Geography

Overview

1 The cost of providing state services can vary with the location in which the service is delivered. Services are typically more expensive to provide in more remote areas, for example due to freight costs, staffing allowances, and the lack of economies of scale. Therefore, the geographic characteristics of a state or territory (state) can influence the expenses needed to service the state's population.

2 Most geographic assessments are covered in the relevant category chapter.[1] For example, in the health assessment, differential use and cost of services are estimated for populations disaggregated by age, Indigenous status, socio-economic status and remoteness. In other assessments, there are category-specific geographic measures. Examples include rural road length (roads assessment), definitions of urban centres (transport assessment) and populations in small communities (services to communities assessment).

3 The differential use and cost of services across remoteness areas is collectively described as the impact of population dispersion. This chapter outlines 2 cost-specific measures.

- Regional costs (higher unit costs) — there are additional costs per person of delivering comparable services, for example due to higher maintenance or supply costs in more remote locations.
- Service delivery scale (fixed costs by locality) — there are additional costs per person of delivering services in more isolated and smaller centres due to fixed costs.

4 Regional costs and service delivery scale costs are measured via cost gradients based on the ABS remoteness classifications. The remoteness classifications are:

- major cities
- inner regional areas
- outer regional areas
- remote areas
- very remote areas.[2]

5 The term 'gradient' refers to the quantification of how much more expensive each remoteness area is to service compared with a major city. These cost differences could reflect use rates, unit cost weights and unit costs driven by small scale. Where the Commission has constructed a category-specific assessment for regional costs or service delivery scale costs, the method is explained in the relevant chapter.

[1] The geography driver is applied across several expense category assessments.

[2] Australian Bureau of Statistics (ABS), *Remoteness Areas*, ABS website, 2023, accessed 19 June 2024.

6 Some assessments have data limitations such that a category-specific cost gradient cannot be measured. If there is a conceptual case for regional costs and potentially service delivery scale costs, the Commission applies the general cost gradient as a proxy.

7 Two general cost gradients are developed: one for regional costs only and one for both regional and service delivery scale costs. These gradients take data from a range of state services with specific measures of cost gradients to calculate a weighted average.

Structure of assessment

8 Table 1 outlines the use of regional costs and service delivery scale costs as drivers of need in expense assessments. It outlines for each category component whether regional costs and service delivery scale costs are assessed and how they are measured. Further details regarding the application of regional costs and service delivery scale costs within these assessments are in the relevant category chapters.

Table 1 Structure of the regional costs and service delivery scale costs assessments

Category	Component	Driver	Type of assessment
Schools	State funding of government schools	RC & SDS	Component-specific and used in the calculation of the general cost gradient
	State funding of non-government schools	RC & SDS	Component-specific
	Commonwealth funding of government schools	RC & SDS	Embedded in the Schooling Resource Standard
Post-secondary education	Post-secondary education	RC	Component-specific and used in the calculation of the general cost gradient
Health	Admitted patients	RC & SDS	Component-specific and used in the calculation of the general cost gradient
	Emergency departments	RC & SDS	Component-specific and used in the calculation of the general cost gradient
	Non-admitted patients	RC & SDS	Component-specific and used in the calculation of the general cost gradient
	Ambulatory community mental health	RC	General cost gradient
		SDS	Component-specific
	Balance of community and public health	RC & SDS	Component-specific
	Non-hospital patient transport	RC	Component-specific
	COVID spending	n/a	n/a
Housing	Social housing expenses	RC	General cost gradient and Rawlinsons
	Social housing revenue	n/a	n/a
	First home owner expenses	n/a	n/a

