

## **POLICE – ASSESSMENT RESULTS**

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- 1 This working paper describes how the Commission estimates what each State would need to spend to provide the average level of police services to its residents. The development of the assessment method is discussed in Volume 6 of the 2004 Review Working Papers.

### **POLICE SERVICES**

- 2 All States provide police services to the general population on an ongoing basis.
- 3 Police services are the principal means through which State and Territory governments pursue the achievement of a safe and secure environment for the community through crime responses, the investigation of offences, the provision of services to the judicial process, and the provision of road safety and traffic management.
- 4 State governments spent \$5.9 billion (\$282.63 per capita) on police services in 2006-07. An Australian Government specific purpose payment (SPP) for improving policing in very remote areas was included in the category.

### **WHY EXPENSES ON POLICE SERVICES DIFFER**

- 5 The amount spent in each State on police services per capita varies considerably. The Commission seeks to understand why these figures vary. If the sole source of variation is different government policies, then these differences have no impact on State grants. If the variation is due to circumstances beyond a States' control, then these differences are reflected in State grants. Table 1 shows police expenses per capita for each State and the average overall.

**Table 1 Assessed expenses per capita, 2008 Update**

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Aust
	\$pc	\$pc	\$pc	\$pc	\$pc	\$pc	\$pc	\$pc	\$pc
2002-03	226.46	210.43	217.40	230.10	205.28	218.86	263.98	613.23	223.82
2003-04	238.60	222.21	229.99	242.76	217.34	230.72	282.97	644.75	236.27
2004-05	240.61	224.19	233.60	246.55	219.89	231.77	292.96	669.94	239.14
2005-06	259.93	242.15	253.27	267.38	238.34	250.28	309.34	719.70	258.55
2006-07	283.28	263.99	279.36	294.08	259.71	271.75	334.13	778.79	282.63

**Box 1: The Commission's concept of average**

The average expense per capita is not a simple average of the experience of the eight States. It is calculated as the total expenses incurred by all States divided by total State population. This is a population weighted average. Population weighting gives equal weight to each Australian's experience. Since more Australians experience the New South Wales level of service, it carries more weight in the calculation of the average. 33 per cent of Australians reside in New South Wales and 1 per cent resides in the Northern Territory. Population weighting gives the experience of New South Wales (\$268.63 per capita in 2006-07) 33 times the weight of the experience of the Northern Territory (\$640.14 per capita). This approach means the average expense per capita is much closer to the New South Wales expense per capita than the Northern Territory expense per capita.

The concept of using this average also applies to the assessment of factors. If the Commission were trying to estimate the cost of providing services to Indigenous people living in remote areas, it would give most weight to the Northern Territory's experience (38 per cent of remote Indigenous people live in the Territory) and least to Tasmania (less than 0.2 per cent), Victoria and the ACT (0 per cent).

- 6 The drivers of State expenses per capita are likely to include influences such as:
  - the number of police officers; and
  - the number of crimes (both against the person and property).
- 7 Crimes against the person include murder, attempted murder, manslaughter, assault, sexual assault, kidnapping/abduction, robbery and blackmail/extortion. Crimes against property include unlawful entry with intent, motor vehicle theft and other theft<sup>1</sup>.
- 8 Table 2 shows measures of the cost of resources and the number of resources provided<sup>2</sup>.

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<sup>1</sup> Equally, police services are employed on crimes that are against victims other than an individual or a household, such as the community in the case of graffiti and some types of fraud/embezzlement, but statistics are not readily available.

<sup>2</sup> States collect data on the *actual* number of personal and property crimes but the data have relative standard error ranges of up to 50 per cent. Instead, for purposes of comparison, *estimated* crime data (obtained from surveys by the ABS) have been used.

**Table 2 Possible drivers of state police expenses per capita, 2006-07<sup>(a)</sup>**

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Aust
<b>(a) General indicators</b>									
Expenses 2006-07 (\$m)	1 841.7	1 522.9	1 108.2	656.7	399.0	129.8	100.7	136.2	5 895.2
Police staff 2005-06	18570	13445	12370	6353	5088	1560	815	1386	59587
Estimated no. of personal crimes ('000)	368	231	250	115	78	23	19	14	1 097
Estimated number of Property crimes (households) ('000)	168	86	92	59	40	9	9	9	471
Population 2006-07 ('000)	6 856	5 168	4 136	2 082	1 577	492	337	213	20 859
<b>(b) Ratios</b>									
Expense per capita, 2006-07 (\$)	269	295	268	315	253	264	299	640	283
Expense per police staff, 2006-07(\$)	99 176	113 272	89 589	103 368	78 417	83 205	123 546	98 285	98 935
Personal crimes, per 1000 people	79	87	147	269	317	956	1 723	3 101	25
Property crimes, per 1000 households	99	89	147	375	419	915	2 287	6 109	30
Police staff per 1000 person 2006-07	2.8	2.5	2.8	2.9	3.0	3.0	2.4	5.8	2.8
<b>(c) Comparison of State ratio to average ratio</b>									
Expense per person, 2006-07 (%)	-5.0	4.3	-5.2	11.6	-10.5	-6.6	5.8	126.5	
Expense per police staff, 2006-07 (%)	0.2	14.5	-9.4	4.5	-20.7	-15.9	24.9	-0.7	
Personal crimes, per capita (%)	210.0	242.7	480.5	958.6	1148.1	3662.3	6679.7	12106.2	
Property crimes, per capita (%)	233.7	199.5	396.2	1 160.4	1 308.3	2 979.3	7 594.1	20 452.5	
Police staff per capita	-0.1	-10.6	2.4	4.5	7.9	9.1	-13.0	110.6	

Source: Productivity Commission, Report on Government Services, 2007; ABS GFS data and population data for 2006-07; ABS catalogue 4509.0 – Crime and Safety, Australia, April 2007.

- (a) Productivity Commission data for the 2005-06 year were the most current at the time of preparation with the 2005-06 data also applied to the 2006-07 year in the assessment, where relevant.
- (b) Both sworn and unsworn police staff.
- (c) Crime data is from ABS, Crime and Safety Australia, Cat. No. 4509.0 and the relevant ratios have been calculated against 2006-07 expense and police staff data.
- (d) Property crimes are counted against all households while personal crimes are against individual victims only.

### Delivering police services

- 9 Table 3 provides information on the staffing each State's police sector and the main population groups that impact on the cost of providing police services.

**Table 3 Police general indicators and shares**

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Aust
	No.	No.	No.	No.	No.	No.	No.	No.	No.
<b>(a) Indicators</b>									
Sworn police staff	14 634	10 762	9 027	4 979	3 975	1 184	620	877	46 058
Un-sworn police staff	3 936	2 683	3 343	1 374	1 113	376	195	509	13 529
Male aged 17 to 25	418 024	325 626	257 088	133 179	95 861	27 816	25 438	14 949	1 297 981
Indigenous males aged 17-25	11 030	2 057	10 722	5 637	2 008	1 352	360	5 384	38 550
People living in urban areas, '000	6 372	4 645	3 655	1 851	1 467	457	312	211	14 672
	%	%	%	%	%	%	%	%	%
<b>(b) Share of all States</b>									
Sworn police staff	32	23	20	11	9	3	1	2	100
Un-sworn police staff	29	20	25	10	8	3	1	4	100
Male aged 17 to 25	32	25	20	10	7	2	2	1	100
Indigenous males aged 17-25	29	5	28	15	5	4	1	14	100
People living in urban areas, '000	43	32	25	13	10	3	2	1	100
<b>(c) Share of State population</b>									
Sworn police staff	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.4	0.2
Un-sworn police staff	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1
Male aged 17 to 25	6.1	6.3	6.2	6.4	6.1	5.7	7.6	7.0	6.2
Indigenous males aged 17-25	0.2	0.0	0.3	0.3	0.1	0.3	0.1	2.5	0.2
People living in urban areas, '000	92.9	89.9	88.4	88.9	93.1	92.9	92.7	99.0	70.3

Source: Productivity Commission *Report on Government Services, 2007* and Census 2006 data.

- 10 The responsibility for providing police services principally resides with each State's relevant police department. Most States, however, also have other agencies provide some policing services.
- 11 The Commission's calculations are based on the average provision of services with the police expenses from all agencies consolidated to the same GFS codes. Nevertheless, a State's decision on which agency has responsibility for different aspects of police services (such as road safety and traffic management) may affect the costs of providing the services because the cost and resource structure of agencies may be greater or less than the central police

department. Such a decision on agency responsibility is an example of a policy decision that affects the cost of providing police services.

## **ASSESSING STATES' COSTS OF PROVIDING POLICE SERVICES**

### **The equalisation task**

- 12 The Commission aims to identify why it costs some States more to provide police services and then using this information to estimate what it would cost each State to provide police services using the average policy and practice of all States. This estimate is called a State's *assessed expense*.
- 13 The process the Commission follows is twofold. First, it starts with the average expense which captures the average policies, efficiency and circumstances of all States. Second, it attempts to quantify how a State varies from the average in some underlying characteristic (for example, the proportion of its population that is male and aged 17 to 25) and what effect such a variation could have on its total expenses. Bringing all characteristics together shows how much a State could be expected to vary from the average, solely because of its innate characteristics. The resultant estimate is its assessed expense. This section discusses how the Commission identifies these characteristics; the following sections discuss how it measures them.
- 14 The Commission identifies the major influences that cause States to have different expenses per capita and estimates their financial impact on either:
  - assessed service use; or
  - assessed unit costs.

### **Assessed service use**

- 15 For police services, the influences which affect the assessed service use are:
  - the proportion of persons that are male and aged 17-25;
  - the proportion of people that are Indigenous; and
  - those living in highly complex urban areas.
- 16 There is also cross-border use of services by some residents of New South Wales which influence the provision of police services in the ACT.

### **Assessed unit costs**

- 17 The influences that affect assessed unit costs of police services are:
  - the small size of some police stations. Small towns have small police stations which incur diseconomies of small scale;
  - the cost of geographically remote police stations. Police stations located in remote areas have higher costs associated with their remoteness (travel, freight, staff relocation etc);
  - the cost of bringing supplies in from outside the State;

- the size of the police service. There is a minimum cost associated with setting up a police service; and
  - the cost of inputs. States face differing costs in relation to the price of labour, accommodation consumables and electricity.
- 18 While some of these influences, such as wage levels and electricity costs, may be partially affected by government policies, the Commission attempts to take account of only that part of the influence which is beyond the control of individual State governments.

## OVERVIEW OF THE METHOD FOR DETERMINING ASSESSED EXPENSES

- 19 The box below provides a brief step by step overview of the framework the Commission uses to determine each States' assessed expenses for police services.

### **Box 2: Assessment framework**

#### **Step 1: Derive the average expense per capita**

This is done by dividing the total expenses incurred by all States by the total State population. This figure captures the average financial impact of the policies, practices and particular State circumstances which impact on the cost of delivering the service across the nation.

#### **Step 2: Identify different types of expenses**

The Commission examines the service to determine whether parts of the total expense are affected by different influences. If the differences are material, the expense is divided into component parts to ensure that the various influences are accurately matched with the expenses they affect. The different expense types identified are referred to as components. To identify components, the Commission analyses information and data on the nature of the service (that is, what States do and how they do it), States' policies concerning the service and submissions. The proportion of total expense attributable to a particular component is referred to as the component weight. The Commission uses GFS data, State public accounts, annual reports and other data to estimate these proportions.

#### **Step 3: Identify the influences for each component**

The Commission identifies the influences that affect each component and the extent to which they are beyond the control of individual State governments. To identify influences, the Commission analyses information and data on the nature of the service (that is, what States do and how they do it), States' policies concerning the service, submissions and other publications.

#### **Step 4: Measure the size of each influence**

The Commission estimates the relative financial impact of each influence on each State's cost of providing the service, but only to the extent it is beyond the control of individual State governments. The relative impact is measured by relating the State's experience to the average experience. The relative impacts are presented as factors. A factor measures the percentage increase (or decrease) that the influence has on a State's cost of providing the service. There is at least one factor assessment for each component. In most cases there is more than one.

#### **Step 5: Derive component factors**

The factors calculated for each cost component are combined together to derive a component factor. If the Commission considers that one factor compounds with another, it multiplies them. If the Commission considers that two factors are independent of one another, it adds them.

#### **Step 6: Derive category factors**

The component factors are weighted to reflect the importance of the component in the category. This is done by multiplying each component factor by its component weight. The category factor is calculated by adding the weighted component factors together. The category factor represents the Commission's estimate of the combined financial impact of all the influences on a State's cost of providing the service.

#### **Step 7: Derive assessed expense per capita**

Each State's assessed expense per capita is calculated by applying its category factor to the average expense per capita. A State's assessed expense per capita is the Commission's estimate of how much it would cost the State (per capita) to provide the average level of service.

The difference between a State's assessed expense per capita and the average expense per capita is a measure of the financial impact of circumstances beyond its control. The difference between its assessed expense per capita and its actual expense per capita is a measure of the financial impact of circumstances within its control.

## DERIVING COMPONENTS AND COMPONENT WEIGHTS

- 20 The Commission examines the service to decide whether parts of the total expense are affected by different influences. If the differences have a material effect, the expense is divided into component parts to ensure that the various influences are accurately matched with the expenses they affect. The different expense types identified are referred to as *components*. The proportion of total expense attributable to a particular component is referred to as the *component weight*.
- 21 The Commission identified six components for police services and estimated the proportion of expenses that each cost component contributed to total police costs. The components and component weights are presented in Table 4.

**Table 4** Components and component weights, 2006-07

	Components	Component Weights
	\$m	%
Fixed costs	65.1	1.10
Crime investigation and judicial processes	2 370.6	40.21
Road safety and traffic management	674.0	11.43
Community safety and support	2 765.7	46.91
Isolation	11.1	0.19
National capital	8.7	0.15
<b>Total</b>	<b>5 895.2</b>	<b>100.00</b>

- 22 The component weights for fixed costs and isolation were calculated directly. For 2006-07, fixed costs were estimated at \$65.1 million and isolation costs at \$11.1 million.<sup>3</sup> The corresponding component weights are calculated by dividing these amounts by total category expenses.
- 23 The component weight for national capital expenses was estimated by dividing the allowance assessed for national capital expenses by total category expenses. More detail on the national capital allowance is provided later in this section.
- 24 Component weights for the crime investigation and judicial process, road safety and traffic management, and community safety and support components comprised the balance of

<sup>3</sup> The Administrative Scale and Isolation sections of Volume 4 of these working papers describe how the Commission determines the size of the administrative scale and isolation costs.

category expenses. Their relative sizes were based on Productivity Commission data. Table 5 shows the comparable proportions used in deriving the component weights used in the 2008 Update.

