

Wage costs

Overview

- 1 The wage costs assessment recognises that the wages states and territories (states) pay public sector workers are different across states, partly due to differences in labour markets beyond the control of state governments.¹ The assessment covers the wage-related portion of state expenses, both the direct employment of public sector workers and indirect employment through contracting and labour hire practices.
- 2 There are many factors leading to differences in state wages. The Commission's task is to identify differences between the wages for similar workers resulting from factors outside a state's control.
- 3 The Commission does this by measuring the differences in private sector wages across states and using the differences as a proxy for the non-policy driven differences in public sector wages. Differences in state private sector wages that cannot be attributed to differences in state workforce characteristics are used to calculate the assessed wage expenses within each expense category.

Structure of assessment

- 4 Wage costs are applied in every expense assessment category, using the relative state wage levels calculated in the wage costs assessment. These relative wage costs are applied to the proportion of expenses within each category that is wage related.
- 5 Using the Government Finance Statistics data, spending within each expense assessment category is classified using the economic type framework code to wage costs, non-wage costs or other (not entirely attributable either to wage costs or non-wage costs). The average wage share of attributable costs was estimated for each category for the years 2019–20 up to 2022–23. This share of costs is fixed for the 2025 Review period and applied to expenses in each assessment year. Wage shares of costs are shown in Table 1.

¹ The wages driver is applied across all expense category assessments.

Table 1 Wage costs by category, 2019–20 to 2022–23 averages

	Wage	Non-wage	Unattributed	Assessed proportion
	\$m	\$m	\$m	%
Schools	35,932	12,944	2,391	72.8
Post-secondary education	3,728	2,898	1,545	56.8
Health	59,326	32,966	3,127	64.1
Housing	653	1,121	3,377	51.3
Welfare	3,860	7,171	13,541	48.2
Services to communities	3,531	5,144	4,605	47.0
Justice	18,032	7,460	604	70.5
Roads	1,859	5,545	3,948	36.9
Transport	1,332	8,630	6,842	31.9
Services to industry	3,343	3,945	10,743	53.6
Other expenses	11,615	12,141	7,923	51.4

Source: Commission calculation based on ABS Government Finance Statistics data.

Data

6 The data used in the assessment are outlined in Table 2.

Table 2 Data used in the wage costs assessment

Source	Data	Updated
ABS	Characteristics of Employment Survey data	Annually
	Wage Price Index	Annually
	Government Finance Statistics	5-yearly

Note: The adjusted budget data sources are outlined in the adjusted budget chapter of the *Commission's Assessment Methodology*.

Assessment method

- 7 The ABS Characteristics of Employment Survey data are used to estimate the differences in wages between individuals using a regression model. A state variable is included in the model to estimate the wage difference between states that cannot be attributed to differences in the characteristics of state workforces.
- 8 The model uses extensive controls to account for worker and workplace characteristics that influence individual wages, such as industry, occupation, education and experience. The model excludes all public sector employees to eliminate any direct effects of state government policy on wages.
- 9 Because the model uses survey data, the estimates produced include some random variation. Estimates are indexed and combined across years to generate more reliable relative wage levels than would be achieved with a single year of survey data.

- 10 These combined estimates of relative wage levels are then used to produce a wage cost factor for each state. This factor reflects the percentage difference from the national average wage level that cannot be explained by workforce characteristics.
- 11 A low-level discount of 12.5% is applied to the wage cost factors.² This reflects some uncertainty about the reliability of private sector wages as a proxy for public sector wage pressures, and the capacity of the model to control for all differences in employee productivity.
- 12 The discounted relative wage cost factor is applied to wage-related expenses in each expense category.

Estimating relative state wages through regression modelling

- 13 To assess the differential wage pressures faced by state governments, the Commission applies a linear regression model to measure relative wages for individuals using ABS Characteristics of Employment Survey data.
- 14 Data for the regression are restricted to data for individuals earning wages in the private sector, who usually work each week and who have provided answers in the survey to relevant questions for the control variables. School students under 20 years old are excluded. This results in a sample of over 15,000 respondents for each annual survey nationally.
- 15 The dependent variable in the regression is the log of hourly wages. The main predictor is state of usual residence. The regression coefficient for each state variable can then be converted into the expected percentage difference in hourly wage for a resident of that state compared with the all-state average.
- 16 To ensure that like individuals are being compared between states, many controls are included in the model. Characteristics of individuals that are correlated with hourly wages and are unequally distributed between state labour forces could bias state coefficients if not controlled for in the model.
- 17 The variables used, and the results of the Commission's regression model that were derived using data from the 2023 survey, corresponding to the 2023–24 assessment year, are shown in Table 3 below.

