

Investment

Overview

- 1 The assessment covers state and territory (state) gross investment.¹ It includes all investment by the general government sector as well as by housing and public transport public non-financial corporations.
- 2 The assessment is made up of 14 components. These reflect the investment associated with the 11 recurrent spending categories, as well as land. The roads and transport recurrent spending categories are reflected in the rural roads, urban roads, urban transport and non-urban transport investment assessments. The components are shown in Table 1.
- 3 The assessment recognises that investment expenditure needs are influenced by the following.
 - Share of national need — the proportion of the national stock of infrastructure each state would hold to deliver national average standard services.
 - Change in share of national need — states with a growing share of national need for assets require additional investment. States with a declining share of national need require less investment.
 - Cost of construction — states with above average construction costs have higher expenditure needs.
 - Wage costs — states facing greater wage cost pressures have higher spending needs.

¹ Gross investment includes total spending on assets. Net investment is gross investment less depreciation.

Actual state investment and assets

- 4 The first step in calculating assessed expenditure is identifying actual state investment, and the stock of assets held by states. States collectively invested around \$59 billion in 2022–23, increasing the total value of their physical assets to \$946 billion (Table 1).² Table 1 shows investment and stock of assets classified by component and Table 2 outlines investment by state.³

Table 1 Investment by component, 2022–23 (a)

	Gross investment		Value of stock of assets	
	\$m	\$pc	\$m	\$pc
Schools	6,359	242	98,305	3,737
Post-secondary education	788	30	10,650	405
Health	6,589	250	82,203	3,125
Housing	593	23	69,937	2,658
Welfare	160	6	1,970	75
Services to communities	1,338	51	18,452	701
Justice	2,099	80	24,845	944
Rural roads	6,618	252	215,729	8,200
Urban roads	10,644	405	163,475	6,214
Urban transport	17,971	683	193,043	7,338
Non-urban transport	70	3	1,255	48
Services to industry	1,169	44	4,643	176
Other expenses	1,960	74	61,693	2,345
Land	2,801	106	(b)	(b)
Total	59,159	2,249	946,202	35,966

(a) Gross investment is for the financial year 2022–23. Value of state assets is as at 30 June 2023.

(b) Data not collected

Table 2 Investment by state, 2022–23

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total
Investment (\$m)	21,939	16,283	10,553	5,399	2,325	777	1,017	865	59,159
Investment (\$pc)	2,660	2,424	1,959	1,904	1,266	1,357	2,206	3,443	2,249

² Adjusted budget calculations use ABS Government Financial Statistics data to determine actual state investment. For further detail see the adjusted budget chapter of the *Commission's Assessment Methodology*. Asset data is provided by states.

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

Structure of assessment

- 5 Table 3 outlines the drivers that influence spending needs in investment. These drivers apply to each component except investment in land, which is assessed equal per capita.

Table 3 Structure of the investment assessment

Driver	Influence measured by driver
Share of national need	Differences in need for infrastructure between states affect costs.
Change in share of national need	The infrastructure needs of faster growing states affect costs.
Cost of construction	Differences in construction and wage costs between states affect costs.

Note: The measure of national need varies between components.

Data

- 6 The data used specifically for the investment assessment are outlined in Table 4. The assessment also uses data from the recurrent expense categories including a wide range of sources as inputs to each specific investment component. While differences between the recurrent and capital measures are covered in this chapter, the detailed explanation of recurrent methods for each component is in each relevant chapter.

Table 4 Data used in the investment assessment

Source	Data	Updated	Component
States	Capital stock data	Annually	All components
ABS	Investment data	Annually	All components
Rawlinsons	Rawlinsons construction cost indices	Annually	All components

Note: Data for the wage costs adjustment are also included in this assessment.

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

Assessment method

- 7 The investment category comprises 14 components, representing the investment needs for the recurrent expense categories and an additional one for investment in land. Each component is constructed in the same way, except for investment in land which is assessed equal per capita.
- 8 The section below describes the construction of a typical investment component and details exceptions where applicable.