**Table 5 Component proportions for the balance of the category**

	Crime investigation and judicial services	Road safety and traffic management	Community safety and support
Share of total expenditure, %			
2002-03 (2004-05 dollars)	44.2	11.3	44.5
2003-04 (2004-05 dollars)	40.5	10.9	48.6
2004-05 (2004-05 dollars)	40.8	11.6	47.6

Source: Productivity Commission, *Report on Government Services, 2004, 2005, 2006*. The data is only available for the years 2002-03 to 2004-05. The Productivity Commission has discontinued publishing this data in its latest Report (2007).

- 25 The Commission identifies the influences affecting each component. They are, in the Commission's assessment, the reasons why States spend more (or less) than the average expense per capita to provide the average level of service. The Commission presents these influences as factors.

**Box 3: Commission factors**

A factor is the Commission's estimate of the relative financial impact a particular influence has on a State's cost of providing a service. Factors are only calculated for the part of the influence which is beyond the control of individual State governments.

A factor value of 1 means the Commission considers the State could provide the average level of service by spending the average expense per capita. A factor value of more than 1 means the Commission considers the State will have to spend more than the average expense per capita to provide the average level of service. A factor value of less than 1 means the Commission considers the State can provide the average level of service by spending less than the average expense per capita.

- 26 Table 6 lists each component and associated factors for police services for 2006-07.

**Table 6**      **Components and factors, 2006-07**

Component and component weights	Factors	Influence measured by factor
Fixed costs (1.10%)	Administrative scale	Recognises the unavoidable costs each State incurred to provide the policy and administrative infrastructure necessary to provide the service, regardless of the size of the task.
	Fixed costs input costs:	Recognises the differences between States in the prices of head office, labour, accommodation and electricity used in providing services.
Crime investigation and judicial processes (40.21%)	Socio-demographic composition (SDC)	Recognises that certain population characteristics affect the use and cost of providing crime investigation and judicial services, for example Indigeneity and males aged 17-25.
	Service delivery scale (SDS)	Recognises that additional costs are incurred by police services in small urban centres.
	Urban complexity	Recognises that there are additional costs in large urban centres due to higher prevalence of crime related to drugs and the concentration of some population groups from diverse backgrounds.
	Cross-border	Recognises the cost to the ACT of providing crime investigation and judicial process services to people who are NSW residents.
	Dispersion	Recognises the differences in per capita costs of service provision associated with the spread of population.
	Input costs	Recognises the differences between States in the costs of labour, office accommodation and electricity. A separate factor was calculated for each of the inputs with weights of 80% for wages, 2% for accommodation and 0.5% for electricity.
Road safety and traffic management (11.43%)	Socio-demographic composition	Recognises that certain population characteristics affect the use and cost of providing road safety and traffic management services, for example Indigeneity and males aged 17-25.
	Urban complexity	Recognises that there are additional costs in large urban centres due to higher prevalence of crime related to drugs and the concentration of some population groups from diverse backgrounds.
	Dispersion	Recognises the differences in per capita costs of service provision associated with the spread of population.
	Input costs	Recognises the differences between States in the costs of labour, office accommodation and electricity. A separate factor was calculated for each of the inputs with weights of 80% for wages, 2% for accommodation and 0.5% for electricity.
	Cross-border	Recognises the cost to the ACT of providing road safety and traffic management services to people who are NSW residents.
Community safety and support (46.91%)	Socio-demographic composition	Recognises that certain population characteristics affect the use and cost of providing community safety and support services, for example Indigeneity and males aged 17-25.
	Service delivery scale	Recognises that additional costs are incurred by police services in small urban centres.
	Urban complexity	Recognises that there are additional costs in highly complex urban centres due to higher prevalence of crime related to drugs and the concentration of some population groups from diverse backgrounds.

Component and component weights	Factors	Influence measured by factor
	Cross-border	Recognises the cost to the ACT of providing road safety and traffic management services to people who are NSW residents. The factor is the same as for the above two components, but with a 50 per cent discount.
	Dispersion	Recognises the differences in per capita costs of service provision associated with the spread of population.
	Input costs	Recognises the differences between States in the costs of labour, office accommodation and electricity. A separate factor was calculated for each of the inputs with weights of 80% for wages, 2% for accommodation and 0.5% for electricity.
Isolation (0.19%)	Isolation	Recognises the additional costs incurred by the States, attributable to the distance of the State from other State capitals and sources of supply.
National capital (0.15%)	National capital	Recognises the higher labour costs to the ACT from having to contract AFP services.

27 An explanation of the reasoning behind each factor assessment in the Police category and the method of assessment are presented below.

## DERIVING THE FIXED COST COMPONENT FACTOR

28 The Commission considers the amount of fixed costs required to be spent by each State is influenced by administrative scale and differences in the price of labour, accommodation and electricity.

### Administrative scale factor

29 The administrative scale factor is assessed to recognise the unavoidable cost each State incurs to provide central administrative services to plan, regulate and subsidise police services, regardless of the size of its population.

30 The disabilities for administrative scale factors are assessed by a common method. The method is discussed in Volume 7 of the 2004 Review working papers under the section for common factors.

31 For 2006-07, the level of unavoidable fixed cost assessed for police services is \$8.138 million for each State.

32 The Table 7 below shows the amount assessed for each State and the per capita equivalent. It also shows the administrative scale factor that is calculated by dividing each States' per capita amount by the average per capita amount.

**Table 7 Calculation of administrative scale factor, 2006-07**

		NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Aust
Fixed cost amount	\$m	8.138	8.138	8.138	8.138	8.138	8.138	8.138	8.138	65.105
Population	m	6.856	5.168	4.136	2.082	1.577	0.492	0.337	0.213	20.859
Fixed costs per capita	\$pc	1.19	1.57	1.97	3.91	5.16	16.55	24.17	38.24	3.12
Factor		0.38031	0.50456	0.63046	1.25230	1.65373	5.30328	7.74403	12.25245	1.00000

33 The administrative scale factor is revised annually by adjusting the unavoidable fixed cost to reflect changes in the wage cost index (80 per cent weight) and consumer price index (20 per cent weight).

### Fixed costs input costs factor

34 The input costs factor is assessed to recognise interstate differences, beyond the control of States, in the price of labour, accommodation and electricity used in providing administrative services.

35 The disabilities for the input costs factors are assessed by a common method. The method is discussed in Volume 7 of the 2004 Review working papers under the section for common factors.

36 The input costs factor depends on the proportion of fixed costs expenses deemed to relate to wages, accommodation expenses and electricity expenses. For this component, these are 80% for wages, 2% for accommodations and 0.5% for electricity. Table 8 below shows:

- the price differentials for labour (wages), accommodation and electricity assessed by the Commission. For example, average wages in New South Wales are, for reasons beyond its control, 3.0 per cent higher than average;
- the proportion of fixed costs expenses which relate to wages, accommodation and electricity expenses;
- a total price differential — obtained by weighting each price differential by the proportion of the fixed costs expenses it influences; and
- the 2006-07 fixed costs input costs factor — which is one plus the total price differential.

**Table 8 Derivation of fixed costs input costs factor, 2006-07**

	Prop'n	NSW	Vic	Qld	WA	SA	Tas	ACT	NT
	%	%	%	%	%	%	%	%	%
Wages	80.0	3.0	-0.5	-2.7	-1.4	-2.2	-4.1	2.5	2.5
Accommodation	2.0	5.0	-19.6	29.4	13.2	-34.2	-41.6	-1.1	-35.8
Electricity	0.5	-1.9	-1.9	-1.9	13.6	2.6	-40.3	-1.9	90.1
Balance of expenses	17.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total price <sup>(a)</sup>	100.0	2.5	-0.8	-1.6	-0.8	-2.4	-4.3	1.9	1.8
Factor		1.02528	0.99212	0.98387	0.99199	0.97579	0.95664	1.01939	1.01769

(a) May not add due to rounding.

**Box 4: Weighting factors**

The Commission weights a factor when the factor is to be applied to all of a component expense but it only affects part of the component expense.

As an example, the fixed costs input costs factor is to be applied to all of the administrative scale expenses, but it only affects the wages (80 per cent), accommodation (2 per cent) and electricity (1/2 per cent) parts of these expenses. So, the Commission weights each subfactor according to the share of expenses it affects.

The formula is:

$$\text{Weighted factor} = \sum_i \text{Weight}_i * \text{subfactor}_i + (100\% - \sum_i \text{Weight}_i) * \text{EPC factor}$$

Where:  $i$  = the number of subfactors. For example, wages, accommodation and electricity  
 $\text{Weight}_i$  = the share of expenses affected by the relevant subfactor

$(100\% - \sum_i \text{Weight}_i)$  = the share of expenses not affected by any of the subfactors.

For the fixed costs input costs factor, the formula is:

$$\begin{aligned} \text{Weighted factor} &= 80\% * \text{wages subfactor} + 2\% * \text{accommodation subfactor} \\ &+ 0.5\% * \text{electricity subfactor} + 17.5\% * \text{EPC factor} \end{aligned}$$

Weighting factors according to the proportion of expenses they affect is important. Weighting factors allows the Commission to combine them. After weighting, a percentage increase in one factor has the same impact on expenses as the same percentage increase in any other factor.

37 The input cost factor is revised annually.

**Fixed costs component factor**

38 The fixed costs component factor is calculated using the formula:

$$\text{fixed costs component factor} = [\text{administrative scale} * \text{fixed costs input costs}]$$

39 The Commission combines these factors multiplicatively because it recognises that States will spend more or less on administrative scales because of the differences in the price of inputs. For example, Table 8 shows price differences add 2.5 per cent to New South Wales costs. So it costs New South Wales 2.5 per cent more than its administrative scale assessment of \$8.138 million to provide police services.

40 Table 9 below shows the derivation of the component factor. It shows that it is the same as a component factor obtained by multiplying the administrative scale and fixed costs input costs factor.

41 The component factor is calculated by:

- estimating the impact of differences in the unit cost of inputs between States on the fixed costs assessed in Table 7;
- adding this impact to States' fixed costs;
- dividing each State's total fixed costs by its population; and
- calculating the component factor by dividing each States' per capita figure by the average per capita figure.

**Table 9 Calculation of fixed costs component factor, 2006-07**

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Aust
<b>A. Fixed costs amount (from Table 7)</b>									
Amount \$m	8.138	8.138	8.138	8.138	8.138	8.138	8.138	8.138	65.105
<b>B. Differences in price of inputs (from Table 8)</b>									
Difference %	2.5	-0.8	-1.6	-0.8	-2.4	-4.3	1.9	1.8	
<b>C. Impact of price differences (A * B)</b>									
Amount \$m	0.206	-0.064	-0.131	-0.065	-0.197	-0.353	0.158	0.144	-0.303
<b>D. Total fixed costs (A + C)</b>									
Amount \$m	8.344	8.074	8.007	8.073	7.941	7.785	8.296	8.282	64.802
Population m	6.856	5.168	4.136	2.082	1.577	0.492	0.337	0.213	20.859
<b>E. Total fixed costs per person</b>									
Expense per capita \$	1.22	1.56	1.94	3.88	5.04	15.83	24.64	38.92	3.11
<b>F. Factor (E / EAust)</b>									
Factor	0.39175	0.50293	0.62319	1.24808	1.62124	5.09707	7.93112	12.52747	1.00000
<b>G. Comparison with assessed component factor (administrative scale factor * fixed costs input costs factor)</b>									
Assessed factor	0.39135	0.50241	0.62255	1.24679	1.61957	5.13543	7.92296	12.51458	1.00000
Difference	0.00040	0.00052	0.00064	0.00128	0.00167	-0.03836	0.00816	0.01289	0.00000

42 The fixed costs component factor is updated annually. Table 10 shows the assessed factors for the 2008 Update.

**Table 10 Fixed costs component factor, 2008 Update**

Year	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Aus
2001-02	0.38534	0.50587	0.64441	1.25845	1.56365	4.98454	7.83375	12.74212	1.00000
2002-03	0.38641	0.50586	0.63709	1.25837	1.57818	5.02762	7.84919	12.79096	1.00000
2003-04	0.38797	0.50586	0.63036	1.25422	1.59213	5.04071	7.89063	12.80981	1.00000
2004-05	0.38930	0.50509	0.62539	1.24856	1.60450	5.06346	7.92238	12.75696	1.00000
2005-06	0.39050	0.50367	0.62057	1.24508	1.61545	5.10859	7.93991	12.63411	1.00000
2006-07	0.39135	0.50241	0.62255	1.24679	1.61957	5.13543	7.92296	12.51458	1.00000

## DERIVING THE CRIME INVESTIGATION AND JUDICIAL PROCESSES COMPONENT FACTOR

43 Policing activities covered by crime investigation include police gathering of intelligence on suspects and locations to assist with investigations; collecting and securing evidence in relation to both the offence and the suspect. Judicial processes relate to police preparing briefs; presenting evidence at court; conducting court and prisoner security.

44 The amount of costs required to be spent by each State on crime investigation and judicial processes are considered by the Commission to be influenced by differences in:

- the use and costs of providing services to particular groups of the population;
- costs of providing small police services in sparsely populated areas;

- costs of providing police services in highly urbanised areas;
- costs due to providing services to nearby residents of another State.
- costs associated with the geographical dispersion of a States' population; and
- the price of labour, accommodation and electricity.

### **Socio-demographic composition factor**

- 45 A socio-demographic composition (SDC) factor is assessed to take account of State differences in the use and unit cost of providing services to particular groups.
- 46 The Commission used a regression model to determine the key socio-demographic composition characteristics that drive police services expenses. The model used a three-stage least squares regression based on a reciprocal relationship between crime rates and police expenses. It was derived with assistance from the Australian Institute of Criminology (AIC) and the Australian National University Statistics Department. The regression model identified Indigeneity, males aged between 17 and 25 and population concentrations in the larger cities of Sydney and Melbourne as drivers of police expenses<sup>4</sup>.

#### **Box 5: Socio-demographic composition factor**

##### **Step 1: Adjust population data for people with unspecified Indigeneity**

The numbers of people within the identified groups of influence are obtained from the ABS. However, the ABS data includes people who did not identify their Indigenous status so they are allocated to Indigenous or non-Indigenous to obtain the total number of Indigenous people.

