

Turkey

Turkey has an earnings-related public scheme with an income-tested safety net and a flat-rate supplementary pension.

Post-reform system

Qualifying conditions

The minimum pension age for men retiring in 2004 is 45 and 40 for women. An earlier pension reform proposed increases in the age so that it would reach 60 for men and 58 for women in the late 2030s. The most recent reform includes further increases to 65 for men retiring in 2043 and for women retiring slightly later. The modelling uses the long-term pension age.

The means-tested pension is payable only to those who have no other social security rights and who are either older than 65 or older than 18 and disabled.

Benefit calculation

Earnings-related

Benefits accrue at a rate of 2.5% of the earnings measure per annum until the end of 2015; thereafter the accrual rate will be 2% per annum. The model uses the long-term accrual rate of 2%. The earnings measure is based on lifetime average earnings, re-valued with an index composed of 50% real earnings growth and 50% price inflation.

Pensions in payment are indexed to prices.

Minimum

There is a minimum pension, which was TRY 364.7 million at the beginning of 2004 and TRY 400.7 million at the end, corresponding to about one third of average earnings.

Targeted

The means-tested pension is paid quarterly. For the first half of 2002 the pension was TRY 54.6 million per month, for the second, pension was TRY 57.9 million per month or about 5% of average earnings.

A monthly supplement is paid to all retirees. Its value started the year 2003 at TRY 75 million. As the monthly increases are awarded to individuals' earnings-related pensions this supplement is reduced by the amount of those increases. In 2004, there was no such supplement.

There was an increase in Consumer Price Index in 2003 by 18.4% and subsequently, all pensions in payment were increased by 10% in January 2004, and 10% in July 2004.

Early retirement

Workers in specific industries (e.g. mining) and people with disability can retire early but other workers cannot claim pensions before the eligibility ages.

Late retirement

It is possible to defer the pension beyond the normal pension age, but the amount of pension benefit is not adjusted to the longer period of contributions. However from 2006, the extended contribution will be reflected.

Pre-reform scenario

Qualifying conditions

Recent entrants (from September 1999) can draw a pension from age 60 (men) or 58 (women) with 7 000 days of contributions. This is equivalent to around 20 years of contributions for continuous employment. An alternative eligibility condition is 25 years of insurance coverage with 4 500 days of contributions but the pension could be claimed at 60 for men and 58 for women.

Benefit calculation

The pension is based on average lifetime earnings revalued in line with GDP growth. For consistency with the modelling for other countries, it is again assumed that real earnings grow at 2% a year. Given projected labour-force growth of 1% a year over the next 50 years, it is assumed that annual real GDP growth will be 3%.

The pension has a non-linear formula with years of coverage. The first 3 600 days of contributions earn a pension of 35% of pay, with 2% per year extra until 9 000 days of contributions and 1.5% per year thereafter.

There is a floor above which contributions are required. This had two different values during calendar 2004: TRY 549.6 million from January to June 2004, TRY 444.1 million from July onwards. Minimum pensionable earnings were higher than the minimum wage in the earlier period while the two values were the same from July.

There is a ceiling to pensionable earnings; its value was TRY 2 748.1 million from January to June 2004 and TRY 2 886.9 million from July onwards. After the reform started in 1999, the ceiling was only three times minimum wage but it is raised to five times in April 2000.

The modelling uses the average of the variables above for the calendar year 2004.

Indexation of pensions in payment is to the consumer price index. Pensions are adjusted monthly. However, in the past two years additional, real increases in pensions have been granted and in one year a “social supplement” was added. The modelling assumes price indexation of pensions in payment.

