

## CHAPTER 11

# POST-SECONDARY EDUCATION

### WHAT IS INCLUDED IN POST-SECONDARY EDUCATION?

- 1 This category includes State expenses on vocational education and training (VET), and higher education. Vocational education and training is mainly provided by technical and further education (TAFE) institutes and higher education mainly by universities. However, there is a significant amount of higher education in TAFE institutes and some universities are significant VET providers. Table 11–1 shows, on average, States spend around 3.0 per cent of their budgets on post-secondary education services (including superannuation) but the proportion varies from 1.9 per cent in Queensland to 4.2 per cent in Victoria.

**Table 11–1 Post-secondary education category State expenses, 2008-09**

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total
Category expense (\$m)	1 500.3	1 634.6	685.8	457.5	439.4	147.3	108.1	108.8	5 081.9
Total (\$pc)	213.07	304.69	157.68	207.58	272.59	294.40	310.91	490.76	234.82
Proportion of State operating expense (%)	3.0	4.2	1.9	2.4	3.2	3.4	3.1	2.7	3.0

Source: Commission calculation using State data.

- 2 As shown in Table 11–2, the average proportion of State expenses devoted to post-secondary education has fallen in recent years.

**Table 11–2 Post-secondary education expenses as a proportion of State operating expenses**

	2005-06	2006-07	2007-08	2008-09
Total for category (\$m)	4 573.6	4 571.5	5 039.9	5 081.9
Total operating expenses (\$m)	134 969.0	146 359.0	157 538.0	171 074.5
Proportion of total operating expenses (%)	3.4	3.1	3.2	3.0

Source: Commission calculation using ABS GFS data and State data.

### The average service delivery policy

- 3 State governments provide most vocational education and training services through networks of colleges of technical and further education. Those colleges are located throughout the States in relatively close proximity to students. The college campuses used for service delivery are widely dispersed in all States. States with dispersed small communities provide services in many of those communities.
- 4 Since the Commonwealth took over the funding of higher education the States have had a minor supporting role, funding areas where their policy priorities are not funded by the Commonwealth. Total State expenses on higher education for 2007-08 were \$0.4 billion, with Victoria accounting for over half that amount.

### What is the role of the Commonwealth?

- 5 The Commonwealth provides the vast majority of funding for the higher education sector in the form of recurrent and capital grants, and other grants for research projects. In addition, the Commonwealth provides support for students by way of income support payments, loans and fee deferral through the Higher Education Contribution Scheme. The total Commonwealth financing for higher education in 2007-08 was \$7.5 billion.<sup>1</sup>
- 6 Commonwealth expenditures on higher education do not appear in the ABS GFS data for the State general government sector and do not differentially affect State fiscal capacities to provide normal State services. They are not reflected in our assessments.
- 7 The Commonwealth also provides financial support to the States for technical and further education (TAFE) institutes. However, the States have primary responsibility for their training systems and the Commonwealth payments affect State fiscal capacities. Table 11–3 shows the treatment of Commonwealth payments to the States during 2008-09 for post-secondary education purposes.

**Table 11–3 Commonwealth payments to States relevant to the Post-secondary education category and their treatment**

Payments affecting the relativities	Payments not affecting the relativities
National SPP	National partnership payments
National skills and workforce development	TAFE fee waivers for childcare qualifications
National partnership payments	Other payments
Better TAFE facilities	Commonwealth own purpose expenses including fee for service programs, and subsidies and other payments to third parties.
Productivity places program	

Source: Commonwealth of Australia *Budget Paper No. 3 2009-10*.

<sup>1</sup> DEEWR, *Annual Report 2008*.

- 8 The Commonwealth makes further own-purpose outlays on vocational skills development, totalling \$1.5 billion in 2008-09. Those programs include:
- fee for service training where contracts are awarded by competitive tender to registered training organisations. These market based tender arrangements do not have direct differential effects on State fiscal capacities and do not affect our comparisons — to the extent that State government agencies are awarded contracts under this program the revenue from the Commonwealth is offset against the related State expenses. These programs involved \$80 million of expenses in 2007-08;
  - a Commonwealth program called Australian technical colleges (ceased in 2008) which provided funding for private technical colleges associated with schools. All the colleges have now merged with schools;
  - subsidies to employers and employees to encourage their participation in training; and
  - income support for people undertaking training.
- 9 The subsidies and income support are demand driven. While they may have an indirect impact on the level of services States provide, they are unlikely to have a material differential impact across the States and so do not affect our assessments.
- 10 Further details of the treatment of Commonwealth payments to the States are in the Adjusted budget chapter.