##### **Step 2: Adjust for the additional costs and needs of providing services to particular groups.**

Some segments of the community need more policing and the type of policing required costs more than average. The Commission considers that there are additional costs of providing police services to males between the ages of 17 and 25 as well as to Indigenous people. These members of the population are weighted for the extra cost and use such that:

- Indigenous males between the ages of 17 and 25 are weighted by 6.0;
- non-Indigenous males between the ages of 17 and 25 are weighted by 2.5;
- the remaining indigenous people are weighted by 3.5; and
- the remaining non-Indigenous people are weighted by 1.0.

##### **Step 3: Calculate the socio-demographic composition factor**

A State ratio can be calculated by dividing the population (weighted for extra use and cost) by the unweighted population. In this way, the relative extra costs of providing police services within each State because of the composition of the population can be determined.

- 47 *Adjusting for Indigeneity not-stated.* Census 2006 data were used to obtain the proportions of State populations in the key service groups for each State; identified as Indigenous and males aged 17 to 25.

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<sup>4</sup> The effect of population concentrations of Sydney and Melbourne are dealt with via the urban complexity factor.

**Table 11 Key group population proportions of State populations**

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Aust
	%	%	%	%	%	%	%	%	%
<b>Males 17-25</b>									
Indigenous	0.2	0.0	0.3	0.3	0.1	0.3	0.1	2.6	0.2
Non-Indigenous	6.0	6.3	6.0	6.2	6.0	5.4	7.5	4.5	6.1
Total	6.1	6.3	6.3	6.5	6.1	5.7	7.6	7.1	6.3
Indigenous	2.0	0.6	3.3	3.5	1.5	3.2	1.1	29.0	2.3
Non-Indigenous	91.9	93.1	90.4	90.0	92.4	91.1	91.3	63.9	91.4
Total	93.9	93.7	93.7	93.5	93.9	94.3	92.4	92.9	93.7
<b>Total</b>									
Indigenous	2.2	0.6	3.6	3.8	1.7	3.4	1.2	31.6	2.5
Non-Indigenous	97.8	99.4	96.4	96.2	98.3	96.6	98.8	68.4	97.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: 2006 Census of Population and Housing.

48 People who had not stated their Indigeneity had to be allocated to a particular group – based on the existing splits for each State and within both the “males 17-25” and “remainder population”. Table 12 contains the population data after the allocation of the Indigeneity “not-stated” people.

**Table 12 Key group population numbers, after allocating for Indigeneity ‘not-stated’**

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Aust
	000s	000s	000s	000s	000s	000s	000s	000s	000s
<b>Males 17-25</b>									
Indigenous	11.1	2.1	10.8	5.7	2.0	1.4	0.4	5.4	38.9
Non-Indigenous	409.3	326.0	249.0	129.0	94.4	26.6	25.3	9.7	1 269.2
Total	420.4	328.1	259.9	134.7	96.4	27.9	25.6	15.1	1 308.0
<b>Remainder</b>									
Indigenous	137.9	29.0	137.2	73.1	24.2	15.6	3.7	61.8	482.5
Non-Indigenous	6 297.5	4 810.4	3 738.6	1 874.3	1 456.1	448.1	307.4	135.9	19 068.2
Total	6 435.4	4 839.4	3 875.8	1 947.4	1 480.3	463.7	311.1	197.7	19 550.7
<b>Total</b>									
Indigenous	149.0	31.1	148.0	78.8	26.2	17.0	4.1	67.3	521.4
Non-Indigenous	6 706.8	5 136.4	3 987.6	2 003.2	1 550.5	474.7	332.6	145.5	20 337.4
Total	6 855.8	5 167.5	4 135.6	2 082.0	1 576.6	491.6	336.7	212.8	20 858.8

Source: 2006 Census of Population and Housing.

49 Weights that reflected the higher use and costs were derived from the regression model. Following a review of the model, the Commission judged the following weights were to be applied to the socio-demographic composition groups:

- 6.0 for Indigenous males aged 17-25;

- 2.5 for non-Indigenous males aged 17-25;
- 3.5 for remaining Indigenous people; and
- 1.0 for the remaining non-Indigenous people.

50 Table 13 contains the population adjusted to reflect differences in use and cost.

**Table 13 Weighted population**

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Aust
	000s	000s	000s	000s	000s	000s	000s	000s	000s
<b>Males 17-25</b>									
Indigenous	66.6	12.4	65.0	34.2	12.1	8.1	2.2	32.6	233.3
Non-Indigenous	1 023.3	815.1	622.5	322.4	235.9	66.4	63.2	24.2	3 172.9
Total	1 089.8	827.5	687.6	356.6	248.0	74.5	65.3	56.8	3 406.2
<b>Remainder</b>									
Indigenous	482.7	101.5	480.1	255.8	84.6	54.6	13.0	216.4	1 688.7
Non-Indigenous	6 297.5	4 810.4	3 738.6	1 874.3	1 456.1	448.1	307.4	135.9	19 068.2
Total	6 780.2	4 911.9	4 218.7	2 130.1	1 540.7	502.7	320.3	352.2	20 756.9
<b>Total (Australia)</b>	<b>7 870.0</b>	<b>5 739.4</b>	<b>4 906.3</b>	<b>2 486.7</b>	<b>1 788.7</b>	<b>577.3</b>	<b>385.7</b>	<b>409.0</b>	<b>24 163.1</b>

Source: 2006 Census of Population and Housing.

51 Once the relevant population was weighted, the socio-demographic composition factor was then calculated. Table 14 shows the derivation of the socio-demographic composition factor for 2006-07.

**Table 14 Socio-demographic composition factor, 2006-07**

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Aust
<b>A. Total weighted population</b>									
Number	7 870.0	5 739.4	4 906.3	2 486.7	1 788.7	577.3	385.7	409.0	24 163.1
<b>B. unweighted population</b>									
Number	6 855.8	5 167.5	4 135.6	2 082.0	1 576.6	491.6	336.7	212.8	20 858.8
<b>C. Ratio (A/B)</b>									
Ratio	1.14794	1.11068	1.18634	1.19437	1.13449	1.17416	1.14548	1.92210	1.15842
<b>D. Factor (C/CAust)</b>									
Factor	0.99095	0.95879	1.02411	1.03104	0.97935	1.01359	0.98883	1.65925	1.00000

52 The socio-demographic composition factors are revised annually to allow for changes in State populations. Table 15 shows the assessed factors for the 2008 Update.

**Table 15 Socio-demographic composition factor, 2008 Update**

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Aust
2001	0.99163	0.96134	1.02409	1.02665	0.98223	1.02197	0.99206	1.61388	1.00000
2002	0.99159	0.96131	1.02406	1.02662	0.98219	1.02194	0.99203	1.61382	1.00000
2003	0.99153	0.96125	1.02400	1.02655	0.98213	1.02188	0.99197	1.61372	1.00000
2004	0.99118	0.95901	1.02434	1.03128	0.97957	1.01383	0.98906	1.65963	1.00000
2005	0.99105	0.95889	1.02421	1.03114	0.97944	1.01369	0.98893	1.65941	1.00000
2006	0.99095	0.95879	1.02411	1.03104	0.97935	1.01359	0.98883	1.65925	1.00000

**Service delivery scale factor**

53 The service delivery scale factor was not updated using the 2006 Census. The service delivery scale factor reflects the additional costs of small police stations in sparsely populated areas. It allows for both:

- the higher costs per unit of service in small police stations compared with large police stations, principally arising from higher client to staff ratios; and
- the effect of the different State settlement patterns on the numbers of police stations.

**Box 6: Service delivery scale****Step 1: Determine the UCLs that experience diseconomies of small size.**

Each urban centre/locality (UCL) is assigned a police: population ratio.

- some parts of each State are deemed not to experience diseconomies of small size. UCLs of more than 500 people with a police station are assigned the average police:population ratio. Police stations within the 'catchment area' of a UCL with more than 500 people (defined as within one hour's drive from the UCL) are also assigned the average police:population ratio;
- the remaining UCLs with police stations are considered to be subject to diseconomies of scale.

**Step 2: Determine police to people ratios for UCLs.**

The ratio of police to population is calculated for UCLs with police stations not subject to diseconomies of small scale.

The UCLs subject to diseconomies of scale are divided into four evenly sized quartiles, grouped by their populations. For each quartile, an average ratio of police: population is calculated for police stations serving population catchment areas of that size.

The populations of catchment areas around UCLs of less than 500 people which did not have a police station were also treated as being subject to service delivery scale disabilities – it was considered that they could be provided with police stations under the standard policy. It is not possible to calculate a ratio for them but the ratios from the other scale affected UCLs are able to be applied, based on their population levels.

**Step 3: Estimate the increase due to diseconomies of scale.**

The diseconomy of scale influence is calculated as the difference in the police:population ratios between each of the quartiles and the non-scale affected UCLs. The calculation involves dividing each quartile's police:population ratio by the police:population ratio of the non-scale affected UCLs. The resultant weights reflect the proportional increase due to diseconomies of small size.

**Step 4: Apply the weights to the scale-affected population in each scale affected group.**

For each State, the UCL populations affected by the diseconomies of scale for each quartile are weighted before being added together.

**Step 5: Incorporate the weighted population into the non-scale-affected population.**

The UCL populations that have been weighted for their extra costs are now added to the population not affected by the diseconomies of scale. This becomes the scale diseconomy-adjusted population.

**Step 6: Calculate the service delivery scale factor**

A State ratio can be calculated by dividing the scale diseconomy-adjusted population by the total population not subject to the diseconomies. The numbers then reflect the extra costs imposed because small police stations are provided in sparsely populated areas. The difference between States is calculated by dividing the State ratio by the average ratio and it becomes the service delivery scale factor.

- 54 Service delivery scale was assessed by estimating the additional police services required for police stations in small urban centres judged to have less than 500 people.
- 55 More specifically, three types of police stations were identified — those that are:
- within an urban centre/locality (UCL) of 500 or more people.
  - within the catchment area of UCLs of 500 or more people (defined as within one hours drive from the UCL).
  - outside the catchment area of UCLs of 500 or more people.
- 56 The first two categories of station were treated as being free from diseconomies of small scale. The last category of station, which served UCLs of less than 500 people and which was more than one hours drive from a UCL with a population greater than 500 people, was considered to be subject to diseconomies of small scale, as a police station was provided where it would otherwise not have been. A catchment population was derived for these stations to indicate people in all collection districts (CDs) within a one hour drive of the station. Because the area included in a one hour drive differed between States (with roads not always in a straight line between urban centres and because of differences in speed limits), the catchment areas were defined based on different road distances from the UCL for each State. Table 16 contains the relevant State catchment distances.

**Table 16 Catchment distance around a UCL of 500 or more people**

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT
Distance, km	80	80	76	84	80	73	94	80

- 57 The populations of catchment areas around UCLs of less than 500 people which did not have a police station were also treated as being subject to service delivery scale disabilities. That is, the Commission considered that such UCLs could be provided with a police station under the standard policy.
- 58 Once the populations in these scale-affected areas were identified, the population in catchment areas around UCLs with less than 500 people were split into quartiles (four groups with an equal number of stations in each group) based on the number of people in each catchment district. The population thresholds, based on the 2001 Census, were:
- Catchment population less than 629;
  - Catchment population between 629 and 907;

- Catchment population between 908 and 1381; and
  - Catchment population over 1381.
- 59 A police to population ratio was determined for each of the quartiles, while a similar ratio was determined for non-scale affected police stations<sup>5</sup>. The differences between each of these numbers reflected the differences in police services due to service delivery scale disabilities.
- 60 Each of the ratios was then divided by the ratio for the non-scale affected police stations to determine a relative weight for the smaller stations. The comparable weights for each quartile were as follows:
- Catchment population less than 629 – weighted by 2.7;
  - Catchment population between 629 and 907 – weighted by 1.8;
  - Catchment population between 908 and 1381 – weighted by 1.5; and
  - Catchment population over 1381 – weighted by 1.1.
- 61 These weights were then applied to the populations in each scale affected quartile and they were added together to derive the weighted populations for all scale-affected UCLs. When these weighted populations are added to the non-scale-affected populations then the resultant populations are the scale diseconomy-adjusted populations.
- 62 A service delivery scale ratio is then calculated as the scale diseconomy-adjusted population divided by the unweighted population.
- 63 The service delivery scale factor is calculated by dividing a State's ratio by the average ratio as shown in the following table.

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<sup>5</sup> The ratios were initially developed during the 1999 Review and were not updated in the 2004 Review because data on numbers of police were not collected in the review.

**Table 17 Service delivery scale factor, 2006-07**

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Aust
<b>A. Total population (MRP 2006-07)</b>									
Number	6 855 811	5 167 516	4 135 619	2 082 041	1 576 644	491 648	336 691	212 802	20 858 772
<b>B. Population not affected by diseconomy of scale</b>									
Number	6 851 365	5 166 212	4 112 069	2 067 885	1 566 730	490 716	336 691	194 799	20 786 467
<b>C. UCL population by quartile affected by diseconomy of scale</b>									
pop < 629	1 883	652	11 870	3 685	3 708	932	0	4 751	27 481
pop 629-908	1 564	652	6 348	1 595	1 203	0	0	1 946	13 308
pop 908-1381	999	0	3 553	2 472	1 029	0	0	2 598	10 651
pop >1381	0	0	1 779	6 403	3 975	0	0	8 708	20 865
<b>D. UCL weight applied to each UCL</b>									
non-scale affected	1.0								
pop < 629	2.7								
pop 629-908	1.8								
pop 908-1381	1.5								
pop >1381	1.1								
<b>E. UCL weighted populations (B x C)</b>									
pop < 629	5 118	1 771	32 256	10 014	10 075	2 532	0	12 911	74 677
pop 629-908	2 821	1 176	11 454	2 879	2 171	0	0	3 511	24 013
pop 908-1381	1 506	0	5 355	3 726	1 550	0	0	3 915	16 053
pop >1381	0	0	1 990	7 162	4 446	0	0	9 740	23 338
<b>F. Scale diseconomy-adjusted population (A + D)</b>									
Number	6 860 810	5 169 160	4 163 123	2 091 666	1 584 972	493 248	336 691	224 876	20 924 547
<b>G. Raw factor (E / A)</b>									
Ratio	1.00073	1.00032	1.00665	1.00462	1.00528	1.00325	1.00000	1.05674	1.00315
<b>H. Factor (F / F_Aust)</b>									
(F / F_Aust)	0.99758	0.99717	1.00349	1.00146	1.00212	1.00010	0.99686	1.05342	1.00000

64 The service delivery scale factors are only revised in a review. Table 18 shows the assessed factors for the 2008 Update. The small differences are due to changes in State populations.