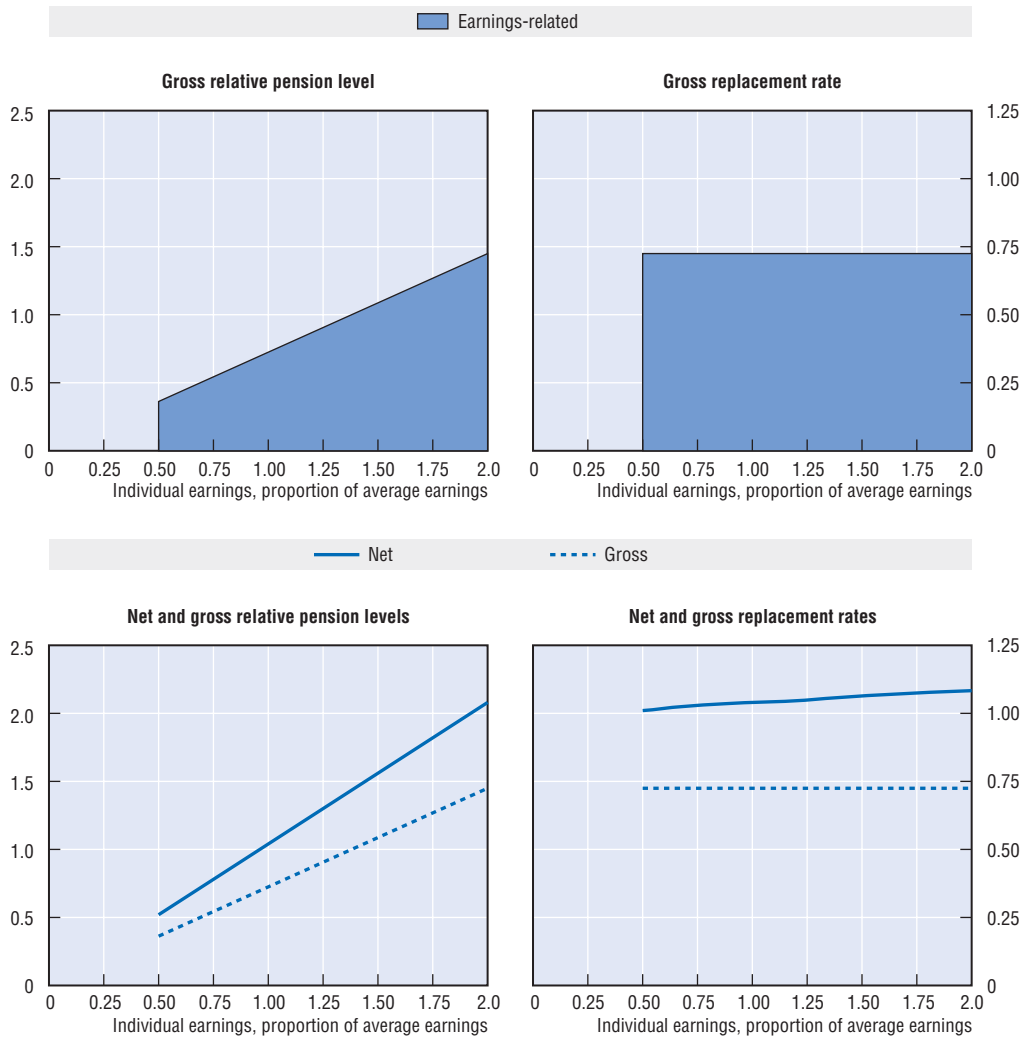
The minimum pension and targeted pension were described above.

Further reading

Brook, A.-M. and E.R. Whitehouse (2006), “The Turkish Pension System: further reforms to help solve the informality problem”, Social, Employment and Migration Working Paper No. 44, OECD, Paris (also available as Working Paper No. 529, Economics Department, OECD.)

OECD (2006), “Making the Pension System Less of an Obstacle to Formalisation”, Chapter 4 of *OECD Economic Surveys: Turkey*, Paris.

