Methodology and assumptions

The indicators of pension entitlements that follow here in Chapter 2 use the OECD cohort-based pension models. The methodology and assumptions are common to the analysis of all economies, allowing the design of pension systems to be compared directly. This enables the comparison of future entitlements under today’s parameters and rules.

The pension entitlements that are presented are those that are currently legislated in the Asian economies. Reforms that have been legislated before publication are included where sufficient information is available. Changes that have already been legislated and are being phased-in gradually and yearly are modelled from the year that they are implemented and onwards.

The values of all pension system parameters reflect the situation in the year 2016 and onwards. The calculations show the pension benefits of a worker who enters the system that year at age 20 and retires after a full career. The main results are shown for a single person. All indexation and valorisation rules follow what is legislated in the baseline scenario.

Economic variables

The comparisons are based on a single set of economic assumptions for all the economies covered. Although the levels of economic growth, wage growth and inflation vary across economies, using a single set of assumptions enables comparison without economic affects. Differences in pension levels therefore reflect differences in actual pension systems and government policies. The baseline assumptions for set out below.

Price inflation is assumed to be 2% per year. Real earnings are assumed to grow by 1.25% per year on average (given the assumption for price inflation, this implies nominal wage growth of 3.275%). Individual earnings are 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. The real rate of return on funded, defined-contribution pensions is assumed to be 3% per year. Administrative charges, fee structures and the cost of buying an annuity are assumed to result in a defined contribution conversion factor of 90% applied to the accumulated defined contribution wealth when calculating the annuity. The real discount rate (for actuarial calculations) is assumed to be 2% per year.

The baseline modelling uses economy-specific projections of mortality rate from the United Nations population database for every year from 2016 to 2080.

The calculations assume that benefits from defined contribution plans are paid in the form of a price-indexed life annuity at an actuarially fair price assuming perfect foresight. This is calculated from the mortality projections once the conversion factor is taken into account. If people withdraw the money in alternative ways, the capital sum at the
time of retirement is the same: it is only the way that the benefits are spread that is changed. 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 economy.

**Taxes and social security contributions**

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.