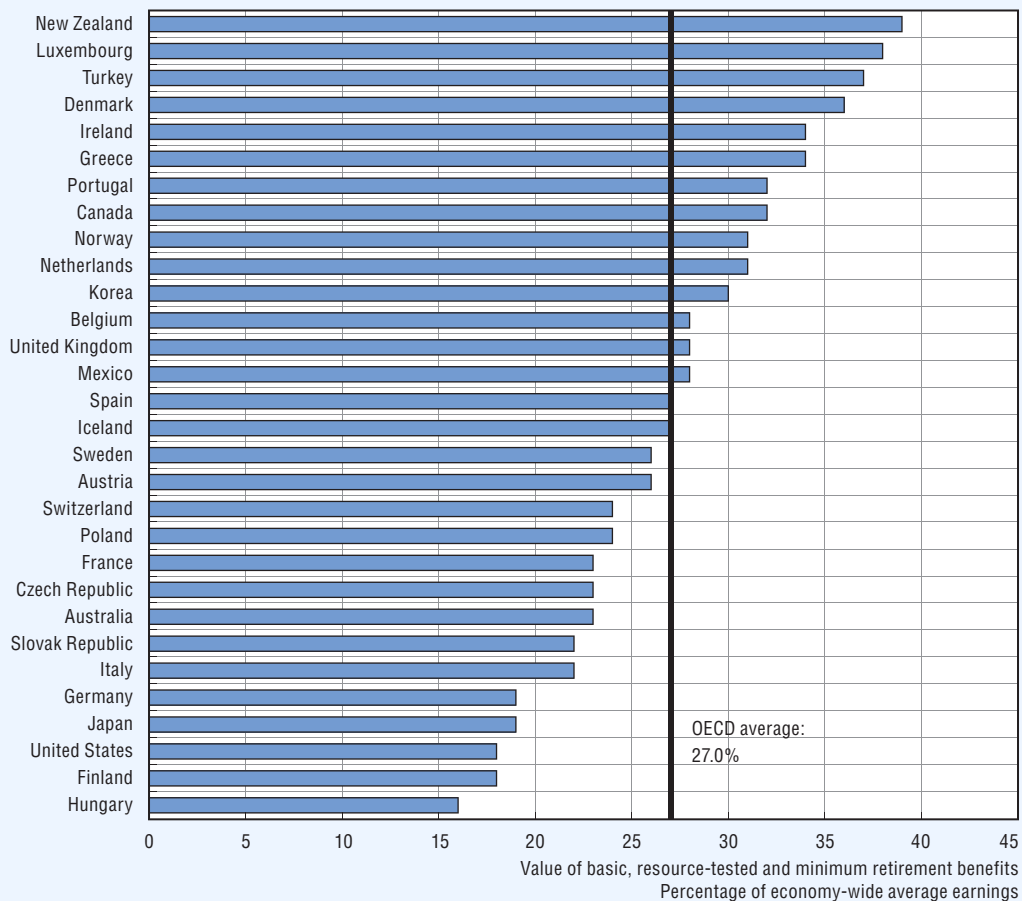
On average in OECD countries, the population poverty rate – of 10.6% – is below the old-age poverty rate – of 13.3%. Older people are less likely to be poor than the population as a whole in 11 countries. The difference is particularly large in Canada, New Zealand and

### Box 2.1. Old-age safety nets\*

Old-age safety-nets are the benefits from “first-tier, redistributive schemes” in the “Framework of Pensions at a Glance”, set out above. They therefore include all basic, resource-tested and minimum pensions which low-income older people might receive. In some countries, there are different programmes or benefit levels depending on individuals’ contribution histories. In these cases, the calculations show the highest level of benefit, which typically requires a certain period of contributions.

At the bottom of the scale, social assistance, basic and minimum pensions provide a minimum retirement income of less than 20% of average earnings in Finland, Germany, Hungary, Japan and the United States.

Figure 2.6. **Value of basic, resource-tested and minimum retirement benefits**  
Percentage of average earnings



Source: “Country profiles” in Part III of this report.

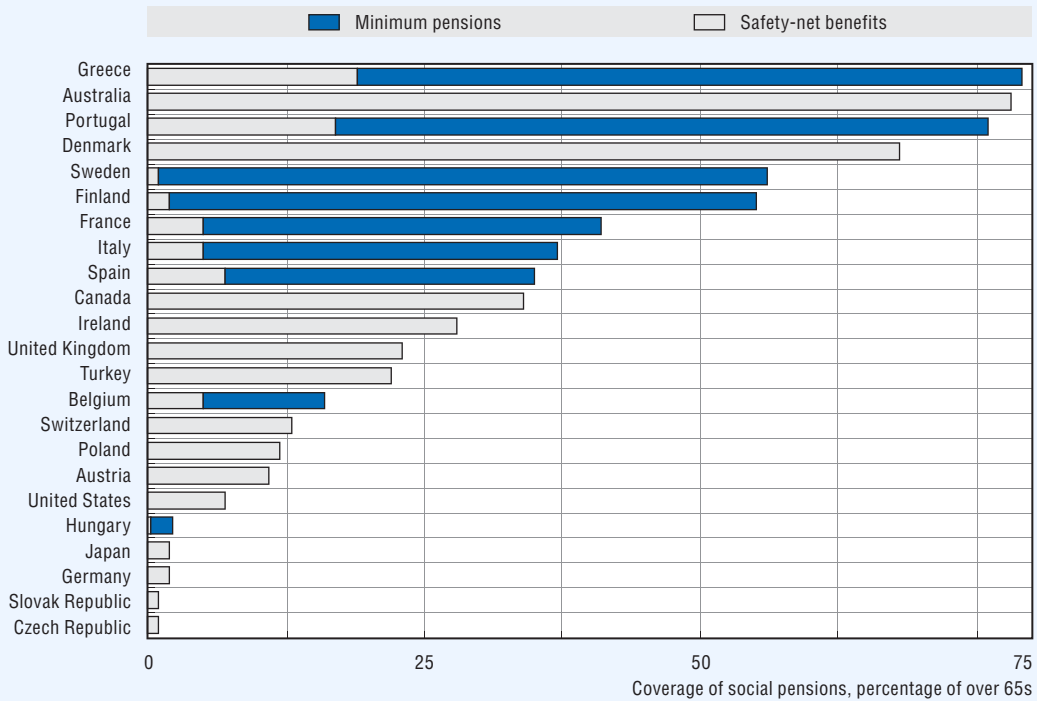
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Figure 2.7 shows the percentage of the over 65s covered by resource-tested benefits, divided, where appropriate, between different programmes. In Portugal, for example, almost 60% of pensioners are on the minimum contributory pension, with another 17% receiving the social pension or solidarity benefit. Coverage of both kinds of programme is even higher in Greece. In Finland and Sweden more than half of older people are also in receipt of minimum pensions. However, the coverage of the safety-net benefit

## Box 2.1. Old-age safety nets\* (cont.)

Figure 2.7. Coverage of resource-tested and minimum pensions

Percentage of over 65s in receipt of one or more benefits



Source: European Union, Social Policy Committee (2006); Pearson and Whitehouse (2009), "Social Pensions in High-Income Countries", in R. Holzmann and N. Takayama (eds.), *Closing the Coverage Gap: The Role of Social Pensions*, World Bank, Washington DC, forthcoming.

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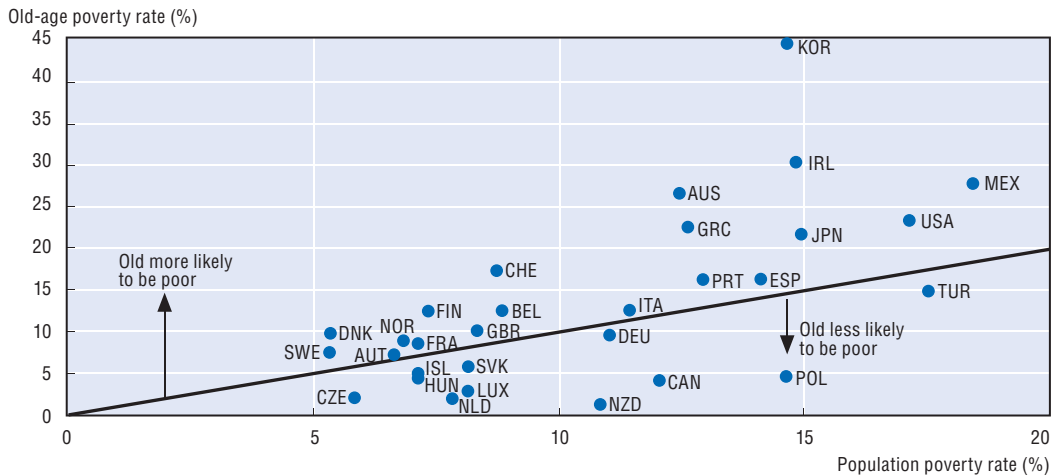
(provided by social assistance) is very narrow in both countries compared with Greece and Portugal. This probably reflects the history of a large informal sector in the southern European countries that must rely on last-resort safety-net benefits. The Nordic countries, in contrast, have a very small informal sector and comprehensive protection, through pension credits, for people out of paid work.

For most countries, the data in Figure 2.7 relate to a single retirement-income programme. The range of coverage of these programmes is huge. In Australia, for example, the public pension is resource-tested. Nevertheless, more than 75% of older people are eligible for the benefit. Compare this with Germany and Japan, where just 2% of older people receive social assistance. In all three of these countries, benefits are resource-tested. But the way they work in practice is fundamentally different. Australia's scheme has been described as "affluence-tested" because the benefit is paid to most people of pension age and denied only to the richest pensioners. In contrast, the German and Japanese programmes are best characterised as "poverty-tested". This is because benefits are paid only to the very poorest older people.


The chart does not include recipients of basic pensions. In the Netherlands and New Zealand, for example, basic pensions are based on adult residency in the country, and so virtually 100% of older people receive a benefit. In the United Kingdom, just fewer than 25% of older people are in receipt of the resource-tested programmes – pension credit and savings credit – but some 98% receive at least some payment from the basic pension. The situation is similar in Canada, the Czech Republic, Denmark, Ireland and Japan, where basic pensions have near-universal coverage.

\* This box draws on the more detailed analysis in Pearson and Whitehouse (2009).

Figure 2.8. **Income poverty rates of older people and the population, mid-2000s**  
Percentage with incomes of less than half median equivalised population incomes



Source: OECD Income Distribution Database; see OECD (2008), *Growing Unequal?*, Tables 5.1 and 5.3.

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Poland, where population poverty rates are in the 10%-15% range while poverty of the over 65s is 5% or less. Older people are also significantly less likely to be poor in the Czech Republic, Luxembourg and the Netherlands.

Of the 19 OECD countries where old-age poverty is relatively more widespread, the difference between poverty rates of the over 65s and the population is fairly small in six of them: France, Italy, Norway, Spain, Sweden and the United Kingdom. However, the differences are large in eight countries. Korea again stands out, with three times as many of the over 65s living in poverty as the population as a whole. In Australia, Ireland and Switzerland, old-age poverty rates are double those of the population; the differences are also significant in Greece, Japan, Mexico and the United States.

As discussed above, one of the main drivers of these cross-country differences lies in the level and coverage of safety-net benefits. This explains relatively low risk of poverty for older people in Canada, Luxembourg, the Netherlands and New Zealand. Similarly, the much higher poverty risk of older people relative to the population occurs in countries with weaker safety nets. In addition to Australia and Ireland (discussed above) safety-net benefits are worth only around 34% of the poverty threshold in Greece, 53% in Japan and the United States and 75% in Switzerland.

It is important to remember that these figures are based on measures of *income* poverty. Box 2.2 illustrates how alternative measures of poverty, looking at people's access to basic needs, provides a rosier picture of poverty risks in old age.

### **Are older women more likely to be poor than older men?**

Older women generally have a much higher poverty rate than older men in OECD countries. On average, older women have a poverty rate of around 15%, compared with around 10% for older men. The only exceptions are in three countries with low overall poverty rates for older people: Iceland, Luxembourg and New Zealand (see the left-hand panel of Figure 2.10). In Luxembourg and New Zealand, this probably reflects the fact that social pensions (minimum and basic, respectively) are among the four highest relative to average earnings in their economies. However, in a further five countries, the poverty rate

### Box 2.2. Income poverty, social exclusion and material deprivation\*

Poverty is clearly a more complex phenomenon than can be captured by measures of income poverty alone. For example, people with low incomes may benefit from in-kind support from the state or their relatives. Some older people are undoubtedly “asset rich, income poor”, meaning that they have a stock of assets that they can draw down to support themselves. Conversely, people might have insufficient income for special needs, such as sickness and disability. Indicators of “material deprivation” or “hardship” try and capture some of these effects.

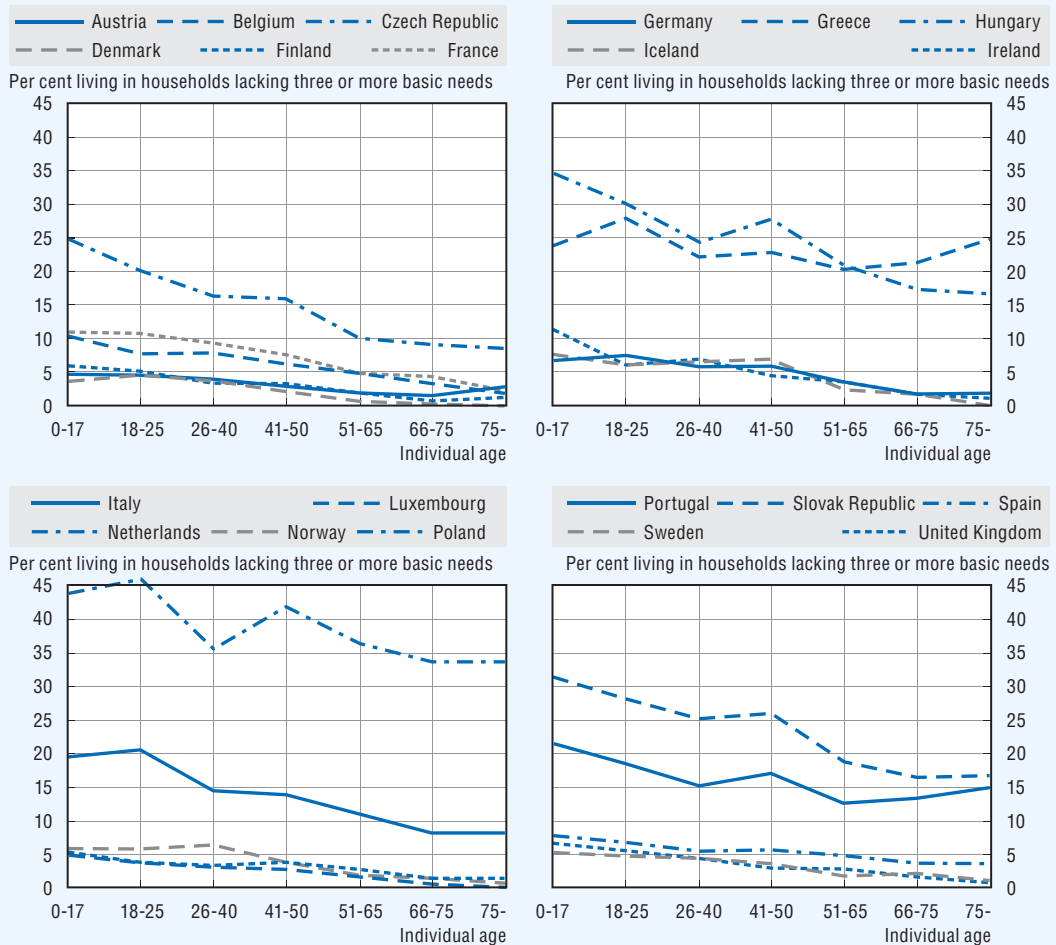
Material deprivation is the lack of socially perceived necessities. Examples of such hardship, which can be measured across a range of countries in similar ways, include:

- inadequate heating;
- constrained food choices;
- overcrowding;
- poor environmental conditions;
- arrears in utility bills;
- arrears in rents or mortgages;
- inability to make ends meet.

In the 21 countries where data are available, 10.6% of all individuals live in households materially deprived in three or more ways. Overall material deprivation is highest in Eastern Europe: at 40% in Poland, around 25% in Hungary and the Slovak Republic and 16% in the Czech Republic. It is also high in Greece, Italy and Portugal.

Figure 2.9. Material deprivation by age

Percentage of individuals in households lacking three or more basic needs



Source: OECD Income Distribution Database; see OECD (2008), *Growing Unequal?*, Figure 7.4.