Pension modelling results: Turkey



Men	Median earner	Individual earnings, multiple of economy-wide average				
		0.5	0.75	1	1.5	2
Gross relative pension level (% average gross earnings)	61.6	36.2	54.4	72.5	108.7	144.9
Net relative pension level (% net average earnings)	88.4	52.0	78.0	104.0	156.0	208.0
Gross replacement rate (% individual gross earnings)	72.5	72.5	72.5	72.5	72.5	72.5
Net replacement rate (% individual net earnings)	103.4	101.0	102.9	104.0	106.4	108.3
Gross pension wealth (multiple of individual gross earnings)	9.2	9.2	9.2	9.2	9.2	9.2
Net pension wealth (multiple of individual gross earnings)	9.2	10.7	10.7	10.7	10.7	10.7
		9.2	9.2	9.2	9.2	9.2
		10.7	10.7	10.7	10.7	10.7

Pension modelling results: Turkey, pre-reform scenario

Men	Median earner	Individual earnings, multiple of economy-wide average				
		0.5	0.75	1	1.5	2
Women (where different)						
Gross relative pension level	91.4	53.8	80.7	107.6	161.4	215.2
(% average gross earnings)	87.4	51.4	77.1	102.8	154.2	205.6
Net relative pension level	131.2	77.2	115.8	154.4	231.6	308.8
(% net average earnings)	125.4	73.8	110.6	147.5	221.3	295.0
Gross replacement rate	107.6	107.6	107.6	107.6	107.6	107.6
(% individual gross earnings)	102.8	102.8	102.8	102.8	102.8	102.8
Net replacement rate	153.5	150.0	152.8	154.4	157.9	160.8
(% individual net earnings)	146.7	143.3	146.0	147.5	150.9	153.7
Gross pension wealth	16.3	16.3	16.3	16.3	16.3	16.3
(multiple of individual gross earnings)	19.1	19.1	19.1	19.1	19.1	19.1
Net pension wealth	16.3	16.3	16.3	16.3	16.3	16.3
(multiple of individual gross earnings)	19.1	19.1	19.1	19.1	19.1	19.1

Foreword

This report provides indicators for comparing pension policies across OECD countries. It gives estimates of the level of pension people will receive if they work for a full career and if today's pension rules stay unchanged.

Monika Queisser and Edward Whitehouse of the Social Policy Division of the OECD's Directorate for Employment, Labour and Social Affairs prepared the report. Rie Fujisawa and Edward Whitehouse were responsible for the pension modelling and the analysis of the tax position of pensioners. Anna Cristina D'Addio and Jongkyun Choi assisted in finalising the report.

National officials provided invaluable, active assistance in collecting information on their countries' pension and tax systems. The results have been confirmed by national authorities with the exception of those for Italy, which are based on the OECD's interpretation of parameters and rules provided by the government.*

Numerous OECD colleagues provided guidance and information, particularly Mark Pearson, Martine Durand and John Martin. The OECD private-pensions team in the Directorate of Financial and Enterprise Affairs – particularly Fiona Stewart and Juan Yermo – provided useful input to the special feature on private pensions. Delegates to the OECD Working Party on Social Policy advised on modelling procedures and development of indicators for cross-country comparisons of pension systems. They also gave constructive comments on earlier drafts.

The report is the product of a joint project co-financed by the European Commission and the OECD; the project also benefited from a financial contribution made by the government of Switzerland.

The OECD pension models use the APEX (Analysis of Pension Entitlements across Countries) infrastructure originally developed by Axia Economics, with the help of funding from the OECD and the World Bank.

* Italy has expressed serious doubts about the adequacy of data used in the report, and consequently about the comparability of results. In particular, baseline assumptions about labour market entry ages and career length (respectively, 20 and 45 years) are different from those agreed in a comparable exercise undertaken at the EU level, and differ from current Italian labour market norms. Italy thinks interpretations based on these data may be misleading.

Structure of the Report and Methodology

The general approach of *Pensions at a Glance* is a “microeconomic” one, looking at prospective individual entitlements under all 30 of OECD member countries’ pension regimes. This method is designed to complement alternative comparisons of retirement-income systems: long-term fiscal and financial projections (for example, Dang *et al.*, 2001; and European Union, 2006) and analysis of income-distribution data (such as Förster and Mira d’Ercole, 2005; and Disney and Whitehouse, 2001).

The report is divided into three main parts. Part I presents the information needed to compare pension policies in a clear, “at a glance” style. It starts by showing the different schemes that together make up national retirement-income provision. Next, there is a summary of the parameters and rules of pension systems.

