

PART I
Chapter 6

Pension Wealth

The replacement rates and relative pension levels discussed above give a first indication of the magnitude of the pension promise, but they are not comprehensive measures. For a full picture, it is necessary to take account of life expectancy, retirement ages and the indexation of pension benefits. These determine for how long the pension benefit must be paid and how its value evolves over time. To compare countries' different provisions, the pension entitlement at retirement is converted into a value of pension "wealth" using standard actuarial techniques. For each country, the present value of future pension payments is calculated, using a uniform discount rate of 2% and country-specific life expectancy. Since the comparisons refer to prospective pension entitlements, the calculations use national life expectancies as projected for the year 2040.

Countries can more easily afford to promise a higher replacement rate at retirement if the pension eligibility age is higher and so the benefit is paid for a shorter period. The average pension eligibility age in OECD countries is 64.4 for men and 63.9 for women. The calculations use a baseline pension age of 65: this is the most common across OECD countries. The results are shown below for the eight different pension ages that occur in OECD countries, ranging from 58 to 67. For illustration, they are also shown for age 70.

The table below shows the effect on pension wealth of a different pension age for men and women relative to the baseline age of 65, using OECD average mortality rates by age and assuming that the pension in payment is indexed to prices. Setting the pension eligibility age at 64 instead of 65, for example, raises the cost of the long-term pension promise by 3.5%; a retirement age of 67, on the other hand, costs 7% less than retirement at 65.

Pension eligibility age		58	60	62	63	64	65	66	67	70
Pension wealth, relative to baseline (%)	Men	+24.5	+17.5	+10.5	+7.0	+3.5	0.0	-3.5	-7.0	-17.4
	Women	+22.2	+16.1	+9.8	+6.6	+3.3	0.0	-3.3	-6.7	-16.9

France, Korea, and Turkey have a pension eligibility age of 60.¹ For men, a pension paid from age 60 costs 17.5% more than the same benefit paid from age 65. Pension eligibility age has a slightly larger effect on the pension wealth of men than of women. This is because men's shorter life expectancy implies that changes in the pension eligibility age have a proportionally larger effect on the duration of retirement.

These calculations assume that benefits after retirement are adjusted in line with prices. If benefits are linked to the growth of economy-wide average earnings and wages grow faster than prices (following the baseline assumptions), pension wealth will be higher, which means that the pension promise will be more costly.

Indexation procedure		Prices	Earnings	80 p: 20 w	67 p: 33 w	50 p: 50 w
Pension wealth, relative to baseline (%)	Men	0	+21.7	+3.9	+6.5	+10.1
	Women	0	+24.5	+4.3	+7.3	+11.3

Using the baseline assumption of 2% real wage growth, full earnings indexation means that pension wealth is over 20% higher than under price indexation. Full linking of pensions in payment to average earnings is now rare.² Indexing to a mix of earnings and prices naturally results in a value of pension wealth which falls between prices up-rating and earnings up-rating. The Czech Republic, Finland, Hungary, Poland, the Slovak Republic and Switzerland all have some type of mixed indexation. For example, the Czech Republic indexes pensions by 67% of price inflation (p) and 33% of wage inflation (w). At the baseline assumptions, this costs around 7% more than a link only to prices.

The effect of more generous indexation procedures is larger for women than for men. This is because of women's longer life expectancy, of over 3½ years on average in OECD countries. This means that they have a longer retirement over which to benefit from the real increases in pension.

The final element in the calculation of pension wealth is the country-specific mortality which, like the pension eligibility age, affects the expected length of retirement. Table 6.1

Table 6.1. 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.

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.

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, total life expectancy at age 65 is 1½ to three years shorter than the OECD average. Iceland, Japan and Switzerland have significantly longer life expectancy than the OECD mean. The other countries are clustered around the OECD average.

The impact of differences in life expectancy on pension wealth are also quite large. The baseline in the table below is a price-indexed pension paid from age 65 at the OECD average mortality rate. For comparison, the table shows pension wealth calculated using the mortality rates for the five countries with the shortest and the five with the longest life expectancy. 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 with the mortality of the five countries with the longest life expectancy, which are Iceland, Japan, Norway, Sweden and Switzerland.