**Table 18 Service delivery scale factor, 2007 Update**

Year	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Aust
2001-02	0.99764	0.99723	1.00355	1.00152	1.00218	1.00016	0.99692	1.05348	1.00000
2002-03	0.99763	0.99722	1.00354	1.00152	1.00217	1.00015	0.99691	1.05347	1.00000
2003-04	0.99762	0.99721	1.00353	1.00151	1.00216	1.00014	0.99690	1.05346	1.00000
2004-05	0.99761	0.99720	1.00351	1.00149	1.00215	1.00013	0.99688	1.05345	1.00000
2005-06	0.99759	0.99718	1.00350	1.00148	1.00213	1.00011	0.99687	1.05343	1.00000
2006-07	0.99758	0.99717	1.00349	1.00146	1.00212	1.00010	0.99686	1.05342	1.00000

### Urban complexity factor

- 65 The urban complexity factor accounts for the additional costs of providing police services to highly urbanised cities because of congestion, anonymity, alienation, and concentrations of populations from culturally and linguistically diverse backgrounds, which interacted to cause particular problems relating to crime. It was more difficult to locate crime suspects because of their anonymity in a large city. There were also greater costs associated with providing police services in areas with significant concentrations of people from different cultural and linguistic backgrounds.
- 66 It was considered that Sydney and Melbourne both faced these higher costs because of their urban complexity.

#### **Box 7: Urban complexity**

##### **Step 1: Determine the populations of affected cities**

The populations of Sydney and Melbourne were derived by the ABS from the 2001 Census.

##### **Step 2: Apply weights to the affected population and add the weighted population to the residual unweighted population.**

A weight of 1.1 was applied to the Sydney and Melbourne populations reflecting that it cost 10 per cent more to provide policing services in these cities because of their complexity. The weighted populations were then added back to the residual State populations. The weighted total State populations then reflected the extra costs of providing police services to the highly urbanised cities.

##### **Step 3: Calculate the urban complexity factor**

A State ratio can be calculated by dividing the cost weighted populations by the unweighted population. The difference in these numbers is the estimate of the additional costs required because of the characteristics of a highly urbanised city. The State ratio indicates the extra costs faced required because of this influence. The urban complexity factor is calculated by dividing the State ratio by the average ratio.

- 67 From the regression analysis undertaken by the Commission, the population concentration in the larger cities of Sydney and Melbourne was considered to be an influence on police expenses. It was calculated that the extra expenditure for police districts in Sydney and Melbourne equated to an extra 10 per cent per capita.
- 68 The relevant populations were weighted by the extra 10 per cent (effectively a weight of 1.1) and were then combined with the residual State population.
- 69 An urban complexity ratio is then calculated as the urban complexity-adjusted population divided by the unweighted population.
- 70 The urban complexity factor is calculated by dividing a State's ratio by the average ratio as shown in Table 19.

**Table 19 Urban complexity factor, 2006-07**

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Aust
<b>A. Population of cities subject to urban complexity</b>									
Number, '000	4 112	3 541	0	0	0	0	0	0	7 653
<b>B. Residual State population</b>									
Number, '000	2 743	1 627	4 136	2 082	1 577	492	337	213	13 205
<b>C. Total State population</b>									
Number, '000	6 856	5 168	4 136	2 082	1 577	492	337	213	20 859
<b>D. Weighted urban complex city population (A x 1.1)</b>									
Number, '000	4 524	3 895	0	0	0	0	0	0	8 419
<b>E. Weighted total State population (D + B)</b>									
Number, '000	7 267	5 522	4 136	2 082	1 577	492	337	213	21 624
<b>F. Raw factor (E / C)</b>									
Ratio	1.05998	1.06852	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.03669
<b>G. Factor (F / F_Aust)</b>									
	1.02247	1.03071	0.96461	0.96461	0.96461	0.96461	0.96461	0.96461	1.00000

71 The urban complexity factor is only revised in a review. The urban complexity factor has been updated using 2006 Census data. Table 20 shows the assessed factors for the 2008 Update. The small differences are due to changes in State populations.

**Table 20 Urban complexity factor, 2008 Update**

Year	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Aust
2001-02	1.02205	1.02966	0.96429	0.96429	0.96429	0.96429	0.96429	0.96429	1.00000
2002-03	1.02216	1.02977	0.96439	0.96439	0.96439	0.96439	0.96439	0.96439	1.00000
2003-04	1.02228	1.02990	0.96450	0.96450	0.96450	0.96450	0.96450	0.96450	1.00000
2004-05	1.02228	1.03051	0.96442	0.96442	0.96442	0.96442	0.96442	0.96442	1.00000
2005-06	1.02238	1.03062	0.96453	0.96453	0.96453	0.96453	0.96453	0.96453	1.00000
2006-07	1.02247	1.03071	0.96461	0.96461	0.96461	0.96461	0.96461	0.96461	1.00000

**Cross-border factor**

72 There is one cross border factor that is used in both the crime investigation and judicial processes and road safety and traffic management components and another used in the community safety and support component.

73 The cross-border factor accounts for the additional costs incurred by the ACT (where Canberra is a major regional centre in south-eastern New South Wales) in providing police services to residents of New South Wales without direct reimbursement from New South Wales. The cross-border factor was updated using the 2006 Census data.

**Box 8: Cross-Border****Step 1: Identify the geographical regions that use the services of another State.**

The south-eastern region of New South Wales was divided into two groups of local government areas, each making different use of ACT services.

**Step 2: Determine the proportions of the population in the identified regions that use cross-border services.**

Each group was considered to use ACT police services to different degrees and so a different weight was applied to each group. It was considered that 50 per cent of group 1 people and 20 per cent of group 2 people used ACT's police services.

**Step 3: Adjust the relevant State populations for the cross-border users.**

The combined group 1 and group 2 users of ACT police services were removed from New South Wales' population and added into the population of the ACT.

**Step 4: Calculate the cross-border factor**

A State ratio can be calculated by dividing the State populations adjusted for the cross-border users by the unadjusted State populations. The State ratio indicates the proportion of additional people needing police services required because of this influence. The cross-border factor is then calculated by dividing the State ratio by the average ratio.

- 74 The cross-border phenomenon occurs where, because of Canberra's regional importance, some residents of New South Wales use ACT police services. Conversely, some ACT residents use police services in New South Wales. If the incoming and outgoing populations were exactly the same size, the net effect would be zero and neither State would incur additional service delivery costs, so it is the net cross-border flow that is important. However, data indicated that the use of ACT police services by residents of New South Wales exceeded the flow in the other direction and the ACT incurs additional service delivery costs.
- 75 It was considered that there were two separate groups, within south-eastern New South Wales, that used ACT police services and imposed extra costs on the ACT. Group 1 included the local government areas (LGAs) of Queanbeyan, Yass, Yarrowlunla and Gunning. It was assumed that the net inflow of services to New South Wales residents equated to 50 per cent of the population of these LGAs.
- 76 Group 2 included LGAs further from the ACT, notably the Bega Valley, Bombala, Boorowa, Cooma-Monaro, Crookwell, Eurobodalla, Goulburn, Harden, Mulwaree, Snowy River, Tallaganda and Young LGAs. As these LGAs were further away from Canberra, it was assumed that the net inflow of services to New South Wales residents equated to 20 per cent of the population of these LGAs.
- 77 In calculating the cross-border factor, the relevant proportions of the LGA populations were removed from New South Wales' population and added to the ACT's population. The factor is then the adjusted populations (for New South Wales and the ACT) divided by their unadjusted populations.
- 78 Table 21 shows the relevant populations and the calculation of the cross-border factor.

**Table 21 Cross-border factor, 2008 Update, 2006-07**

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Aust
<b>A. Total State population for States subject to cross-border effects</b>									
Number, '000	6 889 072						339 865		
<b>B. Total group populations</b>									
Group 1, Number	- 425						425		
Group 2, Number	- 593						593		
<b>C. Weight (by 50%) group population for use (Number)</b>									
Group 1	- 213						213		
Group 2	- 119						119		
<b>D. Cross-border population (Combined C)</b>									
Number	- 331						331		
<b>E. Adjusted population (D + A)</b>									
Number, '000	6 888 741						340 196		
<b>F. Factor (E / A)</b>	0.99995	1.00000	1.00000	1.00000	1.00000	1.00000	1.00097	1.00000	1.00000

(a) Estimated Resident Population, 2006-07, ABS special data request.

79 The cross-border factors are updated annually for changes in the cross-border populations. Table 22 shows the assessed factors for the 2008 Update.

**Table 22 Cross-border factor, 2008 Update**

Year	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Aust
2001-02	0.99164	1.00000	1.00000	1.00000	1.00000	1.00000	1.17183	1.00000	1.00000
2002-03	0.99153	1.00000	1.00000	1.00000	1.00000	1.00000	1.17365	1.00000	1.00000
2003-04	0.99139	1.00000	1.00000	1.00000	1.00000	1.00000	1.17635	1.00000	1.00000
2004-05	0.99134	1.00000	1.00000	1.00000	1.00000	1.00000	1.17719	1.00000	1.00000
2005-06	0.99128	1.00000	1.00000	1.00000	1.00000	1.00000	1.17787	1.00000	1.00000
2006-07	0.99121	1.00000	1.00000	1.00000	1.00000	1.00000	1.17809	1.00000	1.00000

### Input costs factor

80 The input costs factor is assessed to recognise interstate differences, beyond the control of States, in the price of labour, accommodation and electricity used in providing services for central and regional administrative services. The disabilities for the input costs factors are assessed by a common method. The method is discussed in Volume 7 of the 2004 Review working papers under the section for common factors.

81 The input costs factor depends on the proportion of police expenses deemed to relate to wages, accommodation expenses and electricity expenses. For this component, these are 80% for wages, 2% for accommodations and 0.5% for electricity. Table 23 below shows:

- the price differentials for labour (wages), accommodation and electricity assessed by the Commission;

- the proportion of police expenses which relate to wages, accommodation and electricity expenses;
- a total price differential — obtained by weighting each price differential by the proportion of police expenses it influences.

**Table 23 Derivation of input costs factor, 2006-07**

	Prop'n	NSW	Vic	Qld	WA	SA	Tas	ACT	NT
	%	%	%	%	%	%	%	%	%
Wages	80.0	3.0	-0.5	-2.7	-1.4	-2.2	-4.1	2.5	2.5
Accommodation	2.0	5.0	-19.6	29.4	13.2	-34.2	-41.6	-1.1	-35.8
Electricity	0.5	-1.9	-1.9	-1.9	13.6	2.6	-40.3	-1.9	90.1
Balance of expenses	17.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total price (a)	100.0	2.5	-0.8	-1.6	-0.8	-2.4	-4.3	1.9	1.8
Factor		1.02528	0.99212	0.98387	0.99199	0.97579	0.95664	1.01939	1.01769

(a) May not add due to rounding.

82 The input costs factor is revised annually to allow for changes in wages, rents and electricity prices. Table 24 shows the assessed factors for the 2008 Update.

**Table 24 Input costs factor, 2008 Update**

Year	NSW	Vic	Qld	WA	SA	Tas	ACT	NT
2001-02	1.03684	0.99636	0.96389	0.98130	0.96589	0.95890	1.02398	1.03040
2002-03	1.03477	0.99678	0.96611	0.98188	0.96959	0.95930	1.02353	1.02682
2003-04	1.03281	0.99725	0.96852	0.98192	0.97293	0.95970	1.02269	1.02369
2004-05	1.03051	0.99679	0.97282	0.98179	0.97569	0.95902	1.02160	1.02456
2005-06	1.02893	0.99520	0.97517	0.98512	0.97839	0.96029	1.02149	1.02346
2006-07	1.02528	0.99212	0.98387	0.99199	0.97579	0.95664	1.01939	1.01769

### Dispersion factor

83 The dispersion factor is assessed to recognise differences in the per capita costs of service provision associated with the geographic dispersion of population. The dispersion factor reflects the combined differences in State expenses associated with telecommunication, freight, travel and other costs associated with providing services to dispersed localities. The disabilities for the dispersion factors are assessed by a common method. The method is discussed in Volume 7 of the 2004 Review working papers under the section for common factors.

84 Table 25 below shows:

- the price differentials for each of the 11 types of expenses covered by the dispersion factor;
- the proportion of police expenses which relate to each type of expense;

- a total price differential — obtained by weighting each price differential by the proportion of police expenses it influences; and
- the 2006-07 police dispersion factor — which is one plus the total price differential.

**Table 25 Derivation of dispersion factor, 2006-07**

	Prop'n	NSW	Vic	Qld	WA	SA	Tas	ACT	NT
	%	%	%	%	%	%	%	%	%
Freight general	0.2	3.8	-7.8	25.8	-0.9	-46.1	-5.1	-92.1	115.9
Locality allowances	1.1	-58.5	-97.6	92.0	207.7	-41.9	-89.2	-100.0	1360.7
non-voice	0.1	-0.2	0.0	0.0	0.3	0.0	-0.1	0.5	0.7
Remote staff turnover	0.7	-56.4	-96.9	89.9	220.4	-20.7	-65.2	-100.0	964.6
Repairs and maintenance	0.6	-69.7	-95.5	28.6	184.7	47.0	-38.1	-100.0	2281.6
RepairT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Training	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Travel Air	0.4	-19.8	-89.8	148.6	31.4	-21.0	-94.9	-100.0	363.8
Travel inter-region	2.3	15.9	-6.3	-7.5	-30.6	12.5	65.8	-89.8	-52.2
Travel local	3.8	-3.0	-5.2	-3.0	22.0	-12.8	-32.7	-46.0	331.8
voice technology adjusted	1.2	-1.3	-13.8	16.6	12.2	-8.9	-4.5	-61.3	138.7
Balance of expenses	89.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total price (a)	100.0	-0.9	-1.8	1.5	3.3	-0.6	-1.0	-2.7	24.2
Factor		0.98604	0.96640	1.02410	1.05391	0.99091	0.98018	0.92323	1.50452

(a) May not add due to rounding.

