

## Executive Summary

Recent years have seen a wave of pension reforms across OECD countries. These changes were motivated primarily by concerns about the *financial sustainability* of pension systems in the context of ageing populations. An in-depth look at pension systems reveals complex structures and rules, which make it difficult to compare retirement-income regimes. Nevertheless, sharing experience of pension reform and its impact provides valuable information for policy makers.

The report shows how large a pension people who start work now can expect to receive when they retire. This analysis answers a number of policy questions. Do retirement-income systems protect against poverty? Are they financially sustainable? How do they treat people who have low incomes or time out of employment? The report is the first in a series that will appear every two years. Future editions will also assess the impact of pension reforms.

This report shows the direction in which pension systems are heading. The cross-country comparisons reveal a diversity of pension provision in OECD countries. The analysis presented in this report covers all mandatory pension schemes – not only public pension systems, but also all compulsory private pensions. It also examines safety-nets for the elderly, and it takes account of differences in taxes, both across countries and between workers and pensioners. As such, this report provides a complete picture of the transfers across and within generations, and thus of the social *adequacy* of pension systems. Pension programmes have two main objectives. The first is redistribution of income towards low-income pensioners and prevention of destitution in old age. The second is helping workers maintain living standards during retirement by replacing income from work at an adequate level. Most countries pursue both goals in their overall pension policy, but there is large variation in the balance of emphasis between the two each objectives.

This report shows that workers on average earnings in OECD countries can expect their post-tax pension to be worth just under 70% of their earnings after tax. The countries with the lowest *net replacement rate* are Ireland and New Zealand, which have just basic pension schemes and net replacement rates of less than 40%. The United Kingdom and the United States have slightly higher net replacement rates of around 50%.

Low-income workers in OECD countries on half of average earnings will receive a net replacement rate on average of about 85%. But pensions for poor workers are very low in some countries. In Germany, Mexico, the Slovak Republic and the United States, safety-net pensions for full-career workers are worth less than a quarter of economy-wide average earnings.

Some countries have aimed to link contributions and benefits more closely. In Italy, Poland and Hungary, for example, the redistributive features of pension systems have been all but eliminated. If the pension system does not redistribute to poorer people, then means-tested safety-net provisions will generally play a more prominent role in retirement incomes.

All OECD countries have some form of safety-net for older people. Usually, these are means-tested programmes. The average minimum retirement benefit for full-career workers across OECD countries is worth a little under 29% of average earnings.

This report reveals that the personal tax system plays an important role in old-age support. Pensioners often do not pay social security contributions and, as personal income taxes are progressive, the average tax rate on pension income is typically less than the tax rate on earned income. In addition, most income tax systems give preferential treatment either to pension incomes or to pensioners, by giving additional allowances or credits to older people.

Net replacement rates at average earnings are 22% larger than gross replacement rates (averaging across the OECD). However, the effect of taxes and contributions on low earners is more muted than on average because the former pay less in taxes and contribution than higher-income workers. The differential between gross and net replacement rates for low earners is 17% on average.

Most countries withdraw tax concessions from richer pensioners. However, Germany and the United States are two exceptions. They provide tax concessions across the income range (although this is changing in Germany).

The adjustment of pensions in payment to reflect changes in costs or standards of living – “indexation” – has long been central to the debate on the financial sustainability of pension systems. Nearly all OECD countries now link pensions to consumer prices. However, some still adjust pensions in line with average earnings, which may cost more than 20% more than if pensions were indexed to prices.

A related feature is “valorisation”: the adjustment of past earnings to account for changes in living standards between the time when pension rights are earned and when they are claimed. Until very recently, valorisation has received much less attention than indexation despite its powerful impact on pension benefits.

Most OECD countries revalue past earnings in line with economy-wide earnings growth. But there are several exceptions – Belgium, France, Korea, and Spain – where past earnings are valorised with prices. Wages usually grow faster than prices, so price valorisation leads to substantially lower replacement rates than earnings valorisation. Price valorisation for a full-career could result in a pension 40% lower than under earnings valorisation.