Category	Component	Driver	Type of assessment
Welfare	Child protection and family services	RC & SDS	General cost gradient
	National Disability Insurance Scheme	n/a	n/a
	Concessions	n/a	n/a
	Homelessness services	RC	General cost gradient
	Other welfare	RC	General cost gradient
Services to communities	Water subsidies	RC	Component-specific
	Electricity subsidies	RC	Component-specific
	First Nations community development	RC	General cost gradient
	Other community development and amenities	RC	General cost gradient
	Environmental protection	RC	General cost gradient (a)
Justice	Police	RC & SDS	Component-specific (b)
	Criminal courts	RC & SDS	Component-specific and used in the calculation of the general cost gradient
	Other legal services	RC & SDS	Category-specific (extrapolated from the criminal courts component) (c)
	Prisons	RC & SDS	Component-specific and used in the calculation of the general cost gradient
Roads	Rural roads	RC	Rawlinsons (d)
	Urban roads	n/a	n/a
	Bridges and tunnels	RC	Rawlinsons (d)
Transport	Non-urban transport	RC	General cost gradient
	Urban transport	n/a	n/a
Services to industry	Agriculture regulation	RC	General cost gradient
	Mining regulation	RC	General cost gradient
	Other industries regulation	RC	General cost gradient
	Business development	n/a	n/a
	COVID-19 Business support	n/a	n/a
Other expenses	Service expenses	RC	General cost gradient (e)
	Natural disaster relief	n/a	n/a
	Administrative scale	n/a	n/a
	Native Title and land rights	n/a	n/a
Investment	All	RC	Rawlinsons and used in the calculation of the general cost gradient

Note: RC refers to regional costs, SDS refers to service delivery scale costs.

(a) In the environmental protection component, regional costs are only applied to the protection of biodiversity and landscape sub-component.

(b) In the police component, regional costs and service delivery scale costs are measured together as a single cost gradient along with the differential use of police resources in different remoteness areas. Where assessed, differential use of services is considered separately from regional costs in all other categories.

(c) In the other legal services component, the costs gradient is only applied to the civil courts sub-component.

(d) In the roads assessment, Rawlinsons applies to road length.

(e) In the service expenses component, regional costs are only applied to a proportion of the expenses in the component.

Data

9 Data used in the calculation of geographic measures within category assessments are outlined in the relevant assessment chapters of the *Commission's Assessment Methodology*. The general cost gradient uses data on regional and service delivery scale costs from the following categories:

- schools (state funding of government schools)
- post-secondary education
- health (admitted patients, non-admitted patients and emergency departments)
- justice (prisons and criminal courts)
- investment (Rawlinsons).

Assessment method

10 The general regional cost gradient and the general regional and service delivery scale cost gradient are calculated using a weighted average of cost gradients from assessments where costs can be measured.

Calculating specific cost gradients

Schools

11 The Commission's schools assessment uses a regression of state funding of government schools to assess expenses per student in each government school. The coefficients for outer regional and combined remote (remote and very remote) areas reflect the additional costs of educating comparable students in these areas compared to major cities. The cost per student in each non-metropolitan area as a proportion of the base cost per student defines the regional cost gradient in schools.

12 The regression also estimates the fixed costs of running a school. The service delivery scale cost gradient is calculated by applying these fixed costs to the average school size in each remoteness classification.

13 Further details are in the schools chapter of the *Commission's Assessment Methodology*.

Post-secondary education

14 The regional cost gradient in the post-secondary education assessment is calculated using state data on loadings for training providers in regional and remote areas. A national average loading, weighted by enrolled contact hours, is calculated for each remoteness classification.

15 Further details are in the post-secondary education chapter of the *Commission's Assessment Methodology*.

Health

16 The Independent Health and Aged Care Pricing Authority publishes remoteness adjustments for patient treatment locations. The regional cost gradients for admitted patients, non-admitted patients and emergency departments come directly from the published adjustments of prices due to treatment location in remote and very remote areas.

17 The service delivery scale cost gradients for admitted patients, non-admitted patients and emergency departments are calculated by comparing the estimated cost of block funded hospitals using activity-based funding arrangements and the efficient cost of the same hospitals based on block funding arrangements, for each remoteness classification.

18 Further details are in the health chapter of the *Commission's Assessment Methodology*.

Justice

19 Data in the criminal courts component do not allow for regional costs and service delivery scale costs to be disaggregated. The regional and service delivery scale cost gradient for criminal courts is calculated by comparing average costs per court case in combined remote locations to average costs in major cities.

20 The prisons component uses a regression to predict funding per prisoner in each prison. The coefficient for combined remote areas reflects the additional cost of imprisoning an otherwise comparable person in a remote area compared to a major city. This coefficient represents the regional cost gradient in the prisons component.