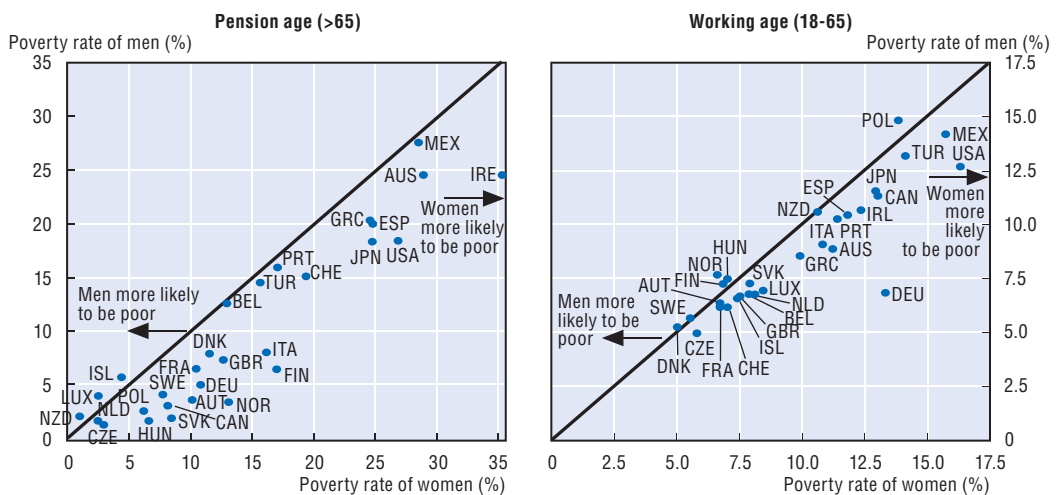
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### Box 2.2. Income poverty, social exclusion and material deprivation\* (cont.)

Exploring the results by age reveals that material deprivation is highest on average in OECD countries for children (aged 17 or less) and young adults (aged 18-25), at 14.1% and 13.1% respectively. Material deprivation is much less common among older people (aged over 65): around 6.8%. Most countries follow this general pattern of a decline in material deprivation with age (Figure 2.9); the main exceptions are Greece, Poland and Portugal, where there is little difference between age groups. Material deprivation is also relatively high for older people compared with the population as a whole in Hungary, the Slovak Republic and Spain. Material deprivation is practically non-existent among older people in Denmark, Iceland, Luxembourg, the Netherlands, Norway and the United Kingdom.


\* See OECD (2008), *Growing Unequal?*, Chapter III.7 for a detailed analysis.

**Figure 2.10. Income poverty rates by age and sex, mid-2000s**  
Percentage with incomes of less than half median equivalised population incomes



Note: For reasons of clarity, the outlier Korea has been excluded from the charts. The poverty rate for men of pension age is 41.8% and for women, 47.2%. For working age, the figure for men is 11.0% and for women, 12.4%.

Source: OECD Income Distribution Database; see OECD (2008), *Growing Unequal?*, Figure 5.6.

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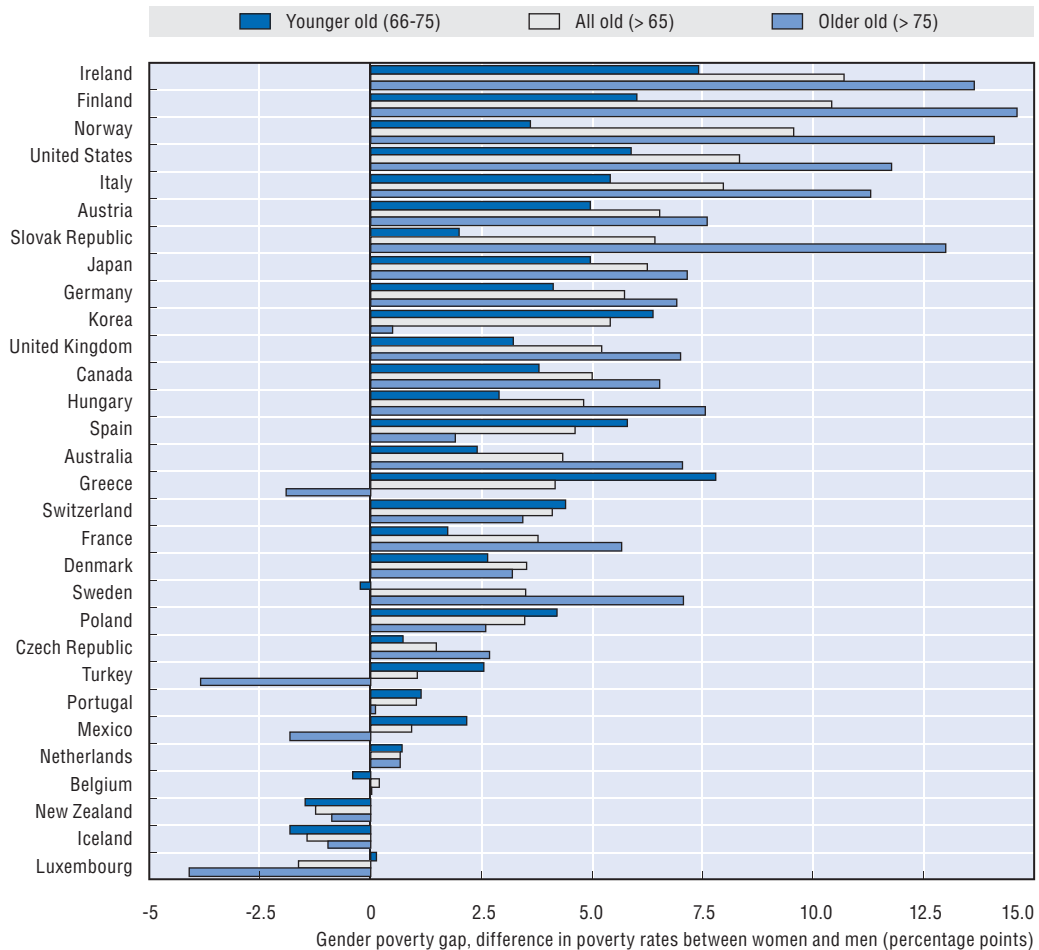
for older women is only a little larger (one percentage point or less) than for men: Belgium, Mexico, the Netherlands, Portugal and Turkey. The largest differences between old-age poverty for men and women are in Ireland, Finland and Norway, where poverty rates for women are 10 percentage points higher than for men. The differences are also large and significant in Austria, Italy, Japan, the Slovak Republic and the United States.

The right-hand panel of Figure 2.10 carries out the same comparison of poverty rates by sex for people of working age (18-65). For reasons of clarity, the scale used for working-age people is exactly half the one used for people of pension age. As is evident from the comparison of old-age and population poverty rates, people of working age are generally less likely to be poor. Working-age poverty rates are 9.8% for women and 8.8% for men, compared with poverty rates of 15.2% and 10.7% respectively for people of pension age. The largest difference in working-age poverty between the sexes is in Germany, where women's poverty rate is 13% and men's is 7%. The gender differential in poverty is also relatively large in Australia and the United States. However, it is readily apparent from Figure 2.10 that most countries have only marginally higher poverty among women of working age than men.


Delving deeper into the differences in poverty risk between men and women, Figure 2.11 is based on analysis of poverty rates of older people aged 66-75 and over 75. The chart shows the “gender gap” for old-age poverty: the difference, in percentage points, between the poverty rates for men and women. A positive figure shows that women are more likely to be poor than men. For reference, the chart also shows the overall poverty gap for all men and women aged over 65.

Figure 2.11. **Gender gap in old-age poverty: difference in poverty rates between men and women by age, mid-2000s**

Percentage with incomes of less than half median equivalised population income



Source: OECD Income Distribution Database; see OECD (2008), *Growing Unequal?*, Figure 5.6.

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What explains the striking pattern of increasing feminisation of poverty with age? It is useful to employ again the distinction between age, cohort and generational effects used to describe patterns of relative incomes of older people in Section 1 above. First, the *age* effect is driven by policies for indexing pensions in payment. Since poverty is treated as a relative concept, price indexation might mean that older pensioners fall below the poverty threshold as they get older. This will affect women more than men because they live longer on average.



However, the cohort or generational effect is the most significant. The younger old (aged 66-75) entered the labour market in the 1960s while the older old mainly started working in the 1950s. The women of these generations started a family earlier than today: the average age when mothers had their first child in 1970 was 24, compared with nearly 28 in 2005. These women also had more children than today's: an average of 2.7 children per woman in 1970 in contrast to just 1.65 in 2005. (See the indicator of "Fertility" in Part II of this report.) Given that this trend is a longstanding one, the older old tended to have more children and start their families earlier than the younger old. This in itself would mean that the younger old will tend to have had shorter career breaks to care for children.

Moreover, women's position in the labour market has changed dramatically in this period. Although countries have varied in the scale and pace of the change, the direction has been the same: successive generations of women have been spending more of their lives in paid work. Also, anti-discrimination legislation has led to a narrowing in the gap between the earnings of women and men (although in many countries the gap remains large). This means that more members of each generation of women reaching retirement have built up greater pension entitlements in their own right, rather than relying on benefits derived from their husband's pension contributions. In addition, many countries have adopted policies to provide pension credits for women out of the labour force caring for children.

Also, pension ages for women in many OECD countries used to be below those for men, also giving earlier generations fewer years of contributions to the pension system and so lower benefits in their own right. In 1983, for example, pension age for men in OECD countries averaged 63.6 years, 2.0 years older than for women. The gap between the two closed over the next decade to 1.5 years by 1993: pension eligibility age fell for both sexes, but by a larger amount for men. By 2002, a small increase for men and a one-year increase for women brought the gap between men's and women's pension ages down to 0.7 years. Under current legislation, there will be increases in pension age for both sexes that will bring them to an average of 65.3 for men and 64.8 for women in the long term.<sup>19</sup>

Thirdly, there is a *compositional* effect. Women live longer than men on average and are often married to men older than themselves. This means that the older old group contains many widows, whose incomes are, to a large extent, derived from survivors' benefits. The rules for these benefits therefore have a powerful impact on poverty rates of the older age group of female retirees. Furthermore, the prevalence of poor women among the older old reflects differences in mortality between socio-economic groups: women who were married to poorer men are more likely to be widows.

### **The role of earnings**

Most OECD countries offer increments in pension entitlements to people who delay their retirement and continue to work beyond the normal pension-eligibility age. However, the labour-market opportunities for older people can often be limited by age discrimination and other barriers, such as pay schedules that link earnings strongly to seniority (thereby making older workers expensive to hire or retain).<sup>20</sup>

Around 27% of people aged over 65 are working (or live in a household where someone is working) on average in OECD countries. This proportion has remained stable over the past decade, as the earlier decline in effective retirement ages has come to a halt.<sup>21</sup>

Working households of pension age have much lower poverty rates – 7% on average – than households with no workers: 17% (Table 2.1). Differences in poverty rates by working status of the household member(s) are most noticeable in Australia, France, Germany, Greece, Ireland, Italy, Norway, Portugal and the United Kingdom. The effect on the poverty rate is much lower in Austria, Finland, the Netherlands, New Zealand and Poland. In Turkey, however, non-working older households have lower poverty rates than working ones. This is because of the relatively low coverage of the pension system, which is concentrated among higher earners.


**Table 2.1. Poverty rates for older people (aged over 65) by household type and working status**

Percentage with incomes of less than half median equivalised population incomes

	All	Head of household is of pension age (over 65)				
		All	Working	Not working	Single	Couple
Australia	27	27	4	32	50	18
Austria	7	8	7	9	16	4
Belgium	13	12	4	13	17	10
Canada	6	7	2	10	16	4
Czech Republic	2	3	[..]	3	6	2
Denmark	10	10	2	12	17	4
Finland	13	14	11	14	28	4
France	9	9	1	9	16	4
Germany	9	8	2	9	15	5
Greece	23	21	7	31	34	18
Hungary	5	5	[..]	5	11	1
Iceland	5	5	3	7	10	2
Ireland	31	25	5	36	65	9
Italy	13	13	3	17	25	9
Japan	22	21	13	30	48	17
Korea	45	49	35	69	77	41
Luxembourg	3	3	[..]	4	4	3
Mexico	28	23	19	39	45	21
Netherlands	2	2	2	2	3	2
New Zealand	2	4	1	2	3	1
Norway	9	9	1	10	20	1
Poland	5	6	6	6	6	6
Portugal	17	20	5	25	35	16
Slovak Republic	6	4	[..]	7	10	3
Spain	23	27	12	32	39	24
Sweden	6	6	3	7	13	1
Switzerland	18	18	[..]	[..]	24	15
Turkey	15	18	20	16	38	17
United Kingdom	10	10	1	12	17	7
United States	24	24	9	34	41	17
<b>OECD</b>	<b>13</b>	<b>14</b>	<b>7</b>	<b>17</b>	<b>25</b>	<b>9</b>

[..] indicates that the sample size is too small.

Source: OECD Income Distribution Database; see OECD (2008), *Growing Unequal?*, Table 5.3.

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### The role of living arrangements

Table 2.1 also assesses the degree of poverty among older people living in different types of household. The first two columns, for example, show the poverty rate for all older people and for people living in a household headed by someone of pension age (over 65).

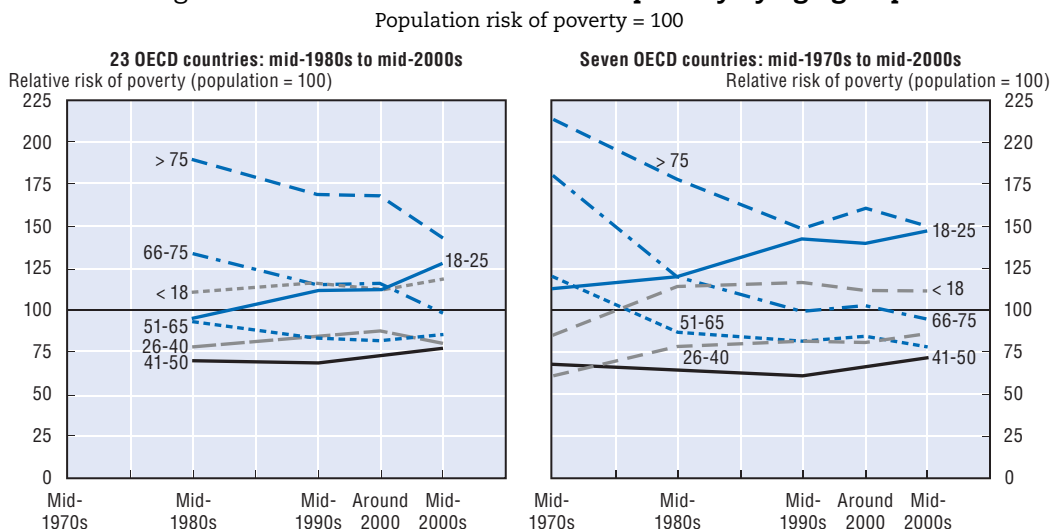
The difference between the two is generally small, and averages just one percentage point in the OECD as a whole. Only in Portugal, Spain and Turkey are people more likely to be poor in households headed by a retired person. This mainly reflects the extent to which older people live in multi-generational households; living with their children, for example.

The starkest difference in risk of poverty is between single people of pension age and couples where the head of the household is of pension age, with poverty rates of 25% and 9% respectively on average in OECD countries. Single older people fare worse in Ireland and Korea, with well over half of them living in poverty. Poverty rates are also high – 40-50% – for single older people in Australia, Japan, Mexico and the United States.

### How has old-age poverty changed?


Poverty rates of older people have fallen over the past three decades. Figure 2.12 shows poverty rates over time for a range of different age groups relative to the poverty rate for the population as a whole. The left-hand panel presents data for 23 OECD countries. In the mid-1980s, the older old (aged over 75) were nearly twice as likely to be poor as the population as a whole. The relative poverty of older people fell over the next two decades: from 90% to less than 45% above the overall poverty rate. The improvement for the younger old (aged 66-75) was equally marked. Their relative risk of poverty was 33% higher than average in the mid-1980s, but fell a little below the average by the mid-2000s. Poverty rates of people of prime working age (26-50) were fairly stable. Thus, it was children and young adults (people aged 25 or under) who replaced older people over time as a group with a relatively high risk of poverty.

Figure 2.12. Trends in relative risk of poverty by age group



Note: Right-hand panel comprises data from Canada, Finland, Greece, the Netherlands, Sweden, the United Kingdom and the United States. Left-hand panel shows the remaining 23 OECD countries.

Source: OECD Income Distribution Database; see OECD (2008), *Growing Unequal?*, Figure 5.5.

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A longer series of data – back to the mid-1970s – is available for seven countries: Canada, Finland, Greece, the Netherlands, Sweden, the United Kingdom and the United States. The results for these seven, shown in the right-hand panel of Figure 2.12, demonstrate that the trend to lower old-age poverty is a longstanding one.