² The Commission's approach to discounting is outlined in the approach to horizontal fiscal equalisation chapter of the *Commission's Assessment Methodology*.

Table 3 Results of wage costs regression model, 2023–24

Variable	Estimated effect	95% confidence bounds	Variable	Estimated effect	95% confidence bounds
	%	%		%	%
State			Dependent child		
NSW	2.2	0.3 – 4.1	Has dependent child	1.2	-1.0 – 3.4
Vic	0.9	-0.6 – 2.3	Tenure		
Qld	-0.8	-2.6 – 1.1	Years employed in current job	0.4	0.3 – 0.6
WA	1.4	-1.2 – 4.0	Casual status		
SA	-4.5	-6.4 – -2.4	Has paid leave entitlement	-1.2	-3.8 – 1.4
Tas	-3.6	-5.7 – -1.4	Marital status		
ACT	4.9	1.4 – 8.5	Married	4.0	2.0 – 6.0
NT	-0.2	-3.2 – 2.9	Migrant status		
Usual hours			Australian born	—	—
1-34 (Part time)	-3.0	-5.7 – -0.2	Born in MESC (a) <10 years in Aust.	-2.4	-7.8 – 3.3
35-40 (Full time)	—	—	Born in MESC (a) 10-20 years in Aust.	4.3	-0.5 – 9.4
40+ (> Full time)	6.2	3.9 – 8.6	Born in MESC (a) >20 years in Aust.	6.7	2.9 – 10.5
Gender			Born in NESC (b) <10 years in Aust.	-9.3	-11.6 – -6.9
Male	6.8	5.2 – 8.4	Born in NESC (b) 10-20 years in Aust.	-5.3	-7.1 – -3.4
Age			Born in NESC (b) >20 years in Aust.	-3.6	-6.8 – -0.2
15-19	—	—	Education		
20-24	26.3	22.2 – 30.5	Less than year 12	-5.8	-8.3 – -3.3
25-29	32.7	27.9 – 37.7	Year 12	—	—
30-34	48.0	41.5 – 54.9	Certificate III or IV	-0.3	-2.8 – 2.4
35-39	50.9	43.9 – 58.3	Advanced diploma	4.3	1.5 – 7.2
40-44	56.7	50.7 – 62.9	Bachelor's degree	12.0	8.9 – 15.2
45-49	55.6	48.9 – 62.6	Graduate diploma/certificate	16.8	11.1 – 22.9
50-54	58.8	51.2 – 66.9	Post-graduate degree	18.8	13.7 – 24.1
55-59	59.8	52.2 – 67.8	Occupation		
60-64	49.0	40.9 – 57.5	3-digit ANZSCO minor groups	(c)	(c)
65+	52.9	43.7 – 62.6	Industry		
			ANZSIC Divisions	(d)	(d)

Note: Variable groups with more than 2 variables show reference variable as dashes. For example, all ages are measured relative to wage levels of 15–19-year-olds.

Variable groups with 2 possible outcomes show the measured variable relative to the unlabelled reference variable. For example, male wages are shown relative to female wages.

State coefficients are shown relative to the national average wage level.

Estimated effect is calculated as the exponent of the regression coefficient minus one.

(a) Main English-speaking countries are United Kingdom, Ireland, USA, Canada, South Africa and New Zealand.

(b) Non-English-speaking countries are all other countries.

(c) Effect for each of approximately 120 variables reflecting each 3-digit Australia New Zealand Standard Classification of Occupations minor group is not shown.

(d) Effect for each of 19 variables reflecting each Australia New Zealand Standard Industry Classification Divisions is not shown.

Source: Commission calculation using ABS Characteristics of Employment Survey data.

- 18 Estimates from the August 2023 survey data suggest that the ACT has the highest wages for similar private sector workers, and South Australia the lowest. A private sector worker in the ACT is on average expected to earn 4.9% more than the national average wage for similar workers, while a worker in South Australia earns on average 4.5% less than the national average wage for similar workers. The relatively wide ranges for the ACT and the Northern Territory estimates indicate the lower reliability of these estimates, due to smaller samples of private sector workers.
- 19 Effects in Table 3 are presented as the expected percentage difference in hourly wages compared with a reference category, for otherwise identical workers. For example, if 2 individuals were identical on all other items in the model, a man would be predicted to earn 6.8% more than a woman. The estimate for tenure implies that on average, all else being equal, every additional year working in the same job leads to a 0.4% increase in hourly wage.
- 20 The estimated effects for highest level of education imply that, all else being equal, average wages generally increase with each level of higher education. The age coefficients show expected wages increasing to a peak at around age 55–59, all else being equal. The coefficients for usual hours of work show that people who usually work more than full-time hours earn more for each hour that is recorded on their payslip than those who usually work exactly full-time hours, all else being equal. Similarly, working part time lowers the hourly wage for otherwise similar workers.

