



# **COMMONWEALTH GRANTS COMMISSION**

**DISCUSSION PAPER CGC 2002/20**

## **INPUT COSTS**

PART A of the Paper is prepared for the  
Commission Conference in October 2002

PART B of the Paper is prepared for the  
Commission Staff Conference in November 2002

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## INTRODUCTION

1. This Discussion Paper is in two parts. Part A deals with the conceptual issues and has been written as the basis for discussion at the Commission Conference in October 2002. It discusses only the wages input cost component of the disability factor<sup>1</sup> and provides an overview of:

- (i) concepts relating to the operation of the labour market (and the public sector labour market in particular), with a focus on general determinants of wage levels;
- (ii) how specific determinants cause differences in wage levels; and
- (iii) research options Commission staff are considering to measure differences in wage levels in a policy-neutral manner

2. Part B expands the discussion into the technical areas of the assessment and has been prepared for further discussion of this disability factor, if necessary, at the staff level conference in November. It consists of three attachments.

- (i) Attachment A provides background information.
- (ii) Attachment B summarises the States' arguments and provides comments on them by the Commission staff.
- (iii) Attachment C provides an outline of the statistical approaches to the assessment of the wages input cost factor that the staff are proposing.

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<sup>1</sup> To the extent necessary, the electricity and accommodation components of the factor calculation are discussed in Part B.

## PART A — THE CONCEPTUAL ISSUES

3. Although the assessed interstate differences in the unit cost of wages and salaries States must pay are small, their impacts on redistribution are substantial<sup>2</sup>. This is because wages and salaries constitute a large component of the cost of government service provision.

4. In the 1999 Review, the Commission measured interstate differences in wages levels in the public sector using wage levels in the non-State sector (the private sector plus the Commonwealth sector). It did this because it believed that these differences were unaffected by State government policies and reflected the general levels of wages with which State governments had to compete. The average wage levels were adjusted to reflect the occupation structure of workforces in the State public sector and to remove the effect of the higher concentration of head offices of large private companies and Commonwealth agencies in the more populous States and the ACT. The disabilities so calculated were discounted by 50 per cent to account for any residual data deficiencies and the relative heterogeneity of the non-State sector employment.

5. Adjustments were not made to remove the influences of industry composition or labour force characteristics because these were considered to be largely beyond direct State policy influences. Nor was any allowance made for dominant employer effects in the education, health and police categories as the Commission believed that it would be difficult for States to set wages for any profession without reference to the prevailing labour costs.

6. The main issues the States raised in their submissions were:

- (i) whether there are unavoidable differences in the unit cost of wages and salaries across State public sectors and; if there are
- (ii) whether the benchmark based on non-State sector wages that the Commission adopted in the 1999 Review should be retained; or
- (iii) whether changes to the method should be made to correct for:
  - ‘composition’ effects, such as industry structure and labour quality — which arise because the underlying characteristics that determine wage levels in the private sector are different from those in the public sector, both within and between States; or
  - the ‘dominant employer’ effect — which arises because of the concentration of occupations, like police, nurses and teachers, in the public sector.

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<sup>2</sup> For example, a change of 0.001 point to the factor for New South Wales amounts to a redistribution of more than \$12 million.

## *Nature of the Labour Market*<sup>4</sup>

7. Wage levels that must be paid to employees are similar to prices paid for goods and services. They are influenced by a wide range of supply and demand considerations. Because it is an input to production of goods and services, a distinctive feature of the demand for labour is that it depends, at least in part, on patterns of demand for final goods and services.

8. One useful way of thinking about how wage levels are determined is that of ‘equalising differences’. Differences in earnings between employees in a competitive economy<sup>5</sup> with perfect labour mobility represent compensating payments for differences in the opportunity cost of work. The opportunity cost will depend on: the investment necessary to acquire skills; the job characteristics such as the possibility of injury; locational amenities such as availability of infrastructure and recreational facilities; and the preference of employees, such as their inclination to work in capital cities.

9. Employees will move between jobs to maximise the net benefits they receive from employment — wage payments less an opportunity cost of work.

10. As a result of workers seeking to maximise net benefits in this competitive setting, any differences in the levels of wages would be due to differences in:

- (i) personal skills of prospective employees;
- (ii) job characteristics; and
- (iii) the location of employment.