## ASSESSMENT APPROACH

### Overview

- 11 The main objective of post-secondary education is to provide vocational skills. States consider a number of variables when determining the level of post-secondary education services they provide. Those variables include the demands of industry, areas of skill shortages and their ability to respond. The latter may be constrained by the resources they have, shortages of trainers and the cost of providing services in different regions or to different client groups.
- 12 Post-secondary education is primarily aimed at people in the working age group (15 to 64 years). The data on service use and expenses indicate some groups of people within that population may have different intensities of use of post-secondary education services. The provision of services to some groups may also affect the unit costs States incur. In particular:
- Indigenous people, people from a non-English speaking background and people living in remote areas use post-secondary education services with different intensities; and
  - providing a service to Indigenous people and people living in remote areas costs more than providing it to other people.
- 13 The assessment is based on applying a profile of the average service use by subgroups of the target population to the corresponding populations of each State. It also allows for interstate

differences in the price of some inputs used in providing the services (such as employee wages and certain materials) and the effects of diseconomies of small scale in administrative tasks.

- 14 Consistent with the top down approach, these influences on service use and unit costs are applied to the average State expenses on all post-secondary education (vocational education and training services and higher education). State expenses on higher education may be affected by different, mainly policy driven, influences. We have not assessed higher education separately because there is no material difference between using the VET disabilities and an equal per capita assessment. The latter approach is what we tend to use where it is difficult to discern an average policy and drivers of differential needs. It was the approach used in the 2004 Review.
- 15 Most States supported the general direction of the assessment.

### Factors affecting service use

- 16 Since post-secondary education aims to provide work related skills, most of the users of the services are in the working age population. This is generally considered to be the population aged 15 to 64 years. We consider the 15 to 64 year old population to be a suitable policy neutral broad indicator of the target population for post-secondary education services.
- 17 While almost all States supported the use of the 15 to 64 population as the broad indicator of service use, Victoria argued it should be the interstate distribution of actual annual contact hours (ACH). We decided not to use annual hours because they measure actual service use in each State and as such are affected by interstate differences in policy on service availability and delivery.
- 18 However, by itself, the 15 to 64 year old population of each State does not recognise the higher intensity of use by some sub-groups within that population.
- 19 The National Centre for Vocational Education Research (NCVER) maintains comprehensive statistics on the use of training services (measured using annual hours of training) which can be used to build a national average profile of service use by different groups of people. We have used the NCVER data for this purpose even though they do not cover activity in higher education.
- 20 National average service use rates<sup>2</sup> for groups within the 15 to 64 year old population have been estimated using ERP<sup>3</sup> and annual contact hours data, which were both cross classified by Indigeneity, remoteness and English fluency. We measured low English fluency using the broad indicator of whether or not English was spoken at home because initiatives may be directed to all students with low English fluency regardless of whether they were born in Australia or overseas.

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<sup>2</sup> A use rate for a population group is the annual contact hours for that group divided by the ERP for that group.

<sup>3</sup> Where necessary, the ERP data are cross-classified using census data.

- 21 Table 11–4 shows the national average use rates calculated for Indigenous and non-Indigenous sub-populations, and compares them to the working age population as a whole. It shows Indigenous people use post-secondary services with more than twice the intensity of non-Indigenous people. The use weights in the following tables are calculated as the use rate of the subgroup divided by that of the broader working age population.

**Table 11–4 Use rates by Indigeneity, NCVER and ERP data for 2008-09**

Attribute	Use rate (ACH per person)	Use weight	Proportion of total ACH %
Working age population	19.1	1.000	100.0
Indigeneity			
Indigenous	40.4	2.116	4.8
Non-Indigenous	18.6	0.974	95.2

Source: 2008 annual contact hours (ACH) data provided by NCVER. ERP data on population aged 15 to 64 apportioned using census data.

- 22 On a similar basis, Table 11–5 shows people in remote areas tend to use post-secondary services more intensively than people in non-remote areas.

**Table 11–5 Use rates by remoteness, NCVER and ERP data for 2008-09**

Attribute	Use rate (ACH per person)	Use weight	Proportion of total ACH %
Working age population	19.1	1.000	100.0
Remoteness			
Not Remote	19.0	0.996	97.3
Remote	22.3	1.170	2.7

Source: 2008 annual contact hours (ACH) data provided by NCVER. ERP data on population aged 15 to 64 apportioned using census data.

- 23 In Table 11–6 we see that people who do not speak English at home use post-secondary education services slightly more intensively than those who speak English at home.

**Table 11–6 Use rates by English fluency, NCVER and ERP data for 2008-09**

Attribute	Use rate (ACH per person)	Use weight	Proportion of total ACH %
Working age population	19.1	1.000	100.0
English fluency			
English not spoken at home	19.6	1.025	17.9
English spoken at home	19.0	0.995	82.1

Source: 2008 annual contact hours (ACH) data provided by NCVER. ERP data on population aged 15 to 64 apportioned using census data.

- 24 When fully cross classified, some groups have relatively high use rates. For example, Table 11–7 shows the rates for all the subgroups of the Indigenous population.

**Table 11–7 Use rates by selected cross classified attributes, NCVER and ERP data for 2008-09**

Attribute	Use rate (ACH per person)	Use weight	Proportion of total ACH %
Working age population	19.1	1.000	100.0
Selected cross-classified attributes			
Indigenous – Not remote – English not spoken at home	30.1	1.576	0.1
Indigenous – Not remote – English spoken at home	41.9	2.195	3.6
Indigenous – Remote – English not spoken at home	25.1	1.315	0.4
Indigenous – Remote – English spoken at home	49.0	2.567	0.7

Source: 2008 annual contact hours (ACH) data provided by NCVER. ERP data on population aged 15 to 64 apportioned using census data.