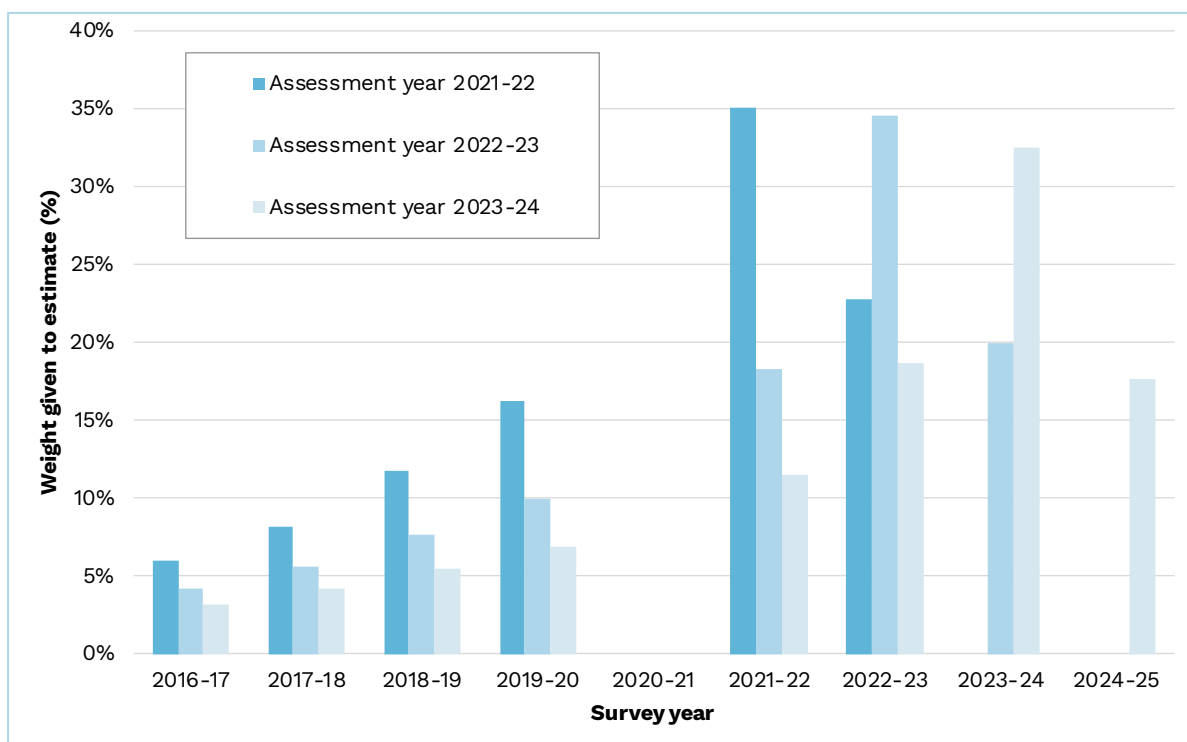
Combining annual estimates of relative state wages

- 21 As a result of small sample sizes, the coefficients for a state in a single year are not necessarily reflective of the underlying relative wage level in that state. This can unduly contribute to volatility in the assessment. Table 3 showed that the error margins for small states are larger than for large states.
- 22 The Commission combines the regression results from several survey years to generate a more reliable and less volatile estimate of relative state wages. This effectively increases the sample size used in the regression.
- 23 For each assessment year, regression results are used from the assessment year, the subsequent year and all previous years back to 2016–17, omitting 2020–21 due to COVID-19–related data concerns. For example, the 2023–24 assessment year relative state wage factors in the 2025 Review are based on data from surveys in each year from 2016–17 to 2024–25, excluding 2020–21. These results are indexed to the assessment year using the ABS state wage price index to account for differences in wage growth between states.³

³ ABS, *Wage Price Index* (various issues), cat. no. 6345.0, table 2a.

