

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.

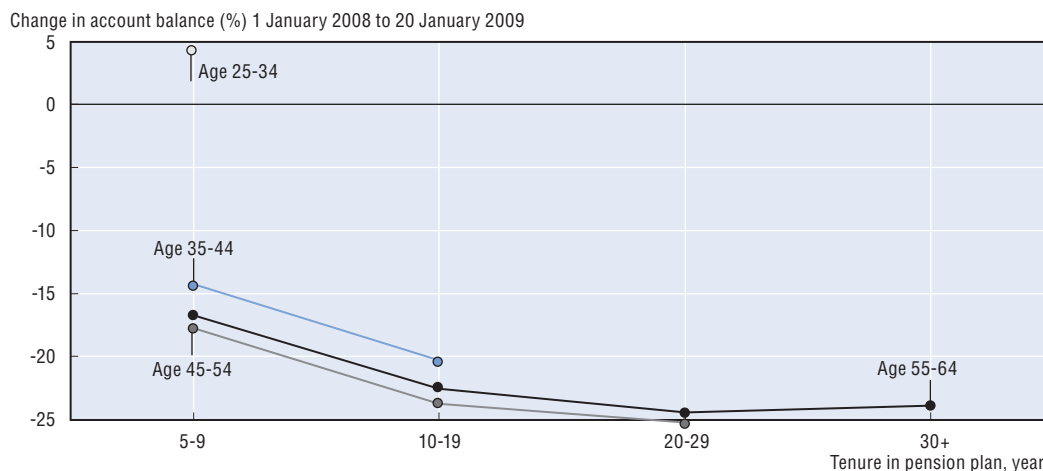
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The effects of financial and economic crisis can be expected to be smallest on younger and prime-age workers. Younger workers will have more time to rebuild their provision for old age once the economy recovers, though losses will obviously be greater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

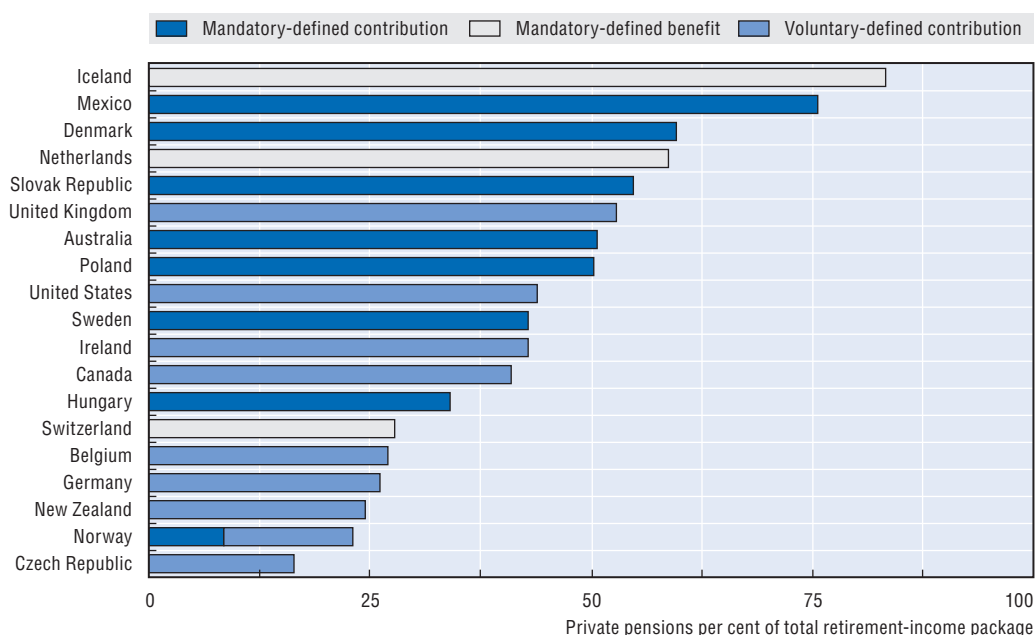
2. In which countries are pensions most affected?