- 25 Estimates of potential service use in each State were obtained by applying the national average use rates to suitably dissected data on each State’s population.

#### *Labour force status*

- 26 Unemployed persons are often referred to training to improve their employment outcomes. When unemployment rises, governments tend to respond by offering training places. This suggests a conceptual case could be made that labour force status affects the use of post-secondary services. The actual overall impact on training services of changing unemployment levels is, however, less clear for several reasons, including:
- there are some indications from NCVER that in a downturn there is often a fall in the demand for apprenticeship and traineeships — trade apprenticeships commencements fell around 20 per cent at the beginning of 2009;
  - the data used in the 2009 Update suggest people not in the labour force use VET services at a higher rate than the unemployed; and
  - training is not purely demand driven — it is partly supply driven, which suggests States may reallocate resources in an attempt to increase training unemployed people rather than adjusting the total level of training offered.
- 27 Data deficiencies impeded reliable testing of the possible effects of unemployment. In particular, the NCVER data on the employment status of students are based on what they report when they enrol and are of relatively poor quality. This is because the data reflect the students’ perception of unemployment which may not be consistent with the standard definition of unemployment as used in the Census and there is a high non-response rate.
- 28 South Australia and Tasmania suggested a labour force status assessment could be based on Centrelink data on the number of unemployment beneficiaries in training. We investigated

those data and found they were not fit for our purposes. The data were not cross classified by Indigeneity and remoteness, and provided no information on intensity of use of services.

- 29 Since the amount of training provided is partly supply determined and there is no clear relationship between unemployment and training effort, there does not appear to be sufficient evidence to support the conceptual case for a disability for unemployment or labour force status. The differences between the concepts of employment status reflected in the NCVET data on students and the Census data for State populations as a whole, mean use rates and cost weights calculated using those data are not reliable. Consequently, the Commission has not included any allowance for the effects of employment on the assessed costs of providing post-secondary education.

#### *People with disabilities*

- 30 Recent welfare reforms have encouraged people with a disability to seek work and training. Providing training to them may involve additional costs for the States. These issues suggest a conceptual case could be made that disability status affects the use and cost of post-secondary services.
- 31 Disability is, however, a very difficult concept to measure. The NCVET data include a broad range of self identified disabilities for students. However, those data are difficult to align with the data on disabilities of the population as a whole recorded in the Census. It appears the data from the Census and NCVET are measuring different concepts of disability. This in turn means reliable service use rates and cost weights cannot be calculated.
- 32 We also considered whether an assessment could be made by applying a measure of needs derived from Census data on people with disabilities to a proportion of service delivery costs. However, the proportion of costs affected by those needs necessary to achieve a material effect on the assessed GST distribution was well above the actual proportion of people with a disability. We considered that unlikely and concluded an allowance for people with a disability would not be material.

#### **Differences in the cost of services**

- 33 Most States agreed the costs of providing post-secondary education services to Indigenous students and students in remote areas differed from the average and that those differences should be reflected in the assessments. New South Wales and Victoria argued students from culturally and linguistically diverse backgrounds also imposed extra costs, but other States said it was not a significant cost for them.
- 34 The Commission requested data from the States to determine whether Indigeneity, remoteness, low English fluency (LEF), qualification level, course mix and industry mix affected unit costs.

#### *Indigeneity and remoteness*

- 35 Data on the additional costs of remoteness and Indigeneity were obtained from all States except New South Wales and the Northern Territory. The data were considered reliable and

broadly comparable and when taken together allowed us to make estimates of the extra costs incurred in servicing Indigenous and remote clients. The raw data indicated a contact hour delivered to Indigenous people was on average 37 per cent more costly than one delivered to non-Indigenous people and remote services were 47 per cent more costly than non-remote ones. On the assumptions that the effect of Indigenous status was the same for all Indigenous people and the effects of remoteness were the same for all people, the data suggested:

- an additive Indigenous cost weight of 1.3 (implying the cost of providing a service to Indigenous students was 1.3 times the average cost per non-Indigenous non-remote student contact hour);
- a remoteness cost weight of 1.35; and
- a combined cost weight for remote Indigenous people of 1.65<sup>4</sup>.

- 36 These cost weights have been applied to the average contact hours for each subgroup of the population.
- 37 The effects on the GST distribution of assessing cost weights for Indigenous status and remoteness are shown in Table 11–8. The effects of the cost weights are material for the Northern Territory.

**Table 11–8 Materiality of applying cost weights for Indigenous status and remoteness**

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total
	\$pc	\$pc	\$pc	\$pc	\$pc	\$pc	\$pc	\$pc	\$pc
Indigenous cost weight	-0.25	-2.39	1.32	1.38	-0.85	1.93	-1.65	30.20	0.69
Remoteness cost weight	-1.21	-2.14	0.93	4.04	-0.12	-1.72	-2.35	39.43	0.70
Indigenous + remoteness	-1.45	-4.47	2.23	5.35	-0.96	0.21	-3.95	68.80	1.64

Source: Commission calculation.