- 24 State relative wages are calculated as a weighted average of estimates from each year of data, weighted by reliability of the estimate.⁴ Survey estimates from years close to the assessment year of interest are given a higher weight than estimates from earlier years.⁵
- 25 The 2022–23 assessment year estimates were produced from a weighted average of 7 survey results. Figure 1 shows the weights used. The effect of discounting less relevant data is seen in that the 2016–17 survey contributed only 4% of the total, while the 2022–23 survey contributed 35%. The 2021–22 and 2023–24 surveys are both equally distant from the 2022–23 year of interest, but the 2023–24 survey estimates have a higher weight, reflecting that those estimates are on average more reliable than the ones from 2021–22.

Figure 1 Survey year weights for assessment years

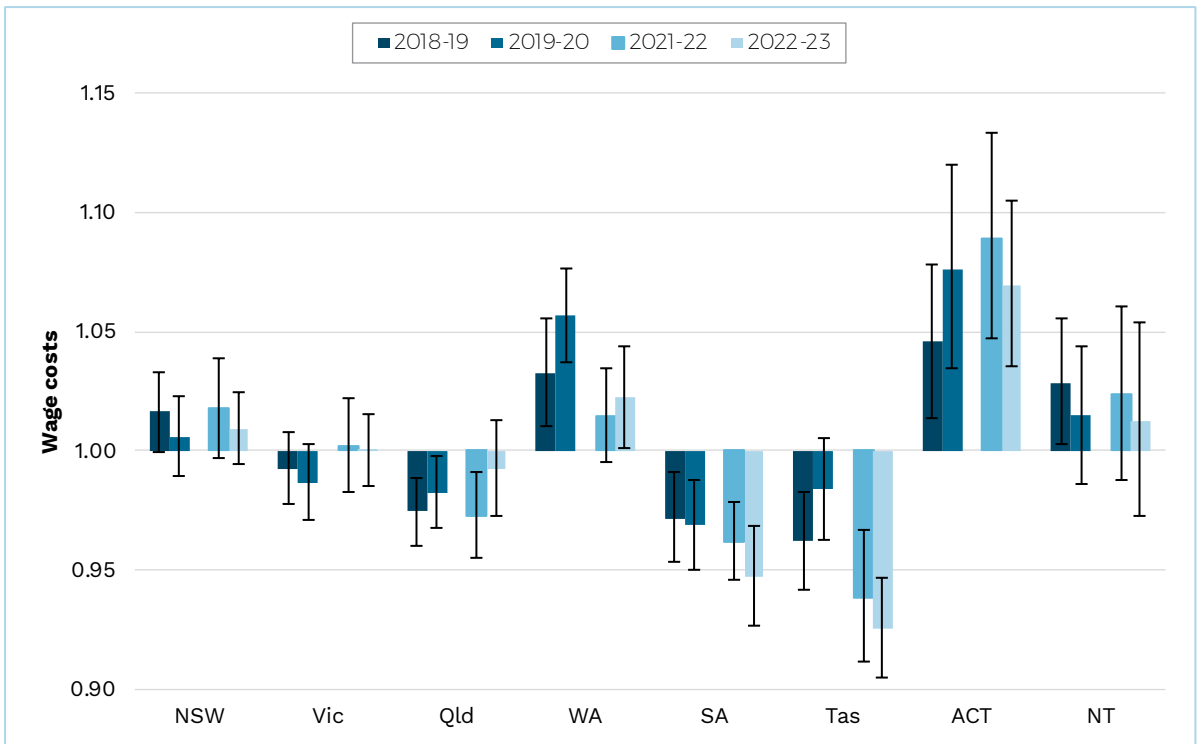


⁴ Weights used are the inverse of each estimate’s variance, as in standard fixed-effects meta-analysis techniques. M Borenstein, LV Hedges, JPT Higgins and HR Rothstein, ‘A basic introduction to fixed-effect and random-effects models for meta-analysis’, *Research Synthesis Methods*, 2010, 1:97–111.

⁵ The variance associated with the indexation is estimated as the variance in annual relative state wage growth for all states. This approach overestimates the actual variance associated with indexation, producing lower weights for early years, and higher weights for survey years close to the assessment year.

