

# 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 October 2022–23, Statement 2: Economic Outlook (BS2)*, provides information on the forecasting approach used in the 2022–23 October Budget.

## Population

Population data are used to distribute funding between the state and territory governments (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. Projected 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
2021	8.095	6.560	5.265	2.762	1.807	0.570	0.453	0.249	25.762	25.767
2022	8.188	6.667	5.346	2.802	1.834	0.578	0.464	0.256	26.135	26.140
2023	8.274	6.780	5.428	2.845	1.855	0.585	0.471	0.260	26.498	26.503
2024	8.366	6.900	5.506	2.887	1.874	0.591	0.479	0.263	26.866	26.871
2025	8.458	7.018	5.584	2.929	1.892	0.598	0.487	0.267	27.233	27.238

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
2020-21	8.094	6.548	5.218	2.750	1.803	0.568	0.454	0.249	25.683	25.688
2021-22	8.149	6.614	5.302	2.780	1.822	0.575	0.460	0.255	25.956	25.961
2022-23	8.228	6.720	5.390	2.824	1.845	0.582	0.467	0.258	26.313	26.318
2023-24	8.319	6.841	5.467	2.866	1.865	0.588	0.474	0.262	26.682	26.687
2024-25	8.412	6.959	5.545	2.908	1.883	0.595	0.483	0.265	27.050	27.055
2025-26	8.504	7.077	5.623	2.949	1.901	0.601	0.492	0.268	27.416	27.421

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 analysis undertaken and commissioned by the Centre (Table A.3). The total fertility rate is assumed to be 1.66 babies per woman in 2021–22 before falling to 1.65 by 2024–25. The total fertility rate is assumed not to be adversely affected by the COVID-19 pandemic. 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**

	2020-21(a)	2021-22	2022-23	2023-24	2024-25	2025-26
Total fertility rate, Australia	1.66	1.66	1.66	1.66	1.65	1.65

a) Outcome for 2020–21, from ABS National, state and territory population, March 2022.

## 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 have been adjusted in 2021–22 and 2022–23 to account for the impact of COVID-19. Life expectancies are then assumed to improve at the same average annual rate that has been observed over the past three decades. 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**

	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26
Male life expectancy at birth, Australia	81.6	81.1	81.3	82.1	82.3	82.4
Female life expectancy at birth, Australia	85.6	85.2	85.3	86.0	86.1	86.2

## 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 an assumption of a return to pre-pandemic migration patterns. Net overseas migration is assumed to continue in line with pre-pandemic trends at 235,000 from 2022–23.

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

	2020-21(a)	2021-22(b)	2022-23	2023-24	2024-25	2025-26
Net overseas migration, Australia	-85,000	150,000	235,000	235,000	235,000	235,000

a) Outcome for 2020–21 from ABS National, state and territory population, March 2022.

b) Figure for 2021–22 consists of 3 quarters of preliminary outcomes and one quarter of forecasts.

## Interstate migration

Assumptions about future net interstate 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 recent population revisions to account for data from the 2021 Census and analysis of economic factors associated with interstate migration. These assumptions account for the impact of COVID-19 through fewer total movements and changing patterns of movement between states, which particularly reflect the impact of lockdowns in 2021–22.

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

	NSW	VIC	QLD	WA	SA	TAS	ACT	NT
2020-21	-16,800	-18,300	31,200	5,400	900	-100	400	-2,500
2021-22	-40,100	-16,600	40,400	7,400	4,400	2,700	800	1,000
2022-23	-31,300	-6,400	30,600	4,200	500	1,800	700	-200
2023-24	-22,500	3,700	21,000	900	-3,500	1,000	700	-1,300
2024-25	-22,500	3,400	21,200	800	-3,400	1,000	700	-1,300
2025-26	-22,500	3,100	21,400	800	-3,300	1,100	700	-1,300

### 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	2022-23	2023-24	2024-25	2025-26
Wage cost index – 1	1 3/4	3	2	1 3/4
Wage cost index – 3	2	4	2 1/4	2
Wage cost index – 6	2 1/2	5	2 1/2	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 October 2022–23, Statement 11: Historical Australian Government Data*, for more information.

## 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 2022–23 financial year, the most relevant publication is the report *GST Revenue Sharing Relativities – 2022 Update*.