### *Low English fluency*

- 38 We noted above that people’s English fluency status had a material effect on the use of post-secondary education services. This effect was particularly large for Indigenous people who were fluent in English.
- 39 We also examined whether the costs of providing a contact hour to people with low fluency differed from that for people who are fluent in English. Data from the States indicated their extra spend on low English fluency (LEF) identified students was between zero and eight per cent of their total expenditure.
- 40 These proportions reflect the differences between the implied cost of vocational education per contact hour for all students and the average cost per hour for LEF students (total identified expenses for LEF students divided by LEF hours) shown in Table 11–9 and the proportion of LEF students using post-secondary education services (about 18 per cent).

<sup>4</sup> The remote Indigenous weight is calculated as one plus the sum of the fractional parts of the Indigenous and remoteness cost weights.

**Table 11–9 Implied cost per hour from the State supplied data, 2008**

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT
	\$/hr	\$/hr	\$/hr	\$/hr	\$/hr	\$/hr	\$/hr	\$/hr
All hours	13.42	19.84	15.98	11.98	21.16	18.40	18.17	25.62
LEF hours	n.a.	27.69	28.79	12.10	n.a.	0.00	25.55	n.a.

Source: Commission calculation using State data.

- 41 Variability across States in Table 11–9 suggests the States used different criteria to identify LEF students and thus the data were not comparable. Moreover, the pattern of spending in the States suggested it was directed to an LEF population that was smaller than that associated with the measure of the LEF proxy (people who do not speak English at home). While some of this may reflect the low English fluency of some Indigenous people, using another proxy such as people born in a non-English speaking country would not necessarily give a better fit.
- 42 We could not calculate an adjustment for the cost of LEF from the State data we received. LEF is, however, material as a disability across all State services, so we used judgment to set a six per cent LEF cost weight. Our judgment was guided by the cost weight of eight per cent assessed for the Schools education category.
- 43 The combined financial impact of assessing LEF use and cost weights in post-secondary education is shown in Table 11–10. It is material for the Northern Territory because different use rates are applied to Indigenous people who are fluent in English and those who are not — the use rate for Indigenous people with low English fluency is much lower than that for other Indigenous people and Indigenous people with low English fluency are concentrated in the Northern Territory and more so than the Indigenous population as a whole.
- 44 We have assessed low English fluency in this category rather than in the Other expenses category because it is primarily driven by Indigenous people. The factor assessed in the Other expenses category is driven by people born in non-English speaking countries.

**Table 11–10 Impact on the GST distribution of assessing LEF in post-secondary education**

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total
Dollars million	10.3	5.4	-5.9	0.5	-1.7	-1.2	-0.1	-7.2	16.1
Dollars per capita	1.44	0.98	-1.32	0.21	-1.03	-2.40	-0.41	-31.80	0.73

Source: Commission calculation.

- 45 To avoid double counting the cost weights are constructed to be additive (that is, the cost weight applying to Indigenous, remote populations that do not speak English at home is 0.71 derived as  $0.30 + 0.35 + 0.06$ ) and the cost weights are applied to cross-classified service populations.

*Qualification level, course mix or industry mix*

- 46 The data provided by the States did not show a consistent relationship between cost and qualification level, which indicated an allowance for interstate differences in qualification level could not be supported.
- 47 A number of States said they considered industry mix a more important cost driver than qualification level. They said the cost of providing training for particular job types varied because of differing capital inputs and wage levels of trainers. Work done by Victoria and some simple modelling by the Commission, using details of students attending TAFE and Census data, suggested there is some relationship between industry of employment of the whole population and the use of vocational training.
- 48 However, neither the States nor the Commission have been able to devise a reliable and practical method for making an allowance. An approach suggested by Western Australia, based on employment in industry groups, was not feasible because we could not reliably identify the relationship between employment and demand for vocational education and training.
- 49 Some States also argued allowances should be made for the cost effects of interstate differences in course mix. We have not done so because the costs of differing course mixes are already embedded in the use and cost assessments we have made for students with various characteristics. Moreover, we were unable to determine the average policy course mix to apply in each State.

*Low socio-economic status (SES)*

- 50 Tasmania said labour force status should be included in the socio-demographic composition assessment. The NCVET does not collect data on SES status. We could impute a low SES characteristic to students using their addresses. However, we could not be sure the imputation was robust because VET students are mobile and thus the SES characteristics of where they live may not be a good indicator of their actual status. Moreover, it was not clear from the data available to us that States, as a whole, devoted extra resources to low SES students.
- 51 We decided not to assess SES status because reliable data are not available to support the assessment.

**Other factors affecting the cost of services**

*Administrative scale*

- 52 Administrative scale expenses capture the costs of the minimum level of administration required to provide post-secondary education services. The estimation of those minimum scale affected costs is set out in the Administrative scale chapter.
- 53 All States except New South Wales supported the assessment of administrative scale disabilities to recognise that the minimum policy formulation and administrative functions needed to run these services have a greater per capita impact in the smaller States.