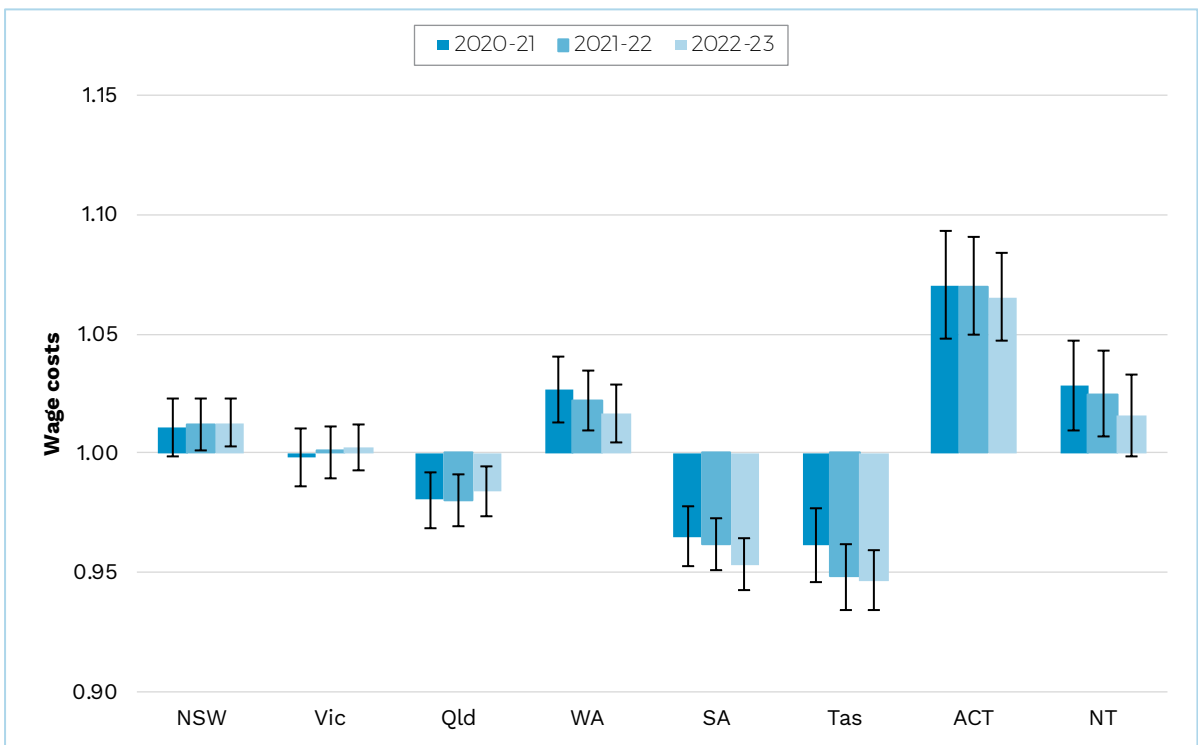
26 Annual estimates of relative state wages and the assessment year wage cost factors from combining these estimates are shown in Figure 2 and Figure 3.

Figure 2 Annual estimates of relative wages 2018–19 to 2022–23



Note: Data from 2020–21 are omitted as they are unreliable due to a combination of COVID-19 public health orders and JobKeeper payments. Error bars show the 95% confidence intervals.

Figure 3 Smoothed wage cost factors (before discount)



Note: Error bars show the 95% confidence intervals.

Applying the discount

- 27 Before applying the wage cost factors produced using the combined regression estimates, they are first discounted by 12.5%. This is done to acknowledge some uncertainty about the reliability of private sector wages as a proxy for public sector wage pressures, and the capacity of the model to control for all differences in employee productivity.
- 28 The discounted factors are then multiplied by the wage cost proportion of expenses in each category to produce a category specific wage cost factor which is applied to the assessed expenses for the category.
- 29 After applying the wage cost factor to the assessed expenses in each category, the expenses are rescaled to ensure they sum to the total national expense for the category in each assessment year.

GST distribution in the 2025 Review

- 30 Table 4 shows the GST impact of the assessment in the 2025 Review.

Table 4 GST impact of the wage costs assessment, 2025–26

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total effect
	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m
Schools	130	35	-155	87	-108	-43	45	9	306
Post-secondary education	13	3	-15	9	-11	-5	5	1	31
Health	198	58	-210	130	-176	-78	62	15	463
Housing	6	-13	-11	18	-10	-4	2	11	37
Welfare	24	6	-28	16	-19	-9	6	3	55
Services to communities	17	4	-21	13	-16	-6	6	2	43
Justice	65	17	-75	45	-56	-24	19	9	155
Roads	13	4	-15	10	-12	-4	3	1	31
Transport	18	2	-19	10	-13	-3	6	0	36
Services to industry	20	4	-25	16	-17	-7	7	1	49
Other Expenses	56	15	-66	39	-58	-29	38	6	154
Total (\$m)	561	137	-640	392	-496	-211	199	60	1,347
Total (\$pc)	65	19	-112	128	-261	-365	411	232	48

Note: Magnitude and direction of GST impact can change from year to year.
Wage component of building costs in investment not included.