This pattern of declining old-age income poverty is common to most OECD countries (although this is not shown graphically here: see OECD, 2008, Table 5.3). However, there are some exceptions. Ireland and Spain have seen a large increase in the proportion of older people who are poor throughout the late-1980s, the 1990s and the early 2000s. This was driven by rapid economic growth and increases in real earnings that, in a way, left older people behind. In Mexico, an increase in the risk of poverty at retirement age between the mid-1980s and mid-1990s was offset by a decline between the latter period and the mid-2000s. Australia, Finland, Sweden, Switzerland and the United States have all seen increases in old-age poverty over time, with the growth occurring during the period from the mid-1990s to the mid-2000s.

Returning finally to the role of living arrangements, during the decade spanning the mid-1990s and mid-2000s, poverty rates for single older people fell more rapidly than the equivalent rates for older couples. This decline is strongest in the Czech Republic (19.1 percentage points), followed by Norway (13.8) and Austria (11.6). However, the effect was the opposite in seven countries: in particular for Spain and Finland, where poverty rates for the single older people rose by 32.7 and 12.5 percentage points respectively.

### 3. The redistributive role of the state: taxes and benefits

The analysis of incomes and poverty of older people – and how they compare with the position of the population as a whole – is based on *disposable* income. The state plays an important role in determining people's disposable income. It takes money away from households in the form of personal taxes and social security contributions. It gives some of it back in the form of cash benefits, including, of course, old-age pensions.

#### **Taxes and contributions**

The first two columns of Table 2.2 show the proportion of household income paid in taxes and contributions by individuals of pension age (over 65) and of working age (18-65). In the 24 countries for which data are available, people of working age pay an average of 31% of their incomes in direct taxes.<sup>22</sup> For people of pension age, the direct tax burden is just 18% of income on average in OECD countries. This difference in tax burdens has a large effect when the incomes of older people are compared with those of people of working age at any point in time. They also have an important effect on individuals' living standards as they move from work into retirement (see the indicator on "Net replacement rates" in Part II of this report).

Differences between countries in the tax burdens of people of working age are well described in other OECD reports.<sup>23</sup> The tax burden for older people tends to be smaller than that carried by people of working age. There are three main reasons. First, OECD countries' income taxes are progressive: richer people pay a higher proportion of their income in taxes. Older people tend to have lower incomes than people of working age. Secondly, most OECD countries do not levy social security contributions on pensioners, or do so only at a low rate to finance particular benefits, such as healthcare. Thirdly, most OECD countries offer concessions in their income-tax regimes for either pensioners or pension income.

The progressivity of taxes and transfers is measured by comparing their distribution with the distribution of equivalent household disposable income. The concept is illustrated in Figure 2.13. The horizontal axis shows the cumulative percentage of the population, ranked by equivalent household disposable income, with the poorest to the left and the


Table 2.2. **Scale and progressivity of household taxes and cash benefits**

Share of household taxes and public transfers in disposable income  
and measure of progressivity of taxes and transfers expressed in percentage terms, mid-2000s

	Household taxes (% of disposable income)		Progressivity of household taxes		Public transfers (% of disposable income)		Progressivity of public transfers		
	Pension age	Working age	Pension age	Working age	Pension age	Working age	Pension age	Working age	Old-age benefits
Australia	9.7	24.8	81.6	49.2	48.7	10.1	-8.0	-43.1	-47.0
Austria	27.5	35.0	46.4	36.5	101.3	27.4	25.6	13.0	24.9
Belgium	19.6	42.1	42.0	36.3	96.9	22.3	16.9	-14.1	-8.9
Canada	15.0	27.0	58.6	47.2	46.7	9.3	-0.6	-17.3	-11.0
Czech Republic	6.1	23.9	78.9	42.4	79.1	17.0	3.7	-15.1	-10.8
Denmark	44.2	53.8	33.6	33.2	81.1	19.9	-5.4	-30.3	-49.4
Finland	24.8	31.0	44.4	41.9	18.1	12.4	-13.8	-25.8	-44.1
France	11.1	28.8	47.4	35.4	96.4	22.6	28.5	9.8	25.3
Germany	12.5	41.1	48.5	43.9	82.2	16.4	17.5	-6.6	10.1
Greece <sup>1</sup>	..	..	..	..	66.4	16.7	20.2	17.6	14.5
Hungary <sup>1</sup>	..	..	..	..	85.6	27.5	11.9	-2.5	1.0
Iceland	34.2	54.1	29.6	25.7	79.7	12.3	3.7	1.8	
Ireland <sup>1</sup>	5.4	20.7	78.2	53.1	55.8	13.3	-0.1	-20.5	-32.0
Italy	21.1	32.0	62.3	51.2	87.4	21.1	22.5	15.8	21.8
Japan	15.4	21.0	42.9	35.6	55.8	11.0	12.1	2.0	2.3
Korea	5.0	8.1	46.2	36.3	15.7	3.0	28.2	4.0	
Luxembourg	14.8	26.3	43.0	40.4	91.0	22.4	14.5	7.5	17.3
Mexico <sup>1</sup>	..	..	..	..	21.3	5.4	51.8	40.7	
Netherlands	10.0	26.9	70.5	43.6	53.0	12.7	-1.4	-22.3	-16.0
New Zealand	19.8	29.1	24.9	48.5	76.8	13.1	-1.1	-33.1	-32.4
Norway	22.7	35.0	43.3	35.5	72.7	15.4	7.4	-17.7	-26.7
Poland <sup>1</sup>	17.9	28.8	32.5	38.2	92.6	30.4	19.8	17.3	26.0
Portugal <sup>1</sup>	..	..	..	..	74.2	20.3	29.5	31.5	33.2
Slovak Republic	5.0	22.0	72.6	38.8	86.0	22.0	10.4	-3.0	-0.2
Spain <sup>1</sup>	..	..	..	..	70.4	15.0	17.5	10.2	4.1
Sweden	40.2	44.2	31.2	33.0	96.3	21.4	9.0	-15.3	-18.7
Switzerland	32.9	36.6	20.2	21.1	63.6	9.7	1.5	-17.6	-18.7
Turkey <sup>1</sup>	..	..	..	..	46.0	18.6	28.8	32.0	37.3
United Kingdom	10.0	26.2	61.4	48.6	54.3	8.7	3.5	-34.7	-20.6
United States	16.4	27.7	65.8	54.9	42.1	5.6	10.5	-11.5	-3.8
<b>OECD24</b>	<b>18.4</b>	<b>31.1</b>	<b>50.2</b>	<b>40.4</b>	<b>69.7</b>	<b>15.8</b>	<b>8.5</b>	<b>-10.7</b>	<b>-4.5</b>

1. For Greece, Hungary, Mexico, Portugal, Spain and Turkey, data on public transfers are reported net of taxes and so household taxes cannot be separately identified. The OECD average therefore excludes these six countries. Progressivity of public transfers are calculated on net values for these countries, plus Ireland and Poland.

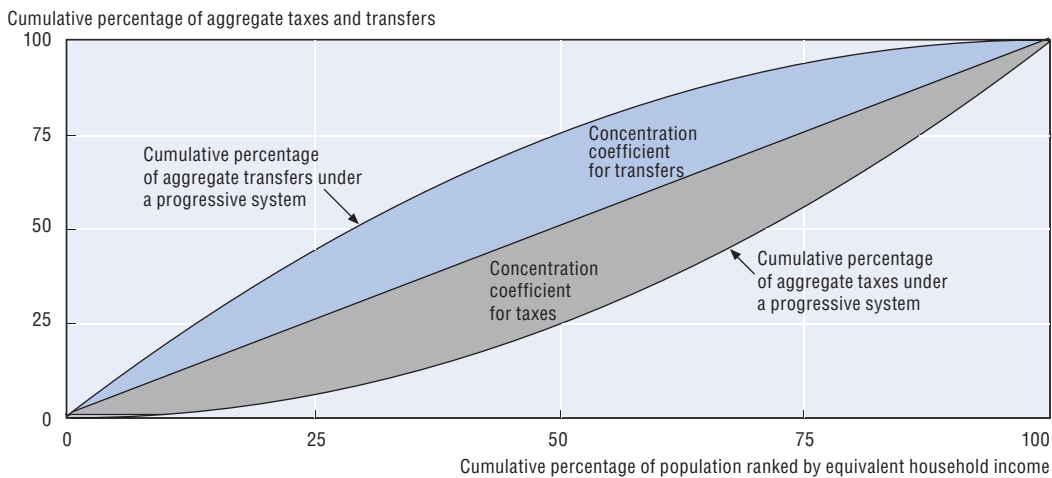
Source: OECD Income Distribution Database; see OECD (2008), *Growing Unequal?*, Tables 4.2-4.4 and the surrounding discussion.

StatLink  <http://dx.doi.org/10.1787/651477340623>

richest to the right. The vertical axis shows the cumulative percentage of total taxes or transfers paid or received. If taxes and transfers were distributed equally, then the result would be a 45° line. In practice, they are not shared in this way.

The chart shows the effect of a progressive tax system, where the share of income paid in tax rises with income. This is the curve below the 45° line. It also shows the effect of a redistributive system of transfers, where the share of total benefits received declines with income. This is the curve above the 45° line.

The shaded areas show the measure of progressivity of taxes and transfers presented below. Formally, these are called “concentration coefficients”.<sup>24</sup> The larger the area between the 45° line and the share of taxes and transfers, the more progressive these

Figure 2.13. **Measuring progressivity of taxes and transfers: an illustration**

systems are. In the illustrative example shown in Figure 2.13, public transfers are redistributive, and so the result for the concentration measure is negative.

Table 2.2 presents the empirical measure of progressivity of taxes and social security contributions in the third and fourth columns. A value of zero would indicate that all households paid an equal share of taxes and contributions (and so the curve for taxes would be the 45° line in Figure 2.13). The higher the value, the more progressive is the tax system.

For people of working age, the English-speaking countries – Australia, Canada, Ireland, New Zealand, the United Kingdom and the United States – along with the Czech Republic, Germany and the Netherlands have the most progressive tax systems. Direct taxes are the least progressive in France, Switzerland and the Nordic countries.

For people of pension age, taxes are significantly more progressive than for people of working age in 16 of the 24 countries for which data are available. There are three main reasons. First, basic tax reliefs (allowances, credits and so on) are often larger for pensioners than people of working age. As a result, many pensioners pay no tax. Secondly, retirees in most OECD countries do not pay social security contributions (or do so at a low level). Social security contributions are generally more regressive than the personal income tax. There is often a single contribution rate that applies equally to all earners. Also, ceilings on contributions cap the contributions paid by high earners (see Table III.1 in Part III).

However, differences in progressivity between taxes on people of working and pension age are small – or taxation of workers is more progressive than pensioners – in the Nordic countries, New Zealand, Poland and Switzerland. The reasons for this pattern differ: high overall taxes in the Nordic countries, the absence of social security contributions in New Zealand and contributions paid by pensioners for healthcare in Poland.

### **Public cash transfers**

The right-hand part of Table 2.2 examines public cash benefits. These include the full range of public retirement benefits: basic, resource-tested and minimum programmes and earnings-related schemes. However, they also include other cash benefits paid to older people that are not generally covered elsewhere in the report, such as family, unemployment, housing and disability benefits.<sup>25</sup>

The first two of the five columns show the share of these benefits in disposable income. Unlike the data on income sources in Figure 2.3 above, these are shown in gross terms, before the deduction of income tax and social security contributions. (This explains why public transfers account for more than 100% of disposable income in Austria.)

Unsurprisingly, public transfers are a more important source of income for people of pension age than working age in all countries. On average, public benefits make up 70% of the gross incomes of older people but only 16% for people of working age. Public transfers are most heavily targeted on people of pension age in Iceland, New Zealand, Switzerland, the United Kingdom and the United States. This is principally because public transfers to people of working age in these countries are a smaller proportion of disposable income than the OECD average.

The final columns of Table 2.2 show how public cash transfers are distributed across income groups, again divided between people of working age and people of pension age. The measure of progressivity used here would again have the value of zero if all income groups received the same share of public benefits. Unlike taxes, however, many of the values for cash benefits are negative. This means that people with lower incomes receive a greater-than-proportionate share of the pool of benefit payments (see the explanation around Figure 2.13 above).

Cash transfers paid to people of working age are more progressive in their distribution than payments to people of pension age in all OECD countries bar Portugal and Turkey. In particular, family and unemployment benefits are targeted on lower-income groups.<sup>26</sup> In contrast, 23 of the 30 OECD countries have public, earnings-related pensions (see Table 0.1 in the Framework of *Pensions at a Glance* above). These, by design, pay a higher level of benefits to people who had higher earnings when they were working. This accounts for much of the difference between the redistribution inherent in schemes paid to working-age families than to retirees.

To study this effect more closely, the final column of Table 2.2 separates out old-age benefits and shows the empirical measure of progressivity (the concentration coefficient) for these schemes alone. In six countries<sup>27</sup> that do not have public, earnings-related pension schemes – Australia, Denmark, Finland,<sup>28</sup> Ireland, the Netherlands and New Zealand – the progressivity measure is strongly negative. This is because public transfers take the form either of basic pensions or resource-tested retirement benefits. As a result, coverage of these programmes is high or, in some cases, near-universal (see Box 2.1 above). Other countries with relatively large proportions of older people covered by resource-tested, minimum and basic pensions – such as Belgium, Canada, Sweden and the United Kingdom – also have highly progressive public transfers to older people. In the Czech Republic, Switzerland and the United States, the public pension system is designed to pay higher pensions relative to earnings for low-paid people and, again, the progressivity measure in Table 2.2 is negative.

In contrast, the empirical progressivity measure of old-age benefits is positive in 12 countries. This is typically because pension benefits are strongly related to earnings when working: in Austria, France and Italy, for example. In others, it is because low-income workers have often spent all or part of their lives working in the informal sector. This explains the results for Greece, Portugal and Turkey (and the result for the progressivity of all transfers to people of pension age in Mexico).

It is interesting also to compare these empirical measures of the distribution of public retirement benefits paid out today with the projections of the distribution of future pensions for people entering the labour market today and so reaching normal pension age in 40-50 years' time (the indicator of "Progressivity of pension benefit formulae" in Part II of this report). Some of the differences between the two sets of results reflect differences in the types of benefits received: for example, public pensions are highly redistributive in Finland, the Netherlands, Sweden and Switzerland. However, the overall retirement-income system is less so, because of the exclusion of mandatory or quasi-mandatory occupational plans from the analysis underlying Table 2.2. The second reason is the fact that many pension systems have been reformed, meaning that the level and distribution of retirement benefits will be very different from those of today's pensioners.

#### 4. Looking forward

This chapter has analysed the economic situation of today's older people, looking at the level of their incomes and the extent of old-age poverty. Today's retirement incomes depend on the rules of pension systems in the past and on pensioners' job and earnings history. This underlines the long time horizon involved in analysing pensions. This begs the question of how the position will look in 20 or 40 years' time, when today's prime-age and younger workers will be retiring.

The experience of these generations of current workers will look very different from those of their parents and grandparents.

First, there have been widespread *social* changes: greater divorce and lone parenthood, fewer children and the decline of the model of the single, male breadwinner as women's participation in the labour market has grown.

Secondly, there have been profound and continual *economic* changes, with many countries experiencing persistent, long-term unemployment into the 1990s. Labour markets have much improved in recent years. However, the ongoing economic crisis seems likely to have a strong impact, in the short-term at least. The financial crisis, too, will have profound implications for many retirees over the next five to ten years. (See the special chapter on "Pension systems during the financial and economic crisis" above.)

Thirdly, the last two decades have seen a wave of *pension reforms*. These will substantially affect the level and sources of retirement incomes of today's workers and so the way old-age incomes and poverty will evolve.

#### **Changes in societies and economies**

The most significant economic and social change has been the changing role of women. The older people whose incomes are analysed in this paper entered the labour market in 1940 or earlier. This was a period when the family model of the single, male breadwinner was strong. Women often left the labour market when they got married or had children (at rather earlier ages than today) and spent long periods out of the labour market caring for their children. Some never took paid work again.

The gap between the sexes in employment has changed, as women have fewer children, give birth later and spend less time out of the labour market caring for children. The gap between the sexes in pay has also fallen, as a result of anti-discrimination legislation, changing social attitudes, smaller gender differentials in education and qualifications, and longer working hours for women. The result of this change is that,



generation by generation, more women will earn pensions in their own right and their value will be greater. The pattern of lower old-age incomes and wider old-age poverty of women observed among today's retirees should be less stark in the future.

Another social change affecting women has been the rise in divorce. Whilst a few countries allow for pensions to be split between couples on divorce, even these rules are relatively recent. Many women moving into retirement in coming years will no longer be able to rely on survivors' benefits, for example. More widespread divorce has made lone parenthood more prevalent. Lone parents tend to have low incomes because of caring responsibilities and lack of affordable child care.

Taken together, these social and economic developments affecting women's position in the labour market might result in higher old-age incomes on average for women. But this might be accompanied by greater rates of old-age poverty as a result of more widespread divorce and lone-parenthood.