*Cross-border use*

- 54 We consider there is a strong conceptual case that residents of the regions in New South Wales that surround the ACT affect its need to provide post-secondary education services. While New South Wales said all cross-border use should be assessed, Table 11–11 indicates the only significant impact is on the ACT and this is overwhelmingly due to New South Wales students using ACT services.

**Table 11–11 Net annual hours provided to students identified as resident in other States as a proportion of total annual hours provided by State, 2008**

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT
Proportion	-0.8%	0.5%	-0.6%	0.0%	-0.2%	0.9%	13.6%	-0.2%

Source: NCVER, using postcode of student.

- 55 The NCVER data on annual hours suggest the ACT's total annual contact hours for 2008-09 would have been 15.2 per cent lower had it provided services to its own residents only.

*Effects of location*

- 56 We considered that in general:
- interstate location disabilities (predominantly interstate differences in wage levels) affected the administrative scale expenses and service delivery expenses;
  - intrastate location effects (reflecting the effects of interstate differences in population dispersion and the higher costs of providing services in remote areas) affected service delivery expenses; and
  - interstate differences in the need to provide services in small centres (called service delivery scale effects) also affected service delivery expenses.
- 57 The higher costs associated with providing services in remote areas and with differences in the need to provide services in small communities are already reflected in the allowances for remoteness discussed above. Consequently, the additional location allowances cover only the effects of interstate differences in wage levels and other interstate costs. The details of the approach and rationale of these assessments are set out in the Location costs chapter.

**THE ASSESSMENT METHOD**

- 58 The Commission decided to assess two components in this category — service delivery expenses and other expenses.
- 59 Table 11–12 sets out the category structure, the disabilities that are to be assessed and the relative size of each component for 2008-09.

**Table 11–12 Category structure, Post-secondary education, 2008-09**

Component	Component weight	Disability %	Influence measured by disability
Service expenses	98.77	Socio-demographic composition	Recognises that certain population characteristics affect the use and cost of providing post-secondary education services, for example Indigeneity, people in remote areas and people with low English fluency.
		Cross-border	Recognises the cost to the ACT of providing post-secondary education services to people who are New South Wales residents.
		Location	Recognises the differences in the cost of providing labour and non-labour resources between States.
Other expenses	1.23	Administrative scale	Recognises the unavoidable costs each State incurs to provide the policy and administrative infrastructure necessary to provide the minimum unavoidable service, regardless of the size of the task.

Source: Commission calculation.

### Service delivery expenses

60 Service delivery expenses make up the bulk of the category. These expenses were initially split between States on the basis of their population shares (that is, assessed equal per capita). As shown in Table 11–19, they were then adjusted for:

- the effects on service use of interstate differences in the socio-demographic composition of State populations (adjustments for intensity of service use by Indigenous people, people in remote areas and people who speak English at home, and the additional costs of providing services to Indigenous people and people in remote areas);
- the effects on service use in the ACT by residents of New South Wales; and
- the other interstate effects on costs of location.

### *Socio-demographic (SDC) factor*

61 The population that materially affects the use of the service are people aged 15 to 64, but we also recognise the different use intensities of sub-populations cross-classified by Indigeneity, remoteness and whether English is spoken at home. Use rates are calculated using ABS estimated resident population (ERP) data for those groups and data on annual contact hours obtained from the NCVER. Table 11–13 shows the use rates for 2008-09.

**Table 11–13 Use rates (ACH per person), 2008-09**

Indigeneity	Remoteness	Language spoken	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Average	
		at home										
Indigenous	Non-remote	Other	54.1	19.6	12.7	34.3	30.0	0.7	13.8	49.2	30.1	
		English	54.4	57.8	26.6	42.0	39.5	23.4	31.0	29.3	41.9	
	Remote	Other	34.0	0.0	17.4	15.3	11.4	0.0	0.0	0.0	30.9	25.1
		English	74.1	0.0	41.5	43.9	37.4	21.9	0.0	0.0	54.0	49.0
Non-Indigenous	Non-remote	Other	23.0	18.6	9.6	19.4	17.5	17.6	7.2	21.3	19.5	
		English	20.1	22.8	13.4	16.1	16.0	21.1	15.5	15.3	18.4	
	Remote	Other	19.9	0.2	5.7	19.0	13.5	0.0	0.0	0.0	18.8	15.0
		English	22.4	15.2	14.3	17.8	13.9	14.7	0.0	0.0	22.5	17.7

Source: Commission calculation, NCVER annual hours data, ABS ERP data.