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.¹ 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.²

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.³

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.⁴ 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.⁵ 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.⁶

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

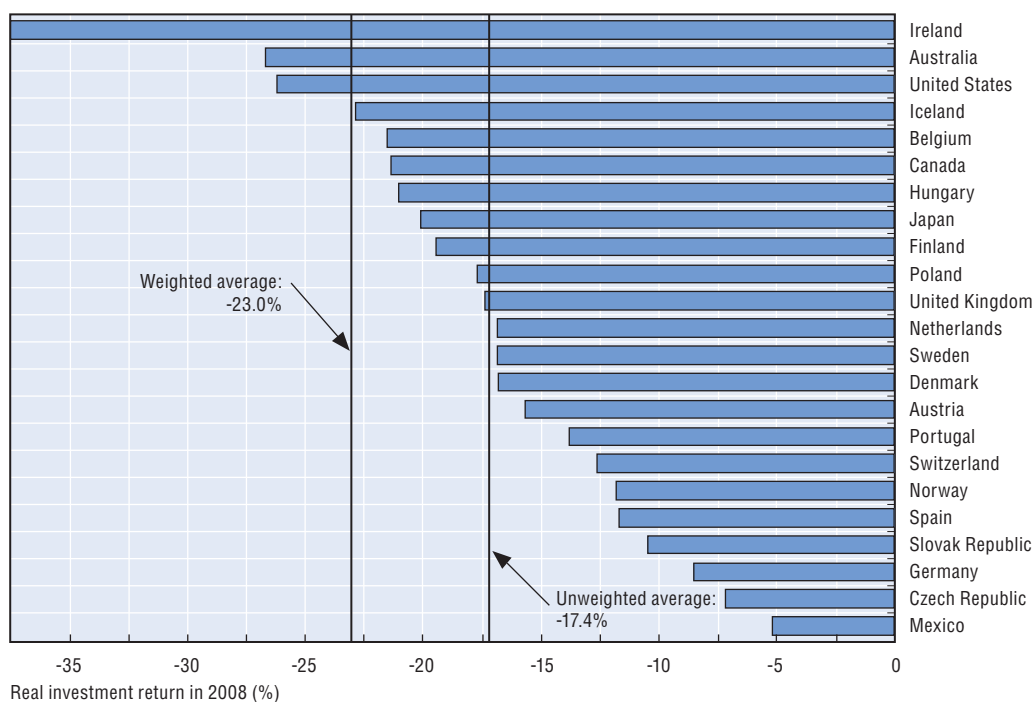
In 2008 as a whole, world stock markets (as measured by the MSCI index) fell by nearly a half and markets were much more volatile than in the past. In contrast, the world government-bond index (Citigroup) increased by around 7%. Property markets in many OECD economies weakened, in some cases dramatically. 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.

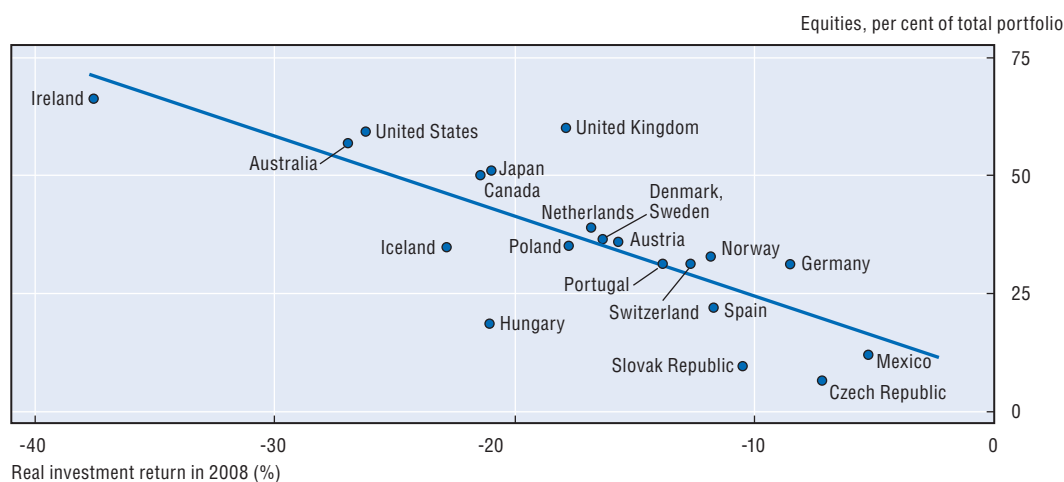
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The major reason for the pattern of investment returns between countries is the way that funds are invested. In countries with smaller losses, pension funds tend to be invested mainly in bonds, especially government bonds. In countries with larger 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 has up 6.4% on 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.⁷ 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.⁸ 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.⁹ 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.¹