### **Changes in pension systems**

Pension systems have also been subject to change in recent times, affecting most OECD countries. *Pensions at a Glance* has set out the key components of these reforms, in the special chapter on "Recent pension reforms" in this volume and in the last edition (OECD, 2007a, Part II.1). The analysis here focuses on the impact of these changes on the pension entitlements of individuals with different levels of earnings. This is, in part, a stylised exercise: it asks, what would the pension entitlements of a worker entering the labour market in 2006 have been, had pension reform not taken place? It then compares this with the results for the same individual under the current rules, including any changes that are being phased in. If there have been multiple reforms in the past 15 to 20 years, the analysis generally shows the cumulative effect of the changes.

Table 2.3 presents the results for replacement rates: the ratio of pension during retirement to earnings when working. It shows these in gross and net terms (after taxes and contributions).<sup>29</sup> Results are provided for three earnings levels: 50%, 100% and 150% of the economy-wide average. The 20 countries shown in the table can be divided into four groups.

First, one of the key motives for pension reform has been to improve the long-term financial sustainability of pension systems. Eight countries have achieved this through *across-the-board* cuts in benefits, which apply equally (or almost equally) to low, middle and high earners alike. This applies to Austria, Finland, Germany, Italy, Japan, Korea, Portugal and Turkey. Gross pension entitlements for people under the reformed rules will be an average of 22% lower for full-career workers than under the pre-reform rules in these countries. The largest cuts, of around 40% will be in Korea and Portugal, with more modest changes of 10-25% in the rest of this group.


A second group of countries has also cut benefits but these reforms have *protected low earners* from all or most of the reduction in benefits. This group comprises France, Mexico and Sweden. The reform in Mexico, for example, will cut pensions by 50% for average earners compared with less than 25% for low earners (with half-average earnings). The cuts for average earners in France and Sweden are approximately 20%, but they are only around 5% for low earners.

The third set of countries has moved towards a *stronger pension-earnings link*, the opposite direction of the second group. In Hungary, Poland and the Slovak Republic, the redistributive features of the new pension system are much smaller than the previous one. Pensions for low earners will be cut substantially: by 25% in Poland and 13% in the

**Table 2.3. Impact of pension reforms on individual entitlements**  
Gross and net replacement rates under pre- and post-reform rules, in percentage

Individual/earnings	Gross replacement rate						Net replacement rate					
	Pre-reform			Post-reform			Pre-reform			Post-reform		
	0.5	1	1.5	0.5	1	1.5	0.5	1	1.5	0.5	1	1.5
Australia	46.2	23.1	15.4	67.0	41.6	33.1	55.3	30.4	21.8	80.2	53.1	41.8
Austria	90.0	90.0	85.9	80.1	80.1	76.4	98.4	99.2	95.1	90.5	90.3	86.3
Belgium	54.8	40.4	31.4	58.1	42.0	32.5	74.2	62.1	50.6	78.7	63.7	51.7
Czech Republic	72.1	45.0	32.9	79.2	49.7	36.4	86.7	58.1	44.6	95.3	64.1	49.4
Finland	69.9	66.2	65.2	66.5	56.2	56.2	75.9	71.4	72.4	73.2	62.4	63.8
France	64.7	64.7	58.4	61.7	53.3	48.5	79.7	78.2	70.8	76.2	65.7	60.2
Germany	47.9	47.9	46.5	43.0	43.0	42.6	56.4	66.6	66.4	59.2	61.3	60.3
Hungary	69.9	57.7	53.6	76.9	76.9	76.9	85.9	83.2	79.1	94.3	105.5	99.2
Italy	90.0	90.0	90.0	67.9	67.9	67.9	99.1	99.1	99.2	74.8	74.8	77.1
Japan	56.5	40.6	35.3	47.1	33.9	29.4	55.8	41.0	37.0	51.4	38.7	33.9
Korea	100.0	69.3	56.0	64.1	42.1	33.6	105.9	74.9	61.6	68.8	46.6	38.7
Mexico	72.5	72.5	72.5	55.3	36.1	34.5	73.4	76.5	83.2	56.0	38.0	39.6
Norway	62.5	51.9	41.9	66.2	59.3	49.8	80.4	62.0	52.3	76.7	69.3	60.6
New Zealand	77.5	38.7	25.8	79.3	41.1	29.0	77.5	38.7	25.8	79.3	41.1	29.0
Poland	81.2	62.9	56.8	61.2	61.2	61.2	97.1	76.9	69.7	74.4	74.9	75.0
Portugal	91.3	89.9	88.5	63.0	53.9	53.1	106.1	112.0	110.8	73.2	69.6	72.0
Slovak Republic	65.0	58.9	39.3	56.4	56.4	56.4	76.4	75.9	52.2	66.3	72.7	74.9
Sweden	82.5	78.6	76.5	76.6	61.5	75.6	84.5	80.3	81.9	79.3	64.1	81.2
Turkey	107.6	107.6	107.6	86.9	86.9	86.9	150.0	154.4	157.9	121.2	124.7	127.1
United Kingdom	41.1	29.7	20.6	51.0	30.8	21.3	51.9	39.8	28.3	63.8	40.9	29.2

Source: OECD pension models; see also OECD (2007), *Pensions at a Glance*, Part II.1.

StatLink  <http://dx.doi.org/10.1787/651486817320>

Slovak Republic. The cuts for average earners will be small: less than 5%. High earners (at 150% of average earnings) will receive higher pensions under the new rules than they would have done under the old. In Hungary, replacement rates are higher after reform at all earnings levels, but the increase in pension is greater for higher earners.

Finally, countries with *higher pensions* after reform make up a fourth group. In Australia and Norway, this is because private pensions have been made mandatory. Previously, private pensions had broad coverage in both countries, but this measure will ensure that many low-to-middle income workers are now covered by private pensions. In New Zealand, the pension age was increased but the level of benefit was unchanged. In the Czech Republic and the United Kingdom, pension ages will also be increased, but this will allow people to build up larger pension entitlements. In addition, the United Kingdom's public, earnings-related pension scheme will gradually move to a flat-rate benefit. Low earners will see a large increase in benefits – nearly 25% – while the gains for low and middle earners will only be around 4%. In Belgium, the higher replacement rate arises under the standard assumption of retirement at the normal pension age (of 65) due to an increased pension bonus paid to people who work between 62 and 65.

## 5. Conclusions

There are large differences in the economic well-being of older people between OECD countries. In some of them, older people's incomes are, on average, almost the same as the population as a whole once differences in household size is taken into account. In others, older people have to get by on incomes of just two-thirds of the population average. The proportion of pensioners living in income poverty varies even more. In some countries, old-age poverty is

virtually non-existent, while in others more than 40% of older people are poor. Even in countries with relatively low numbers of poorer pensioners overall, there are still pockets of old-age poverty, particularly among the oldest old, women and those living alone.

The findings are summarised in Table 2.4, which compares poverty rates and relative incomes of older people. At the top right are six countries with low rates of poverty and high old-age incomes. Yet these countries have radically different pension systems. At the other end of the spectrum lie Australia, Korea and Ireland, which have low old-age incomes and high poverty rates. Greece, Japan Portugal, Spain, Switzerland and the United States also have high old-age poverty rates, but incomes of older people are towards the middle of the distribution. In Belgium, Denmark, Finland, Norway and the United Kingdom, relative incomes of older people are low while poverty rates are towards the middle of the range. France, Germany and Turkey also have mid-range poverty rates for older people, but high old-age incomes overall.

**Table 2.4. Summary: old-age poverty rates and relative incomes of older people**

Relative incomes of older people	Old-age poverty rates		
	High	Medium	Low
High	Mexico	France, Germany, Turkey	Austria, Canada, Iceland, Luxembourg, Netherlands, Poland
Medium	Greece, Japan, Portugal, Spain, Switzerland, United States	Italy, Sweden	Czech Republic, Hungary
Low	Australia, Ireland, Korea	Belgium, Denmark, Finland, Norway, United Kingdom	New Zealand, Slovak Republic

Source: OECD Income Distribution Database, see OECD (2008), *Growing Unequal?*.

These findings are at least suggestive of policy directions. Low incomes and high poverty of older people indicates that governments might consider redistribution from the working-age population to retirees. Indeed, since the OECD income-distribution data were collected in the mid-2000s, Australia, Ireland and Korea have already taken steps in this direction. In contrast, there is a weaker case for redistribution from workers to pensioners in countries with middle or high old-age incomes. However, in countries that combine this with middle or high levels of old-age poverty, there might be a case for greater targeting of old-age pensions on people with low retirement incomes. Nevertheless, there are, of course, many other considerations to take into account in designing pension policy.

Looking forward, the major social and economic change that will affect future incomes and poverty of older people is the changing role of women: greater labour-market participation, a narrowing gender pay gap and better protection for periods of childcare leave, as discussed in Section 4 above. Pension reforms will also have a substantial impact on the evolution of old-age incomes and poverty.<sup>30</sup> Countries that have cut benefits across-the-board are likely to see lower pensioner incomes and greater poverty in the future, unless individuals make up for these cuts by working longer or with voluntary retirement savings.<sup>31</sup> Average old-age incomes may well fall in countries which protected low earners from cuts, but this policy means that pensioner poverty will not be affected by reform. In the countries that moved to a stronger pension-earnings link, average incomes of the old may increase, but the lack of redistribution in the new pension systems means that pensioner poverty may be higher. Finally, the group that increased mandatory retirement provision should naturally see higher incomes in old age. In all of these cases, the changes will help low earners more, and so there should be a larger effect on pensioner poverty.

## Notes

1. The chapter draws on the OECD's income-distribution database, which underlies much of the analysis contained in the recent report on inequality and poverty, *Growing Unequal?* (OECD, 2008).
2. See the indicators on "Progressivity of pension benefit formulae" and the "Pension-earnings link" in Part II.
3. See OECD (2008), Table 1.A1.1 for information on the surveys used and adjustments made to the data.
4. For most countries, the data are for the year 2004. However, for Canada, Denmark, Germany, Hungary, Ireland, Korea, the United Kingdom, and the United States the data refer to 2005. The survey used for the Netherlands relates to 2003 and the one for Korea to 2006.
5. A standard linear regression of older people's relative incomes yields the following results, with standard errors in parentheses:  

$$\text{income} = 2.128 \times \text{public expenditure/GDP} - 0.761 \times \text{dependency ratio}$$

(0.483)
(0.311)

 Both coefficients are significant at the 5% level and the  $R^2$  for the regression is 0.31. The data are drawn from the indicators in Part II.
6. Most people of retirement age do not have dependent children, but the cost of children is already taken into account by the process of equivalising incomes.
7. We are unaware of any studies that have attempted to measure these directly. However, they often discussed in the literature on consumption behaviour over the lifecycle: see, *inter alia*, Banks *et al.* (1995) and Browning and Crossley (2001).
8. Analysis of household debt by age of household head for five countries shows a peak in the 35-44 age range. People aged 65 and over have virtually zero debt in these countries (see OECD, 2008, Figure 10.1).
9. See OECD (2008), Chapter IV.10 for evidence on the distribution of wealth by age for seven OECD countries. Disney and Whitehouse (2003) and Crystal and Shea (1990) discuss alternative measures that take account of the value of wealth.
10. OECD (2008), Chapter IV.9 analyses the distribution of publicly provided services. In particular, see Figure 9.1 for analysis of healthcare expenditures by age of recipient.
11. See Whitehouse (2009) for an analysis of pension-indexation policy and related issues.
12. See the indicator of "Life expectancy" in Part II of this report for discussion and data for all 30 OECD countries.
13. See Whitehouse and Zaidi (2008) for a survey of the literature, and new evidence on socio-economic differences in mortality of older people in Germany, the United Kingdom and the United States.
14. Data for Switzerland are not shown in Figure 2.3. This is because capital (mainly private pensions) and work incomes are aggregated in the database. Together they account for 52% of older people's incomes on average, with the 48% residual coming from public transfers.
15. See the evidence in Förster and Mira d'Ercole (2005) and Disney and Whitehouse (2001), Chapter 7, for example.
16. OECD (2008), Annex 5.A1 shows the thresholds for low income for different family types in both national currencies and US dollars (at purchasing-power-parity exchange rates).
17. Benefit levels for 2005 are taken from the database underlying the calculations in Whitehouse (2009). The "Country profiles" in Part III give 2006 values. The level of poverty thresholds for 2005 is taken from OECD (2008), Table 5.A1.1.
18. The correlation coefficient is 0.6425, which is significant at the 0.01% level. Based on the  $R^2$  for a simple regression, general levels of poverty "explain" 41.3% of cross-country differences in old-age poverty.
19. See Whitehouse *et al.* (2009), Turner (2007) and Part III of this report for information on the change in pension eligibility ages for men and women over time.
20. OECD (2006) offers a comprehensive analysis of the situation of older workers.
21. See OECD (2006) and OECD (2008), Chapter III.5.

22. The calculations do not include social security contributions levied on employers or indirect taxes, such as consumption taxes (value-added tax, goods-and-services tax and excise duties). Warren (2009) and OECD (2008), Chapter V.11 discuss the impact of allowing for consumption taxes on income-distribution analysis.
23. OECD (2007b and 2009), for example.
24. The technical details of the calculation are set out in OECD (2008), Chapter II.4. The technique is similar to the calculation for the distribution of retirement benefits: see the indicator on “Progressivity of pension benefit formulae” in Part II of this report and the discussion thereof.
25. Nevertheless, data on public expenditure on these benefits is shown for ten countries where these are significant in the indicator of “Pension expenditure” in Part II.
26. See OECD (2008), Table 2.4 for measures of progressivity disaggregated into eight separate programmes, such as disability, family, unemployment and housing benefits.
27. Iceland also does not have a public earnings-related scheme, but data are not available on the progressivity of public old-age benefits. Mexico’s replacement of public earnings-related with private defined-contribution pensions has very little impact on people already retired.
28. The occupational plans in Finland are treated as “public” elsewhere in *Pensions at a Glance* and in the national accounts. However, they are treated as “private” in the OECD income-distribution database because they are funded, defined-benefit plans.
29. For a more detailed discussion of replacement rates and presentation of the results for the post-reform scenario, see the indicators of “Gross replacement rates” and “Net replacement rates” in Part II of this report).
30. Note that incomes and poverty are *relative* measures: both compare incomes of older people with those of the population as a whole. Thus, developments in the incomes of people of working age – driven by changes in employment rates and earnings, for example – will also have an effect on the position of older people.
31. See the special chapter on “The pension gap and voluntary retirement savings” below.

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## 3. Recent Pension Reforms

There are clear objectives and principles that all well designed pension systems share. These have been set out in numerous OECD reports.<sup>1</sup> The analysis of recent pension reforms in this special chapter is built around a framework of six objectives of retirement-income provision.

1. *coverage* of the pension system, by both mandatory and voluntary schemes;
2. *adequacy* of retirement benefits;
3. *financial sustainability* and *affordability* of pensions to taxpayers and contributors;
4. *economic efficiency*: minimising the distortions of the retirement-income system on individuals' economic behaviour, such as labour supply and savings outside of pension plans;
5. *administrative efficiency*: keeping the cost of collecting contributions, paying benefits and (where necessary) managing investments as low as possible; and
6. *security* of benefits in the face of different risks and uncertainties.

This framework neatly illustrates the trade-offs involved in pension-system design and pension reform. For example, higher pensions would improve the adequacy of retirement benefits but would also worsen financial sustainability. In other cases, there are synergies between the different objectives. Encouraging later retirement improves both economic efficiency and financial sustainability. Similarly, extending coverage of pensions should also improve adequacy of retirement benefits for today's workers.

OECD countries have continued, in recent years, to be active in reforming their pension systems. The 2007 edition of *Pensions at a Glance* reported on pension reforms in the period from 1990 to 2004.<sup>2</sup> This special chapter updates this earlier work. The measures that OECD countries have taken towards achieving the six desirable aims for pension systems in the period 2004-08 are set out in Table 3.1.

### 1. Coverage of pension systems

Changes that aim to increase pension coverage have mainly been aimed at voluntary, private pensions. France, Hungary, Poland and Portugal have introduced new private-pension plans, often with tax privileges. Germany extended the tax incentives that were due to expire in 2008.

In the period 2004-08, only Norway joined other OECD countries that have mandated private pensions. (These countries include Australia, Hungary, Iceland, Mexico, Poland, the Slovak Republic, Sweden and Switzerland.)

Italy and Korea have continued an already lengthy reform process that aims to convert existing, employer-managed severance-pay schemes into occupational pension plans. In these new plans, savings are earmarked for retirement rather than withdrawn when people change jobs or become unemployed. However, in neither country have the occupational plans been as popular as governments had hoped, with coverage remaining relatively low.

New Zealand introduced its KiwiSaver scheme, which requires individuals to opt out of rather than opt in to private pensions. The United Kingdom has legislated for a similar scheme that will begin operating in 2012.<sup>3</sup>

Some countries aimed to extend coverage of the mandatory pension system. Greece, with relatively low coverage currently, hopes to increase this with new institutional arrangements. Switzerland has reduced the earnings floor to ensure that more part-time, low-paid workers are covered. The United Kingdom has relaxed the qualifying conditions for a full basic pension and strengthened credits for carers. One expected result is that 90% of women will qualify for a full basic pension in 2050, compared with just 30% now.