Pension wealth – the present value of the future stream of pension payments – is the most comprehensive indicator of pension promises. It takes into account the level at which pensions are paid, the age at which people become eligible to receive a pension, people’s life expectancy and how pensions are adjusted after retirement to reflect growth in wages or prices. Luxembourg has the highest pension wealth for a worker who earned average earnings, worth 18 times average earnings for men and nearly 22 times for women (due to higher female life expectancy). This is equivalent to USD 587 000 at the time of retirement, nearly treble the average for OECD countries. The lowest pension wealth for someone who has earned average earnings when working is found in Ireland, Mexico, New Zealand, the United Kingdom and the United States, where it is less than six times average earnings.

The pension eligibility age in most OECD countries is 65. Iceland and Norway have and the United States will have a normal pension age of 67. Pension eligibility ages are less than 65 in the Czech Republic, France, Hungary, Korea, the Slovak Republic and Turkey. France has gross replacement rates below the OECD average at earnings between 75 and 200% of the average. Pension wealth, however, exceeds the OECD average because the pension eligibility age of 60 is relatively low and life expectancy is relatively long.

The impact of differences in *life expectancy* on pension wealth is quite large. Other things being equal, the countries with low life expectancy – Hungary, Mexico, Poland, the Slovak Republic and Turkey – could afford to pay men a pension 10% higher than a country with OECD average mortality rates (Germany, Italy and the United Kingdom, for example). In contrast, longer life expectancies increase the burden on the pension system. For men, pension wealth is nearly 8% higher in the five countries with the longest life expectancy, which are Japan, Iceland, Norway, Sweden and Switzerland.

## Bibliography

- Aldrich, J. (1982), "The Earnings Replacement Rate of Old-age Benefits in Twelve Countries: 1969-1980", *Social Security Bulletin*, Vol. 45, No. 11, pp. 3-11.
- Blanchard, O.J. (1993), "The Vanishing Equity Premium", in R. O'Brien (ed.), *Finance and the International Economy 7*, Oxford University Press.
- Bodie, Z. (1995), "On the Risk of Stocks in the Long Run", *Financial Analysts' Journal*, May-June, pp. 18-22.
- Casey, B., H. Oxley, E.R. Whitehouse, P. Antolín, R. Duval and W. Leibfritz (2003), "Policies for an Ageing Society: Recent Measures and Areas for Further Reform", Economics Department Working Paper No. 369, OECD, Paris.
- Cichon, M. (1999), "Notional Defined-contribution Schemes: Old Wine in new Bottles?", *International Social Security Review*, Vol. 52, No. 4, pp. 87-105.
- Constantinides, G., J. Donaldson and R. Mehra (1998), "'Junior Can't Borrow' A New Perspective on the Equity Premium Puzzle", Working Paper No. 6617, National Bureau of Economic Research, Cambridge.
- Dang, T.T., P. Antolín and H. Oxley (2001), "Fiscal Implications of Ageing: Projections of Age-related Spending", Working Paper No. 305, Economics Department, OECD, Paris.
- Diamond, P.A. (1997), "Insulation of Pensions from Political Risk", in S. Valdés-Prieto (ed.), *The Economics of Pensions: Principles, Policies and International Experience*, Cambridge University Press.
- Disney, R.F. (1999), "Notional Accounts as a Pension Reform Strategy: an Evaluation", Pension Reform Primer Series, Social Protection Discussion Paper No. 9928, World Bank, Washington, D.C.
- Disney, R.F. and P.G. Johnson (eds.) (2001), *Pension Systems and Retirement Incomes Across OECD Countries*, Edward Elgar, Aldershot.
- Disney, R.F. and Whitehouse, E.R. (1994), "Choice of Private Pension and Pension Benefits in Britain", Working Paper No. 94/2, Institute for Fiscal Studies, London.
- Disney, R.F. and E.R. Whitehouse (1996), "What are Pension Plan Entitlements Worth in Britain?", *Economica*, Vol. 63, pp. 213-238.
- Disney, R.F. and E.R. Whitehouse (1999), "Pension Plans and Retirement Incentives", Pension Reform Primer Series, Social Protection Discussion Paper No. 9924, World Bank, Washington, D.C.
- Disney, R.F. and E.R. Whitehouse (2001), *Cross-Country Comparisons of Pensioners' Incomes*, Report Series No. 142, Department for Work and Pensions, London.
- Eurostat (1993), *Old Age Replacement Ratios*, Vol. 1, *Relation between Pensions and Income from Employment at the Moment of Retirement*, Statistical Office of the European Communities, Luxembourg.
- Finkelstein, A. and J. Poterba (2002), "Selection Effects in the United Kingdom Individual Annuities Market", *Economic Journal*, Vol. 112, No. 476, pp. 28-50.
- Finkelstein, A. and J. Poterba (2004), "Adverse Selection in Insurance Markets: Policyholder Evidence from the UK Annuity Market", *Journal of Political Economy*, Vol. 112, No. 1, pp. 183-208.
- Förster, M.F. and M. Mira d'Ercole (2005), "Income Distribution and Poverty in OECD Countries in the Second Half of the 1990s", Social, Employment and Migration Working Paper, No. 22, OECD, Paris.
- Hernanz, V., F. Malherbert and M. Pellizzari (2004), "Take-up of Welfare Benefits in OECD Countries: a Review of the Evidence", Social, Employment and Migration Working Paper No. 17, OECD, Paris.
- Ippolito, R. (1991), "Encouraging Long Tenure: Wage Tilt or Pensions", *Industrial and Labor Relations Review*, Vol. 44, No. 3.