This is followed by eight main indicators that are calculated using the OECD pension models.

- The first two are the most familiar to pension analysts. Both are replacement rates, *i.e.*, the ratio of pension benefits to individual earnings. These are given in gross and net terms, taking account of taxes and contributions paid on earnings and on retirement incomes. Two analyses of the sensitivity of the gross replacement rate follow. The first looks at individuals who enter the pension system later than the baseline assumption, while the second considers the importance of investment returns in pension systems with defined-contribution (DC) components.
- The next two indicators are pension wealth, again given in gross and net terms. Pension wealth is a more comprehensive measure of pension entitlements than replacement rates because it takes account of pension ages, indexation of pensions to changes in wages or prices and life expectancy.
- Countries differ in the way that their pension systems aim to provide an old-age safety-net or replace a target share of pre-retirement income. The balance between these two is explored by the next pair of indicators: the first on the progressivity of the pension benefit formula and the second on the link between pension and earnings.
- The final two indicators aim to summarise the pension system as it affects individuals across the earnings distribution, showing the average pension level, pension wealth and the contribution of each component of the retirement-income system to overall benefits.

Two special chapters form Part II of this report. They cover pension reforms and private pensions, respectively. Both of these analyses use the OECD pension models to explore more deeply the central issues of pension policy in national debates. The framework of *Pensions at a Glance* is forward-looking, focusing on future pension entitlements of today’s

workers. However, the past decade has seen intense reform activity in the world of pensions and retirement. The first special chapter looks at what countries did and how this is likely to affect future benefits. A number of these reforms have increased the role of the private sector in pension provision. The second special chapter identifies the complex range of private retirement arrangements and quantifies the savings effort individuals will have to make to maintain standards of living in retirement.

Finally, Part III provides detailed background information on each of the 30 countries' retirement-income arrangements. These include pension eligibility ages and other qualifying conditions; the rules for calculating benefit entitlements; the treatment of early and late retirees; and more detailed information on the pre-reform scenarios explored in the special chapter on pension reforms. The country studies summarise the national results in standard charts and tables.

The remainder of this section describes the methodology used to calculate pension entitlements. It outlines the details of the structure, coverage and basic economic and financial assumptions underlying the calculation of future pension entitlements on a comparative basis.

Future entitlements under today's parameters and rules

The pension entitlements which are compared are those that are currently legislated in OECD countries. Changes in rules that have already been legislated, but are being phased-in gradually, are assumed to be fully in place from the start. Reforms that have been legislated since 2004 are included where sufficient information is available (in Portugal, for example). Some changes (such as the increase in pension age in Germany and the reform package in the United Kingdom) have not been finalised or were finalised too late for inclusion.

The values of all pension system parameters reflect the situation in the year 2004. The calculations show the pension entitlements of a worker who enters the system today and retires after a full career. The results are shown for a single person only.

Career length

A full career is defined here as entering the labour market at age 20 and working until the standard pension-eligibility age, which, of course, varies between countries. The implication is that the length of career varies with the statutory retirement age: 40 years for retirement at 60, 45 years for retirement at 65, etc. As the results can be sensitive to the career-length assumption, calculations are also made for situations where workers enter at age 25 and so retire with five years less than a full career.

Coverage

The pension models presented here include all *mandatory* pension schemes for private-sector workers, regardless of whether they are public (i.e. they involve payments from government or from social security institutions, as defined in the System of National Accounts) or private. For each country, the main national scheme for private-sector employees is modelled. Schemes for civil servants, public-sector workers and special professional groups are excluded.

Systems with near-universal coverage are also included provided they cover at least 90% of employees. This applies to schemes such as the occupational plans in Denmark, the Netherlands and in Sweden. An increasing number of OECD countries have broad coverage of voluntary, occupational pensions and these play an important role in providing retirement incomes. For these countries, a second set of results is shown with voluntary pension schemes in the special chapter on private pensions.