Mortality rates		Best	Average	Worst
Pension wealth, relative to baseline (%)	Men	+7.8	0	-10.2
	Women	+5.0	0	7.4

The results of the calculations of pension wealth at the standard pension age in the respective country are shown in Table 6.2. The pension-wealth numbers show the size of the lump sum that would be needed to buy a flow of pension payments equivalent to that promised by the mandatory pension system in each country. Taking the United States as an example, the mandatory pension for an average earner is worth 5.5 times economy-wide average earnings at the time of retirement. With the exceptions of the countries with purely flat-rate systems – Ireland and New Zealand – pension wealth is smaller for lower earners. At half average earnings in the United States, for example, the mandatory pension is worth 3.5 times economy-wide average earnings.

Luxembourg has the highest pension wealth at every level of earnings. For average and high earners, this is worth double the average for OECD countries.

In countries with shorter life expectancies, such as Hungary, Poland and Turkey, benefits are paid for a shorter retirement period and so the pension promise becomes more affordable. The effect is the reverse in Switzerland and the Nordic countries, where life expectancies are high. Unlike measures of replacement rates, the link between affordability and life expectancy is captured by the pension-wealth indicator.

The effect of pension eligibility ages is also apparent in the results for pension wealth. France, for example, has gross replacement rates below the OECD average at earnings of between 75 and 200% of average. However, pension wealth is above the OECD average at these earnings because the pension eligibility age of 60 is relatively low and life expectancy is a little longer than the OECD mean.

Table 6.2. **Gross pension wealth by earnings level, mandatory pension programmes, men**

Multiple of economy-wide average earnings

	Individual earnings, multiple of average					
	0.5	0.75	1	1.5	2	2.5
Australia	5.7	6.2	6.7	7.7	8.3	8.6
Austria	6.0	9.0	11.9	17.9	19.6	19.6
Belgium	5.5	5.5	7.3	7.5	9.4	9.4
Canada	5.5	6.0	6.5	6.5	6.5	6.5
Czech Republic	4.6	5.2	5.8	6.2	6.6	7.1
Denmark	7.0	7.2	7.4	7.7	8.0	8.3
Finland	6.3	8.4	11.2	16.9	22.5	28.1
France	7.6	7.6	9.5	13.7	17.1	20.5
Germany	4.3	6.2	8.3	12.5	13.7	13.7
Greece	6.3	9.4	12.6	18.9	25.2	31.5
Hungary	6.1	9.1	12.2	18.3	24.4	26.8
Iceland	7.1	7.8	8.4	9.9	12.6	15.3
Ireland	5.4	5.4	5.4	5.4	5.4	5.4
Italy	5.8	8.7	11.4	16.5	22.0	27.5
Japan	5.7	7.0	8.3	10.9	12.2	12.2
Korea	5.0	5.9	6.7	8.4	9.7	9.7
Luxembourg	10.3	14.3	18.3	26.2	34.1	40.2
Mexico	2.6	3.7	4.8	7.0	9.1	11.3
Netherlands	5.2	7.7	10.3	15.5	20.6	25.8
New Zealand	5.7	5.7	5.7	5.7	5.7	5.7
Norway	5.3	6.7	8.2	10.7	11.7	12.1
Poland	4.0	5.9	7.9	11.9	15.8	19.4
Portugal	7.9	7.9	10.2	15.1	20.0	24.7
Slovak Republic	4.0	6.0	8.0	12.0	15.9	19.9
Spain	6.1	9.1	12.2	18.3	23.0	23.0
Sweden	7.0	8.7	10.4	15.5	21.0	26.6
Switzerland	5.5	7.9	10.1	11.5	11.5	11.5
Turkey	6.1	8.5	11.0	15.9	18.2	18.2
United Kingdom	5.0	5.2	5.5	6.6	6.7	6.7
United States	3.5	4.5	5.5	7.1	8.0	8.9
OECD average	5.7	7.2	8.9	12.1	14.8	16.8
With voluntary schemes						
Canada	6.5	8.2	10.2	13.5	16.8	20.1
Denmark	9.3	10.2	11.2	13.1	15.6	18.6
United Kingdom	5.3	6.5	7.7	10.2	12.6	15.0
United States	5.9	8.0	10.0	14.2	17.3	20.4

Source: OECD pension models.

Notes

1. Note that the pension age for women – 58 – is lower than for men in Turkey.
2. However, the value of many first-tier pensions, such as basic and resource-tested schemes, is linked to average earnings.

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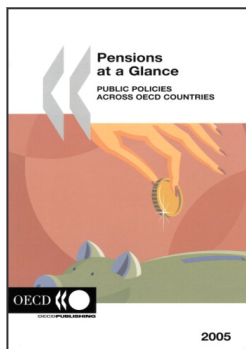
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