- Jagannathan, R. and N. Kocherlakota (1996), "Why Should Older People Invest Less in Stocks than Younger People?", *Federal Reserve Bank of Minneapolis Quarterly Review*, Vol. 20, No. 3, Summer.
- Johnson, P.G. (1998), *Older Getting Wiser*, Institute of Chartered Accountants in Australia.
- Keenay, G. and E.R. Whitehouse (2002a), "Taxing Pensioners", in *Taxing Wages*, OECD, Paris.
- Keenay, G. and E.R. Whitehouse (2002b), "The Role of the Personal Tax System in Old-age Support: a Survey of 15 Countries", Discussion Paper No. 02/07, Centre for Pensions and Superannuation, University of New South Wales, Sydney.
- Keenay, G. and E.R. Whitehouse (2003a), "Financial Resources and Retirement in Nine OECD Countries: the Role of the Tax System", Social, Employment and Migration Working Paper No. 8, OECD, Paris.
- Keenay, G. and E.R. Whitehouse (2003b), "The Role of the Personal Tax System in Old-age Support: a Survey of 15 Countries", *Fiscal Studies*, Vol. 24, No. 1, pp. 1-21.
- Lazear, E. (1981), "Agency, Earnings Profiles, Productivity and Hours Restrictions", *American Economic Review*, Vol. 71, pp. 606-620.
- Lazear, E. (1985), "Incentive Effects of Pensions", in D. Wise (ed.), *Pensions, Labor and Individual Choice*, University of Chicago Press for National Bureau of Economic Research.
- McHale, J. (1999), "The Risk of Social Security Benefit Rule Changes: Some International Evidence", Working Paper No. 7031, National Bureau of Economic Research, Cambridge, Mass.
- Mehra, R. and E.C. Prescott (1985), "The Equity Premium: a puzzle", *Journal of Monetary Economics*, Vol. 15, pp. 145-161.
- Mitchell, O.S. and E.L. Dykes (2000), "New Trends in Pension Benefit and Retirement Provisions", Working Paper No. 2000-1, Pension Research Council, Wharton School, University of Pennsylvania, Philadelphia.
- OECD (1995), *Private Pensions in OECD Countries: Canada*, Social Policy Studies No. 15, Paris.
- OECD (2001), *Ageing and Income. Financial Resources and Retirement in Nine OECD Countries*, Paris.
- OECD (2003), *Taxing Wages*, Paris.
- OECD (2004), *OECD Classification and Glossary of Private Pensions*, Paris.
- OECD (2005), *Taxing Wages*, Paris.
- Palacios, R.J. and E.R. Whitehouse (2000), "Guarantees: Counting the Cost of Guaranteeing Defined Contribution Pensions", Pension Reform Primer briefing note, World Bank, Washington, D.C.
- Palacios, R.J. and E.R. Whitehouse (2005), "Civil-service Pension Schemes Around the World", Pension Reform Primer series, Social Protection Discussion Paper, World Bank, Washington, D.C., forthcoming.
- Pennachi, G.G. (1998), "Government Guarantees on Funded Pension Returns", Pension Reform Primer series, Social Protection Discussion Paper No. 9806, World Bank.
- Turner, J.A. and D.M. Rajnes (2000), "Limiting Worker Financial Risk Through Risk Sharing: Minimum Rate of Return Guarantees for Mandatory Defined Contribution Plans", International Labour Organisation, Geneva.
- United Kingdom, Department of Work and Pensions (2003), "Income Related Benefits Estimates of Take-up – 2000-2001", London.
- United Kingdom, Government Actuary's Department (2003), *Occupational Pension Schemes in 2000: Eleventh Survey by the Government Actuary*.
- United States, Department of Labor (1999), *Private Pension Plan Bulletin: Abstract of 1996 Form 5 500 Annual Reports*, Pension and Welfare Benefits Administration, Washington, D.C.
- Viscusi, W.K. (1985), "The Structure of Uncertainty and the Use of Pensions as a Mobility-reduction Device", in D. Wise (ed.), *Pensions, Labor and Individual Choice*, University of Chicago Press for National Bureau of Economic Research.
- Vordring, H. and Goudswaard, K. (1997), "Indexation of Public Pension Benefits on a Legal Basis: Some Experiences in European Countries", *International Social Security Review*, Vol. 50, No. 3, pp. 31-44.
- Weaver, R.K. (1988), *Automatic Government: The Politics of Indexation*, Brookings Institution, Washington, D.C.
- Whiteford, P. (1995), "The Use of Replacement Rates in International Comparisons of Benefit Systems", *International Social Security Review*, Vol. 48, No. 2.