Resource-tested benefits for which retired people may be eligible are also modelled. These can be means-tested, where both assets and income are taken into account, purely income-tested or withdrawn only against pension income. The calculations assume that all entitled pensioners take up these benefits. Where there are broader means tests, taking account also of assets, the income test is taken as binding. It is assumed that the whole of income during retirement comes from the mandatory pension scheme (or from voluntary pension schemes in those countries where they are modelled).

Pension entitlements are compared for workers with earnings between 0.5 times and twice the economy-wide average. This range permits an analysis of future retirement benefits of both the poorest and richer workers.

Economic variables

The comparisons are based on a single set of economic assumptions for all 30 countries. In practice, the level of pensions will be affected by economic growth, wage growth and inflation, and these will vary across countries. A single set of assumptions, however, ensures that the comparisons of the different pension regimes are not affected by different economic conditions. In this way, differences across countries in pension levels reflect differences in pension systems and policies alone.

The baseline assumptions are:

- real earnings growth: 2% per year (given the assumption for price inflation, this implies nominal wage growth of 4.55%);
- individual earnings: assumed to grow in line with the economy-wide average. This means that the individual is assumed to remain at the same point in the earnings distribution, earning the same percentage of average earnings in every year of the working life;
- price inflation: 2.5% per year;
- real rate of return after administrative charges on funded, defined-contribution pensions: 3.5% per year;
- discount rate (for actuarial calculations): 2% per year (see Queisser and Whitehouse, 2006 for a discussion of the discount rate);
- mortality rates: the baseline modelling uses country-specific projections (made in 2002) from the United Nations/World Bank population database for the year 2040;
- earnings distribution: composite indicators use the OECD average earnings distribution (based on 18 countries), with country-specific data used where available.

Changes in these baseline assumptions will obviously affect the resulting pension entitlements. The indicators are therefore also shown for alternative assumptions regarding the rate of return on funded defined-contribution schemes. The impact of variations in economy-wide earnings growth, and for individual earnings growing faster or slower than the average, was shown in the first edition of *Pensions at a Glance* (OECD, 2005)

The real rate of return on defined-contribution pensions is assumed to be net of administrative charges. In practice, this assumption might disguise genuine differences in administrative fees between countries (see Whitehouse, 2000 and 2001 for an analysis).

The calculations assume the following for the pay-out of pension benefits: when DC benefits are received upon retirement, they are paid in the form of a price-indexed life annuity at an actuarially fair price. This is calculated from mortality data. Similarly, the notional annuity rate in notional accounts schemes is (in most cases) calculated from mortality data using the indexation rules and discounting assumptions employed by the respective country.

Taxes and social security contributions

Information on taxes and social security contributions which were used to calculate the net indicators for 2002 were included in the country chapters in the first edition of *Pensions at a Glance* (OECD, 2005). The tax and social security contribution rules and parameters have been updated to 2004 but are not repeated in this volume for reasons of space (Fujisawa and Whitehouse, forthcoming 2007, provides more information).

The modelling assumes that tax systems and social-security contributions remain unchanged in the future. This implicitly means that “value” parameters, such as tax allowances or contribution ceilings, are adjusted annually in line with average earnings, while “rate” parameters, such as the personal income tax schedule and social security contribution rates, remain unchanged. General provisions and the tax treatment of workers for 2004 can be found in the OECD report *Taxing Wages* (OECD, 2006). The conventions used in that report, such as which payments are considered taxes, are followed here.

Average earnings

Starting with this edition, *Pensions at a Glance* uses a new and more comprehensive measure of average earnings corresponding to an “average worker” (AW). This is broader than the previous benchmark of the “average manual production worker” (APW). This new concept was introduced in the report *Taxing Wages* (OECD, 2006) and also serves as benchmark for *Benefits and Wages* (OECD, 2007).

The reasoning behind the change was that a manual worker in the production sector is not representative of the “typical taxpayer”, given the steady decline in manual employment in manufacturing in most OECD countries. The new base for calculating average earnings includes more economic sectors and both manual and non-manual workers. The concept and definition of earnings, however, remains the same: gross wage earnings paid to average workers, measured before deductions of any kind, but including overtime pay and other cash supplements paid to employees.