85 The dispersion factor is only revised in a review. Table 26 below shows the assessed factors for the 2008 Update.

**Table 26 Dispersion factor, 2008 Update**

Year	NSW	Vic	Qld	WA	SA	Tas	ACT	NT
2001-02	0.98655	0.96685	1.02471	1.05461	0.99143	0.98067	0.92355	1.50654
2002-03	0.98650	0.96683	1.02463	1.05449	0.99138	0.98063	0.92358	1.50591
2003-04	0.98642	0.96676	1.02452	1.05437	0.99129	0.98056	0.92353	1.50554
2004-05	0.98628	0.96660	1.02440	1.05427	0.99115	0.98041	0.92336	1.50566
2005-06	0.98614	0.96648	1.02424	1.05409	0.99102	0.98028	0.92326	1.50522
2006-07	0.98604	0.96640	1.02410	1.05391	0.99091	0.98018	0.92323	1.50452

86 Table 27 shows the derivation of a combined input costs and dispersion factor. It shows that the two factors influence different types of expenses and so do not interact. Consequently, these factors can be combined by addition.

**Table 27 Derivation of combined input costs and dispersion factor, 2006-07**

	Prop'n	NSW	Vic	Qld	WA	SA	Tas	ACT	NT
	%	%	%	%	%	%	%	%	%
Input Costs	82.5	2.5	-0.8	-1.6	-0.8	-2.4	-4.3	1.9	1.8
Dispersion	10.5	-1.4	-3.4	2.4	5.4	-0.9	-2.0	-7.7	50.5
General freight	7.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total price(a)		1.1	-4.1	0.8	4.6	-3.3	-6.3	-5.7	52.2
Factor		1.01132	0.95852	1.00796	1.04589	0.96670	0.93683	0.94262	1.52220

(a) May not add due to rounding.

### CRIME INVESTIGATION AND JUDICIAL PROCESSES COMPONENT FACTOR

87 The crime investigation and judicial processes component factor represents the combined effects of the influence on use and unit costs of crime investigation and judicial processes that are not affected by State policies. The socio-demographic composition factor captures the assessed service use by each State. The Commission recognises that the costs of providing these services will vary between States because:

- the unit costs of providing police services in small centres vary between States;
- the unit costs of inputs vary between States;
- the unit costs of service provision associated with the geographic dispersion of population vary between States; and
- the unit costs of New South Wales residents who use ACT police services.

88 The Commission combines these influences by:

- using the cost and use weighted population from Table 14 reflecting the different costs of different socio-demographic groups;
- adjusting the assessed service use for differences in the costs of providing small police stations in small urban centres, from Table 17;
- adjusting for the unit costs of New South Wales residents who use ACT police services;
- adjusting police expenses for the combined effect of differentials in the price of labour, accommodation and electricity and the costs of service provision associated with the geographic dispersion of population; and
- adjusting for the unit costs of reflecting the extra cost of providing police services in highly complex urban areas.

89 The formula below shows the derivation of the crime investigation and judicial processes component factor for 2006-07.

$$\begin{array}{l} \text{crime} \\ \text{investigation} \\ \text{and judicial} \\ \text{processes} \end{array} = [\text{socio-demographic composition crime} \\ \text{investigation} * \text{cross-border} * \text{service delivery} \\ \text{scale} * \text{urban complexity} * (\text{dispersion} + \text{input} \\ \text{costs} - 1)]$$

91 The calculation shows that the dispersion and input cost factors should be added and then combined with the socio-demographic composition, cross-border, service delivery scale and urban complexity factors by multiplication, as shown in Table 28.

**Table 28 Calculation of crime investigation and judicial processes component factor, 2006-07**

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Aust
<b>Assessed use</b>									
A. Population weighted for males aged 17-25 and Indigenous people									
Number, 000	7 870	5 739	4 906	2 487	1 789	577	386	409	24 163
B. Cross-border adjustment									
	0.99995	1.00000	1.00000	1.00000	1.00000	1.00000	1.00097	1.00000	1.00000
C. Adjusted population (									
	7 870	5 739	4 906	2 487	1 789	577	386	409	24 163
<b>Differences in use, prices and units costs</b>									
D. Small police stations									
	-0.2	-0.3	0.3	0.1	0.2	0.0	-0.3	5.3	0.0
E. Extra costs due to urban complexity									
	2.2	3.1	-3.5	-3.5	-3.5	-3.5	-3.5	-3.5	0.0
F. Input costs and dispersion									
	1.1	-4.1	0.8	4.6	-3.3	-6.3	-5.7	52.2	0.0
<b>G. Cost of services</b>									
	3.2	-1.5	-2.4	1.0	-6.6	-9.6	-9.4	54.7	0.0
<b>H. Impact of differences in service costs (C*G)</b>									
	248	-85	-119	26	-117	-56	-36	224	84
<b>I. Weighted population</b>									
	8 118	5 654	4 787	2 512	1 671	522	350	633	24 247
<b>J. Population</b>									
	6 856	5 168	4 136	2 082	1 577	492	337	213	20 859
<b>K. Population ratio</b>									
	1.18409	1.09420	1.15749	1.20674	1.06014	1.06116	1.03928	2.97304	1.16245
<b>L. Factor (K / K_Aust)</b>									
Assessed Factor	1.01861	0.94128	0.99573	1.03810	0.91198	0.91286	0.89404	2.55756	1.00000

(a) Cost impacts are derived by multiplying factors, not simply the percentage differences in the above table. Table 17 shows the small police stations cost impact for New South Wales is 0.99758 that is its unit costs are 0.1% below average), while the cost impact of its urban complexity is 1.02247 its unit costs are 2.2% above average). Table 27 shows its combined input costs and dispersion cost impact is 1.01112 (that is, its unit costs are 1.1% above average). So its total cost impact is 1.1% ( $0.99758 * 1.02247 * 1.01112$ ) - 1 \* 100.

92 Table 29 below shows the assessed crime investigation and judicial processes component factors for the 2008 Update. The small differences are due to changes in State populations.

**Table 29 Crime investigation and judicial processes component factor, 2008 Update**

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Aus
2001-02	1.02300	0.94793	0.97677	1.02400	0.90595	0.92327	1.05572	2.51214	1.00000
2002-03	1.02092	0.94846	0.97902	1.02460	0.90954	0.92377	1.05704	2.50564	1.00000
2003-04	1.01886	0.94896	0.98141	1.02464	0.91272	0.92419	1.05860	2.50020	1.00000
2004-05	1.01571	0.94645	0.98551	1.02875	0.91248	0.91577	1.05445	2.57206	1.00000
2005-06	1.01389	0.94472	0.98764	1.03183	0.91486	0.91684	1.05479	2.56934	1.00000
2006-07	1.01009	0.94163	0.99610	1.03848	0.91232	0.91320	1.05263	2.55851	1.00000

**DERIVING THE ROAD SAFETY AND TRAFFIC MANAGEMENT COMPONENT FACTOR**

93 Police expenses on road safety and traffic management included: police monitoring of road user behaviour (including speed and alcohol-related traffic operations); undertaking general traffic management functions; attending and investigating road traffic accidents and incidents; improving public education and awareness of traffic and road safety issues.

94 As with the crime investigation and judicial process component, the amount of police costs required to be spent by each State on police services are considered by the Commission to be influenced by differences in:

- the use and costs of providing services to particular groups of the population;
- costs of providing police services in highly urbanised areas;
- costs due to providing services to nearby residents of another State;
- costs associated with the geographical dispersion of a States' population; and
- the price of labour, accommodation and electricity.

95 The component factor has the same factors and is derived the same way as the crime investigation and judicial processes component with the exception that there are no extra costs of providing small police stations in sparsely populated areas for road safety and traffic management.

96 The formula below shows the derivation of the road safety and traffic management component factor for 2006-07.

$$\begin{array}{l} \text{road safety and} \\ \text{traffic} \\ \text{management} \end{array} = [\text{socio-demographic composition crime} \\ \text{investigation * cross-border * urban} \\ \text{complexity * (dispersion + input costs - 1)}]$$

97 The calculation shows that the dispersion and input cost factors should be added and then combined with the socio-demographic composition, cross-border and urban complexity factors by multiplication, as shown in Table 30.

**Table 30 Calculation of road safety and traffic management component factor, 2006-07**

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Aust
<b>A. Population weighted for males aged 17-25 and Indigenous people</b>									
Number, 000	7 870	5 739	4 906	2 487	1 789	577	386	409	24 163
<b>B. Cross-border adjustment</b>									
	0.99995	1.00000	1.00000	1.00000	1.00000	1.00000	1.00097	1.00000	1.00000
<b>C. Adjusted population (A * B) '000</b>									
	7 870	5 739	4 906	2 487	1 789	577	386	409	24 163
<b>Differences in costs</b>									
<b>D. Urban complexity</b>									
	2.2	3.1	-3.5	-3.5	-3.5	-3.5	-3.5	-3.5	0.0
<b>E. Input costs and dispersion</b>									
	1.1	-4.1	0.8	4.6	-3.3	-6.3	-5.7	52.2	0.0
<b>F. Cost of services</b>									
<b>G. Cost of services (D*E*F)</b>									
	3.4	-1.2	-2.8	0.9	-6.8	-9.6	-9.1	46.8	0.0
<b>H. Impact of differences in prices (C*G)</b>									
	268	-69	-136	22	-121	-56	-35	192	65
<b>I. Weighted population (C+H)</b>									
	8 138	5 670	4 770	2 509	1 668	522	351	601	24 228
<b>J. Population</b>									
	6 856	5 168	4 136	2 082	1 577	492	337	213	20 859
<b>K. Population ratio</b>									
	1.18696	1.09730	1.15347	1.20498	1.05789	1.06105	1.04256	2.82228	1.16153
<b>L. Factor (K / KAust)</b>									
Factor	1.02189	0.94470	0.99305	1.03740	0.91077	0.91349	0.89757	2.42979	1.00000

(a) Cost impacts are derived by multiplying factors, not simply the percentage differences in the above table. Table 17 shows the small police stations cost impact for New South Wales is 0.99758 (that is its unit costs are 0.1% below average) and Table 27 shows its combined input costs and dispersion cost impact is 0.00035 (that is, its unit costs are 0.35% above average). So its total cost impact is 0.8673 %= $((0.99758 * 1.01112)-1)*100$ .

98 Table 31 below shows the assessed road safety and traffic management component factors for the 2008 Update.

**Table 31 Road safety and traffic management component factor, 2008 Update**

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Aus
2001-02	1.02617	0.95126	0.97403	1.02319	0.90464	0.92380	1.05977	2.38636	1.00000
2002-03	1.02409	0.95179	0.97628	1.02379	0.90823	0.92430	1.06109	2.38018	1.00000
2003-04	1.02203	0.95230	0.97867	1.02384	0.91141	0.92473	1.06267	2.37504	1.00000
2004-05	1.01893	0.94984	0.98282	1.02801	0.91123	0.91636	1.05857	2.44345	1.00000
2005-06	1.01713	0.94813	0.98496	1.03112	0.91363	0.91745	1.05893	2.44093	1.00000
2006-07	1.01334	0.94505	0.99342	1.03779	0.91111	0.91383	1.05678	2.43069	1.00000

## **DERIVING THE COMMUNITY SAFETY AND SUPPORT COMPONENT FACTOR**

- 99 Police expenses on community safety and support covered actions such as: responding to calls for assistance; responding to, managing and coordinating major incidents and emergencies; undertaking crime prevention activities and community support programs. It also includes expenses on regulatory, information and licensing services; ministerial support services; services to other agencies.
- 100 Similar to the previous two components, the amount of police costs required to be spent by each State on police services are considered by the Commission to be influenced by differences in:
- the use and costs of providing services to particular groups of the population;
  - costs of providing small police services in sparsely populated areas;
  - costs of providing police services in highly urbanised areas;
  - costs due to providing services to nearby residents of another State;
  - costs associated with the geographical dispersion of a States' population; and
  - the price of labour, accommodation and electricity.
- 101 The component factor has the same factors and is derived the same way as the crime investigation and judicial processes component with the exception that the proportion of New South Wales' population serviced by the ACT is half that of the crime investigation and judicial processes component.

### **Cross-border factor for community safety and support**

- 102 Police services in the community safety and support component included responding to calls for assistance; responding to, managing and coordinating major incidents and emergencies; undertaking crime prevention activities and community support programs. It was unlikely that the ACT provided these services to the neighbouring regions in New South Wales. For example, crime prevention activities, community support programs and routine patrols would be performed by New South Wales police in that State, possibly with a degree of coordination with the ACT police.
- 103 Accordingly, it was considered appropriate to discount the cross-border factor for the community safety and support component by 50 per cent.
- 104 The following table show the relevant populations and the calculation of the cross-border factor.
- 105 The cross-border factors are updated annually for changes in the cross-border populations. Table 32 shows the assessed factors for the 2008 Update.

**Table 32 Cross-border factor – community safety and support, 2006-07**

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT
<b>A. Total State population for States subject to cross-border effects</b>								
Number	6 889 072						339 865	
<b>B. Total group populations</b>								
Group 1, Number	- 425						425	
Group 2, Number	- 593						593	
<b>C. Weight group population for use (Number)</b>								
Group 1 (weight by 50%)	- 106						106	
Group 2 (weight by 20%)	- 59						59	
<b>D. Cross-border population (Combined C)</b>								
Number	- 166						166	
<b>E. Adjusted population (D + A)</b>								
Number	6 888 906						340 031	
<b>F. Factor (E / A)</b>								
	0.99998	1.00000	1.00000	1.00000	1.00000	1.00000	1.00049	1.00000
(a)	Estimated Resident Population, 2006-07, ABS special data request.							

**Table 33 Cross-border factor, 2008 Update**

Year	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Aust
2001-02	0.99582	1.00000	1.00000	1.00000	1.00000	1.00000	1.08592	1.00000	1.00000
2002-03	0.99576	1.00000	1.00000	1.00000	1.00000	1.00000	1.08683	1.00000	1.00000
2003-04	0.99570	1.00000	1.00000	1.00000	1.00000	1.00000	1.08818	1.00000	1.00000
2004-05	0.99567	1.00000	1.00000	1.00000	1.00000	1.00000	1.08859	1.00000	1.00000
2005-06	0.99564	1.00000	1.00000	1.00000	1.00000	1.00000	1.08893	1.00000	1.00000
2006-07	0.99561	1.00000	1.00000	1.00000	1.00000	1.00000	1.08905	1.00000	1.00000

106 The formula below shows the derivation of the community safety and support component factor for 2006-07.

$$\text{community safety and support} = [\text{socio-demographic composition crime investigation} \\ * \text{service delivery scale} * \frac{1}{2} \text{cross-border} * \text{urban} \\ \text{complexity} * (\text{dispersion} + \text{input costs} - 1)]$$

107 The calculation shows that the dispersion and input cost factors should be added and then combined with the socio-demographic composition, service delivery scale, cross-border and urban complexity factors by multiplication, as shown in Table 34.

