

## Appendix A: Parameters and further information

This appendix provides information on the parameters used in producing this Budget Paper.

Budget Paper No. 1, *Budget Strategy and Outlook 2021-22, Statement 2: Economic Outlook (BS2)*, provides information on the forecasting approach used in the 2021-22 Budget.

### Population

Population data are used to distribute funding between the states and in the calculation of annual growth factors. The population projections are produced by the Treasury Centre for Population (the Centre).

#### Estimates of state populations

State population projections are constructed using the latest demographic data and incorporate assumptions regarding fertility, mortality, net overseas migration and net interstate migration.

The Centre estimates population and components of change on a financial year basis. Population for the mid-point of the financial year (31 December, Table A.1) is the simple average of the population at the beginning and end of the financial year (Table A.2).

**Table A.1: Population by state, at 31 December**

million	NSW	VIC	QLD	WA	SA	TAS	ACT	NT	Total(a)	Australia
2020	8.160	6.699	5.194	2.668	1.770	0.542	0.431	0.245	25.709	25.713
2021	8.142	6.714	5.228	2.677	1.769	0.543	0.431	0.242	25.746	25.750
2022	8.152	6.768	5.273	2.694	1.771	0.546	0.432	0.240	25.876	25.880
2023	8.213	6.871	5.336	2.724	1.781	0.550	0.435	0.240	26.150	26.153
2024	8.301	6.997	5.408	2.760	1.794	0.554	0.439	0.241	26.494	26.498

(a) 'Total' is the sum of the states and territories shown, and excludes Jervis Bay Territory, Christmas Island, the Cocos (Keeling) Islands and Norfolk Island.

**Table A.2: Population by state, at 30 June**

million	NSW	VIC	QLD	WA	SA	TAS	ACT	NT	Total(a)	Australia
2019-20	8.168	6.697	5.176	2.664	1.770	0.541	0.431	0.246	25.693	25.697
2020-21	8.152	6.702	5.211	2.672	1.770	0.542	0.431	0.244	25.724	25.729
2021-22	8.132	6.726	5.244	2.681	1.768	0.544	0.430	0.241	25.766	25.771
2022-23	8.172	6.810	5.302	2.706	1.774	0.548	0.433	0.240	25.985	25.989
2023-24	8.253	6.932	5.371	2.741	1.787	0.552	0.437	0.240	26.313	26.317
2024-25	8.348	7.061	5.445	2.779	1.801	0.557	0.441	0.242	26.674	26.679

(a) 'Total' is the sum of the states and territories shown, and excludes Jervis Bay Territory, Christmas Island, the Cocos (Keeling) Islands and Norfolk Island.

## Fertility

Assumptions about the fertility rate are based on *A Projection of Australia's Future Fertility Rates* (Table A.3). The total fertility rate is assumed to decline to 1.58 babies per woman in 2021-22 before rising to 1.69 in 2024-25. In the near term, the total fertility rate is assumed to be influenced by the impacts of COVID-19. Projected state fertility rates are assumed to move in line with the national fertility rate.

**Table A.3: Total fertility rate, for years ending 30 June**

	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25
Total fertility rate, Australia	1.65	1.61	1.58	1.65	1.69	1.69

## Mortality

Assumptions about life expectancy at birth are based on life tables produced by the Australian Government Actuary and the Australian Bureau of Statistics (Table A.4). Life expectancies are informed by future mortality rates, which are assumed to improve at the same average annual rate that has been observed over the past 25 years. Projected state mortality rates are assumed to move in line with the national mortality rates.

**Table A.4: Life expectancy at birth, for years ending 30 June**

	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25
Male life expectancy at birth, Australia	81.2	81.4	81.6	81.8	81.9	82.1
Female life expectancy at birth, Australia	85.3	85.4	85.5	85.7	85.8	85.9

## Net overseas migration

Forecasts for net overseas migration (NOM) are produced by the Centre (Table A.5). The forecasts incorporate information from detailed data on international arrivals and departures together with offshore visa grant data provided by the Department of Home Affairs, along with assumptions regarding international travel restrictions (see Box 2.1 in BS2).

**Table A.5: Net overseas migration, for years ending 30 June**

	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25
Net overseas migration, Australia	194,400	-96,600	-77,400	95,900	201,100	235,000

## Interstate migration

Assumptions about future net internal migration (NIM) are produced by the Centre (Table A.6). Assumptions are modelled using historical interstate movements data supplied by the Australian Bureau of Statistics. They are informed by analysis of economic factors associated with interstate migration, and account for the impact of COVID-19 through fewer total movements over the period.

**Table A.6: Net interstate migration by state, for years ending 30 June**

	NSW	VIC	QLD	WA	SA	TAS	ACT	NT
2019-20	-20,900	2,200	25,300	-2,400	-2,200	1,200	-700	-2,700
2020-21	-21,300	4,300	24,700	-2,800	-2,600	1,300	-600	-3,000
2021-22	-22,400	10,600	22,900	-4,100	-3,900	1,400	-600	-4,000
2022-23	-21,300	8,800	21,700	-2,900	-3,800	1,100	-300	-3,200
2023-24	-20,200	6,900	20,600	-1,800	-3,700	700	-100	-2,300
2024-25	-19,200	5,000	19,400	-600	-3,600	400	200	-1,500

### Wage cost indices

Table A.7 shows estimated growth in the wage cost indices used in this Budget Paper, rounded to the nearest quarter of a per cent.

**Table A.7: Wage cost indices**

Per cent	2020-21	2021-22	2022-23	2023-24	2024-25
Wage cost index — 1	1 1/2	1	1 1/2	1 1/2	1 1/4
Wage cost index — 6	1 1/2	1	1 1/2	1 1/2	1 1/2

### Data sources

The information in Appendix B and Appendix C of this Budget Paper is consistent with the ABS Government Finance Statistics reporting framework for the public sector.

Australian Government data are sourced from the Australian Government Final Budget Outcomes, ABS, and Australian Government Consolidated Financial Statements. See Budget Paper No. 1, *Budget Strategy and Outlook 2021–22, Statement 11: Historical Australian Government Data*, for more information.

State data for 2019-20 onwards are from the most recent publicly available state financial reports (states' 2019-20 mid-year financial reports). State data for years prior to 2019-20 are sourced from the ABS. Where ABS data are not available, estimates from states' annual financial reports have been used.

### Further information

Several publications of the ABS and academics also provide information that is relevant to analysing federal financial relations data, including:

- *National, state and territory population*
- *Overseas Arrivals and Departures, Australia*
- *Migration, Australia*

- *Births, Australia*
- *Life tables*
- *Deaths, Australia*
- *Taxation Revenue, Australia*
- *Government Finance Statistics, Australia*
- *Australian System of Government Finance Statistics – Concepts, Sources and Methods*
- *Information Paper: Developments in Government Finance Statistics*
- *Information Paper: Accruals Based Government Finance Statistics*
- McDonald, P (2020), *A Projection of Australia's Future Fertility Rates*, Centre for Population Research Paper, Australian Government, Canberra.

Commonwealth Grants Commission publications provide information about the distribution of GST revenue. In relation to the 2021-22 financial year, the most relevant publication is the *Report on GST Revenue Sharing Relativities – 2020 Review*.