- Whitehouse, E.R. (1998), "Pension Reform in Britain", Pension Reform primer series, Social Protection Discussion Paper No. 9810, World Bank, Washington, D.C.
- Whitehouse, E.R. (2000), "Administrative Charges for Funded Pensions: Measurement Concepts, International Comparison and Assessment", *Journal of Applied Social Science Studies*, Vol. 120, No. 3, pp. 311-361.
- Whitehouse, E.R. (2001), "Administrative Charges for Funded Pensions: Comparison and Assessment of 13 Countries", in *Private Pension Systems: Administrative Costs and Reforms, Private Pensions Series*, Vol. 3, OECD, Paris.
- Whitehouse, E.R. (2002), "Pension Systems in 15 Countries Compared: the Value of Entitlements", Discussion Paper No. 02/04, Centre for Pensions and Superannuation, University of New South Wales, Sydney.
- Whitehouse, E.R. (2005a), "Pension Policy Around the World: Vol. 1, High-income OECD Countries", Social Protection Discussion Paper, World Bank, Washington, D.C.
- Whitehouse, E.R. (2005b), "Pension Policy Around the World: Vol. 2, Eastern Europe and Central Asia", Social Protection Discussion Paper, World Bank, Washington, D.C.
- Whitehouse, E.R. (2005c), "Pension Policy Around the World: Vol. 3, Latin American and Caribbean", Social Protection Discussion Paper, World Bank, Washington, D.C.
- Whitehouse, E.R. and R.J. Palacios (2005), "Pension Policy Around the World: Vol. 5, South Asian Civil-service Schemes", Social Protection Discussion Paper, World Bank, Washington, D.C.
- Whitehouse, E.R. and D. Robalino (2005), "Pension Policy Around the World: Vol. 4, Middle East and North Africa", Social Protection Discussion Paper, World Bank, Washington, D.C.
- World Bank (1994), *Averting the Old-Age Crisis: Policies to Protect the Old and Promote Growth*, Oxford University Press.