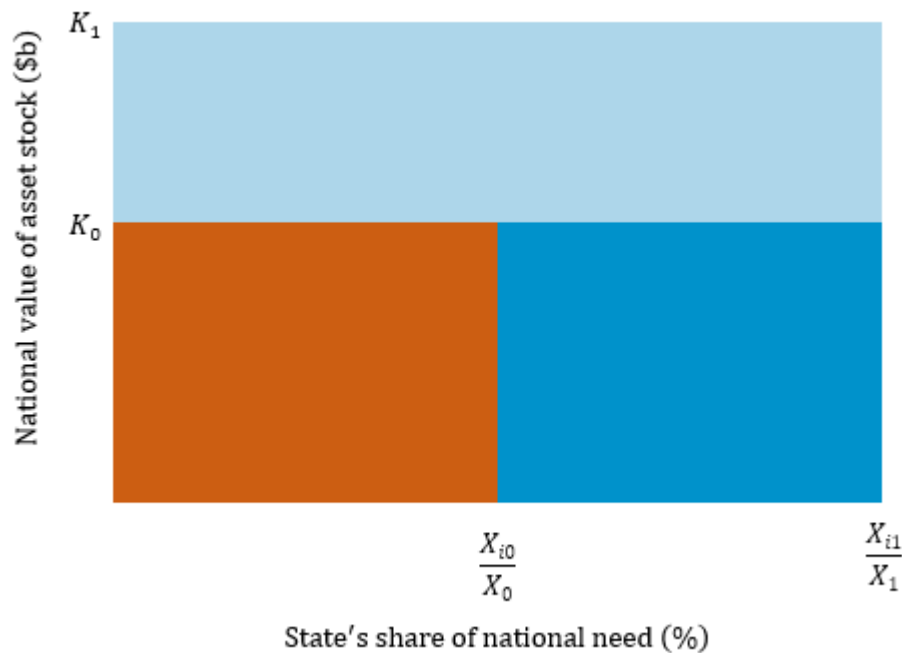
Investment framework

- 9 The investment assessment (Figure 1) assesses that each state's investment needs are its assessed share (x axis) of the national stock of assets (y axis) at the end of

the year less the equivalent concept at the start of the year. This is represented as the area of the 3 boxes in Figure 1, minus the area of the orange box.

- 10 For analytical purposes, the blue boxes representing total assessed investment can be divided in 2. The dark blue box represents the change in share of need for existing assets. This means, if states made no investment, equalisation would be served by the fixed stock of assets effectively being transferred from states with a declining share of need to states with an increasing share of need. The second element, known as capital deepening and represented by the light blue box, reflects that total investment (the growth in value of assets) is allocated to all states in proportion to their assessed share of need at the end of the year. This model assesses the cost of acquiring the investment needs of the states at national average prices. A final adjustment is made to reflect that some states have higher construction costs than others.

Figure 1 Investment framework



- 0 refers to year opening stocks and populations.
- 1 refers to closing stocks and population.
- i refers to a state.
- K refers to capital.
- X refers to population.

- 11 This framework can be illustrated with investment in schools infrastructure (Table 5).
- At the start of 2022–23, New South Wales had 30.7% of all government school students. By the end of the year, this had fallen to 30.5%.
 - Therefore, New South Wales no longer required 0.2% of the \$98.3 billion in school assets that states held at the start of 2022–23, and so its assessed needs reduced by \$190 million.

- States collectively invested \$6.4 billion in schools during 2022–23.
 - New South Wales needed 30.5% of that, or \$1,937 million.
- Finally, as the cost of construction in New South Wales is about 2% more than average, the total construction costs increased by \$43 million (i.e. 2% of its assessed investment needs of \$1,937 million less \$190 million).