## 2. Adequacy of retirement benefits

Increases in pension benefits have, in general, been targeted on low earners. Such changes comprise one-off payments in Australia and Greece and increases in basic pensions in Korea and the United Kingdom. Australia will also increase the age pension by 10.8% for couples and by more for single people. Finland will introduce a new guarantee pension from 2011, worth EUR 8 200 a year in today's money. This will provide a safety-net income level 23% higher than the current national pension. Belgium, France and Spain will all increase minimum pensions by more than required by the normal indexation rules.

The increases in Germany in 2008 and 2009 will raise all pensions by the same proportion, in contrast with the targeted increases elsewhere.

The other policy changes that improve living standards in retirement have been delivered through the tax system. Australia, Finland and Sweden have all reduced taxes on pensioners.

## 3. Financial sustainability

Gloomy long-term fiscal projections have prompted many countries to improve the long-term financial sustainability of retirement-income systems through lower benefits in future. In France and Mexico, reforms have focused on public-sector workers whose pensions were largely unreformed when major changes were made to the benefits of private-sector workers in the 1990s. Iceland will cut future pensions of senior public officials while Ireland has imposed a contribution levy on members of its civil service pension scheme.

Finland and Portugal have introduced measures that will cut future benefits in line with increases in life expectancy. This brings to 12 the number of OECD countries that have adopted such a policy in one or more of their mandatory pension schemes.<sup>4</sup>

In Hungary, Korea and Switzerland, there have been more direct cuts in pension benefits. Hungary will abolish the 13th-month pension payment for higher-income retirees as a condition to a large IMF loan. The target replacement rate of the Korean public pension will gradually fall from 60% to 40%. In Switzerland, the statutory minimum interest rate paid on mandatory private pensions moved up and down over the period, though for 2009 it will be just 2%. This is the lowest level of the statutory interest rate since the scheme was introduced (when it stood at 4%). New rules for the conversion of occupational pension



balances into retirement annuities will cut benefits by as much as 5.5%. Other moves to improve financial sustainability involve changes in indexation procedures for pensions in payment. To alleviate current fiscal problems, Hungary will postpone the 2009 increase for a year. Future increases will be linked to price inflation rather than a mix of 50% wage growth and 50% prices. France will move to price indexation for public-sector schemes.

#### 4. Economic efficiency

Many of the potential improvements to financial sustainability of pension systems come from measures to improve retirement incentives. These changes here come under the heading of “economic efficiency” because they are designed to reduce the distortions to the labour market caused by incentives to retire early. Effective retirement ages are currently below the normal statutory pension age in more than two-thirds of OECD countries. Indeed, men retire before age 60, on average, in eight OECD countries: Austria, Belgium, Finland, France, Hungary, Italy, Luxembourg and the Slovak Republic.<sup>5</sup>

In the period 2004-08, Denmark, Germany and the United Kingdom legislated for gradual increases in the normal pension age to reach 67 or 68. The Czech Republic will increase its normal pension age to 65. The government of the Netherlands has proposed increasing the normal pension age from 65 to 67 (although this is still subject to discussion with social partners). Nevertheless, the intention seems to be for a more rapid increase than in other countries: in 24 monthly steps, perhaps in place by 2011. Hungary will implement a phased increase in the normal pension age from 62 to 65 beginning of 2012.

Belgium, Denmark, Greece, Hungary and Italy either increased early pension ages, increased the number of years of contributions needed to qualify for early retirement or did both. France and Ireland applied such measures in their public-sector pension schemes. The Netherlands has removed tax incentives for private, occupational early-retirement schemes. Finland, France and the United Kingdom increased incentives for people to work after the normal retirement age. Finland has also recently proposed an increase in the age at which early retirement is allowed.

France and Japan have introduced measures that will limit employers’ ability to fire workers who wish to continue in work after the normal pension age. However, a Spanish worker lost a case in the European Court of Justice (the highest court of the European Union) arguing that compulsory retirement was counter to anti-discrimination laws.

A change in Australia was aimed at improving incentives to save (in contrast to the other changes that were aimed at work incentives). The assets test under the means test for the public pension will be less strict, increasing the reward for voluntary saving for retirement.

#### 5. Administrative efficiency

A major administrative problem in Japan was revealed in the summer of 2007. Until 1997, each time Japanese workers changed job, they were often issued with a new identification number by the Social Insurance Agency (SIA). A new SIA database, introduced that year, aimed to combine an individual’s multiple pension accounts into a single account with a unique identification number. However, many records were not linked, meaning that some 50 million accounts are not attached to individual workers and pensioners. To solve the problem, the government has adopted a number of measures, including the removal of the statute of limitations on pension claims. The SIA will be abolished in 2010 and its record-keeping and contribution-collection functions privatised,

with a new regulatory body to oversee administration. Individual members have received, or will soon receive, a detailed statement of their pension history.

Greece has streamlined its pension provision, by merging 133 pension schemes into 13. A centralised database and unique identification numbers should reduce administrative costs, improve compliance and reduce the problems of unmatched records that caused difficulties in Japan. Sweden will merge the bodies responsible for mandatory defined-contribution plans (the Premium Pension Authority) and the public pension (consisting of notional accounts and a minimum pension). However, individuals will still be able to choose the way their defined-contribution pensions are invested.

Other measures have aimed to reduce administrative costs and charges for private pensions. In Mexico, workers have been encouraged to switch to lower-cost providers. Poland recently announced plans to bring forward a reduction in the ceilings on charges for private pensions from 2014 to next year. The Slovak Republic has proposed lower fees and a stronger link between charges and performance. The United Kingdom has a long-term target for administrative charges of 0.3% of assets per year (and 0.5% at the time of the introduction) for the new national pension savings scheme. This compares with a ceiling of 1% on charges for existing stakeholder pensions. To keep costs low, the United Kingdom will operate a central clearing house for contributions, along the lines of the administrative body in Sweden.

## 6. Security of benefits

Pensions are inherently risky because they are long-term contracts: on average, people will spend nearly 60 years from the time of their first contribution to the time they receive their last benefit. The recent financial crisis has highlighted the importance of investment risk as more people are covered by defined-contribution, private pension plans in many OECD countries.<sup>6</sup>

Diversification is the key to limiting investment risk without undue sacrifice of investment returns. In Belgium, Canada and Mexico, for example, pension funds are now freer to invest in a wider range of assets than before. Australians now have greater choice over both the manager of their pension fund and the way it is invested.

A way of further mitigating investment risk is to encourage workers to shift their pensions into less risky assets as they near retirement. Hungary will now automatically switch workers' investments in this way. Mexico has increased the range of investment choice to members of defined-benefit schemes. Poland will introduce a system of three funds of different risk-return characteristics from each provider. Only younger workers will be able to choose the riskiest of the three. The new national pension saving scheme in the United Kingdom will put contributors by default into a "lifecycle" fund that automatically reduces portfolio risk as workers age. New regulations in the United States will make it easier for employers to offer default investment options of this type.

Iceland will strengthen the finances of its defined-benefit occupational plans by increasing the mandatory employer contribution.<sup>7</sup> The United Kingdom has made arrangements to protect defined-benefit occupational pensions through a Pension Protection Fund (similar to the Pension Benefit Guaranty Corporation in the United States) and a financial-assistance scheme. However, the ongoing financial and economic crisis will further strain occupational pension schemes in all of these countries. The special chapter on "Pension systems during the financial and economic crisis" further discusses recent changes in the regulation of private pensions in response.

New indexation procedures in Portugal and Turkey should improve the protection of the purchasing power of pensions in payment.<sup>8</sup> However, the new policy in Turkey offsets the effect of other reform measures that improve the long-term financial sustainability of public pensions by cutting benefits and increasing the pension age.

## 7. Pension reform: process and politics

The period of 2004-08 has been one of evolution rather than revolution in pension systems. Most OECD countries have taken further steps during the past few years to make their retirement-income provision fit for the long term.

Nevertheless, there has been none of the wide-ranging, systemic reforms that took place in the decade up to 2004. In that period, Hungary, Mexico, Poland and the Slovak Republic introduced defined-contribution plans as a substitute for part or all of public pension provision. This marked a major break with the past, when the government was essentially a monopoly provider of pensions. Also, there were major changes to pension systems in the decade up to 2004 that have improved the long-term financial sustainability of public pensions. In the 16 OECD countries that undertook major reforms in that period, the effect was to cut lifetime pension benefits by an average of 22% for men and 25% for women. France, Germany, Italy and Portugal, for example, all substantially reduced benefits for future retirees.

In some countries, the reform process has stalled. The administration's proposal in 2001<sup>9</sup> to substitute defined-contribution plans for part of public, earnings-related pensions in the United States failed to achieve legislative support. Indeed, the United States is one of the few OECD countries where there have been no significant changes to public pensions since the 1980s. In Norway, too, more far-reaching reforms proposed by an independent commission were rejected by the parliament. The result was a modest compulsory defined-contribution plan, extending coverage to 40% of workers who did not already have an occupational pension scheme. The coalition government in Austria fractured over the issue of pension reform. The adoption of a link between life expectancy and retirement benefits was particularly controversial. Finally, a series of reports from independent groups and government discussion papers have yet to forge a consensus over the direction of pension reform in Ireland. Some favour mandatory pensions on top of the existing basic pension, while others do not. Among those supporting a compulsory second pension, there are people who favour a publicly provided, earnings-related scheme and others who prefer private, defined-contribution schemes.

In other countries, the reform process has slowed or even gone into reverse. Legislated changes in Italy that would have increased the pension age and reduced benefits to reflect increased life expectancy have been postponed. In the Slovak Republic, workers covered by the new defined-contribution plans have been allowed to switch back to the public system, although few have chosen to do so.

In conclusion, the financial and economic crisis means that governments' attention is focused, more than ever, on the short term. This brings with it two dangers. The first is that long-term, strategic planning – so vital to retirement-income policy – is set aside. The second is that more governments may be tempted by short-term expediency to backtrack on earlier reforms by, for example, relaxing rules for early retirement as labour-market conditions worsen. It remains necessary, in spite of these pressures, that governments take steps to ensure that public policies deliver a retirement-income system for the long term that is secure, adequate, financially sustainable and economically efficient.

Table 3.1. **Pension reforms: 2004-09**

Coverage	Adequacy	Financial sustainability	Economic efficiency	Administrative efficiency	Security
Australia	<p>Increase in target value of age pension from 25% to 27.7% of average earnings.</p> <p>Increase in age pension for single pensioners to two-thirds of the rate for couples.</p> <p>One-off payment of AUD 1 400 to single pensioners and AUD 2 100 to couples (Dec. 2008) as part of economic-stimulus package.</p>		<p>Increase in pension age from 65 to 67 in 2017-23.</p> <p>Lower deduction from mean-tested benefit entitlement for financial assets, from 7.8% of value to 3.9%, to promote voluntary saving.</p>		<p>Future fund established to prefund benefits of public-sector employees. Aim to achieve full funding by 2020.</p> <p>Choice of pension provider in mandatory DC scheme.</p>
Austria					
Belgium	<p>Increase in minimum pensions additional to standard indexation.</p>		<p>Increase in pre-pension eligibility age from 58 to 60 between 2008 and 2012.</p> <p>Abolition of social security tax exemption for sabbatical leave under the “time-credit” programme.</p> <p>Tighter job-search requirements before older unemployed eligible for early-retirement benefits.</p>		<p>Adoption of “prudent-person” rule for portfolio allocation of private pensions.</p>
Canada					<p>Relaxation of limits on foreign investments.</p>
Czech Republic			<p>Gradual increase in pension age to 65 for men and women by 2030; increase in contribution years required from 25 to 35.</p>		
Denmark			<p>Increase early pension age from 60 to 62 between 2019 and 2022; increase normal pension age from 65 to 67 between 2024 and 2027; link both ages to life expectancy thereafter.</p>		
Finland	<p>New guaranteed pension to be introduced from 2011.</p> <p>Cuts in taxes on pensions worth between EUR 15 000 and 30 000 to bring pensioner tax into line with worker tax.</p>	<p>Earnings measure moves from final ten years to lifetime average.</p> <p>Link between benefits and life expectancy.</p>	<p>Changed adjustments for early and last retirement.</p> <p>Increase in early pension age from 63 to 65 over the period 2011-22 (proposal).</p>		

Table 3.1. **Pension reforms: 2004-09** (cont.)

	Coverage	Adequacy	Financial sustainability	Economic efficiency	Administrative efficiency	Security
France	New individual retirement-saving plan (PEIR) allowing 10% of earnings up to EUR 24 000 to be contributed with tax privileges.	Increase in minimum pensions additional to standard indexation.	Indexation of public-sector pensions with prices rather than wages.	Employers only able to have compulsory retirement at 70 rather than 65. Increase in contribution years for public-sector workers from 37.5 to 40 by 2012; reduction in benefits for early retirement of public-sector workers. Gradual abolition by 2010 of “Delalande” tax on firing of workers over 50. Increment for working age 60-65 raised from 3% to 4% and 5% from age 65.		
Germany	Extension of social security tax exemption (due to expire in 2008) for DC OP contributions up to 4% of earnings.	Increase pensions by 1.1% in 2008 (rather than 0.46% under the 2005 rules); increase of 2.41% in 2009 (rather than 1.76%). Pensions were not increased in the period 2003-06.		Gradual increase in normal pension age from 65 to 67 between 2012 and 2029. (However, early retirement age will remain at 63, subject to benefit reductions.)		Relaxation of limits on foreign investments of Pensionskassen.
Greece	New administrative arrangements (see right) aim to increase compliance with and coverage of public schemes.	One-off payment of EUR 100-200 to pensioners.		Equalise normal pension ages for men and women at 65; early retirement from 55 with at least 15 years' contributions.	Merger of 133 pension funds into 13 schemes; centralised database of members and employers; unique identification numbers issued of individuals.	
Hungary	New voluntary retirement savings account with government matching contributions up to HUF 100 000 a year; accounts also exempt from capital gains tax (introduced in 1997) and broader range of investments than current plans are allowed.		Abolish 13th-month payment for pensions above HUF 80 000 per month. Price indexation of pensions in payment instead of mixed earnings/prices. Postponement of indexation adjustment for 2009 until 2010.	Increase pension age from 62 to 65 starting in 2012. Tighter conditions for early retirement brought forward from 2013 to 2011.		Pension funds to offer three different types of fund; automatic lifecycle adjustment of portfolio.
Iceland			Pensions for senior public officials to be cut.			Increase mandatory employer contribution to OPs from 6% to 8%; requirement to reduce benefits if actuarial shortfall of 10% in one year or 5% for each of five years to restore solvency of OP.

Table 3.1. **Pension reforms: 2004-09** (cont.)

	Coverage	Adequacy	Financial sustainability	Economic efficiency	Administrative efficiency	Security
Ireland			Contribution levy, averaging 7.5%, on members of civil-service pension scheme.	Reductions in civil-service pensions for early retirement.		Annuities for OPs that are wound up to be provided by new Pensions Insolvency Payment Scheme run by the government.
Italy	Companies' (with more than 50 employees) severance-pay schemes to be converted into pension plans; choice of employer plan, other private provider or government-run scheme. (The last is the default option.) Government predicts around a third of contributions will go to new OPs, a third to the government scheme and a third to remain in severance-pay schemes.		Reduction in transformation coefficient used to convert NDC balances into pensions from 2008 to reflect changes in life expectancy. Cuts in pensions range from 6.4% for new retirees aged 57 to 8.5% for 65-year-old retirees.	Increase full pension age from 57 to 58 in 2008 and 60 from 2011; increase in contribution years for full pension from 35 to 36 years. (However, this delays earlier laws to reach age 60 from 2008). Phased increase in normal pension age for women to 65 (proposal).		Limits on companies' ability to take short- or medium-term loans from severance-pay plans.
Japan				Compulsory retirement age that employers can apply to private-sector workers increased 60-65 in the period 2006-13.	Problem of 50 million pension records unmatched with individuals: Social Insurance Agency to be replaced with a new regulatory body from 2010; elimination of five-year limitation on retrospective pension claims.	
Korea	New firms required to set up DB or DC OPs rather than severance-pay schemes; existing employers must ballot employees on whether to maintain severance pay or switch to Ops.	Doubling in value of basic pension from 5% to 10% of average earnings; extension of coverage from 60% to 70% of over 65s.	Gradual cut in target RR from 60% to 40% from 2028	"Wage-peak" system: government subsidies pay of over 53s who stay in jobs while taking a pay cut. Encouraging longer careers through earlier labour market entry (shorter military service, periods in education).		
Luxembourg						

Table 3.1. **Pension reforms: 2004-09** (cont.)