62 The Australian average use rates are applied to the relevant populations to derive assessed use.

**Table 11–14 Assessed use in millions of hours, 2008-09**

Indigeneity	Remoteness	Language spoken	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total	
		at home										
Indigenous	Non-remote	Other	0.05	0.03	0.10	0.03	0.03	0.00	0.00	0.05	0.29	
		English	3.65	0.85	2.81	1.04	0.59	0.49	0.11	0.37	9.92	
	Remote	Other	0.00	0.00	0.19	0.16	0.04	0.00	0.00	0.00	0.60	0.99
		English	0.29	0.00	0.63	0.64	0.06	0.01	0.00	0.00	0.35	1.99
Non-Indigenous	Non-remote	Other	20.73	15.51	4.62	3.50	2.57	0.23	0.74	0.23	48.13	
		English	64.26	51.20	46.12	21.85	16.49	5.54	3.80	1.39	210.64	
	Remote	Other	0.02	0.00	0.04	0.06	0.01	0.00	0.00	0.00	0.03	0.17
		English	0.78	0.06	1.26	1.25	0.40	0.03	0.00	0.00	0.46	4.23
Total			89.78	67.65	55.77	28.54	20.20	6.29	4.66	3.47	276.37	

Source: Commission calculation, NCVER annual hours data, ABS ERP data.

63 Applying the cost weights shown in Table 11–15 to the relevant cells in Table 11–14 we obtained the total cost weighted hours which are used as the weighted population to derive the factor (Table 11–16).

**Table 11–15 Combined cost weight for each subgroup of the population**

Language at home	Indigenous				Non-Indigenous			
	Non-remote		Remote		Non-remote		Remote	
	Other	English	Other	English	Other	English	Other	English
Cost weight	1.36	1.30	1.71	1.65	1.06	1.00	1.41	1.35

Source: Commission calculation.

**Table 11–16 Derivation of the SDC factor 2008-09**

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total
	'000	'000	'000	'000	'000	'000	'000	'000	'000
Total use – assessed hours	89 779	67 654	55 771	28 539	20 196	6 295	4 658	3 474	276 366
Cost weighted hours	92 609	68 873	57 929	30 065	20 751	6 471	4 737	4 445	285 881
Population	7 041.4	5 364.8	4 349.5	2 204.0	1 612.0	500.3	347.8	221.7	21 641.6
SDC factor	0.99563	0.97185	1.00823	1.03263	0.97450	0.97917	1.03097	1.51789	1.00000

Source: Commission calculation, NCVER annual hours data, ABS ERP data.

### Cross-border factor

64 Table 11–18 shows the derivation of the cross-border factor. It was obtained by:

- estimating the ACT’s service weighted population. This was done by applying the proportional increase in ACT services from Table 11–17 to its total population. The calculation implied the ACT’s service weighted population was 16.5 per cent larger than its actual population; and
- estimating the New South Wales service weighted population by removing those people from its actual population, and dividing its service weighted population by its actual population.

**Table 11–17 Net cross-border annual contact hours, 2008-09**

	NSW services provided to residents of the ACT	ACT services provided to residents of NSW	Net cross border flow of services	Total services provided by the ACT	Proportional increase in ACT services
	(a)	(b)	(c) = (b) - (a)	(d)	(d) / [(d) - (c)] - 1
	(ACHs)	(ACHs)	(ACHs)	(ACHs)	%
2008-09	160 985	890 329	729 344	5 156 945	16.5

Source: NCVER data, unpublished, 2008.

65 We also considered whether these adjustments to the service populations of the ACT and New South Wales would have material effects on their socio-demographic profiles used in other parts of these assessments. While insufficient information is available, the indications were that any effects would not be material.

**Table 11–18 Calculation of cross-border factor, 2008-09**

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total
Population (million)	7.041	5.365	4.350	2.204	1.612	0.500	0.348	0.222	21.642
Increase in ACT (million)							0.1647		
Service population (million) (a)	6.984	5.365	4.350	2.204	1.612	0.500	0.405	0.222	21.642
Service population/population	0.99186	1.00000	1.00000	1.00000	1.00000	1.00000	1.16473	1.00000	1.00000
Rescaled factor	0.99186	1.00000	1.00000	1.00000	1.00000	1.00000	1.16473	1.00000	1.00000

(a) The addition to the ACT’s population is obtained by applying its cross-border factor to its population. The increase is removed from New South Wales’ population. Its factor is its service population divided by its population.

Source: Commission calculation.

*Bringing the assessment for the service delivery expenses component together*

66 Table 11–19 shows the calculation of the assessed expenses for the service delivery component.

The equal per capita expenses for each State are multiplied by the disability factors which have been calculated as described above.

**Table 11–19 Service expenses component, Post-secondary education, 2008-09**

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total
Service expenses (\$m)	1 633.2	1 244.3	1 008.8	511.2	373.9	116.0	80.7	51.4	5 019.5
Socio-demographic composition	0.99563	0.97185	1.00823	1.03263	0.97450	0.97917	1.03097	1.51789	
Cross-border factor	0.99186	1.00000	1.00000	1.00000	1.00000	1.00000	1.16473	1.00000	
Location factor	1.01718	0.99108	0.97997	1.01148	0.98645	0.97512	1.03346	1.05133	
Assessed expenses (\$m)	1 639.7	1 197.9	996.2	533.7	359.2	110.7	100.1	82.0	5 019.5

Source: Commission calculation.