Table 5 Investment assessment calculation, schools 2022–23

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total
	%	%	%	%	%	%	%	%	%
Opening share of need	30.66	24.33	22.01	11.20	6.60	2.12	1.74	1.33	100.00
Closing share of need	30.46	24.38	22.06	11.30	6.56	2.11	1.75	1.38	100.00
Change in share of need	-0.21	0.05	0.05	0.11	-0.03	-0.01	0.01	0.04	0.00
	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m
Change in share of need	-190	44	44	98	-31	-11	5	41	0
Capital deepening	1,937	1,550	1,403	719	417	134	111	88	6,359
Cost of construction	43	-71	-32	43	-1	-3	4	17	0
Total assessed investment	1,790	1,523	1,414	860	386	120	121	146	6,359

Measuring share of need

- 12 The Commission generally measures the need for infrastructure in a similar way to how it measures the need for recurrent spending on the related services. However, there may be some drivers that affect one and not the other. The divergences in methods are:
- that the wage costs assessment is not applied in calculating states' relative user populations (although it is used to calculate construction costs)
 - where the impact of regional costs can be separately identified, it is not applied, but the impact of regional factors on the cost of construction is assessed
 - where regional costs cannot be separately identified from other elements of the recurrent assessment, the regional costs element of the cost of construction is not applied to avoid double counting (see Table 7).

- 13 Table 6 indicates each component’s measure of relative requirement for infrastructure.

Table 6 Measure of relative infrastructure need

Component	Measure of need
Schools	Recurrent expenses for government students only, and additional costs for Indigenous schools
Post-secondary education	Recurrent expenses with the Indigenous and remoteness cost-weights removed
Health	Recurrent expenses and cross-border hospital use
Housing	Recurrent expenses excluding the impacts of First home-owners grants and Indigenous households not in Indigenous specific housing
Welfare	Recurrent expenses excluding concessions and NDIS
Services to communities	Equal per capita
Justice	Recurrent expenses
Rural roads	Recurrent expense drivers with different weights used for aggregation
Urban roads	Recurrent expense drivers with different weights used for aggregation
Urban transport	A blend of urban population-squared (25%) and urban centre characteristics costs (75%).
Non-urban transport	Recurrent expenses
Services to industry	Recurrent expenses
Other expenses	Equal per capita

Justice, non-urban transport, services to industry

- 14 For these investment components the corresponding recurrent assessed expenses (excluding wage costs) are used as the measure of the share of national need, without further adjustment.

Other expenses, services to communities

- 15 For these investment components, population is used as the measure of share of national need.

Schools

- 16 The schools measure of share of national need is estimated as the share of government school students. Schools with large First Nations populations often provide additional services requiring infrastructure, such as kitchens. First Nations students in schools with at least 25% First Nations students are given the additional weight estimated for First Nations students in the recurrent regression.
- 17 This assessment is calculated using Australian Curriculum, Assessment and Reporting Authority and ABS student population data.

Post-secondary education

- 18 The post-secondary education measure of share of national need is calculated using the same socio-demographic composition method used to calculate its recurrent assessed expenses, using differences in enrolment rates, but not the cost-weights for First Nations students or for remoteness.

Health

- 19 The health measure of the share of national need is calculated using the same method used to calculate its recurrent assessed expenses, with one adjustment. A cross-border hospital services factor is applied to the assessed expenses for 3 components, admitted health, emergency departments, and non-admitted patients. The recurrent costs of cross-border hospital service use are incorporated in the national health funding agreement, so the Commission does not assess such needs. This agreement does not reflect the associated infrastructure costs, so the Commission recognises these costs.
- 20 The cross-border need is calculated as the ratio of hospital activity in a state to hospital activity for residents of a state, using data from the National Health Funding Body.
- 21 Spending assessed in the COVID-19 components is excluded.

Housing

- 22 The housing measure of share of national need is calculated using the same method used to calculate its recurrent assessed expenses for the social housing expenses component. The First Nations cost weight is applied only to Indigenous specific housing. First Nations households in mainstream housing do not attract the additional cost weight. Data on First Nations specific housing are sourced from the Productivity Commission's Report on Government Services.

Welfare

- 23 The welfare measure of share of national need is calculated using the same method used to calculate its recurrent assessed expenses for family and child welfare, homelessness services and other welfare. State recurrent spending on the National Disability Insurance Scheme and concessions is excluded.

Roads

- 24 Roads investment is assessed in 2 components: urban roads and rural roads. The share of national need is calculated using the same method used to calculate recurrent assessed expenses, although the relative importance of road length, road use and heavy vehicle traffic differs, are calculated using capital-specific weights from National Transport Commission data.