	Coverage	Adequacy	Financial sustainability	Economic efficiency	Administrative efficiency	Security
Mexico			DC scheme for public-sector workers (like the scheme for private sector); new employees must join; workers under 46 can choose DC option or remain with DB plan. (7% of employees work in the public sector).		Charges restricted to those on account balances; switching to low-cost providers encouraged. (Charges are currently double the average in Latin America).	Extension of investment choice in DC plan from two to five portfolios per manager, with up to 30% equity share.
Netherlands				Tax advantages for early-retirement OPs abolished. Increase in normal pension age from 65 to 67 in 24 monthly steps (proposal).		Stronger governance of OPs; clear statement of OP indexation policies; solvency buffer against future liabilities for OPs; market valuation of OPs' assets.
New Zealand	KiwiSaver: DC scheme with automatic enrolment; government match of contributions up to NZD 1 040; one-off payment of NZD 1 000 when account opened; contributions of either 4% or 8% for employees (now reduced to 2% minimum); employer contribution of 1% rising to 2%.					
Norway			Minimum employer contribution of 2% to DC plan from 2006 unless superior arrangements already in place, extending coverage to 25% of workforce.			
Poland		New voluntary DC plan with tax incentives.		New rules for occupations retiring early, cutting eligible numbers from 1.3 million to 0.25 million. Time limits on new rules.	Tighter limits on charges for DC plans.	Choice of investment portfolios between three options. Rules for payout of DC benefits set out, through programmed withdrawals and mandatory annuitisation at 65.
Portugal		New centrally managed, voluntary DC plan, with contributions of 2% or 4% for under 50s and 6% for over 50s.	Cut pension benefits with life-expectancy increases from 2008; accelerated shift to lifetime earnings measure.			Indexation of pensions in payment to mix of prices and GDP growth rather than changes in minimum wage.

Table 3.1. Pension reforms: 2004-09 (cont.)

	Coverage	Adequacy	Financial sustainability	Economic efficiency	Administrative efficiency	Security
Slovak Republic					Tighter limits on charges for DC plans.	
Spain		Increase in minimum pensions of 6.4%.				
Sweden		Cut taxes on over 65s with incomes up to SEK 363 000 from 2009, affecting 90% of pensioners.	DB OP scheme for white-collar workers in private sector converted to a DC scheme.	Cut employers' social security contributions by 1% from 2009.	Merger of bodies managing public and mandatory DC plans.	
Switzerland	Lower earnings threshold to cover more low-paid and part-time workers.		Reduction in minimum interest rate for mandatory OPs from 2.75% to 2% for 2009. (However, this had earlier increased from 2.5% in 2007 to 2.75% in 2008.) Reduction in annuity rate for mandatory OPs from 7.2% to 6.8-7.15%, depending on age and sex.	Increase in normal pension age for women from 63 to 64. (Men's pension age remains at 65.)		
Turkey				Gradual increase in pension age from 58 for women and 60 for men to 65 for both by 2048.		Change benefit adjustment from monthly price indexation to annual changes to a mix of price inflation and GDP growth.
United Kingdom	National pension savings scheme from 2012: automatic enrolment of 22-65 year olds without an OP or PP; employee contribution of 4%, employer of 3% and government of 1% phased in. Reduction in number of years required for full basic pension to 30.	Basic pension to be indexed to average earnings from 2012; increases 2004-08 in line with earnings. Acceleration of change of state second pension from an earnings-related to a flat-rate scheme, with initial benefits indexed to average earnings; improved credits for carers.		Increment for late retirement raised from 7.4% to 10.4% a year; increment now payable as a one-off bonus.	Central clearing house for new national pension savings scheme; aim to have costs of 0.5% of balance initially, falling to 0.3%. New Pensions Regulator established in 2005, combing previous agencies.	Pension Protection Fund, to insure defined-benefit plans, established in 2004. Premiums paid by plans, related to measures of risk, double the originally predicted level. Tightening of recovery rules for plans in deficit. Extension of Financial Assistance Scheme for insolvent OPs, covering 140 000 extra workers.
United States	Employers permitted to enrol employees automatically in pension plans.					

DB = defined benefit; DC = defined contribution; NDC = notional accounts; OP = occupational pension; PP = personal pension; RR = replacement rate.



## Notes

1. OECD (1998, 2001), for example. The World Bank has also set out a similar list of aims: see Holzmann and Hinz (2005).
2. OECD (2007), Part II.1. See also Martin and Whitehouse (2008) and Whiteford and Whitehouse (2006).
3. See the special chapter on “The pension gap and voluntary retirement savings” in this volume, Antolín and Whitehouse (2009) and Queisser *et al.* (2007) for more details on this policy.
4. See Whitehouse (2007) for more details.
5. See OECD (2006) for a detailed policy analysis.
6. See the special chapter on “Pension systems during the financial and economic crisis” in this volume.
7. However, the financial and economic crisis is especially acute in Iceland, and so it remains to be seen how occupational pension funds will withstand these strains.
8. See Whitehouse (2009) for a detailed analysis of inflation risk and pension indexation.
9. President’s Commission to Strengthen Social Security (2001).

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## 4. The Pension Gap and Voluntary Retirement Savings

**M**ost OECD countries have seen major pension reforms over the last 20 years. The main, although not the sole, motivation for these changes has been to strengthen the financial sustainability of public pensions. In the 16 OECD countries with the most wide-ranging reforms, lifetime retirement benefits have been cut on average by 22% for men and 25% for women.<sup>1</sup>

The scale of such cuts implies a significant rebalancing of responsibility for pension provision between the public and private sectors. Today's workers will either need to save more in voluntary, private pension plans, retire later or see a lower income in old age relative to earnings when working than under pre-reform parameters and rules. Indeed, this amounts to implicit or explicit "privatisation" of part of the retirement-income system.

This special chapter<sup>2</sup> begins by exploring the difference in mandatory pension entitlements between OECD countries. It then focuses on 16 countries with particularly low mandatory pensions. In these countries, many people who fail to save will see a precipitate drop in living standards as they move from work into retirement. Based on the shortfall in replacement rates from mandatory schemes in these countries compared with the OECD average, the OECD pension models are then used to calculate the proportion of earnings that should be saved in order to fill this pension gap. The analysis moves from results for individuals on average earnings to people across the earnings range.

Having established who needs to save for retirement and how much they need to save in different countries, the chapter goes on to look at data on retirement-savings behaviour. First, it looks at how coverage of voluntary, private pensions varies with age and income. Secondly, it presents information on contributions.

The chapter concludes by exploring different policies to encourage private retirement savings. The most obvious policy is to mandate participation. However, more flexible approaches include soft compulsion (*e.g.* automatic enrolment with the possibility of opting out); facilitating individuals' access to retirement-saving instruments; policies to improve financial awareness; and preferential tax treatment of retirement savings.

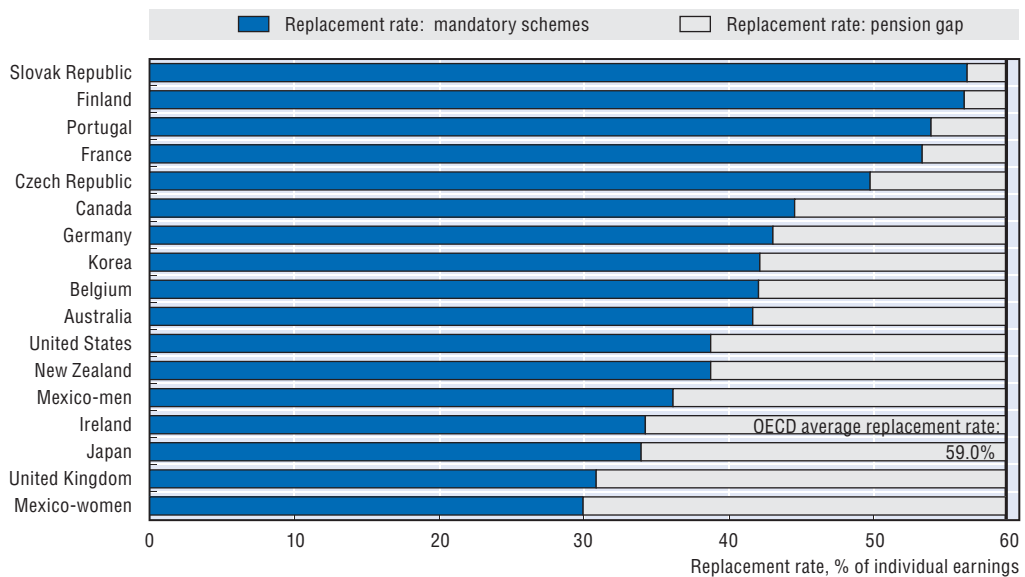
### 1. The pension gap

The replacement rate – the relationship between income in retirement and earnings when working – is widely used to illustrate cross-country differences in pension systems. Data on the 30 OECD countries, provided in Part III of this report, show that the average gross replacement rate for an average earner is 59.0%.

Figure 4.1 shows the projected gross replacement rate for average earners for 16 countries where this is below the OECD average. The calculations include all *mandatory* programmes for providing retirement income, which can include compulsory private pensions and broad social-assistance schemes. This group of 16 countries includes all six of the mainly English-speaking members of the OECD: Australia, Canada, Ireland, New Zealand, the United Kingdom and the United States. It also includes the two East Asian OECD members – Japan and Korea – and a selection of continental European countries, including Belgium and Germany.

Figure 4.1. **The pension gap**

Gross replacement rate for an average earner from mandatory pension schemes and difference from OECD average replacement rate



Source: OECD pension models.

StatLink <http://dx.doi.org/10.1787/651244736381>

In many of these countries, coverage of voluntary private pensions is widespread because mandatory provision is relatively small. However, even among these 16 countries, the need for additional retirement income from voluntary savings varies considerably because mandatory replacement rates differ between countries.

To calculate the varying need for retirement savings in different countries a target replacement rate is needed. As in previous OECD analysis, the benchmark replacement rate used is the average replacement rate from mandatory pensions in all OECD countries. The difference between the replacement rate from the mandatory pension system and the OECD average is called the “pension gap”.

In the United Kingdom, private pension schemes would need to deliver a replacement rate of 28.2% to bring the overall pension of an average earner up to the level of the OECD average. Finland and the Slovak Republic have the smallest pension gap of the 16 countries analysed: around 2.5% of earnings. For the 16 countries as a whole, the replacement rate from mandatory pensions is 41.8% for average earners. This implies a pension gap of 17.2% on average. For Mexico, the results for men and women are different because annuities are calculated on a sex-specific basis and so women must spread their accumulation over a longer retirement period.

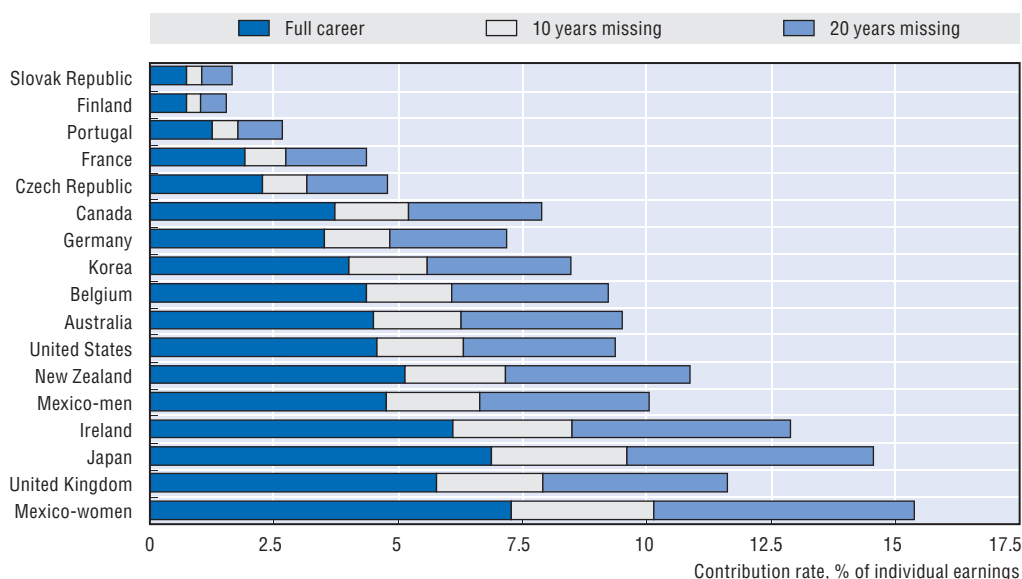
It is also important to remember that, like the rest of the report, the analysis considers the parameters and rules of the pension system for people entering the labour market in 2006. This assumption is particularly important when analysing the position in Mexico, because all existing workers were guaranteed that their defined-contribution pension would be topped up by the government to reach the same level as the level under the pre-reform, earnings-related scheme. The OECD pension models suggest that the replacement rate for workers already in the labour market at the time of the reform will be around double that offered by the defined-contribution scheme under the standard assumption for the rate of return (see OECD, 2007, pp. 65-66).

How much will people have to contribute to voluntary, private pensions to lift overall replacement rates from the national, mandatory level to the average for OECD countries? For simplicity and comparability, the calculations assume that people with voluntary pensions have a defined-contribution plan, where the value of the benefit depends on contributions and investment returns.<sup>3</sup> The modelling makes the same general assumptions as the calculations in Part II of the report. In particular it assumes an annual real return of 3.5% on pension savings, net of administrative charges.

Figure 4.2 shows the percentage of earnings that an average earner would need to pay into a private pension plan to plug the retirement-savings gap in the respective country. Countries are ordered in the same way as in Figure 4.1, that is by the size of the pension gap. The darkest bars show the contribution rate needed with a full history, that is contributions in each year from age 20 to the normal pension age in the country.

Figure 4.2. **Filling the pension gap**

Contribution rate required for average earner to reach OECD average gross replacement rate



Source: OECD pension models.

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The chart shows the impact of different national pension ages. The required contribution rate in Germany, the United Kingdom and the United States is lower because pension ages will increase to 67 or 68. Similarly, lower pension ages below 65 – in France and the Slovak Republic – reduce the number of contribution years and increase the retirement duration.

Differences in life expectancy also have an effect. In Mexico, for example, 65-year-olds are projected to live an extra 17.6 years, while this figure is 22.2 years in Japan. Longer life expectancy, of course, increases the required contribution rate because the pension that it finances must be paid for a longer period.

### **Effect of incomplete contribution histories**

With a full contribution history, the proportion of earnings that would need to be paid into retirement savings plans to fill the pension gap is not generally large: around 6% in Ireland and the United Kingdom and around 7% in Japan. In many cases – Australia, Belgium, Canada, Germany, Korea and the United States – the required contribution rate is 3.5-4.5%.

However, as discussed later in this special chapter, workers are unlikely to have full contribution histories. The lighter bars show two scenarios: one with 10 missing contribution years, the other with 20. It is assumed that these missing years occur at the start of the career: that is, people delay joining a private pension until they are 30 or 40 years old. For the countries shown, the average of the required contribution rate increases from 4.0% with a full career to 5.5% with ten missing years and to 8.4% with 20 years missing.

### **Effect of individual earnings**

The analysis so far has focused on the position of average earners. For lower earners, however, safety-net benefits tend to play a more important role in providing retirement incomes. This can mean higher replacement rates than received by average earners. At the other end of the scale, ceilings on pensionable earnings can mean lower replacement rates for higher earners.

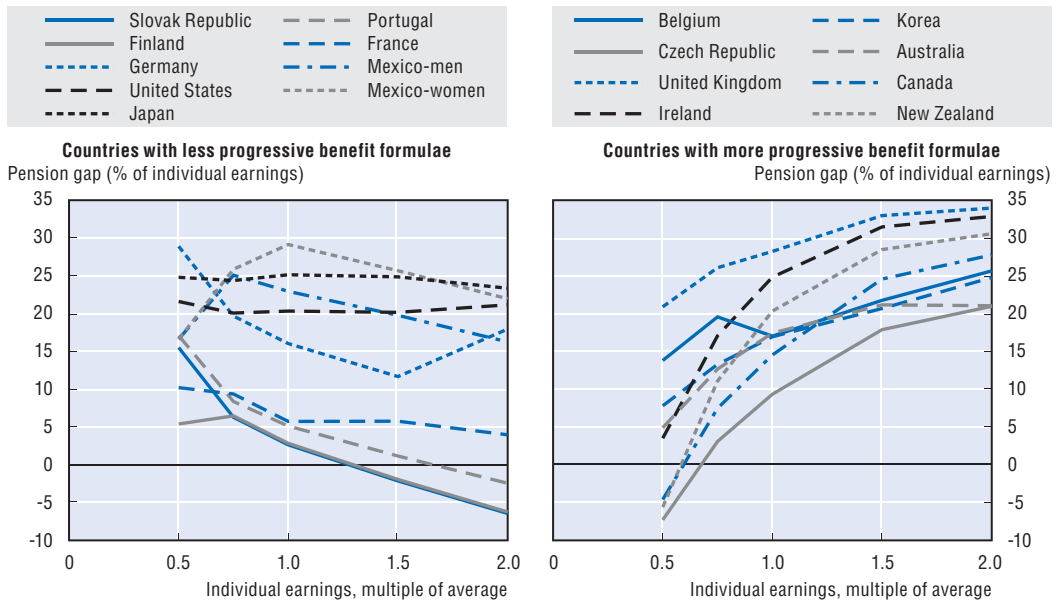
Figure 4.3 shows how replacement rates vary with earnings in the 16 countries under study relative to the OECD average. Workers with 50% of average earnings have an average replacement rate of 72% across the 30 OECD countries, compared with 59% for workers on mean earnings. At double average earnings, the replacement rate averages 50%. How do the countries measure up against this benchmark?