# Table of Contents

|  |    |
|--|----|
| Preface: Why Pensions at a Glance? ..... | 9  |
| Introduction .....                       | 11 |
| Executive Summary .....                  | 15 |

*Part I*  
**Monitoring Pension Policies**

|   |    |
|---|----|
| Chapter 1. <b>Pension-system Typology</b> .....                         | 21 |
| 1. First-tier, redistributive pensions .....                            | 22 |
| 2. Second-tier, mandatory, insurance pensions .....                     | 24 |
| Notes .....   | 25 |
| Chapter 2. <b>Comparing Pension-system Parameters</b> .....             | 27 |
| 1. First-tier, redistributive schemes .....                             | 28 |
| 2. Second-tier, earnings-related schemes .....                          | 28 |
| 3. Earnings measures and valorisation in earnings-related schemes ..... | 31 |
| 4. Defined-contribution schemes .....                                   | 33 |
| 5. Ceilings on pensionable earnings .....                               | 33 |
| 6. Pension eligibility ages .....                                       | 34 |
| 7. Indexation of pensions in payment .....                              | 34 |
| 8. Taxes and social security contributions.....                         | 34 |
| Notes .....   | 37 |
| Chapter 3. <b>Modelling Pension Entitlements</b> .....                  | 39 |
| 1. Future entitlements under today's parameters and rules.....          | 40 |
| 2. Coverage .....   | 40 |
| 3. Economic variables .....   | 41 |
| 4. Average earnings data.....   | 42 |
| 5. Taxes and social security contributions.....                         | 42 |
| 6. Indicators and results .....   | 42 |
| Notes .....   | 45 |
| Chapter 4. <b>Replacement Rates</b> .....                               | 47 |
| 1. Gross replacement rates.....   | 48 |
| 2. Net replacement rates .....  | 51 |
| Notes .....   | 53 |

|   |    |
|---|----|
| <b>Chapter 5. Relative Pension Levels .....</b>   | 55 |
| <b>Chapter 6. Pension Wealth .....</b>  | 59 |
| Notes .....   | 63 |
| <b>Chapter 7. Key Indicators .....</b>  | 65 |
| 1. Weighted averages and the earnings distribution .....  | 66 |
| 2. Weighted average pension levels and pension wealth .....   | 67 |
| 3. Structure of the potential resource transfer to pensioners.....  | 68 |
| Notes .....   | 70 |
| <b>Annex I.1. Differences between Defined-benefit, Points and Notional-accounts<br/>Pension Systems .....</b> | 71 |
| <b>Annex I.2. Sensitivity Analyses .....</b>  | 73 |
| <b>Annex I.3. Progressivity of Pension Benefit Formulae.....</b>  | 81 |
| <b>Bibliography .....</b>   | 84 |