**Table 34 Calculation of community safety and support component factor, 2006-07**

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Aust
A. Population weighted for males aged 17-25 and Indigenous people									
Number, 000	7 870	5 739	4 906	2 487	1 789	577	386	409	24 163
B. Cross-border adjustment									
	0.99998	1.00000	1.00000	1.00000	1.00000	1.00000	1.00049	1.00000	0.00000
C. Adjusted population (A * B) '000									
	7 870	5 739	4 906	2 487	1 789	577	386	409	0
<b>Differences in use, prices and units costs</b>									
D. Small police stations	-0.2	-0.3	0.3	0.1	0.2	0.0	-0.3	5.3	0.0
E. Extra costs due to urban complexity	2.2	3.1	-3.5	-3.5	-3.5	-3.5	-3.5	-3.5	0.0
F. Input costs and dispersion	1.1	-4.1	0.8	4.6	-3.3	-6.3	-5.7	52.2	0.0
G. Price of services (D*E*F)	3.2	-1.5	-2.4	1.0	-6.6	-9.6	-9.4	54.7	0.0
H. Impact of differences in cost (C*G)									
	248	-85	-119	26	-117	-56	-36	224	84
I. Weighted population (C+H)									
	8 118	5 654	4 787	2 512	1 671	522	350	633	24 247
J. Population	6 856	5 168	4 136	2 082	1 577	492	337	213	20 859
K. Population ratio	1.18412	1.09420	1.15749	1.20674	1.06014	1.06116	1.03877	2.97304	1.16246
<b>L. Factor (K / KAust)</b>									
Factor	1.01864	0.94128	0.99573	1.03810	0.91198	0.91286	0.89360	2.55755	1.00000

(a) Cost impacts are derived by multiplying factors, not simply the percentage differences in the above table. Table 17 shows the small police stations cost impact for New South Wales is 0.99758 (that is its unit costs are 0.1% below average) and Table 27 shows its combined input costs and dispersion cost impact is 1.01112 (that is, its unit costs are 1.1% above average). So its total cost impact is 0.9% = ((0.99758 \* 1.01112) - 1) \* 100.

108 The following table shows the assessed community safety and support component factors for the 2008 Update.

**Table 35 Police, community safety and support component factor, 2008 Update**

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Aus
2001-02	1.02712	0.94776	0.97658	1.02381	0.90578	0.92310	0.97814	2.51167	1.00000
2002-03	1.02509	0.94828	0.97884	1.02441	0.90937	0.92360	0.97866	2.50517	1.00000
2003-04	1.02310	0.94879	0.98123	1.02445	0.91255	0.92402	0.97907	2.49974	1.00000
2004-05	1.01995	0.94627	0.98533	1.02856	0.91231	0.91560	0.97492	2.57158	1.00000
2005-06	1.01816	0.94455	0.98745	1.03164	0.91469	0.91667	0.97497	2.56887	1.00000
2006-07	1.01438	0.94146	0.99591	1.03829	0.91215	0.91303	0.97288	2.55803	1.00000

## DERIVING THE ISOLATION COMPONENT FACTOR

- 109 The isolation factor recognises the additional costs incurred by some States due to their distance from other State capitals and sources of supply. It is calculated by a general method. The method is discussed in Volume 7 of the 2004 Review working papers.
- 110 For 2006-07, the Commission assessed total isolation expenses of \$11.079 million. Table 36 below shows the amount assessed for each State and the per capita equivalent. It also shows the isolation factor which is calculated by dividing each States' per capita amount by the average per capita amount.

**Table 36 Isolation assessment and isolation factor, 2006-07**

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Aus
Isolation amount (\$m)	0.149	0.190	0.248	1.999	0.916	0.718	0.220	6.639	11.079
Amount per capita (\$pc)	0.02168	0.03674	0.06006	0.96008	0.58087	1.46093	0.65244	31.19922	0.53113
Factor	0.04081	0.06917	0.11309	1.80761	1.09363	2.75060	1.22840	58.74083	1.00000

### Isolation component factor

- 111 As only one factor is assessed for this component, the isolation component factor is assessed using the formula:

$$\text{Isolation component factor} = [\text{isolation}]$$

- 112 The isolation factor is revised annually to reflect changes in isolation expenses. Table 37 below shows the assessed factors for the 2008 Update.

**Table 37 Isolation factor, 2008 Update**

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Aus
2001-02	0.03814	0.07298	0.12343	1.89467	1.12474	2.70471	1.20063	57.83841	1.00000
2002-03	0.04205	0.07417	0.12879	1.88492	1.13911	2.63848	1.18458	58.26946	1.00000
2003-04	0.04319	0.07509	0.12808	1.85589	1.13744	2.65868	1.19096	58.73838	1.00000
2004-05	0.04293	0.07408	0.12446	1.80763	1.11858	2.83559	1.20498	58.76243	1.00000
2005-06	0.04217	0.06977	0.11630	1.81991	1.09002	2.74026	1.27866	58.78934	1.00000
2006-07	0.04081	0.06917	0.11309	1.80761	1.09363	2.75060	1.22840	58.74083	1.00000

## DERIVING THE NATIONAL CAPITAL COMPONENT FACTOR

- 113 In providing policing services, the ACT pays higher wages for police because of having to purchase the delivery of community policing services for the Territory through a contract with the Australian Federal Police.

**Box 9: National capital****Step 1: Identify the average ratio of staff to people.**

The average ratio of staff (both sworn and unsworn) is calculated per 100 000 people to establish what staffing level is necessary in the absence of the ACT's higher levels.

**Step 2: Calculate the average staff costs.**

The average salary costs are calculated from salary information while the average staff costs are also calculated from total police expenses. This enables the on-costs to be isolated and removed.

**Step 3: Determine extra costs to the ACT.**

The extra costs the ACT faces are based on the higher staff salaries that they have, above how much it should cost them.

**Step 4: Determine final year costs.**

The Productivity Commission from which the costs are derived are generally not available for the final year of the update (2004-05) until after the relativities have been finalised. Accordingly, the estimated additional costs for the 2003-04 year are grown by the CPI for 2004-05.

- 114 Most States have their own police forces. In the ACT, however, police services are provided by the Australian Federal Police (AFP) and the State has no power to influence policy on the terms and conditions of AFP employees. Accordingly, the higher salaries are a disability that the ACT faces because of its status as the national capital.
- 115 To calculate the extra costs of police for the ACT, it is important to know the number of staff that is required. Accordingly, the Australian average number of staff per 100 000 people is determined. Table 38 shows the calculation of the average staffing level.
- 116 A comparison is then made between the ACT's average salaries and the Australian average salaries. The Productivity Commission's *Report on Government Services* contains average police salary and on-costs (including superannuation payments and payroll tax) for each State. The numbers are adjusted to remove the influence of the on-costs.

**Table 38 Staffing levels and staff per 100 000 people, 2006-07<sup>(a)</sup>**

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Aust
A. Number of staff									
Sworn	14 634	10 762	9 027	4 979	3 975	1 184	620	877	46 058
Unsworn	3 936	2 683	3 343	1 374	1 113	376	195	509	13 529
B. Average per 100 000 people									
Sworn	213	208	218	239	252	241	184	412	221
Unsworn	57	52	81	66	71	76	58	239	65
C. Required staff levels, based on Australian average staff levels (A * State population)									
Sworn	15138	11410	9132	4597	3481	1086	743	470	46058
Unsworn	4447	3352	2682	1350	1023	319	218	138	13 529

(a) 2005-06 data were used as they were the most current at the time of the 2008 Update.

Source: Productivity Commission *Report on Government Services*, 2007.

**Table 39 Staff salaries and payments, 2006-07<sup>(a)</sup>**

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Aust
<b>Average salary costs including on-costs</b>									
Sworn, \$	91 487	86 190	83 544	89 766	89 592	77 536	89 192	134 095	88 765
Unsworn, \$	68 439	48 270	49 542	58 735	48 245	66 441	88 728	32 356	56 002
<b>Ratio of salaries to total salaries and payments</b>									
Salaries & related payments, \$m	1368.8	906.4	776.6	457.5	341.7	99.8	62.9	115.1	4128.8
Total salaries & payments, \$m	1608.2	1057.1	919.8	527.6	409.8	116.8	72.6	134.1	4846.0
Ratio									
<b>Staff salaries, excluding on-costs, \$</b>									
Sworn, \$	77 868	73 903	70 537	77 839	74 704	66 251	77 275	115 096	75 631
Unsworn, \$	58 251	41 389	41 829	50 931	40 228	56 771	76 873	27 772	47 704

(a) 2005-06 data were used as they were the most current at the time of the 2008 Update.

Source: Productivity Commission *Report on Government Services*, 2007.

117 The Australian average salaries (excluding on-costs) were then adjusted for the influence of some disabilities, including input costs and dispersion, before additional superannuation expenses were added back. The ACT faces higher than average costs of superannuation that are valued at 20 per cent on top of salary (essentially a multiplier of 1.2).

118 We now have Australian average staffing levels per 100 000 people – 221 sworn staff and 65 unsworn staff from which we were able to calculate the number of staff needed by the ACT (Table 38). The extra costs to the ACT are equal to the required number of staff multiplied by the extra salary, and are calculated as:

$$\text{Extra ACT police costs} = [\text{Average staff level per 100 000 people}] * [\text{ACT population}] * [\text{ACT staff salary} - (\text{Aust staff salary} * \text{disabilities})]$$

119 Table 40 shows the relevant populations and the calculation of the national capital factor for 2006-07.

**Table 40 National capital factor, 2006-07<sup>(a)</sup>**

	ACT	Aust
<b>A. Required staff level, per 100 000 people</b>		
Sworn		221
Unsworn		65
<b>B. Population</b>	336 691	
<b>C. Staff salaries</b>		
Sworn, \$	89 192	88 765
Unsworn, \$	88 728	56 002
<b>D. Disabilities adjustment</b> (combination of wages and dispersion)		
	1.00777	1.00000
<b>E. Extra staff needs before super adjustment</b> (AAust * B * [C - CAust * D])		
Sworn	- 194 866	- 194 866
Unsworn	7 051 589	7 051 589
<b>F. Extra staff needs after super adjustment</b> (E * 1.2)		
\$	8 228 068	8 228 068
<b>G. Per capita extra staff costs</b>		
\$ per capita	24.44	0.39
<b>H. National capital factor</b> (G / GAust)		
2006-07	61.95227	1.00000

(a) 2005-06 data were used as they were the most current at the time of the 2008 Update.

120 National capital costs for the years following 2005-06 were calculated by applying the annual CPI for the relevant years to the ACT's costs (in line E of the above table).

### National capital component factor

121 As only one factor is assessed for this component, the national capital component factor is assessed by the formula:

$$\text{National capital component factor} = [\text{national capital}]$$

122 The national capital factors are updated annually using the most recent Productivity Commission data. Table 41 shows the assessed factors for the 2008 Update.

**Table 41 National capital factor, 2008 Update**

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Aus
2001-02	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	60.87752	0.00000	1.00000
2002-03	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	61.01895	0.00000	1.00000
2003-04	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	61.38267	0.00000	1.00000
2004-05	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	61.70609	0.00000	1.00000
2005-06	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	61.87532	0.00000	1.00000
2006-07	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	61.95227	0.00000	1.00000

### CALCULATING CATEGORY FACTORS

123 Category factors measure the combined impact on a State of those circumstances that are beyond its control and which impact on its cost of providing police services. Category factors are calculated by:

- weighting the component factors to reflect the importance of the component in the category. This is done by multiplying each component factor by its component weight; and
- adding the weighted component factors together.

124 Table 42 below summarises the components, component weights and disability factors assessed for this category for the last year of the 2008 Update. It shows the calculation of the category factor for 2006-07.