11. The circumstances of perfect competition or perfect labour mobility are not fully met in practice, which can have effects on levels of wages.

12. ***Imperfect competition.*** If the labour markets are not operating in circumstances of pure competition, the additional influences would generally alter the competitive levels of wages. For example, one possible source of imperfection in the labour market is the operation of unions<sup>6</sup> that may achieve higher levels of net benefits for their members than those that are available to non-members in otherwise identical circumstances. The extent to which unions are able to bargain depends on the workplace and the legal environment in which the bargaining takes place, some of which can be influenced by State policy.

13. Similarly, market dominance of a small group of employers in an industry can lead to prices for goods and services that are above the competitive level. This enhances the ability of those employers to influence the levels of wages of employees in their industry.

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<sup>4</sup> This section is in part based on Volume 2 of the Commission’s *Reports on Research in Progress, 1995*

<sup>5</sup> In which both product and labour markets are *competitive*.

<sup>6</sup> In this paper, ‘union’ includes all forms of organised effort of employees in bargaining processes.

14. These deviations could lead to spillover effects. If imperfections influence one part of the labour market, such influences could affect other parts as a result of employees attempting to switch to the higher paying industry.

15. For these reasons, as well as the attributes mentioned above, an analysis of what causes differences in the unit cost of wages needs to include consideration of:

- (i) industry characteristics;
- (ii) the size of the business; and
- (iii) the effect of unions.

16. In general, differences in this bundle of characteristics (what we might call composition effects) would lead to differences in wages.

17. ***Imperfect labour mobility.*** The other point of departure from the reference setting relates to less than perfect mobility of labour. This could relate either to those wishing to change physical locations (States or regions) or sectors of the labour market (occupations or industries). Insofar as it is costly for employees to move, differences in wages in otherwise identical situations could arise in different States or regions.

### ***The Public Sector Labour Market***

18. At a broad level, the concepts discussed above apply equally to both the public sector and the private sector. The profit constraint on wages in the private sector is replaced in the public sector with a budget constraint, and commercial market forces are replaced with political constraints. At a finer level, however, there are important differences.

19. While units in the private sector vary enormously by size and composition, the public sector is relatively homogeneous and can operate as a single organisation in a more ‘controlled’ market. A government’s ability to pay is arguably more flexible than that of the private sector because it can influence levels of revenue and expenditure to accommodate wages claims. It can also influence the legal parameters in which bargaining occurs. Government services are often essential and relatively labour intensive. These characteristics give the unions greater bargaining ability.

20. There are two ways in which policy neutral differences in the unit cost of wages that must be paid in States could be measured.

- (i) One would be to use private sector wages as the benchmark. The appropriateness of this would depend on whether private sector wages are set at truly competitive levels and whether the States operate in that market.<sup>7</sup>

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<sup>7</sup> ‘For most studies of public sector labour market outcomes, (the benchmark) has been the private sector’, *Recent Developments in Public Sector Labour Markets*, Robert G Gregory in: *Volume 3, Handbook of Labour Economics*, 1999.

- (ii) The other would be to analyse the public sector in its own right based on an assumption that the public sector environment for determining wage levels was materially different from that of the private sector. Adjustments to achieve a policy neutral measure may not be easy to determine.

21. States' comments on these alternatives would be appreciated.

22. The case for using private sector wages as a benchmark may not be equally strong for all occupation groups within the public sector. Occupations such as nurses, teachers and police officers — where governments are the 'dominant' employers — may not be as closely aligned to private sector markets as other areas of government employment. There is some evidence that the proportion of public service employees in an occupation influences earnings of all employees in that occupation<sup>8</sup>.

23. Some departures from competitive settings may be temporary. For example, it is possible that the current shortages of nurses and to a lesser extent teachers in Australia, and the consequent upward pressure on wages for those occupations, are temporary and need to be handled differently within the assessment process. In practice, it could be difficult to dissect variations in wages into temporary and longer term causes. This is also a question on which the Commission would like States' comments.

### ***Variations in Wages between States***

24. One concerning aspect of variations in wages between States' public sectors is that they are small relative to the levels of wages, and are caused by a wide range of influences. It would be helpful to be able to measure the impact on wage levels of each type of influence. We think it is useful to group them as:

- (i) cost of living influences;
- (ii) 'composition' influences; and
- (iii) 'dominant employer' influences.