**Other expenses***Administrative scale affected expenses*

67 The calculation of the assessed administrative scale affected expenses, as adjusted for the effects of interstate differences in wage and non-wage costs, is shown in the Administrative scale chapter.

**Table 11–20 Calculation of assessed expenses — Other expenses component, 2008-09**

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total
	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m
Administrative scale expenses	7.9	7.6	7.5	7.8	7.6	7.4	8.0	8.5	62.3
Assessed expenses	7.9	7.6	7.5	7.8	7.6	7.4	8.0	8.5	62.3

Source: Commission calculation.

**Bringing the assessment together**

68 Table 11–21 brings the assessed expenses for each component together to derive the total assessed expenses for each State for Post-secondary education.

**Table 11–21 Assessed expenses, Post-secondary education, 2008-09**

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total
Service expenses (\$m)	1 639.7	1 197.9	996.2	533.7	359.2	110.7	100.1	82.0	5 019.5
Other expenses (\$m)	7.9	7.6	7.5	7.8	7.6	7.4	8.0	8.5	62.3
Total	1 647.5	1 205.5	1 003.8	541.5	366.8	118.2	108.0	90.6	5 081.9
Assessed expenses (\$pc)	233.98	224.71	230.78	245.67	227.56	236.20	310.56	408.48	234.82
Cost of service provision ratio	0.9964	0.9569	0.9828	1.0462	0.9691	1.0059	1.3225	1.7396	1.0000

Source: Commission calculation.

- 69 Table 11–22 summarises the category factors. It shows, for each disability, how the expenses per capita in each component and in total are affected by differences in State characteristics. Disability factors below one indicate a State is assessed to need to spend less than average. Disability factors above one indicate States are assessed to need to spend more than average.

**Table 11–22 Category factor, Post-secondary education 2008-09**

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Average
<b>Service expenses (component weight = 98.77 %)</b>									
Socio-demographic composition	0.99563	0.97185	1.00823	1.03263	0.97450	0.97917	1.03097	1.51789	1.00000
Cross-border	0.99186	1.00000	1.00000	1.00000	1.00000	1.00000	1.16473	1.00000	1.00000
Location	1.01718	0.99108	0.97997	1.01148	0.98645	0.97512	1.03346	1.05133	1.00000
Component factor	1.00398	0.96269	0.98753	1.04396	0.96081	0.95433	1.24035	1.59499	1.00000
<b>A. Weighted component factor</b>	0.99166	0.95088	0.97542	1.03115	0.94902	0.94262	1.22513	1.57542	0.98773
<b>Other expenses (component weight = 1.23 %)</b>									
Administrative scale	0.38759	0.49429	0.60165	1.22675	1.63334	5.15671	7.93888	13.37828	1.00000
Component factor	0.38759	0.49429	0.60165	1.22675	1.63334	5.15671	7.93888	13.37828	1.00000
<b>B. Weighted component factor</b>	0.00476	0.00606	0.00738	0.01505	0.02004	0.06327	0.09740	0.16414	0.01227
<b>Category factor</b>									
[A+B]	0.99642	0.95695	0.98280	1.04620	0.96906	1.00589	1.32253	1.73956	1.00000

Note: The disability factors in each component are multiplied together and the result rescaled so that their average remains one. The component factors are then multiplied by the component weight. The weighted component factors are summed to obtain the category factor.

Source: Commission calculation.

## WHAT IS THE IMPACT ON THE GST DISTRIBUTION?

- 70 Table 11–23 shows the extent to which the assessments for this category move the recommended distribution of the GST for the 2010 Review away from an equal per capita distribution. It shows New South Wales, Victoria, Queensland and South Australia are assessed as needing to spend less per capita to deliver post-secondary education services. Western Australia, Tasmania, the ACT and the Northern Territory are assessed as needing to spend more. The driver for each State is different.

**Table 11–23 Impact on the GST distribution of the Post-secondary education assessment**

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Redist
Dollar million	-11.3	-53.8	-11.7	24.6	-13.0	0.1	26.6	38.4	89.8
Dollar per capita	-1.58	-9.86	-2.62	10.89	-7.97	0.22	75.46	169.63	4.08

Note: The difference from an equal per capita assessment, derived using 2006-07 to 2008-09 assessed expenses and 2009-10 GST.

Source: Commission calculation.

71 Table 11–24 shows the contribution of each factor to the redistribution arising from the Post-secondary education assessment.

**Table 11–24 Reasons for difference from EPC, Post-secondary education**

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Redist
	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m
Socio-demographic composition	-14.9	-36.3	14.3	21.5	-10.9	-2.9	2.4	26.8	65.0
Cross border	-13.4	0.0	0.0	0.0	0.0	0.0	13.4	0.0	13.4
Location factor	30.4	-9.6	-20.3	1.8	-5.0	-2.8	2.9	2.5	37.7
Administrative scale	-12.3	-7.7	-4.9	1.5	2.9	5.8	6.9	7.9	24.9

Source: Commission calculation.