**Table 42 Derivation of category factor, 2006-07**

Factors	NSW	Vic	Qld	WA	SA	Tas	ACT	NT
<b>Fixed costs (component weight = 1.1 %)</b>								
Administrative scale	0.38031	0.50456	0.63046	1.25230	1.65373	5.30328	7.74403	12.25245
Input costs	1.02528	0.99212	0.98387	0.99199	0.97579	0.95664	1.01939	1.01769
Component factor	0.38993	0.50059	0.62029	1.24227	1.61369	5.07334	7.89420	12.46916
<b>A Wgted comp factor</b>	<b>0.00433</b>	<b>0.00555</b>	<b>0.00688</b>	<b>0.01378</b>	<b>0.01790</b>	<b>0.05629</b>	<b>0.08759</b>	<b>0.13835</b>
<b>Crime investigation (component weight = 40.21 %)</b>								
Socio-demographic composition	0.99095	0.95879	1.02411	1.03104	0.97935	1.01359	0.98883	1.65925
Service delivery scale	0.99758	0.99717	1.00349	1.00146	1.00212	1.00010	0.99686	1.05342
Urban complexity	1.02247	1.03071	0.96461	0.96461	0.96461	0.96461	0.96461	0.96461
Cross border	0.99121	1.00000	1.00000	1.00000	1.00000	1.00000	1.17809	1.00000
Dispersion	0.98604	0.96640	1.02410	1.05391	0.99091	0.98018	0.92323	1.50452
Input costs	1.02528	0.99212	0.98387	0.99199	0.97579	0.95664	1.01939	1.01769
Component factor	1.01323	0.94456	0.99920	1.04172	0.91516	0.91604	1.05591	2.56647
<b>B Wgted comp factor</b>	<b>0.40618</b>	<b>0.37865</b>	<b>0.40055</b>	<b>0.41760</b>	<b>0.36687</b>	<b>0.36722</b>	<b>0.42329</b>	<b>1.02883</b>
<b>Road safety and traffic management (component weight = 11.43 %)</b>								
Socio-demographic composition	0.99095	0.95879	1.02411	1.03104	0.97935	1.01359	0.98883	1.65925
Urban complexity	1.02247	1.03071	0.96461	0.96461	0.96461	0.96461	0.96461	0.96461
Cross border	0.99121	1.00000	1.00000	1.00000	1.00000	1.00000	1.17809	1.00000
Dispersion	0.98604	0.96640	1.02410	1.05391	0.99091	0.98018	0.92323	1.50452
Input costs	1.02528	0.99212	0.98387	0.99199	0.97579	0.95664	1.01939	1.01769
Component factor	1.01569	0.94724	0.99573	1.04019	0.91322	0.91595	1.05923	2.43633
<b>C Wgted comp factor</b>	<b>0.11585</b>	<b>0.10805</b>	<b>0.11358</b>	<b>0.11865</b>	<b>0.10417</b>	<b>0.10448</b>	<b>0.12082</b>	<b>0.27790</b>
<b>Community safety and support component (component weight = 46.91 %)</b>								
Socio-demographic composition	0.99095	0.95879	1.02411	1.03104	0.97935	1.01359	0.98883	1.65925
Service delivery scale	0.99758	0.99717	1.00349	1.00146	1.00212	1.00010	0.99686	1.05342
Urban complexity	1.02247	1.03071	0.96461	0.96461	0.96461	0.96461	0.96461	0.96461
Cross border	0.99561	1.00000	1.00000	1.00000	1.00000	1.00000	1.08905	1.00000
Dispersion	0.98604	0.96640	1.02410	1.05391	0.99091	0.98018	0.92323	1.50452
Input costs	1.02528	0.99212	0.98387	0.99199	0.97579	0.95664	1.01939	1.01769
Component factor	1.01772	0.94456	0.99920	1.04172	0.91516	0.91604	0.97609	2.56647
<b>D Wgted comp factor</b>	<b>0.47589</b>	<b>0.44168</b>	<b>0.46722</b>	<b>0.48711</b>	<b>0.42793</b>	<b>0.42834</b>	<b>0.45642</b>	<b>1.20008</b>
<b>Isolation (component weight = 0.19 %)</b>								
Isolation	0.04081	0.06917	0.11309	1.80761	1.09363	2.75060	1.22840	58.74083
Component factor	0.04081	0.06917	0.11309	1.80761	1.09363	2.75060	1.22840	58.74083
<b>E Wgted comp factor</b>	<b>0.00008</b>	<b>0.00013</b>	<b>0.00021</b>	<b>0.00340</b>	<b>0.00206</b>	<b>0.00517</b>	<b>0.00231</b>	<b>0.11039</b>
Factors	NSW	Vic	Qld	WA	SA	Tas	ACT	NT
<b>National capital (component weight = 0.15 %)</b>								
National capital	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	61.95227	0.00000
Component factor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	61.95227	0.00000
<b>F Wgted comp factor</b>	<b>0.00000</b>	<b>0.00000</b>	<b>0.00000</b>	<b>0.00000</b>	<b>0.00000</b>	<b>0.00000</b>	<b>0.09182</b>	<b>0.00000</b>
<b>Category factor</b>	<b>1.00232</b>	<b>0.93406</b>	<b>0.98845</b>	<b>1.04053</b>	<b>0.91892</b>	<b>0.96150</b>	<b>1.18224</b>	<b>2.75555</b>

Note: For each component, the component factor is calculated using the formula in the following paragraph. The weighted component factor is the component factor multiplied by the component weight. This is then population weighted to ensure that the sum of assessed expenses equals average expenses. Category factor is the sum of the weighted component factors. It equals A + B+ C+ D+ E+ F.

125 The category factor was calculated as follows:

$$\text{category factor} = \text{fixed costs} + \text{crime investigation} + \text{road safety} + \text{community safety} + \text{isolation} + \text{national capital}$$

Where

$$\text{fixed costs} = 0.0111 [\text{administrative scale} * \text{input costs}]$$

$$\begin{aligned} \text{crime investigation} &= 0.4021 [\text{socio-demographic composition crime} \\ \text{and judicial} &\quad \text{investigation} * \text{cross-border} * \text{service delivery scale} * \\ \text{processes} &\quad \text{urban complexity} * (\text{dispersion} + \text{input costs other} - \\ &\quad 1)] \end{aligned}$$

$$\begin{aligned} \text{road safety and} &= 0.1143 [\text{socio-demographic composition road safety} * \\ \text{traffic management} &\quad \text{cross-border} * \text{urban complexity} * (\text{dispersion} + \text{input} \\ &\quad \text{costs other} - 1)] \end{aligned}$$

$$\begin{aligned} \text{Community safety} &= 0.4691 [\text{socio-demographic composition community} \\ \text{and support} &\quad \text{safety} * \text{cross-border discounted by 50 per cent} * \\ &\quad \text{service delivery scale} * \text{urban complexity} * \\ &\quad (\text{dispersion} + \text{input costs other} - 1)] \end{aligned}$$

$$\text{Isolation} = 0.0019 [\text{isolation}]$$

$$\text{national capital} = 0.0015 [\text{national capital}]$$

126 In each case, the contribution to the category factor was calculated as the component weight (the percentages in the table) multiplied by the component factor (the bracketed terms in the formulas). Each component's contribution to the category factor was scaled to ensure the sum of assessed expenses equalled average expenses.

## RESULTS FOR 2006-07

127 Table 50 at the end of this working paper summarises the results of the assessment. It shows the average, actual and assessed expenses for each State for all years of the 2008 Update.

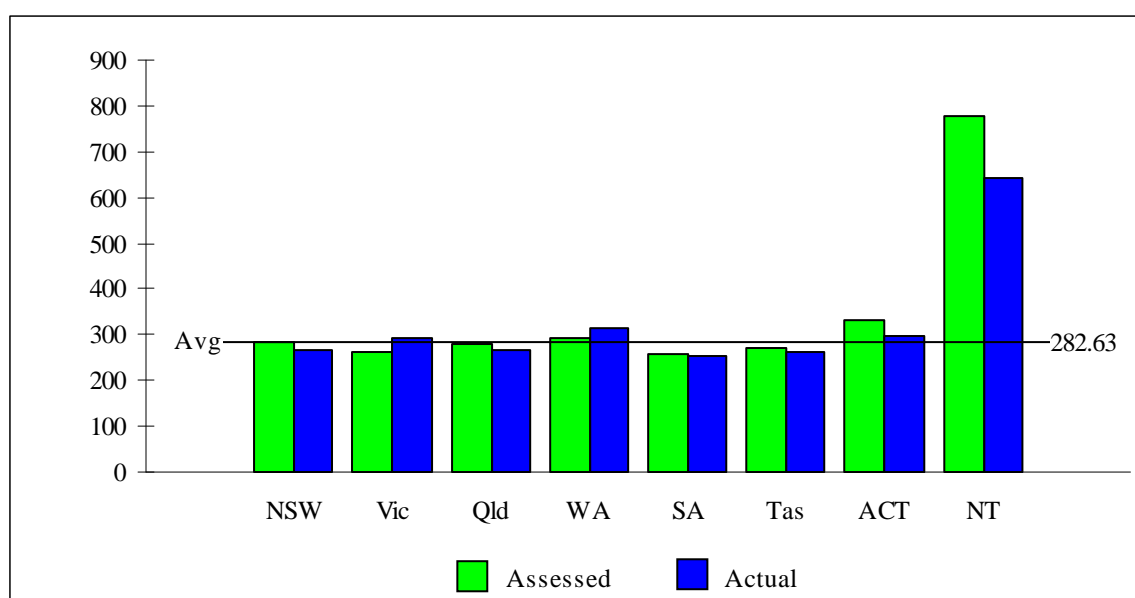
128 Assessed expenses per capita are calculated by multiplying each States' category factor by the average expense per capita. Table 43 below shows the actual, average and assessed expenses per capita and the assessed cost of providing services ratios for 2006-07. The assessed cost of providing services ratios are equivalent to the category factor shown in Table 46.

**Table 43 Assessment results, 2006-07**

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Avg
	\$pc	\$pc	\$pc	\$pc	\$pc	\$pc	\$pc	\$pc	\$pc
Actual expenses	268.63	294.71	267.97	315.41	253.06	264.01	299.06	640.14	282.63
Assessed expenses	283.28	263.99	279.36	294.08	259.71	271.75	334.13	778.79	282.63
	%	%	%	%	%	%	%	%	%
Assessed cost of providing services ratio (a)	100.23	93.41	98.85	104.05	91.89	96.15	118.22	275.56	100.00

(a) The cost service provision ratio is the ratio of assessed expenses per capita to average expenses per capita.

129 Figure 1 illustrates the per capita actual, average and assessed expenses for Police Services for 2006-07.

**Figure 1 Police, assessed expense per capita, actual expenses per capita and average expenses per capita, 2006-07**

## CONTRIBUTION TO GST REVENUE DISTRIBUTION

130 The assessed difference from average in millions dollars provides an indication of the impact of this assessment on grant shares. This can be calculated by:

- subtracting the average expense per capita from each State's assessed expenses per capita; and
- multiplying by each State's population.

131 Table 44 shows this calculation for 2006-07.

**Table 44** Assessed difference from average, 2006-07

		NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Aust
Assessed expenses per person	\$pc	283.28	263.99	279.36	294.08	259.71	271.75	334.13	778.79	282.63
Assessed difference from average per person	\$pc	0.66	-18.64	-3.26	11.46	-22.92	-10.88	51.51	496.17	0.00
Population	m	6.856	5.168	4.136	2.082	1.577	0.492	0.337	0.213	20.859
Assessed difference from average	\$m	4.5	-96.3	-13.5	23.9	-36.1	-5.3	17.3	105.6	151.3

132 Table 45 shows the category's contribution to the distribution of GST revenue. It also shows the contribution of each factor and component to the GST revenue distribution.

**Table 45 Contribution to GST revenue distribution, 2008 Update**

Factor	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total redist'd
	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m
<b>Fixed costs</b>									
Administrative scale	-14.6	-8.8	-5.1	1.9	3.4	7.1	7.7	8.3	28.5
Input costs	0.7	-0.1	-0.4	-0.1	-0.1	-0.1	0.0	0.0	0.8
Component factor	-14.3	-8.8	-5.3	1.8	3.2	6.8	8.0	8.6	28.4
<b>Community safety and support</b>									
Socio-demographic composition	-8.2	-27.8	13.2	8.1	-4.1	1.1	-0.5	18.2	40.5
Service delivery scale	-2.2	-1.9	1.9	0.4	0.4	0.0	-0.1	1.5	4.3
Urban complexity	20.5	21.0	-19.5	-9.8	-7.4	-2.3	-1.6	-1.0	41.5
Cross-border	-3.9	0.0	0.0	0.0	0.0	0.0	3.9	0.0	3.9
Dispersion	-12.8	-23.2	13.3	15.0	-1.9	-1.3	-3.4	14.3	42.6
Input costs	27.8	-2.9	-14.5	-4.2	-5.3	-2.6	1.0	0.7	29.5
Component factor	18.1	-37.3	-7.9	8.2	-18.3	-5.3	-1.1	43.6	69.9
<b>Crime investigation and judicial processes</b>									
Socio-demographic composition	-7.2	-24.4	11.6	7.1	-3.6	1.0	-0.4	15.9	35.6
Service delivery scale	-1.9	-1.7	1.7	0.4	0.4	0.0	-0.1	1.3	3.8
Urban complexity	18.0	18.4	-17.1	-8.6	-6.5	-2.0	-1.4	-0.9	36.4
Cross-border	-6.9	0.0	0.0	0.0	0.0	0.0	6.9	0.0	6.9
Dispersion	-11.2	-20.3	11.7	13.2	-1.7	-1.1	-3.0	12.6	37.4
Input costs	24.5	-2.5	-12.8	-3.7	-4.6	-2.3	0.9	0.6	26.0
Component factor	12.6	-32.6	-6.9	7.2	-16.1	-4.6	2.2	38.3	60.3
<b>Road safety and traffic management</b>									
Socio-demographic composition	-2.0	-6.7	3.2	2.0	-1.0	0.3	-0.1	4.4	9.8
Urban complexity	5.0	5.1	-4.7	-2.4	-1.8	-0.6	-0.4	-0.2	10.0
Cross-border	-1.9	0.0	0.0	0.0	0.0	0.0	1.9	0.0	1.9
Dispersion	-3.1	-5.6	3.2	3.6	-0.5	-0.3	-0.8	3.5	10.3
Input costs	6.7	-0.7	-3.5	-1.0	-1.3	-0.6	0.2	0.2	7.1
Component factor	4.1	-8.4	-2.2	1.9	-4.5	-1.3	0.6	9.7	16.4
<b>National capital</b>									
National capital	-3.0	-2.3	-1.8	-0.9	-0.7	-0.2	9.1	-0.1	9.1
Component factor	-3.0	-2.3	-1.8	-0.9	-0.7	-0.2	9.1	-0.1	9.1
<b>Isolation</b>									
Isolation	-3.9	-2.9	-2.2	1.0	0.1	0.5	0.0	7.3	9.0
Component factor	-3.9	-2.9	-2.2	1.0	0.1	0.5	0.0	7.3	9.0
<b>Redistribution from EPC resulting from the 2008 Update assessment</b>									
	13.5	-92.3	-26.3	19.3	-36.2	-4.1	18.8	107.4	159.1

Note: The redistribution due to the component factors includes the effect of interactions between factors.

Therefore the component factor figure may not equal the sum of its factors' redistribution.

### Differences from an equal per capita assessment

133 Table 45 indicates that the main drivers of this assessment were:

- socio-demographic composition — recognising the unavoidable differences between States in per capita service delivery costs because Indigenous people and young males were over-represented in policing functions;
- dispersion — recognising differences between States in the level of expenses due to the effects of population dispersion on telecommunication, freight, travel and staffing costs;
- urban complexity — recognising that Sydney and Melbourne required additional police resources because of their greater urban complexity;
- service delivery scale — recognising that crime investigation and judicial processes were more expensive per capita to provide in small population centres;
- administrative scale — recognising the unavoidable costs each State incurred to have the policy and administrative infrastructure necessary to provide the service, regardless of the size of the task;
- input costs — recognising the differences between States in the prices of labour, accommodation and electricity relating to fixed costs in providing services, for reasons beyond the control of individual States; and
- national capital — recognising the unavoidable costs the ACT faces in delivering community policing services because it is national capital and the seat of government.

134 Of these, socio-demographic composition, dispersion, urban complexity and input costs factors were the most important drivers.