21 The prisons regression also estimates the fixed costs of running a prison. The service delivery scale cost gradient for prisons is calculated by applying these fixed costs to the average prison size and comparing combined remote areas to major cities.

22 Further details are in the justice chapter of the *Commission's Assessment Methodology*.

Investment

23 The investment assessment uses the Rawlinsons cost indices, which contain state-specific cost gradients. The general cost gradient aims to assess differential costs in comparable remoteness areas on a national level. Therefore, the average of Rawlinsons state-specific gradients are used in the general cost gradient calculation.

24 Further details are in the investment chapter of the *Commission's Assessment Methodology*.

Calculating the general cost gradients

25 Each of the assessment components outlined above calculates the additional costs of providing services in more remote locations. The additional costs can be described using a cost gradient with major cities representing the base cost and being set equal to 1. The remaining remoteness areas then receive a value which describes how much more expensive the area is to service in comparison to the base cost.

26 The weighted average of these gradients is used to derive the general cost gradients. The weight for each component is based on its share of national spending. Table 2 outlines which components contribute to each gradient and the weight the components received in the calculation of the general cost gradients in 2022–23.[3]

Table 2 Components that contribute to the general cost gradients, 2022–23

Component	Contribution to regional cost gradient (%)	Contribution to regional and service delivery scale cost gradient (%)
Schools	21.7	29.5
Post-secondary education	4.4	0.0
Admitted patients	36.1	49.0
Emergency departments	3.8	5.2
Non-admitted patients	5.7	7.7
Criminal courts	0.0	2.6
Prisons	4.6	6.2
Investment (Rawlinsons)	23.8	0.0

Note: Weights are based on the share of national spending of the relevant components.

27 A discount of 25% is applied to the general cost gradients. The discount reflects the uncertainty associated with the proxy status of the data used.

28 The discounted general cost gradients for 2022–23 are outlined in Table 3.

Table 3 General cost gradients (discounted), 2022–23

	General regional cost gradient	General regional and service delivery scale cost gradient
Major cities	1.00	1.00
Inner regional	1.01	1.03
Outer regional	1.03	1.07
Remote	1.18	1.24
Very remote	1.27	1.48

Applying the general cost gradients

29 The discounted general regional cost gradient is applied to components, as shown in Table 1.

[3] Tables in this chapter, unless otherwise stated, use 2022–23 data.

30 The discounted general regional and service delivery scale cost gradient is applied to the child protection and family services component of the welfare assessment.

GST distribution in the 2025 Review

31 Table 4 shows the GST impact of population dispersion in all expense categories. This includes the effect of applying regional costs and service delivery scale costs, either as part of the application of the general cost gradient, or as category and component specific measures, as shown in Table 1. It also includes the effect of remoteness as part of socio-demographic composition, across a range of categories.

32 People in different remoteness areas have different rates of use of state services. The cost of delivering services is higher in more remote areas due to higher unit costs and higher fixed costs. Each of these factors is included in the impacts in Table 4.

Table 4 GST impact of population dispersion, 2025–26

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total effect
	$m	$m	$m	$m	$m	$m	$m	$m	$m
Schools	-231	-212	201	79	15	57	-24	115	467
Post-secondary education	-41	-37	24	15	6	15	-6	24	84
Health	-1,193	-915	750	128	16	624	-224	814	2,331
Housing	-150	-58	6	82	6	-9	-6	128	222
Welfare	-58	-45	18	10	-2	14	-5	68	110
Services to communities	-201	-217	66	154	34	25	-21	160	439
Justice	-436	-340	145	209	24	79	-50	370	827
Roads	-26	-24	15	19	-1	-2	-1	20	54
Transport	-3	-3	1	2	0	1	0	2	6
Services to industry	-8	-8	3	4	0	2	-1	7	17
Other expenses	-24	-25	11	14	3	5	-3	17	51
Total ($m)	**-2,372**	**-1,882**	**1,242**	**714**	**102**	**809**	**-340**	**1,725**	**4,593**
Total ($pc)	**-274**	**-263**	**217**	**234**	**54**	**1,401**	**-704**	**6,708**	**165**

Note: Magnitude and direction of GST impact can change from year to year.