In the left-hand panel of Figure 4.3, the pension gap is broadly constant with earnings in Japan and the United States: the progressivity of mandatory pensions there broadly matches the average pattern among OECD countries.

In Germany, the replacement rate from the mandatory system is constant from 50% of average earnings to the ceiling of around 150% of average earnings. The pension gap, relative to the OECD average replacement rate by earnings, is therefore larger for low earners than it is for average earners. In Finland, Portugal and the Slovak Republic, the replacement rate is close to constant across the earnings range. This means that high earners would have a replacement rate above the OECD average, while low earners would need to make voluntary retirement provision to meet the OECD replacement rate at that level of pay.


The countries in the right-hand panel show the opposite pattern. Indeed, in Canada, the Czech Republic and New Zealand, the mandatory replacement rate for low earners exceeds the OECD average: there is no pension gap for these workers. The gap is very small for the low paid in Australia and Ireland. The pension gap increases with earnings in eight countries at the right of Figure 4.3. For high earners (at 200% of mean earnings), mandatory replacement rates are less than 25% in Belgium, Canada, Ireland, New Zealand and the

Figure 4.3. **The pension gap and individual earnings**  
Difference between mandatory, national and OECD average replacement rate



Note: Countries have been grouped according to the OECD index of progressivity of pension benefit formulae.

Source: OECD pension models.

StatLink  <http://dx.doi.org/10.1787/651315163361>

United Kingdom, compared with the benchmark OECD average of 50%. The pension gap is 27% on average for high earners in the eight countries in the right-hand panel. This compares with just 4% for workers with half-average pay.

Figure 4.4 explores the implications of differences in mandatory replacement rates by earnings on the need to save for old age to reach the benchmark, overall replacement rate. Countries are grouped in the same way as in Figure 4.3. The analysis assumes that people have ten years missing from their contribution history for voluntary plans (that is, they start paying in from age 30 but then contribute in each year until the national, normal, pension age).

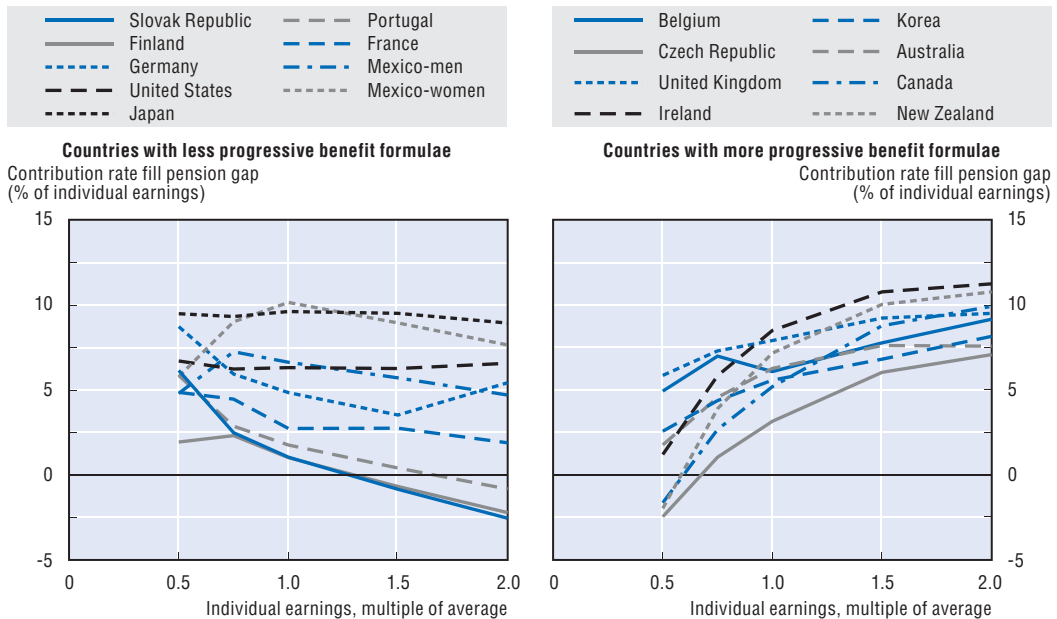
In the right-hand panel, the required contribution rate increases with earnings. For example, in Canada, the Czech Republic and New Zealand, there is little or no need for low earners to provide for their own retirement because mandatory schemes already do this. In Australia, Ireland and Korea, the required contribution rates for people earning half of the average is 2.5% of earnings or less. Averaging across the eight countries in the right-hand panel, the required contribution rate is less than 1.5% for low earners, 6% for average earners and 9% for high earners (with double average pay).

The left-hand panel of Figure 4.4 shows countries with less progressive pensions than at the right of the chart. Workers in Japan and the United States need to save a similar proportion of their pay across the earnings range: around 9.5% and 6.5% of pay respectively. This suggests that the degree of progressivity in the mandatory pension systems of Japan and the United States is close to the average among OECD countries.

In contrast, replacement rates in Germany are constant over much of the earnings range. To reach the higher target replacement rate for low earners would require much higher contributions of nearly 9% of pay compared with around 5% for average earners. There are similar patterns in Finland and Portugal.


Figure 4.4. **Filling the pension gap at different earnings levels**

Contribution rate with ten contribution years missing required to reach OECD average gross replacement rate



Note: Countries have been grouped according to the OECD index of progressivity of pension benefit formulae.

Source: OECD pension models.

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### Effect of taxes and means testing

The calculations so far have looked only at gross pension entitlements whereas it is obviously income net of taxes and contributions that determines living standards, both in work and in retirement. The effects of taxes and contributions on the results are complex. A relatively high tax on old-age income increases the need to contribute to reach a certain living standard. In contrast, high taxes and contributions paid by workers increase the net replacement rate and so reduce the need to contribute compared with other countries and compared with workers at different earnings levels.

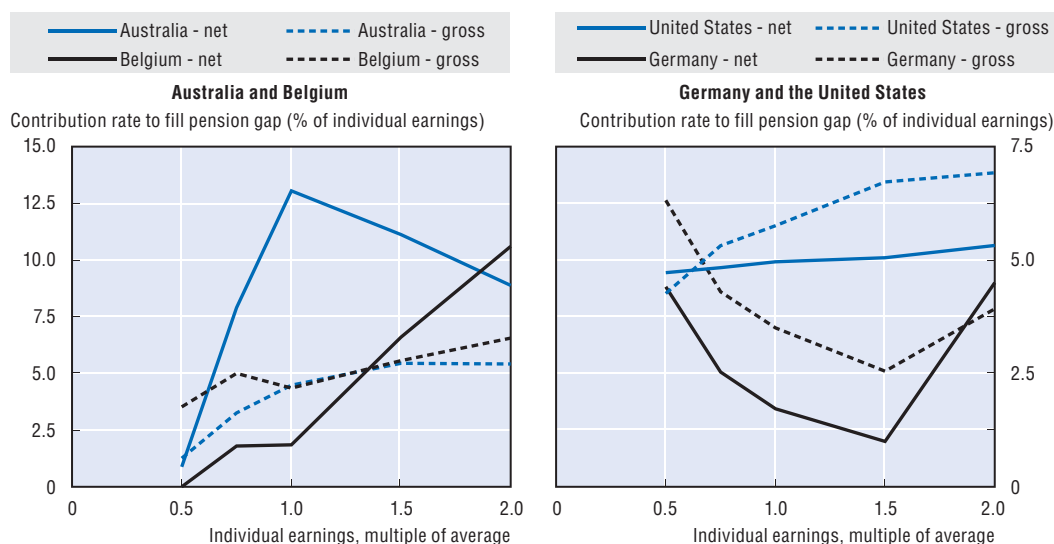
The calculations have also assumed that voluntary private pension savings feed straight through to retirement income and so did not take account of the fact that benefits are means-tested in some countries. Extra private pension therefore results in lower public retirement benefits. Means-testing therefore increases the need to contribute for people affected.

Figure 4.5 compares gross and net calculations of the contribution rate required to reach the OECD average (gross or net) replacement rate at different levels of earnings for selected countries. Australia illustrates the effect of broad means-testing, where even middle and high earners are affected. For an average earner, for example, an individual would need to pay 13% of their earnings into a voluntary pension plan – in addition to the 9% mandatory contribution – to reach the OECD average net replacement rate. This is because income from a private pension currently results in a reduction in entitlement to the public pension of 40% of its value at the margin.

In Germany, in contrast, the net pension gap is smaller than the gross across nearly all of the earnings range. The required contribution rate is highest for low earners measured in both gross and net terms because the German pension system offers a constant replacement rate for workers up to the pension ceiling, while the OECD average replacement rate has a progressive structure, with higher replacement rates for low earners. The main driver of the



**Figure 4.5. Filling the pension gap: the impact of taxes and means-testing**  
 Contribution rate with a full history required to reach OECD average (gross and net) replacement rate by earnings in Australia, Belgium, Germany and the United States



Note: The vertical axis differs between the two panels of the figure for reasons of clarity.

Source: OECD pension models.

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large difference between gross and net measures of the contribution rate needed to fill the pension gap is the relatively high tax burden faced by both workers and pensioners in Germany.

The effect of taxes on the pension-gap calculations is most dramatic for Belgium. For low and middle income workers, taxes and contributions are relatively large but little or no tax is due in retirement. This significantly reduces the required contribution rate. However, higher earners will also pay a significant slice of their income in taxes during retirement. This increases the required contribution rate on a net basis compared with the calculations on a gross basis.

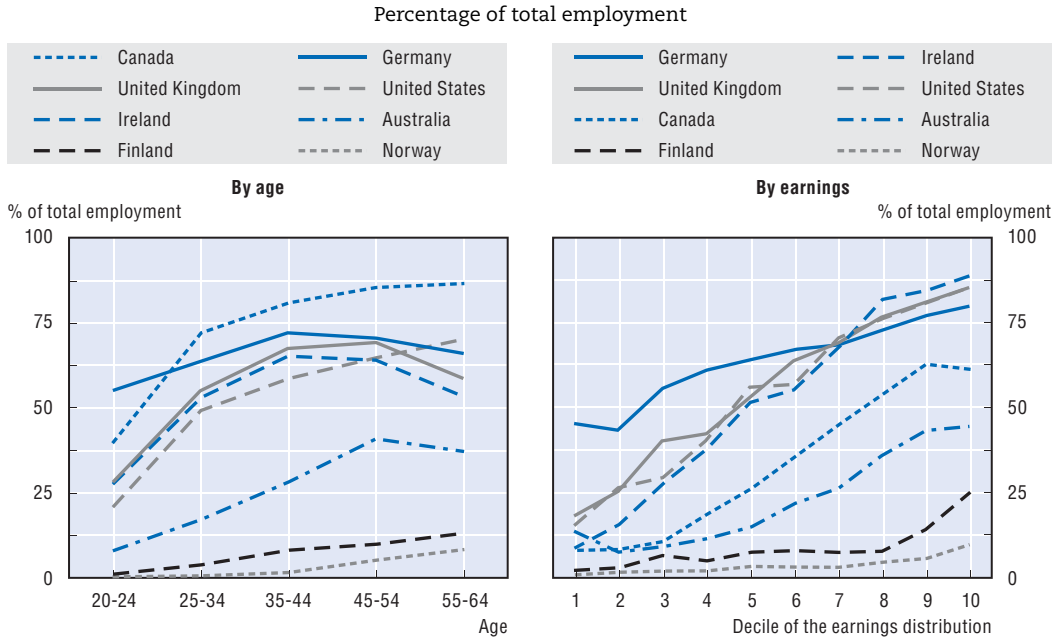
Finally, in the United States, the pattern of required contribution rates is very similar on a gross and net basis. This is also the case in many of the countries not shown: Canada, Ireland and the United Kingdom, for example.

## 2. Coverage of voluntary private pensions by age and earnings<sup>4</sup>


The evidence on coverage of private pensions, obtained from household surveys, deals with eight OECD countries in most of which mandatory schemes provide a relatively low replacement rate. In these cases, people need voluntary pensions to complement their future retirement income.

Coverage of voluntary private pensions has a hump-shaped relationship with age, reaching a peak at prime working ages, i.e. 35-44 or 45-54, depending on the country (left-hand panel of Figure 4.6). However, young people are more likely to have a private pension in Germany than older people. This probably reflects the recent introduction of a tax-privileged retirement-savings plan. There is a fall in coverage rates at older working ages in most countries (with the notable exceptions of Canada and the United States). It could be linked to early retirement of people with private pensions (because of their greater pension wealth than people without private retirement-savings plans).

Figure 4.6. Coverage of voluntary private pension plans



Source: Antolín, P. and E.R. Whitehouse (2009), "Filling the Pension Gap: Coverage and Value of Voluntary Retirement Savings", Social, Employment and Migration Working Paper No. 69, OECD; OECD analysis of national datasets (Finland and Norway).

StatLink  <http://dx.doi.org/10.1787/651406013027>

Coverage of voluntary private pensions tends to increase with earnings (right-hand panel of Figure 4.6). However, it typically reaches a plateau after the 7th and 8th deciles of the distribution. Among the poorest groups, coverage is low: 10-20% in all countries, bar Germany (40%).

Although overall coverage of voluntary private pension plans is well above half of the employed population in many of the countries analysed, it is unevenly distributed. Younger workers and people with low earnings are much less likely to be members of voluntary pensions. The analysis of pension gaps in Section 1 of this special chapter showed that lower-income individuals can reach the OECD average replacement rate with little or no voluntary private retirement saving in Australia, Canada and Ireland. Low rates of coverage for low earners is therefore not as much of a policy concern as it is in the United Kingdom and the United States, where even low earners would need to save 4-5% of their earnings throughout their working lives to reach the benchmark replacement rate. Pension gaps for low earners are also relatively large in Germany, but coverage of private pensions is also high among these groups. These results suggest that some, but not all, OECD countries need to focus efforts to expand coverage among low earners.

The pattern of coverage by age suggests that most people who do eventually have a private pension only start contributing at age 30 or even later. These missing years in people's contribution history substantially increase the savings effort needed in the years when people do pay into their private pension. For example, delaying joining a pension from age 20 to 30 raises the required contribution rate by nearly a half (see Figure 4.2 above). The implication is that public policy needs to focus on younger workers, bringing forward the time at which people start contributing to private pensions.

### 3. Contributions to private pensions

Evidence on voluntary contributions to private pensions is available for only a few of the countries indentified as having a pension gap in Section 1 of this special chapter. Table 4.1 shows that contribution rates are close to (Belgium, Germany) or exceed the contribution rate required to eliminate the pension gap, conditional on a full career. However, once a period of missing contribution years is factored in, many more countries have a shortfall in average contribution rates (Belgium, Czech Republic, Germany). In the United Kingdom, the average rate is close to the required contribution rate with ten missing years. But in addition to uncovered workers, many people will be contributing less than the average. In Ireland, for example, the average contribution rate in defined-contribution plans is 10%, split equally between employers and employees. However, 30% of schemes have employee contribution rates below 5% while 18% of schemes have an employer contribution rate below 5%.

Table 4.1. **Total contribution rates in voluntary, defined-contribution pension plans**

Percentage of earnings

	Average contribution rate
Belgium	4.3
Czech Republic	2.5
Germany	4.0
Ireland	10.0
United Kingdom	8.8
United States	9.0

Note: Data for the United Kingdom relate to defined-contribution occupational plans and do not include people with personal pensions. Figures have been rounded.

Source: Antolin, P. and E.R. Whitehouse (2009), "Filling the Pension Gap: Coverage and Value of Voluntary Retirement Savings", Social, Employment and Migration Working Paper No. 69, OECD.

### 4. Policies to encourage private pension savings

Public pensions will be much lower for workers entering the labour market today than those offered to their parents and grandparents. This means that voluntary, private provision for old age is needed to maintain living standards into retirement. Indeed, many of the reforms to public pensions have been predicated on the assumption that voluntary retirement savings will increase. In some countries, such as Canada, Japan, the United Kingdom and the United States, this has long been the case. But it is a new phenomenon in others, such as France and Germany. Moreover, the need to save for old age now encompasses more of the population, including groups such as low earners who have not traditionally made active retirement-savings decisions.

