

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 2022-23, Statement 2: Economic Outlook* (BS2), provides information on the forecasting approach used in the 2022-23 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
2021	8.199	6.664	5.256	2.696	1.781	0.544	0.434	0.248	25.821	25.826
2022	8.242	6.727	5.330	2.730	1.798	0.549	0.437	0.250	26.063	26.068
2023	8.322	6.835	5.405	2.767	1.814	0.554	0.441	0.252	26.389	26.394
2024	8.415	6.960	5.477	2.803	1.828	0.558	0.447	0.253	26.742	26.747
2025	8.511	7.088	5.551	2.839	1.844	0.562	0.453	0.255	27.104	27.109

(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	8.189	6.649	5.221	2.682	1.773	0.541	0.432	0.246	25.735	25.739
2021-22	8.209	6.679	5.290	2.711	1.789	0.547	0.435	0.249	25.908	25.913
2022-23	8.276	6.775	5.370	2.749	1.807	0.552	0.439	0.251	26.219	26.223
2023-24	8.367	6.896	5.440	2.785	1.821	0.556	0.443	0.252	26.560	26.565
2024-25	8.463	7.024	5.514	2.821	1.836	0.560	0.450	0.254	26.923	26.928
2025-26	8.559	7.152	5.588	2.857	1.852	0.565	0.456	0.256	27.284	27.289

(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 in 2025-26. In the near term, the total fertility rate is assumed not 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

	2020-21 (a)	2021-22	2022-23	2023-24	2024-25	2025-26
Total fertility rate, Australia	1.62	1.66	1.66	1.66	1.65	1.65

(a) Preliminary outcome for 2020-21, from ABS National, state and territory population, September 2021.

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 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	81.7	81.9	82.1	82.3	82.4
Female life expectancy at birth, Australia	85.6	85.7	85.8	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 assumptions regarding international travel restrictions (see Box 2.1 in BS2).

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

	2020-21(a)	2021-22	2022-23	2023-24	2024-25	2025-26
Net overseas migration, Australia	-89,900	41,000	180,000	213,000	235,000	235,000

(a) Outcome for 2020-21 from ABS National, state and territory population, September 2021.

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 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
2020-21	-16,700	-18,300	30,900	4,600	700	0	900	-2,200
2021-22	-40,600	-17,300	41,000	7,600	4,500	2,800	900	1,100
2022-23	-30,200	-5,000	30,000	3,200	100	1,700	700	-400
2023-24	-20,000	6,900	19,200	-1,200	-4,200	700	500	-1,800
2024-25	-20,200	6,400	19,400	-1,200	-4,100	800	600	-1,700
2025-26	-20,200	5,900	19,600	-1,200	-4,000	900	600	-1,600

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	2021-22	2022-23	2023-24	2024-25	2025-26
Wage cost index - 1	1	1 3/4	1 1/2	1 1/2	1 1/2
Wage cost index - 6	1	2 1/4	1 3/4	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 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 2021-22 financial year, the most relevant publication is the *Report on GST Revenue Sharing Relativities – 2020 Review*.