72 Table 11–24 shows the main reason States require more or less than an equal per capita share of GST is because of differences in the socio-demographic composition of their populations. The shaded cells in Table 11–25 show where States have more than their population shares of different population groups. Differences in interstate wage costs reflected in the location factor are also important.

**Table 11–25 Population subgroup shares of State working age populations, 2008-09**

Indigeneity	Remoteness	Language spoken at home	NSW	Vic	Qld	WA	SA	Tas	ACT	NT
			%	%	%	%	%	%	%	%
Indigenous	Non-remote	Other	16.7	9.4	34.7	10.4	9.9	1.1	1.2	16.5
		English	36.8	8.6	28.4	10.5	5.9	4.9	1.1	3.7
	Remote	Other	0.2	0.0	18.7	15.9	4.1	0.0	0.0	61.1
		English	14.7	0.1	31.9	32.2	3.2	0.4	0.0	17.6
Non-Indigenous	Non-remote	Other	43.1	32.2	9.6	7.3	5.3	0.5	1.5	0.5
		English	30.5	24.3	21.9	10.4	7.8	2.6	1.8	0.7
	Remote	Other	10.6	0.8	25.6	36.9	7.6	0.3	0.0	18.2
		English	18.5	1.4	29.7	29.5	9.4	0.7	0.0	10.8
Total working age population			32.4	24.9	20.1	10.3	7.4	2.3	1.7	1.1
Total ERP			32.5	24.8	20.1	10.2	7.4	2.3	1.6	1.0

Note: Cells where the share is above the ERP share are shaded.

Source: Commission calculation using ABS ERP data

73 New South Wales needs less than average GST because it has mostly below average shares of high cost students, its residents make use of VET services in the ACT and it experiences economies of scale in administration because of its size. Its relatively higher average wage in part offsets these lower needs.

74 The assessed GST shares for Victoria and South Australia are reduced by their below average shares of most high cost populations and below average wage levels. Queensland's assessed share is below average due to its below average share of the working age population (although

that effect would be largely offset by its above average share of most high cost population groups), its economies of scale in administration and its relatively low wage levels.

- 75 Western Australia needs an above average share of GST because it has above average shares of most high cost groups, particularly Indigenous groups. It also incurs diseconomies of scale in administration and above average wage levels and interstate freight costs.
- 76 Tasmania faces substantial diseconomies of small scale in administration but these effects on its assessed GST share are offset by its below average shares of high cost groups and relatively low wage levels. The ACT needs an above average share of GST mainly because it provides services to New South Wales residents, and it has a relatively high share of the working-age population and experiences diseconomies of scale in administration.
- 77 Table 11–26 provides a summary of the main reasons for changes between the recommended and the 2009 Update distributions arising from the Post-secondary education services assessments. It shows the main reason for those changes is method changes, which include:
- the use of fewer and broader student groups (for example, the working age group is no longer disaggregated by age); and
  - the use of fewer and broader cost weights. As a consequence, a lower weight has been given to remote Indigenous students.

**Table 11–26 Changes since the 2009 Update, Post-secondary education**

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Redist
	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m
Shortening the review period	7.6	-3.9	-3.7	-0.2	1.4	-1.3	0.7	-0.6	9.7
Method changes	11.1	19.2	-29.3	3.5	-4.4	-4.8	10.1	-5.4	43.9
State circumstances	2.9	-0.4	-4.2	1.3	0.5	0.0	-0.3	0.2	4.9
<b>Total</b>	<b>21.6</b>	<b>15.0</b>	<b>-37.1</b>	<b>4.6</b>	<b>-2.6</b>	<b>-6.2</b>	<b>10.5</b>	<b>-5.8</b>	<b>51.7</b>

Source: Commission calculation.

## UPDATE PROCESS

- 78 We recommend that data used in these assessments be updated when new data become available to ensure the relativities remain contemporary and consistent with the circumstances of the States. On this basis, we expect the following assessment data would be updated annually:
- NCVER annual hours data by the population subgroups and ERP population data cross-classified by the same population subgroups — these data are used to calculate the socio-demographic composition factor; and
  - NCVER total annual hours by State of provision by postcode of student — these data support the assessment of the cross-border factor.

- 79 However, dissections of the population based on census data such as by language spoken at home (which are used to derive the population proportions to dissect the ERP population data into those population subgroups) cannot be updated until the next population census.

### **SIMPLIFICATION**

- 80 There are two main aspects to the simplification of the 2010 Review assessment of Post-secondary education over the 2004 Review. The first is the absorption of higher education into the post-secondary category. The second is the simplification of the socio-demographic factor matrix flowing from the application of the materiality and data reliability rules, which resulted in the omission of allowances for labour force status and differences in the use of services by various age groups in the working age population and regional cost effects were assessed at only two levels (that is, remote and non-remote).

### **FURTHER INFORMATION**

- 81 Background material in support of this assessment is published on the Commission's website. That material includes the following documents, released for comment in the development of this assessment, together with State submissions responding to those documents:
- Staff discussion paper *2007/10-S Post-secondary education for the 2010 Review*;
  - Commission position paper *2008/17 Post-secondary education*; and
  - *2010 Review Draft Report*.