Some data suggest that coverage of, and contributions to, retirement-savings plans are adequate. Others imply that there might be substantial gaps. This inconclusive evidence provides no grounds for complacency among policymakers. Fortunately, governments have been highly active in developing policies to encourage private pension savings.

#### Compulsion

Mandating contributions is an easy way to achieve both high coverage and a uniform distribution of coverage across age and earnings levels. In countries such as Australia,

Iceland, Norway and Switzerland voluntary private pensions historically had broad coverage (of 50% or more of employees). Governments simply made it mandatory for employers to organise and contribute to private pensions on their employees' behalf. However, the mandatory level of pension provision was generally below the customary level that prevailed when private pensions were provided voluntarily. A second policy has been to mandate private-pension contributions as a substitute for part of the public pension. Hungary, Mexico, Poland, the Slovak Republic and Sweden have all taken this route.

Other countries such as Denmark, Sweden and the Netherlands, do not directly mandate contributions to private pensions, but as a result of employment agreements, participation in private pensions is *de facto* compulsory ("quasi-mandatory") and coverage exceeds 85% of employees. Coverage of voluntary pension arrangements in Belgium and Germany has also edged upwards in recent years as a result of the establishment of industry-wide pension plans. However, this model is difficult to export to other OECD countries, where labour-market and industrial-relations structures are less amenable to achieving near universal coverage of private pensions.

The main argument for compulsion is that it protects people from the regret of not having saved enough for their retirement when they were younger. It also protects societies from having to pay for safety-net benefits for those feckless people who did not provide for old age. Implementing this paternalistic approach is simple: it involves choosing a target replacement rate (which may or may not vary with earnings) and then ensuring that people reach that target through either public retirement-income provision or mandatory private pension plans.

An important, but sadly unresolved question is whether compulsion is necessary. Are people myopic? Left to their own devices, will they fail to save enough for retirement? The analysis of pensioner incomes in the special chapter above on "Incomes and poverty of older people" suggests that, adjusted for household size, these tend to be 75-85% of the average income for the population as a whole. But there is no link between relative incomes and the type of pension system. Voluntary, private pensions play an important role in Canada and the United States where older people's relative incomes are above the OECD average. However, the same is true of Ireland with the lowest old age incomes and the United Kingdom, which are towards the bottom. The OECD (2001) has described this phenomenon as "convergent outcomes, divergent means". These data provide some evidence against the myopia hypothesis.

There are also arguments against compulsion.

- First, even if individuals are myopic, it does not mean that greater mandatory pension provision is always a good thing. Mandating retirement saving means choosing a target replacement rate. However, this is difficult to determine but important to get right. The losses in terms of individual welfare from forcing people to over-save can be as great as the losses from myopia and under-saving. For example, resources diverted to retirement savings might come at the expense of devoting the necessary amounts to raising and educating children.
- Secondly, formal pension plans are not the only way people can and do save for retirement. People might want to invest in property or their own businesses. This perfectly rational behaviour may not be possible with large, mandatory savings through formal pension schemes.

- Thirdly, mandatory contributions to pensions are often perceived as a tax, which is likely to discourage people from working.
- Finally, the providers of voluntary pension arrangements – especially occupational pension schemes – have often opposed compulsion because it would crowd out these existing plans. There is also the risk that existing provision is reduced if the target set by the government is lower than prevailing norms.

### **Soft compulsion**

Mandating pensions has disadvantages while purely voluntary pension provision runs the risk of under-saving. Automatic enrolment into private pensions means that people have to opt out of saving for retirement rather than opt in. The goal is to increase participation while preserving individual choice. Many people report in surveys that saving for retirement is important and that they feel they should be planning for old age (OECD, 2005). Unfortunately, this often does not translate into action. An obvious reason is that signing up for a pension plan can be long and complex while information about and understanding of saving options can be missing. Automatic enrolment is designed to turn procrastinators into retirement savers.

A number of employer-provided pension plans in the United Kingdom and the United States have long used automatic enrolment to increase coverage among their employees. In the United States, there has recently been rapid expansion of automatic enrolment in defined-contribution occupational plans [known as 401(k)s after the relevant clause of the tax code] from 8.4% in 2003 to 16.9% in 2005. This has been led by larger schemes. In 2002, just 17% of these had automatic enrolment, increasing to 41.3% by 2006. This is likely to increase further as a result of legislative changes that removed obstacles to automatic enrolment.

An analysis of the United Kingdom distinguishes four different enrolment procedures. Some 44% of employees used a process of “streamlined joining”, meaning just signing a pre-completed form (McKay, 2006). Only 19% of employees were covered by a plan with full automatic enrolment, that is, requiring an active opt out. As in the United States, both of these enrolment procedures were more common among larger employers. Traditional opt-in accounted for 19% of plans, weighted by the number of members.

Automatic enrolment is now being implemented on a national scale. New Zealand has already adopted such a policy and the United Kingdom will do so shortly. There has also been active discussion of such programmes in Germany, Ireland and the United States.

The key question about automatic enrolment is: Does it work? Despite growing enthusiasm for automatic enrolment, evidence of its impact is fairly limited. One of the most widely cited papers – Madrian and Shea (2001) – looks at the experience of a single employer in the United States. Before automatic enrolment, only 57% of people who had been with the company for less than three years had joined the occupational plan, increasing to 80% or more for people with tenure of ten years or more. In the first 18 months of automatic enrolment, coverage increased to 86%. Similarly, Beshears *et al.* (2006) found a 35 percentage point increase in coverage for people with three month’s tenure in another firm, falling to 25 points at two years’ tenure. These results tend to suggest that automatic enrolment brings forward people’s decision to join a company pension plan but that coverage of long-term employees does not increase as much.

Horack and Wood (2005) looked at 11 company pension schemes in the United Kingdom that changed their enrolment arrangements. Two firms that introduced automatic enrolment increased coverage; from 25% to 58% and from 45% to 62% respectively. The other two firms already had very high coverage rates of 86% and 88%, most likely because the schemes did not require employee contributions. Automatic enrolment increased coverage to 92% and 100% respectively. Another survey, carried out for the Department of Work and Pensions, found coverage of 41% with traditional opt-in compared with 60% with automatic enrolment (McKay, 2006). These figures relate to larger employers (with more than 20 employees). Among smaller employers, coverage was virtually the same with traditional and automatic enrolment (at 67%).

New Zealand's KiwiSaver, introduced in July 2007, is the first national implementation of automatic enrolment (see Rashbrooke, 2009). Employers must enrol new employees into the scheme and individuals have two months to opt out. So far, the proportion of workers opting out has averaged around one third. Unsurprisingly, opting out is more widespread among younger workers (37% of 25-34 year olds, for example) than older (25% for people aged 55 or over). However, analysis of the policy in New Zealand is complicated by the generous incentives to join KiwiSaver. For example, 47% of members are people who opted in to the scheme through a financial-services company and a further 17% did so through their employers. Thus, only 36% of KiwiSavers can for certain be said to be in the plan because of automatic enrolment.

Taking these studies as a whole, they suggest a potentially large effect of automatic enrolment on coverage of private pensions. However, it is always best to be wary of generalising from a small number of case studies. And there are many reasons to expect experience with national schemes for automatic enrolment is likely to be different than with employer-provided plans. There is a clear need for further evidence before evaluating the effectiveness of soft compulsion in extending coverage of private pensions.

- First, if automatic enrolment simply mitigates procrastination, bringing forward the starting point for retirement saving, then the effects on future pensions will not be large.
- Secondly, longer-term data are needed to assess the degree of persistence in pension coverage. For example, workers may, over time, overcome their inertia in the opposite direction and realise that opting out is a quick way of increasing current income.
- Thirdly, it is important to investigate the way in which individuals finance the contributions to automatic-enrolment retirement savings schemes (see the analysis of tax incentives below).
- Finally, the schemes with automatic enrolment have also involved sizeable subsidies to individual savings. This is most obvious with the government's contribution to KiwiSaver accounts in New Zealand. But the occupational plans in the United Kingdom and the United States all involved employer contributions of varying sizes. Care is therefore needed to isolate a "pure" automatic enrolment effect on coverage separately from the effect of tax reliefs, employer contributions and other subsidies.

Arguments against soft compulsion are of two types: those that favour "hard" compulsion and those that support a purely voluntary approach. The validity of the former argument rests on the failure of automatic enrolment to increase coverage substantially. The argument for a purely voluntary approach echoes the case against compulsion: that the scheme with automatic enrolment will crowd out existing schemes and lead to a levelling down of provision for income in retirement. For example, case studies of automatic enrolment in the

United States have shown that the default contribution rate acts as a powerful indicator for scheme members and so automatic enrolment reduces average contribution rates (see, for example, Beshears *et al.*, 2006; and Madrian and Shea; 2001). Indeed, many employers deliberately set low default contribution rates to minimise the degree of opting out.

Nevertheless, automatic enrolment is likely to spread as a way of extending coverage of private pensions. Survey evidence suggests that automatic enrolment is much more popular with individuals than compulsion in the United Kingdom (Bunt *et al.*, 2006; Hall *et al.*, 2006). And voters' views are shared by many politicians, who worry that workers will view mandatory contributions to private pensions as an unwelcome tax on their earnings.

### **Financial education**

Financial education can also be a means of improving awareness of the need to save for retirement and, it is hoped, coverage of voluntary funded pensions. There is evidence, for example, that employment-based information campaigns have increased participation in and contributions to private pension schemes (OECD, 2005). For example, studies in the United States have shown that more financially literate workers in 401(k) plans are more likely to join the plan (or less likely to opt out of a scheme with automatic enrolment plans). Statements of individual pension rights – which have recently been introduced or improved in France, Germany, Sweden and the United Kingdom, among others – can help people better plan their retirement and make informed choices about voluntary private-pension savings.

### **Facilitating access to private pensions**

Participation might be increased by facilitating access to private pension plans. The availability of occupational pensions is concentrated among workers with large employers. Just under 50% of workers in companies with fewer than 25 employees have access to an occupational pension in the United Kingdom, compared with more than 95% of those where there are more than 1 000 employees (Office of National Statistics, 2009, Table 6.10). In the United States, around two-thirds of firms with more than 500 employees have a pension plan, compared with 28% of those in smaller firms, with less than 25 employees. This pattern is echoed in other countries. People who work for smaller employers tend to have relatively low earnings, meaning that low earners are less likely to have access to an occupational pension plan. In the United States, for example, around 30% of workers earning less than USD 20 000 are employed by a firm with a pension scheme, compared with nearly 70% for workers earning more than USD 50 000 (Copeland, 2007).

A widely cited reason for the fact that smaller employers are less likely to establish occupational pension plans is the fixed cost of operating such a scheme, some of which is attributed to the burden of complying with regulations. The United States has responded to this problem by allowing small employers to establish pension plans with lighter administrative requirements than those for larger companies. For example, in the United States employers can establish the Simplified Employee Pension (SEP) plan is effectively a collection of individual retirement accounts managed by a financial institution acting as trustee.

### **Tax incentives**

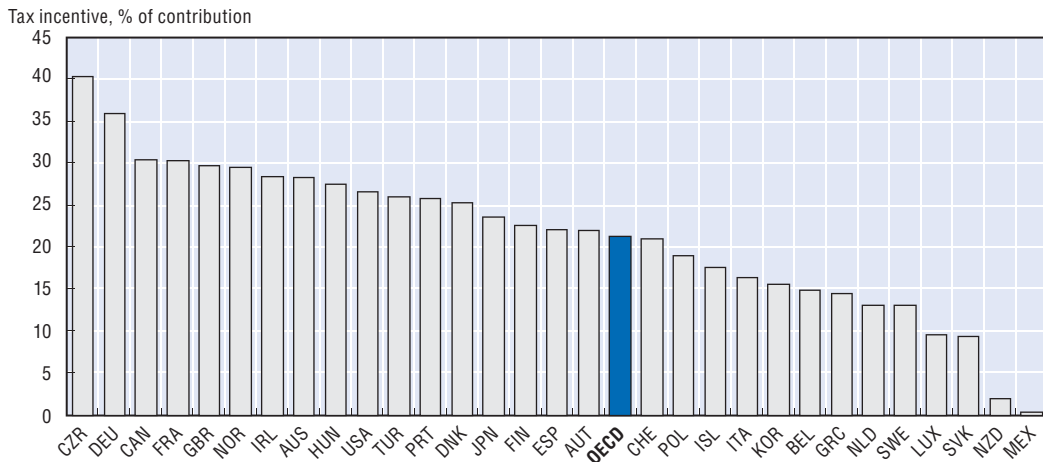
A standard policy to encourage private, voluntary retirement savings is to give preferential tax treatment to contributions and returns from investments in pension plans.

The idea is that a higher *net* rate of return on savings will encourage people to save more. These tax incentives tend to come with conditions, usually over duration of saving and restrictions on the way benefits can be withdrawn. It is these conditions that qualify them as “retirement savings” (see Engen *et al.*, 1994, and 1996 for example).

The key policy issue is whether such tax incentives are effective in increasing savings earmarked for retirement. The OECD has measured incentives to save in pension schemes by comparing the effective tax rate on pensions with that applied to “benchmark savings”; typically this is a bank deposit (see Yoo and De Serres, 2004). The scale of tax incentives is calculated as a percentage of contributions, but considers revenues foregone from deductible contributions and tax-free investment returns and takes account of revenues collected when benefits are withdrawn. It is important to note that the study uses tax parameters and rules for 2003: in many countries, there have been significant changes to the tax treatment of pension since then.

The results suggest that there is indeed an incentive to save in pension plans (Figure 4.7). The size of the tax incentive varies significantly, ranging from around zero in Mexico and New Zealand to over 40% of contributions in the Czech Republic. These two apart, most countries provide incentives of at least 10% of contributions and the OECD average is above 20%.

Figure 4.7. **Tax incentive for private pensions relative to benchmark savings**  
2003 parameters and rules



Source: Yoo, K.Y. and A. De Serres (2004), “Tax Treatment of Private Pension Savings in OECD Countries”, OECD Economic Studies, Vol. 39, No. 2, pp. 73-110.

Surveys of the literature suggest that tax incentives for private pension plans do increase *pension* savings (see Engen *et al.*, 1994 and 1996 for example). However, this increase in retirement savings could result from people actually increasing their overall savings (*i.e.*, new saving) or from people shifting savings from other saving vehicles (*i.e.*, reallocation) and leaving their total savings unchanged. Unfortunately, the empirical evidence on whether savings flowing into tax-advantaged pension schemes are new or reallocated is inconclusive and it is largely based on the United States.



If new saving predominates, then *national* saving (taking account of the reduction in public saving due to the tax incentive) is very likely to increase. But if reallocation is more important, then national saving would decline. This substitution of private for public saving has little macroeconomic effect. However, it may serve a public-policy purpose by locking individual savings into long-term plans earmarked for retirement.

The design of tax incentives is also important. Simply making contributions to private pensions deductible from personal income tax liabilities means that higher earners, paying higher marginal rates, get the greatest benefit. In contrast low earners, who do not pay any income tax or pay at a low rate, have a smaller tax incentive to save for old age. Moreover, their relatively low pension entitlements might mean that they are subject to means-testing in retirement. This is effectively an additional “tax” on pension saving, as shown above. However, it is possible to design fiscal incentives that benefit low earners equally or are focused on the low paid. For example, the tax relief on contributions might be limited to the lower or standard rate of income tax. Another method is to offer matching contributions or tax credits that are paid even to individuals who are not liable for income tax on their earnings.

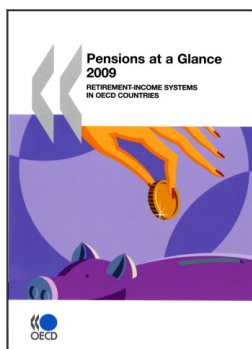
## Notes

1. See OECD (2007, Section II.1), Martin and Whitehouse (2008) and the special chapter on “Recent pension reforms” in this volume.
2. This special chapter draws on the more detailed analysis in Antolín and Whitehouse (2009). The calculations in Section 1 of this chapter update the modelling in from 2004 to 2006 parameters and rules of pension systems, as in the rest of this report. Queisser *et al.* (2008) also discuss the changing balance of public and private pension provision.
3. A detailed, step-by-step illustration of the calculations is set out in OECD (2007), pp. 83-84.
4. Overall coverage of private pensions is presented in the indicators section in Part II of this volume.

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**From:**  
**Pensions at a Glance 2009**  
Retirement-Income Systems in OECD Countries

**Access the complete publication at:**  
[https://doi.org/10.1787/pension\\_glance-2009-en](https://doi.org/10.1787/pension_glance-2009-en)

**Please cite this chapter as:**

OECD (2009), "Policy Issues", in *Pensions at a Glance 2009: Retirement-Income Systems in OECD Countries*, OECD Publishing, Paris.

DOI: [https://doi.org/10.1787/pension\\_glance-2009-5-en](https://doi.org/10.1787/pension_glance-2009-5-en)

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