25. ***Cost of Living.*** This is a measure of the locational aspect of the opportunity cost of wages. It could relate to whether, other things being equal, wages would be different between and across capital cities and non-capital city areas. Such differences could arise if employees sought higher compensation for higher prices, lack of amenities or other adverse characteristics associated with locations of employment. This is the minimum level of difference that Commission staff will seek to measure. As the South Australian submission puts it: '(t)he argument may come down to the contribution that non-traded services, mainly residential land and public and private travel time, make to the relative cost of living.'

26. ***Composition Effects.*** These arise if there are differences in either:

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<sup>8</sup> For example, see Jacobsen, 'Spillover Effects from Government Employment', *Economic Letters*, 39 (1992).

- (i) the underlying composition of the characteristics that determine wage levels across States or sectors; or
- (ii) the market places different valuations on the same characteristics in different locations.

27. In the 1999 Review, the Commission used the average characteristics of employees in, and the values given to those characteristics by, the private sector in each State as the policy neutral measure of those characteristics and values in the public sector in each State<sup>9</sup>.

28. To allow for possible but unknown policy influences, perceived data deficiencies and a degree of labour market segmentation between the State and non-State sectors, the Commission discounted the raw factors by 50 per cent. An alternative interpretation of this discounting could be that the differences in wages in State public sectors were due equally to influences in the States' separate private sectors and the national labour market (in which, for each occupation, wages would be equal across States) — 50 per cent each.

29. It is appropriate to use the private sector as a benchmark if:

- (i) there is a high degree of competitiveness within the private sector;
- (ii) there is competitive interaction between the private and the public sector; and
- (iii) there is a high degree of labour immobility between public sectors and thus markets are regional, rather than national in character.

30. If these assumptions do not hold, then it is probably not reasonable to assume that the average characteristics in terms of wage levels and composition of State private sectors approximate those of State public sectors. As a result, the Commission is inclined to re-examine the validity of these assumptions and to test the degree of influence on the public sector wages of each State of both:

- the private sector wages of that State; and
- the public sector wages of other States.

31. ***Dominant Employer Effect.*** Concerning a possible dominant employer effect, the Commission concluded during the 1999 Review that the relative effects of regional and national markets, and possible spillover effects between sectors, were similar to those existing in other occupations. As such, it did not make any specific adjustments for these occupations.

32. It is possible to see the dominant employer effect, if any, as a special case of the general issue of insularity of the State public sector labour market. The characteristics of the occupation group — such as the industry structure, nature of union activity and composition of firms by size — can then be examined separately to see whether the private

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<sup>9</sup> The effect was, however, discounted by 50 per cent.

sector or the public sector in other States influences public sector wages in each State. In this sense, the issue is whether this effect might have a different impact for some occupations than for others.

33. Queensland, South Australia and Tasmania reinforced the issues relating to dominant employer effects by arguing that, for the relevant occupations, there was a need for:

- (i) stronger emphasis on the national nature of the market;
- (ii) lesser emphasis on the prevailing wages or the general characteristics of the private sector; and
- (iii) recognition of limited room for the individual State sectors in setting wages because of enterprise bargaining and the involvement of the Australian Industrial Relations Commission (AIRC) in arbitration.

34. We are inclined to acknowledge a need to examine issues (i) and (ii), in particular because the essential services provided by those in the dominant employer occupations possibly leaves wider room for bargaining between the unions and the States, and hence the impact of State policies.

35. Ultimately, however, this is an empirical issue and statistical analyses could be used to evaluate the relative impact of these effects. Unfortunately, the current labour shortages in these occupations may act to complicate the analysis and the findings.

36. The Commission has generally focused on the longer term underlying trends in variations in wages across States rather than on those at a point in time<sup>10</sup>. Its premise has been that wage setting for all occupations in the longer term remains subject to:

- (i) market forces that restore the balance between supply and demand;
- (ii) budget constraints; and
- (iii) levels of wages for other public and private sector occupations.

If this premise is valid, variations across States in the levels of wages for the dominant employer occupations would not necessarily be any different from those for other occupations, over the longer term.

37. We are less convinced about the effect of (iii) than we are of (i) and (ii). We think the enterprise bargaining environment is designed to reinforce differences across work groups and States through decentralisation of wage setting. It has been a move away from nationally determined levels of wages.