**Part II**  
**Country Studies**

|                             |     |
|-----------------------------|-----|
| <b>Introduction .....</b>   | 89  |
| <b>Australia .....</b>      | 91  |
| <b>Austria .....</b>        | 95  |
| <b>Belgium .....</b>        | 98  |
| <b>Canada.....</b>          | 102 |
| <b>Czech Republic .....</b> | 105 |
| <b>Denmark .....</b>        | 108 |
| <b>Finland.....</b>         | 112 |
| <b>France .....</b>         | 116 |
| <b>Germany .....</b>        | 120 |
| <b>Greece .....</b>         | 123 |
| <b>Hungary.....</b>         | 127 |
| <b>Iceland.....</b>         | 130 |
| <b>Ireland .....</b>        | 133 |
| <b>Italy .....</b>          | 136 |
| <b>Japan .....</b>          | 140 |
| <b>Korea .....</b>          | 143 |
| <b>Luxembourg .....</b>     | 146 |
| <b>Mexico .....</b>         | 149 |
| <b>Netherlands .....</b>    | 152 |
| <b>New Zealand.....</b>     | 155 |
| <b>Norway .....</b>         | 158 |
| <b>Poland .....</b>         | 161 |
| <b>Portugal .....</b>       | 164 |
| <b>Slovak Republic.....</b> | 167 |
| <b>Spain .....</b>          | 170 |
| <b>Sweden .....</b>         | 173 |

|   |            |
|---|------------|
| Switzerland .....                             | 177        |
| Turkey .....                                  | 180        |
| United Kingdom .....                          | 183        |
| United States .....                           | 187        |
| <b>VOLUNTARY, OCCUPATIONAL PENSIONS .....</b> | <b>191</b> |
| Canada .....                                  | 193        |
| Denmark .....                                 | 196        |
| United Kingdom .....                          | 198        |
| United States .....                           | 200        |

### List of Box

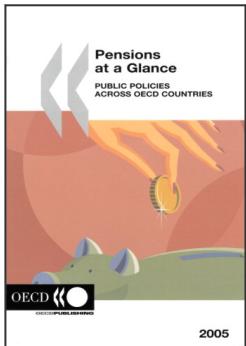
|                               |    |
|-------------------------------|----|
| 3.1. Modelling pensions ..... | 44 |
|-------------------------------|----|

### List of Tables

|   |    |
|---|----|
| 1.1. Structure of pension systems in OECD countries .....                                   | 23 |
| 2.1. Summary of pension system parameters .....   | 29 |
| 2.2. Earnings measure and valorisation: earnings-related schemes .....                      | 32 |
| 2.3. Procedures for adjustment of pensions in payment by country and scheme .....           | 35 |
| 2.4. Categories of concession available to pensioners .....                                 | 37 |
| 3.1. Earnings of the average production worker, 2002 .....                                  | 43 |
| 4.1. Gross replacement rates by earnings level, mandatory pension programmes, men .....     | 49 |
| 4.2. Net replacement rates by earnings level, mandatory pension programmes, men .....       | 52 |
| 6.1. Total life expectancy at age 65, 2040 projected mortality rates .....                  | 61 |
| 6.2. Gross pension wealth by earnings level, mandatory pension programmes, men .....        | 63 |
| 7.1. Weighted average pension level and pension wealth .....                                | 67 |
| 7.2. Contribution of different components of pension systems to total pension promise ..... | 69 |
| I.3.1. Indicators of the progressivity of pension benefit formulae .....                    | 82 |

### List of Figures

|  |    |
|--|----|
| 4.1. Gross replacement rates at different earnings levels .....  | 50 |
| 4.2. Net replacement rates at different earnings levels .....  | 51 |
| 5.1. The link between pre-retirement earnings and pension entitlements .....   | 57 |
| 7.1. Distribution of earnings, average of 16 OECD countries .....  | 66 |
| I.2.1. Total gross replacement rates for low, average and high earners by rate of return on defined-contribution pensions .....                    | 74 |
| I.2.2. Total gross replacement rates for low, average and high earners by rate of growth of economy-wide average earnings .....                    | 77 |
| I.2.3. Total gross replacement rates for low, average and high earners by rate of growth of individual earnings relative to average earnings ..... | 78 |
| I.2.4. Total gross replacement rates for low, average and high earners by the number of jobs over the career .....                                 | 80 |



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