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.² 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,³ 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.⁴ 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.⁵ 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.¹⁰ 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.

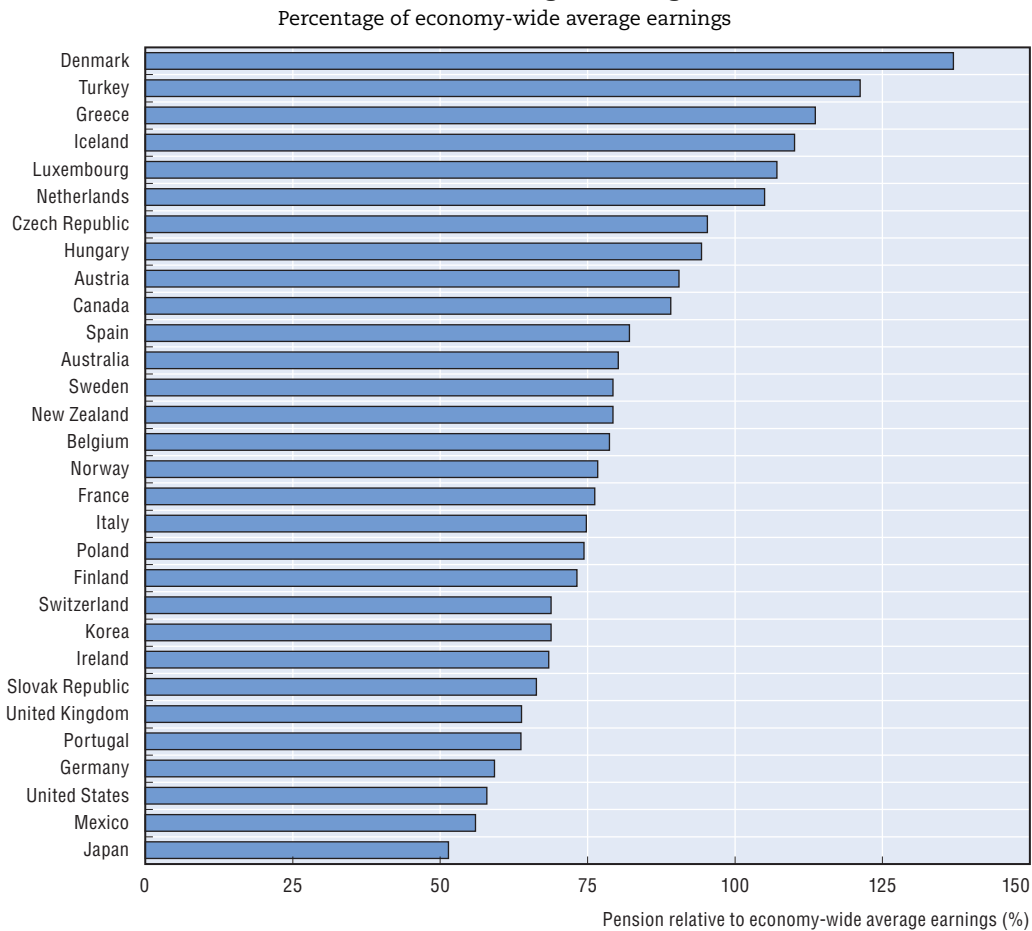
Once a spell of late-in-life long-term unemployment or early retirement is also factored in, retirement incomes can be lower still. With weaker labour markets, many older workers may be forced to retire early or suffer long-term unemployment. The special chapter on “Recent pension reforms” shows that 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 economies¹¹ 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: retirement incomes for workers with 50% of average earnings**



Source: OECD pension models.