38. As quoted by South Australia<sup>11</sup>, the AIRC stated that:

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<sup>10</sup> The Commission used the average of ten years of wages data in the 1999 Review.

<sup>11</sup> Page 46, South Australia's submission to the 2004 Review, referring to the Australian Industrial Relations Commission's decision Number T1383.

(t)he information ... does not lead us to the view that we should fix the salaries of Tasmanian teachers at the same level as those in any other State or Territory. It does, however, assist us considerably in determining the salaries claim as it provides a broad picture of teachers' salaries across Australia in the 1990s.

39. Commission staff are of the view that in this judgement, the AIRC rejected interstate wages benchmarking or outcomes of other agreements as fundamental bases for arbitration. We would be pleased to receive States' comments on this issue.

### *Options for Assessment*

40. On balance, we are not inclined to accept at present that an Equal Per Capita (EPC) assessment is a valid starting point for considering States' relative needs to spend on wages for any of the occupations. However, we have accepted a Commission staff recommendation that they investigate the appropriateness of the assumptions underlying the 1999 Review method — in particular those relating to composition and dominant employer effects. Decisions on whether to modify the assessments will be made based on the findings of that investigation. To this end, the Commission has considered three options.

- (i) *Option 1* would focus on ascertaining the validity of using non-State sector wages as a benchmark. It would examine if and how differences in a broad range of characteristics — including those of employees, employers, industries and jobs — between the State and the non-State sectors impact on State sector wages. It would also examine if and how wages for occupations subject to a dominant employer effect differed from those for other occupations. If it were established that the assumptions made in the 1999 Review were no longer realistic, the method of calculating the wages and salaries input cost factor would be modified.
- (ii) *Option 2* is an extension of Option 1 in that it would consider not only comparable non-State sector data in each State but also State sector data in other States. *Option 2* would thus analyse public sector wages in each State in relation to two benchmarks.

This work would attempt to establish whether (and when) it is possible to use adjusted non-State sector data as a benchmark for the assessment. Although it is in part an extension of Option 1, it could involve statistical issues that are more complex than those relating to Option 1.

- (iii) *Option 3* would view each State sector labour market as a separate entity and examine the total State labour market in detail. Other studies of this type have been based on demand for and supply of labour, fiscal capacity and flexibility of the public sector, and other key characteristics such as the union structure, institutional structure and the legal environment in which public sectors operate.

Although this is a sound option in theory (and could possibly help us to better understand the dominant employer effect), it would require

different types of data. Such data are not readily available and it is not feasible to progress this option in the 2004 Review.

41. Commission staff have proposed that Option 1 be the central part of the analysis. It would focus on whether the simple rules used in the 1999 Review assessment should be modified or replaced. Whatever the outcome, a method based on simple rules will again be sought. The work to be done under Option 2 may provide an alternative approach to quantify input costs differentials. Attachment C in Part B of the paper outlines the statistical approaches to these two options.

## **PART B — SUPPORTING INFORMATION AND PROPOSALS FOR ANALYSIS**

42. Part B provides further information and comment on the Input Costs factors. It holds Commission staff views and has been prepared to support discussion at the Staff Conference in November 2000. It comprises:

- (iv) Attachment A      which provides background information;
- (v) Attachment B      which summarises the States' arguments and provides comments on them by the Commission staff; and
- (vi) Attachment C      which provides an outline of the statistical approaches to the assessment of the wages input cost factor that the staff are proposing.

## BACKGROUND INFORMATION

1. This attachment presents background information in relation to the input costs factors — wages and salaries, electricity and accommodation — for the 2004 Review.

2. The Commission introduced the input costs factor in the 1993 Review because it believed that policy-neutral differences existed in the level of States' wages and salaries. The input costs factors, in particular the wages and salaries component, have large redistributive effects. Table 1 shows the input costs factor for Government Primary Education<sup>12</sup>, and the overall redistributive impact of the factor in the 2001 Update. The total redistributive impact of the expenditure assessments is included for comparison.