135 The category factor reflected the following on a State by State basis.

- *New South Wales* — New South Wales had an above average GST redistribution. This is mainly due to higher labour costs and the extra costs of policing highly populated urban areas. This was partly offset by lower per capita costs of providing policy and administrative infrastructure and its lower dispersion costs.
- *Victoria* — its below average GST redistribution was mainly due to its below average proportion of Indigenous people and its low dispersion related costs.
- *Queensland* — Queensland's below average GST redistribution was mainly due to lower labour costs and lower than average costs of policing its urban areas.
- *Western Australia*—its above average GST redistribution was mainly due to high dispersion related costs. This impact was partly offset by lower than average costs of policing its urban areas.
- *South Australia* — South Australia had a below average GST redistribution resulting from a below average proportion of young males and Indigenous people, lower dispersion costs and lower than average costs of policing its urban areas.

- *Tasmania* — Tasmania's below average GST redistribution resulted from lower dispersion costs and lower labour costs. This was partly offset by above average administrative scale costs.
- *ACT* — the ACT had an above average GST redistribution because of its extra costs in providing services to New South Wales residents, its extra wage costs from using the Australian Federal Police and above average administrative scale costs.
- *Northern Territory* — its above average GST redistribution was mainly due its above average proportion of Indigenous people, its small widely dispersed population and diseconomies of small scale including the costs of administration and service delivery.

## **CHANGES SINCE THE 2007 UPDATE**

### **Major changes in this update**

136 The main reasons for change in the amount redistributed by this assessment was changes due to the Census (\$2.6 million) and to a lesser extent the impact of input cost (primarily wages cost) on the redistribution of GST revenues amongst the States. The overall impact of this update on the distribution of the GST pool was small.

### **Effect of assessment on the distribution of GST revenue**

137 Table 46 shows the distribution of GST revenue resulting from the assessments in the 2008 Update and the 2007 Update. It also shows the sources of the changes.

138 Changes in the distribution of GST revenue between the 2008 Update and the 2007 Update were brought about because the Commission:

- used revised financial data in the average expenses and other revised data in factor calculations for the years 2001-02 to 2005-06; and
- replaced 2001-02 average expenses and factors with those of 2006-07 to move forward the five-year period on which GST revenue distribution was based. Moving the five-year period forward in this way ensures the assessments reflect recent trends in State priorities on the services provided and recent trends in State demographic, and economic circumstances on the relative costs of those services.

**Table 46 Police, effect of assessment on GST revenue distribution, 2007 Update to 2008 Update**

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total redist'd
	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m
<b>Redistribution from EPC resulting from the 2007 Update assessment (a)</b>	18.7	-89.5	-31.4	16.5	-36.2	-3.1	19.1	105.9	160.2
<b>Effect of revising category averages and factors for 2001- 02 to 2005-06</b>									
Category average	0.0	-0.4	-0.1	0.1	-0.1	0.0	0.1	0.4	0.6
Category factors	-0.5	-1.0	0.2	1.1	-0.4	-0.4	-0.3	1.3	2.6
Interactions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	-0.5	-1.3	0.2	1.2	-0.5	-0.5	-0.2	1.7	3.0
<b>Effect of replacing 2001-02 category averages and factors with those for 2006-07</b>									
Category average	0.0	0.1	0.1	0.0	0.1	0.0	0.0	-0.2	0.2
Category factors	-4.7	-1.6	4.9	1.6	0.4	-0.6	0.0	0.0	6.9
Interactions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	-4.7	-1.5	4.9	1.6	0.5	-0.6	0.0	-0.2	6.9
<b>Redistribution from EPC resulting from the 2008 Update assessment (a)</b>	13.5	-92.3	-26.3	19.3	-36.2	-4.1	18.8	107.4	159.1
<b>Total effect of revisions and updating (b)</b>	-5.2	-2.8	5.0	2.7	0.0	-1.0	-0.2	1.5	9.3

(a) Assuming same pool and a constant population.

(b) This figure shows the change in the amount redistributed among the States between the 2007 Update and the 2008 Update. It does not necessarily equal the difference in the total redistribution from EPC between the two inquiries.

139 Compared with an equal per capita (EPC) assessment, the 2008 Update redistributed \$159.1 million away from Victoria, Queensland, South Australia and Tasmania to the other States.

140 Table 47 shows the changes in GST revenue attributable to changes in each factor arising from both revisions over the period 2001-02 to 2005-06 and replacing 2001-02 data with 2006-07 data.

**Table 47 Police, effect of assessment on GST revenue distribution by factor, 2007 Update to 2008 Update**

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total redist'd
	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m
<b>Fixed costs</b>									
Administrative scale	0.9	0.3	0.0	-0.1	-0.1	-0.3	-0.3	-0.3	1.2
Input costs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
<b>Community safety and support</b>									
Socio-demographic composition	0.5	0.9	-0.7	0.3	-0.1	-0.4	-0.1	-0.4	1.6
Service delivery scale	0.2	0.1	-0.1	0.0	0.0	0.0	0.0	-0.2	0.3
Urban complexity	-1.7	-1.1	1.2	0.7	0.5	0.2	0.1	0.1	2.8
Cross-border	0.2	0.0	0.0	0.0	0.0	0.0	-0.2	0.0	0.2
Dispersion	1.0	1.5	-0.9	-1.0	0.1	0.1	0.2	-1.0	2.9
Input costs	-5.0	-0.5	3.6	1.0	0.9	0.2	-0.1	-0.2	5.8
<b>Crime investigation and judicial processes</b>									
Socio-demographic composition	-1.0	-2.7	0.7	1.0	-0.6	-0.2	-0.1	2.9	4.6
Service delivery scale	-0.2	-0.2	0.1	0.0	0.0	0.0	0.0	0.3	0.4
Urban complexity	1.1	1.5	-1.3	-0.6	-0.4	-0.1	-0.1	-0.2	2.6
Cross-border	-0.5	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.5
Dispersion	-1.0	-1.7	0.6	0.8	-0.2	-0.1	-0.3	1.9	3.3
Input costs	-0.4	-0.7	0.8	0.3	0.1	-0.1	0.0	0.0	1.2
<b>Road safety and traffic management</b>									
Socio-demographic composition	-0.3	-0.9	0.3	0.3	-0.2	-0.1	0.0	0.9	1.5
Urban complexity	0.5	0.5	-0.5	-0.2	-0.1	0.0	0.0	-0.1	1.0
Cross-border	-0.2	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.2
Dispersion	-0.4	-0.6	0.2	0.3	-0.1	0.0	-0.1	0.7	1.2
Input costs	0.1	-0.2	0.1	0.0	0.0	-0.1	0.0	0.0	0.3
<b>National capital</b>									
National capital	0.2	0.1	0.1	0.0	0.0	0.0	-0.4	0.0	0.4
<b>Isolation</b>									
Isolation	0.3	0.1	0.1	-0.1	0.0	-0.1	0.0	-0.3	0.5

141 The reason that there are opposite changes within each component of police is because revisions to the component weights for the last two years and the current year have been made due to new data received from the Productivity Commission. As a result, the component weight for community safety and support declined and the weight for the other category

specific components increased resulting in offsetting effects of factors on GST revenue redistributions. States that have a factor less than one where the component weight has been revised downwards will have an increased grant share compared to last year.

142 The main reasons for the changes in GST revenue distribution are as follows.

#### **Changes due to revising average expenses and factors for years 2001-02 to 2005-06**

143 **Revising average expenses.** There were upward revisions to expense data in 2005-06. This increased the amount of GST revenue redistributed for that period (\$0.6m) and increased the revenue share for those States assessed to have above average assessed cost of providing services (New South Wales, Western Australia, ACT and the Northern Territory).

144 Table 48 shows the average expenses and user charges for the six financial years of this update and those of the previous update.

**Table 48 Average expenses used in the 2007 and 2008 Updates**

	2000-2001	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07
	\$pc	\$pc	\$pc	\$pc	\$pc	\$pc	\$pc
2008 Update		211.17	223.82	236.27	239.14	258.55	282.63
2007 Update	198.16	211.25	224.12	236.74	239.84	254.47	
Difference	-	-0.08	-0.30	-0.47	-0.70	4.08	-

145 **Revising category factors.** Revisions were made to States' cost of providing services ratio as a result of replacing 2001 Census data with 2006 Census data from 2004-05.

146 The Northern Territory (\$1.6 million) and Western Australia (\$1 million) saw a greater redistribution of GST revenue due to revisions from Census data because a greater proportion of their populations grew faster in the higher cost groups or the groups that use police services more frequently.

#### **Changes in State circumstances — replacing 2001-02 with 2006-07 data**

147 Table 49 shows the actual expenses and implied costs of service provision for 2001-02, the year that drops out of the assessment period, and 2006-07, the year that comes in, for the 2008 Update assessment.

**Table 49 Police Services, actual expenses and assessed cost of providing services, 2001-02 and 2006-07**

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Avg
	\$pc	\$pc	\$pc	\$pc	\$pc	\$pc	\$pc	\$pc	\$pc
Actual expenses									
2001-02	223.11	187.16	197.16	214.45	224.26	209.62	230.59	498.62	211.17
2006-07	268.63	294.71	267.97	315.41	253.06	264.01	299.06	640.14	282.63
	%	%	%	%	%	%	%	%	%
Change between 2001-02 and 2006-07									
	20.41	57.47	35.92	47.08	12.84	25.95	29.69	28.38	33.84
	\$pc	\$pc	\$pc	\$pc	\$pc	\$pc	\$pc	\$pc	\$pc
Assessed expenses									
2001-02	214.01	198.30	204.58	217.00	193.00	207.10	249.52	582.48	211.17
2006-07	283.28	263.99	279.36	294.08	259.71	271.75	334.13	778.79	282.63
	%	%	%	%	%	%	%	%	%
Assessed cost of providing services ratio									
2001-02	101.34	93.90	96.88	102.76	91.39	98.07	118.16	275.83	100.00
2006-07	100.23	93.41	98.85	104.05	91.89	96.15	118.22	275.56	100.00

148 **Replacing average expenses.** Between 2001-02 and 2006-07 State spending on this category has increased by 42.8 per cent, which was slightly less than the increase in the per capita GST pool (43.9 per cent). So, replacing the 2001-02 average expenses with the 2006-07 average expenses has led to a marginal reduction in the amount of GST revenue this category redistributes (\$0.3m).

149 **Replacing category factors.** The cost of providing services increased in Queensland and Western Australia due to wages rising faster than in other States. As a result the GST revenue shares of those States increased. The cost of providing services fell in New South Wales and Victoria resulting in a decreased GST revenue share.

This chapter was prepared by the Expense — Law and Order section of the Commonwealth Grants Commission. If you have any questions about its content please contact Daniel Dwyer on (02) 6229 8856 or [daniel.dwyer@cgc.gov.au](mailto:daniel.dwyer@cgc.gov.au).

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**Table 50 Assessment of Expenses, Police**

	2002-03		2003-04		2004-05		2005-06		2006-07	
	Amount	Per Capita	Amount	Per Capita	Amount	Per Capita	Amount	Per Capita	Amount	Per Capita
	\$m	\$	\$m	\$	\$m	\$	\$m	\$	\$m	\$
<b>Average Expenses</b>		223.82		236.27		239.14		258.55		282.63
New South Wales										
Assessed difference	17.555	2.64	15.606	2.33	9.878	1.47	9.356	1.38	4.503	0.66
Expenses - Assessed	1 506.630	226.46	1 596.850	238.60	1 619.963	240.61	1 764.667	259.93	1 942.140	283.28
Actual	1 534.604	230.67	1 630.158	243.58	1 678.659	249.33	1 696.000	249.82	1 841.700	268.63
Victoria										
Assessed difference	- 65.561	- 13.39	- 69.671	- 14.06	- 75.047	- 14.95	- 83.516	- 16.40	- 96.303	- 18.64
Expenses - Assessed	1 030.134	210.43	1 101.302	222.21	1 125.316	224.19	1 232.772	242.15	1 364.175	263.99
Actual	1 035.000	211.42	1 073.000	216.50	1 005.544	200.33	1 267.000	248.87	1 522.944	294.71
Queensland										
Assessed difference	- 24.178	- 6.42	- 24.264	- 6.28	- 21.954	- 5.55	- 21.377	- 5.28	- 13.500	- 3.26
Expenses - Assessed	819.061	217.40	888.374	229.99	924.197	233.60	1 025.466	253.27	1 155.337	279.36
Actual	764.871	203.02	831.000	215.13	880.914	222.66	998.836	246.70	1 108.212	267.97
Western Australia										
Assessed difference	12.166	6.28	12.777	6.49	14.804	7.40	18.000	8.83	23.852	11.46
Expenses - Assessed	446.047	230.10	477.806	242.76	493.089	246.55	545.087	267.38	612.293	294.08
Actual	471.541	243.25	520.389	264.40	558.583	279.29	591.823	290.31	656.694	315.41
South Australia										
Assessed difference	- 28.304	- 18.54	- 29.079	- 18.93	- 29.785	- 19.26	- 31.547	- 20.22	- 36.129	- 22.92
Expenses - Assessed	313.325	205.28	333.898	217.34	340.084	219.89	371.920	238.34	409.473	259.71
Actual	343.077	224.77	365.677	238.03	374.412	242.08	409.461	262.39	398.986	253.06
Tasmania										
Assessed difference	- 2.358	- 4.96	- 2.668	- 5.55	- 3.575	- 7.37	- 4.042	- 8.27	- 5.350	- 10.88
Expenses - Assessed	103.968	218.86	110.903	230.72	112.365	231.77	122.253	250.28	133.603	271.75
Actual	104.000	218.93	113.000	235.08	140.000	288.77	130.000	266.14	129.800	264.01
Australian Capital Territory										
Assessed difference	13.016	40.15	15.233	46.70	17.681	53.82	16.874	50.79	17.342	51.51
Expenses - Assessed	85.568	263.98	92.307	282.97	96.249	292.96	102.775	309.34	112.500	334.13
Actual	79.000	243.72	85.000	260.57	89.000	270.90	93.000	279.92	100.690	299.06
Northern Territory										
Assessed difference	77.664	389.41	82.066	408.48	87.999	430.79	96.251	461.15	105.585	496.17
Expenses - Assessed	122.303	613.23	129.534	644.75	136.849	669.94	150.217	719.70	165.729	778.79
Actual	94.942	476.05	112.752	561.21	120.999	592.34	129.036	618.22	136.223	640.14

Note: Refer to Attachment A, *Relative Fiscal Capacity of States* for how these figures are compiled.