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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. 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.

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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.¹² 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.

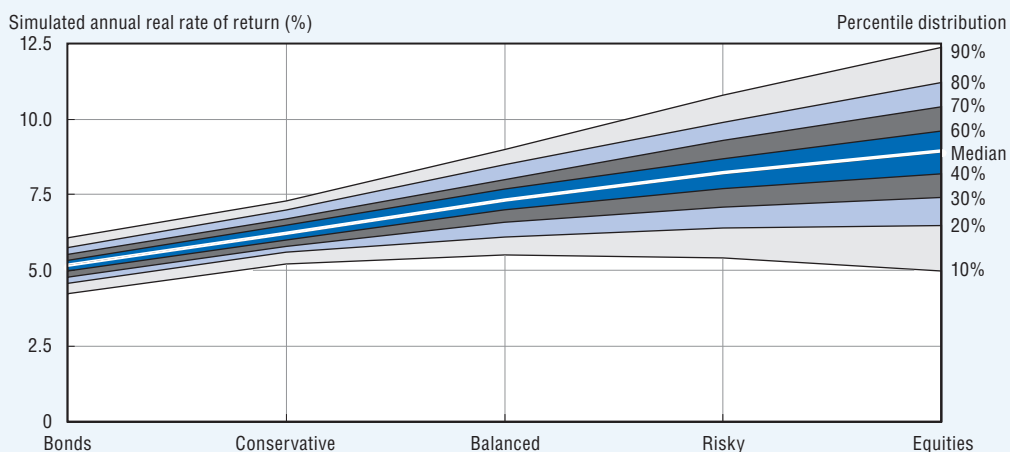
Box 1.4. Long-term investment performance of different types of assets

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 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.

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* 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 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

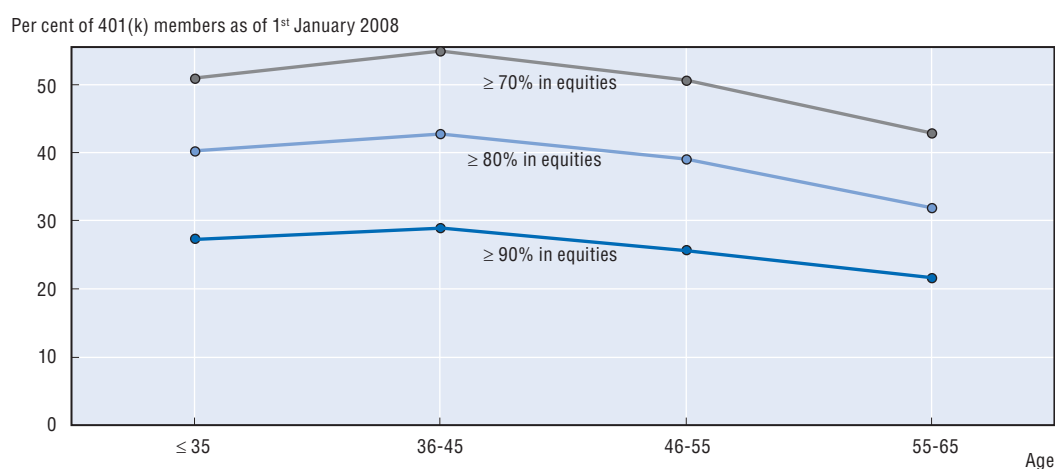
Individuals can choose their investment portfolio in most defined-contribution pension plans. In Australia, for example, around 85% of people are members of a scheme with investment choice, typically among five different funds. However, individuals are now free to choose among different pension providers: 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.¹³ 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.

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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.¹⁴

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.¹⁵ 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 2009-12.¹⁶ 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.¹⁷ The Ministry of Finance (2009) estimates that around ISK 75 billion will be accessible, equivalent to more than 5% 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.¹⁸

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.¹⁹

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 funds²⁰ also means that public money is at risk.

4. Conclusions: security through diversity²¹

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”.²²

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 1.1. 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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