**Table 1** INPUT COSTS FACTORS, REDISTRIBUTIVE IMPACT DUE TO INPUT COSTS FACTOR AND OVERALL EXPENDITURE, 2001 UPDATE <sup>(a)</sup>

|  | NSW     | Vic      | Qld     | WA      | SA      | Tas     | ACT     | NT      | AUS     |
|--|---------|----------|---------|---------|---------|---------|---------|---------|---------|
| 2001 Update input costs factors <sup>(b)</sup>     | 1.01414 | 0.99648  | 0.98186 | 1.01002 | 0.98133 | 0.98253 | 1.01931 | 1.00677 | 1.00000 |
| Input costs redistribution (\$m)                   | 233.2   | -48.6    | -172.0  | 42.5    | -67.9   | -13.0   | 16.1    | 9.6     | 301.5   |
| Total expenditure assessments redistribution (\$m) | -239.4  | -1 384.9 | -227.7  | 565.2   | 48.3    | 182.6   | 1.8     | 1 054.1 | 1 851.9 |

(a) Based on a pool of \$24 052.4 million and 2001 Update GST relativities.

(b) Sources: Commonwealth Grants Commission, *State Revenue Sharing Relativities, 2001 Update Working Papers*, Volume 3.

## 1999 REVIEW METHOD

3. **Wages and Salaries.** Wages and salaries are a large component of the costs of government services. Consequently, the wages and salaries factor is weighted heavily in the calculation of the input costs factor (it is usually 60 to 80 per cent of total category expenditure). Although the absolute interstate differences in wages and salaries are small, they have a substantial impact on total redistribution. The factors for each category are calculated by weighting a base wages and salaries disability factor (the raw factor) by the proportion of each category's expenditure that is attributable to wages and salaries.

4. Since the 1999 Review, the raw wages and salaries costs factor has been based on average non-State sector (that is private sector and the Commonwealth public

<sup>12</sup> The input costs factors vary for each category depending on the proportion of total expenditure in the category that is wages and salaries. For Government Primary Education, wages and salaries costs factors are based on 70 per cent of expenditure, accommodation costs factors on 2 per cent and electricity costs factors on 1 per cent.

sector) wage by occupation and State<sup>13</sup>, and the Australian average profile of State government employees by occupation.

5. To allow for possible but unknown policy influences, perceived data deficiencies and a degree of labour market segmentation between the State and non-State sectors, the raw factors were discounted by 50 per cent<sup>14</sup>.

6. Because there are more private sector head offices in New South Wales and Victoria, and a higher concentration of Commonwealth head offices in the ACT, the non-State sector data for 'Managers and Administrators' were not considered comparable. As a result, the raw wages data for this group were discounted by 50 per cent before the raw factors were calculated.

7. **Electricity.** In the 1993 Review, the electricity cost disabilities were assessed by judgement, with data on electricity generation costs from the Electricity Supply Association of Australia (ESAA) as a guide. Electricity cost disabilities were assessed for Western Australia, South Australia, the ACT and the Northern Territory.

8. In the 1999 Review, given the movements towards a competitive electricity market, the Commission restricted electricity cost disabilities to the Northern Territory, Western Australia and South Australia<sup>15</sup>. It believed that South Australia's disability would be temporary, and decided to phase it out by 2004. It also adjusted the weights for this component downwards because of falling prices of electricity.

9. **Accommodation.** In the 1993 Review, the Commission assessed office accommodation cost disabilities based on the average commercial rents in a standard set of real estate regions. To ensure that State policy decisions on the locations of their offices did not influence the factor, it used a standard distribution of offices by types of real estate region.

10. In the 1999 Review, the Commission used 'effective rents' instead of face rents to take account of particular leasing arrangements<sup>16</sup> and increased the expenditure weights from 1 per cent to 2 per cent of category expenditure.

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<sup>13</sup> Refer to the Commonwealth Grants Commission, *1999 Review: Report on General Revenue Grant Relativities, Working Papers (1993-94 to 1997-98)*, Volume 3.

<sup>14</sup> An alternative interpretation of this discounting is that the relative influence of the State labour market and a national labour market (in which, for each occupation, wages become equal across States) is similar across States — that is, 50 per cent each.

<sup>15</sup> The rationale was that: the Northern Territory lacked both raw fuel and infrastructure, and was not connected to the national grid; Western Australia faced high electricity cost, although to a lesser extent than the Territory, because of its infrastructure and the availability of fuel used in electricity generation; and South Australia was facing a period of adjustment before it could take full advantage of the national electricity market. The Commission assigned raw factors of 2.00, 1.50 and 1.25 respectively to the three States.