Table 0.1 reports average earnings levels under the old (APW) and new (AW) definition, for the year 2004. Only three countries (Ireland, Korea and Turkey) are not yet able supply earnings data on the broader basis and so the modelling is based on the old, APW measure of average earnings.

The effect of broadening the types of workers covered has very different effects on measured average earnings in different OECD countries. In 19 of the 27 countries for which new, AW data are available, these are *higher* than average earnings under the previous, APW definition but the size of the difference varies greatly (see Figure 0.1). The change in definition increases measured average earnings by 30% or more in six countries (Austria,

Table 0.1. OECD measures of average earnings, 2004
National currency and USD at market price and purchasing-power-parity exchange rates

	OECD measure of average earnings				Exchange rates with USD	
	Old – National currency (APW)	New – National currency (AW)	New – USD, market price	New – USD, PPP	Market price	PPPs
Australia	52 777	48 827	35 922	35 917	1.36	1.36
Austria	24 946	32 872	40 842	37 872	0.80	0.868
Belgium	32 281	35 578	44 205	41 151	0.80	0.865
Canada	40 912	38 945	29 933	31 269	1.30	1.25
Czech Republic	213 573	209 489	8 153	14 936	25.69	14.03
Denmark	323 900	316 500	52 860	37 684	5.99	8.40
Finland	29 152	31 539	39 186	32 372	0.80	0.974
France	23 087	29 549	36 713	32 199	0.80	0.918
Germany	34 088	41 046	50 998	45 898	0.80	0.894
Greece	12 525	17 360	21 569	24 996	0.80	0.695
Hungary	1 262 712	1 697 268	8 377	13 682	202.61	124.05
Iceland	2 849 554	2 770 000	39 463	29 461	70.19	94.02
Ireland	30 170	n.a.	37 485	30 321	0.80	1.00
Italy	23 044	22 053	27 400	25 628	0.80	0.861
Japan	4 223 100	4 943 208	45 708	37 139	108.15	133
Korea	27 356 688	n.a.	23 888	34 974	1 145.20	782
Luxembourg	32 586	39 171	48 668	42 649	0.80	0.918
Mexico	66 432	76 332	6 767	10 446	11.28	7.31
Netherlands	32 457	37 026	46 003	41 300	0.80	0.897
New Zealand	41 778	39 428	26 129	26 793	1.51	1.47
Norway	314 523	366 161	54 332	41 005	6.74	8.93
Poland	26 745	29 263	8 015	15 858	3.65	1.85
Portugal	9 372	12 969	16 113	18 344	0.80	0.707
Slovak Republic	190 000	200 722	6 228	11 679	32.23	17.19
Spain	17 913	19 828	24 635	26 215	0.80	0.756
Sweden	251 282	300 814	40 949	32 773	7.35	9.18
Switzerland	64 419	70 649	56 849	40 900	1.24	1.73
Turkey	13 959	n.a.	9 789	16 788	1.43	0.831
United Kingdom	20 560	27 150	49 747	43 881	0.55	0.619
United States	34 033	30 355	30 355	30 355	1.00	1.00

n.a.: Not available.

AW = average wage.

APW = average production worker.

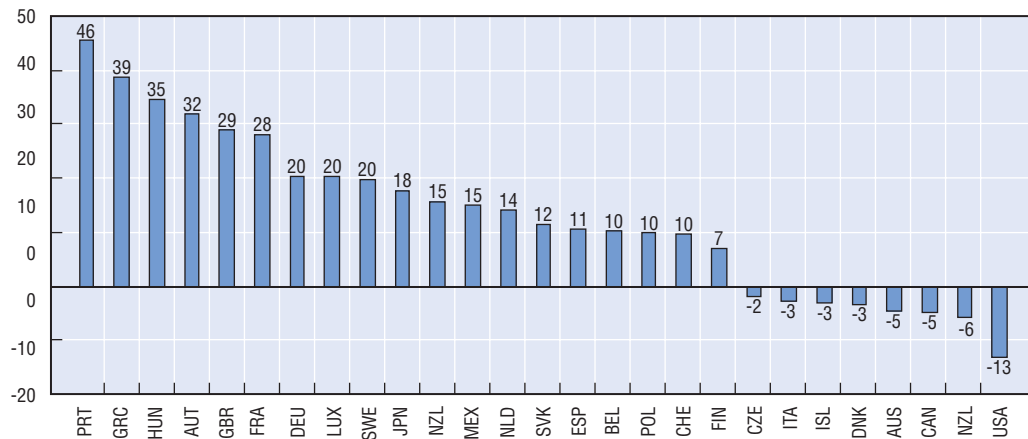
PPP = purchasing power parity.