Urban transport

- 25 The urban transport measure of share of national need is calculated using the same method used to calculate its recurrent assessed expenses with one exception - blending. Both the recurrent and capital use measures blend the results of the regression model with a measure of urban population. However, while the recurrent assessment is blended with urban population in each urban centre, the capital assessment is blended with the square of urban population in each urban centre. The level of blending also differs. In the recurrent assessment, the urban population measure accounts for 35% of the final assessment, in the capital measure it is 25%.

Construction Costs

Inter-state costs

- 26 The inter-state construction cost factor is a blend of the Rawlinsons interstate capital city construction cost indices with the Commission's wage costs factors. The blending ratio is 50/50. These cost differentials are applied to all investment components except land.

Regional costs

- 27 The cost of construction gradient is calculated in several steps. Rawlinsons regional indices provide index numbers for 259 urban centres and localities across all states. The population weighted average index for each remoteness area is calculated, based on the population of each urban centre or locality with a Rawlinsons index value.
- 28 The population weighted average of these index numbers in each remoteness area for each state are combined to produce state factors. Population weighted averages are used for most services, except where the distribution of construction is likely to differ considerably from the distribution of the population, and where data are available for an alternative.
- In the rural roads assessment, the weighting for the averages is based on the length of road in each remoteness area in each state.
 - In the urban roads assessment, the weighting is based on the population in urban areas of at least 40,000 people.
- 29 In some investment components, the measure of share of need, based on the equivalent recurrent assessment, incorporates a regional cost impact. Where this can be removed, a construction cost specific gradient is applied. Where it cannot be removed (in health and justice), the capital construction cost specific gradient is not applied, to avoid double counting. In components where services are not provided in regional and remote communities, such as for urban transport, a regional cost gradient is not applied. The application of the regional cost gradient is shown in Table 7.

Table 7 Regional cost gradient application

Investment component	Weighting of Rawlinsons regional cost gradient
Schools	Population
Post-secondary education	Population
Health	—
Housing	Population
Welfare	Population
Services to communities	Population
Justice	—
Rural roads	Rural roads
Urban roads	Urban population
Urban transport	—
Non-urban transport	Population
Services to industry	Population
Other expenses	Population

Negative investment

30 Occasionally a state is assessed to have negative assessed investment for a component. This can occur in a component, such as housing, which has a relatively large stock of assets and relatively low new investment. A state's share of national need may decline, but this is not offset by capital deepening. A negative assessed investment reflects that to maintain the average level of stock, the state would need to sell stock. In this scenario, construction cost factors are not applied. The costs associated with constructing new physical assets are not related to the disposal of physical assets.

Land

31 Developing new areas can involve both selling Crown land to developers, and buying land for state infrastructure. State policies on how much crown land to hold vary significantly. Due to these factors, the Commission has been unable to identify a driver of need for net purchasing of land. As such, investment in land is assessed equal per capita and stocks are not differentially assessed.

GST distribution in the 2025 Review

32 Table 8 shows the GST impact of the assessment in the 2025 Review.

Table 8 GST impact of the investment assessment, 2025-26

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total effect
	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m
Schools	-271	18	87	241	-85	-37	14	34	394
Post-secondary education	-6	-13	12	13	-3	-2	0	0	25
Health	-277	-289	191	185	54	59	-8	86	575
Housing	-98	-84	99	97	-10	-16	-10	21	218
Welfare	3	-9	5	2	-2	0	0	1	11
Services to communities	-11	-17	14	24	-6	-5	1	0	38
Justice	-36	-144	60	59	-6	5	-11	73	196
Rural roads	-547	-938	504	612	77	-15	-103	411	1,604
Urban roads	39	-81	203	100	-177	-68	11	-26	353
Urban transport	1,345	1,283	-1,185	-227	-587	-312	-163	-152	2,628
Non-urban transport	-4	2	2	5	-2	-2	0	0	9
Services to industry	-31	-47	5	79	-6	-1	-4	6	89
Other expenses	-60	-44	63	74	-18	-14	2	-3	139
Land	0	0	0	0	0	0	0	0	0
Total (\$m)	44	-364	58	1,263	-771	-410	-271	450	1,816
Total (\$pc)	5	-51	10	414	-405	-709	-561	1,750	65

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