Note: Monetary values for Turkey divided by 1 000 000. Average earnings are not available on the AW measure for Ireland, Korea and Turkey.


Source: OECD (2006), p. 13; and OECD Main Economic Indicators.

France, Greece, Hungary, Portugal and the United Kingdom). For three additional countries the increase was 20% (Germany, Luxembourg and Sweden). In contrast, a sizeable decrease occurred only in the United States (13%), with more modest declines (of around 5% or less) in seven further countries.*

* Countries have endeavoured to supply data based on the new Average Wage concept. However, as when any new series is introduced, there are teething problems and different interpretations of guidelines need to be reconciled. It appears possible, for example, that the US data excludes some groups that are included in other countries' estimates of the average wage, which may partly explain the surprisingly low US average wage estimate. This issue is subject of ongoing work, and updates to the wage series will be posted on the OECD website as and when they become available.

Figure 0.1. **Percentage difference of average earnings AW levels with regard to previous APW levels, 2004**

Source: OECD (2006), p. 13.

StatLink  <http://dx.doi.org/10.1787/886456570455>Table 0.2. **Total life expectancy at age 65, 2040 projected mortality rates**

	Men	Women
Australia	84.0	87.4
Austria	83.7	87.3
Belgium	83.8	87.3
Canada	83.8	87.4
Czech Republic	82.5	86.0
Denmark	83.1	86.0
Finland	83.6	87.5
France	83.9	87.6
Germany	83.2	86.6
Greece	83.3	86.6
Hungary	80.8	85.0
Iceland	84.8	87.5
Ireland	82.8	86.2
Italy	83.0	87.0
Japan	85.8	88.7
Korea	81.8	85.6
Luxembourg	83.0	87.2
Mexico	80.9	84.8
Netherlands	83.5	86.7
New Zealand	83.6	86.8
Norway	84.2	87.5
Poland	81.5	85.6
Portugal	82.8	86.2
Slovak Republic	81.1	85.1
Spain	83.4	87.0
Sweden	84.3	87.5
Switzerland	84.5	88.2
Turkey	80.0	83.0
United Kingdom	83.3	86.4
United States	83.8	87.3
OECD average	83.1	86.6

Note: These projections build on recent national census data. The assumptions for future changes in mortality rates vary between countries but nonetheless use a consistent methodology. The resulting mortality rates can differ from national projections because of differences in assumptions.

Source: OECD calculations based on United Nations/World Bank population database.

Demographics and life expectancy

Table 0.2 shows the country-specific total life expectancy, separately for men and women, conditional on surviving until age 65. Given that pension entitlements are projected into the future, the calculations use the projections for 2040 from the United Nations/World Bank population database. Workers who enter the labour market in 2004 will retire between 2044 and 2051. Unfortunately, mortality-rate projections are available only for 2040 and 2075.

Citizens of poorer OECD member states are projected to retain lower life expectancies than their counterparts in richer economies. In Hungary, Mexico, Poland, the Slovak Republic and Turkey, life expectancy at age 65 is 1½-3 years shorter than the OECD average. Japan and Switzerland have significantly longer life expectancy than the OECD mean today and are projected to remain at the top in 2040. Other countries are clustered around the OECD average.

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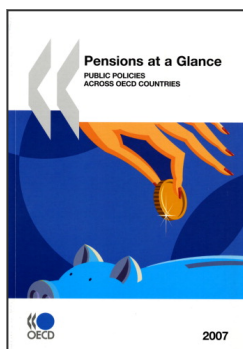
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