<sup>16</sup> Corporate Property Research supplied, and continues to supply, the data.

## WAGES AND SALARIES

11. Since the introduction of the wages and salaries factor, States have consistently put forward arguments as to whether such a disability exists and, if so, how best to measure it. They have suggested that while the 1999 Review approach is simple, it masks a range of assumptions that need critical appraisal.

12. In 1993, New South Wales was the main advocate of the input costs factor. Victoria, Queensland, South Australia<sup>17</sup>, Tasmania and the Commonwealth Treasury<sup>18</sup> generally argued that there was not enough evidence of long-term interstate wage differentials. They expressed doubts about the conceptual bases for, and the problems of measuring, input cost factors.

13. Queensland also argued that differences in State wage levels were more likely to reflect policy choices regarding wage setting and enterprise bargaining. It and other States questioned the applicability of the assessment methods to police, nurses and teachers because the States were exclusive or near-exclusive employers in these occupations — the ‘dominant employer effect’. They suggested that input cost factors should be further discounted or not assessed at all for health, education and police services.

14. Some States questioned the appropriateness of using private sector wages as benchmarks because of different underlying characteristics that influence that labour market. Such characteristics include industry and age-sex structure, measures of labour quality such as education and experience, and labour productivity. While the States generally acknowledged impacts of such influences on private sector wages, there was less agreement on whether the benchmarks should be standardised<sup>19</sup> to remove the influences due to such differences.

15. In the mid 1990s, the Commission did a great deal to investigate and analyse these issues<sup>20</sup>. The analysis did not establish clear evidence of State-of-residence<sup>21</sup> effects across all States, or provide conclusive evidence of the existence or direction of a relationship between public and private sector wages.

16. In the 1999 Review, the benchmarks for the calculation of the wages and salaries costs factor was expanded from private sector wages to non-State sector (private

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<sup>17</sup> South Australia proposed that if the factor were assessed, interstate differences in wages should be discounted because of uncertainty.

<sup>18</sup> The Commonwealth argued that interstate wage differentials were largely attributable to differences in worker skills and job characteristics, and therefore not relevant to fiscal equalisation.

<sup>19</sup> That is, adjusted as if all States had an Australian average age-sex and quality of private sector labour force, and policy neutral effects due to industry, workplace relations and firm size structure.

<sup>20</sup> Most notably, Volume 2 of the Commission’s *Reports on Research in Progress, 1995* (hereafter CGC, 1995) and *Reports on Research in Progress, 1996* (hereafter CGC, 1996).

<sup>21</sup> The Commonwealth and several States noted that the results of the empirical study by the consultants Borland and Lye indicated that ‘State of residence’ effects were not a significant determinant of earnings. However, the Commission’s current method captures more than just ‘State of residence’ effects.

sector plus Commonwealth Government sector) wages. However, the preferred indicator of unavoidable differences in State sector wage levels remained *primarily* based on private sector wage levels. The Commission's view was that private sector wages were in the main set by market forces and were generally free of *direct* State policy influences. It accepted that States had to pay levels of wages similar to those in the private sector if they were to attract labour, and any levels of wages different from those prevailing in the private sector were deemed to be due to policy choices and not wage disabilities. Thus, it was thought that private sector wages were the best policy-neutral starting point for measuring the wage cost disability.

17. Concerning the 'dominant employer effect', policies were examined to determine whether States had a relatively large effect on wages paid for those occupations where the labour markets were segmented<sup>22</sup>. The Commission also examined whether there was a flow-on effect on average private sector wages used as the benchmark for the assessment.

18. Extreme versions of both assumptions were rejected. Assumption of extreme segmentation meant that a wage input cost disability should not be assessed for the 'dominant employer' occupations. Assumption of flow-on effects for private sector wages implied adjustments to the average private sector wages used as benchmarks for all States employees, and not just for those in the 'dominant' occupations.

19. The Commission noted that:

given the Australian industrial framework and the general absence of institutional barriers to labour mobility, it would be difficult for State governments to set wages for any professions without reference to the prevailing labour costs.

On balance, general labour market competitive forces were thought likely to have some effect on the levels of wages paid by the States for these occupations, at least in the long term, and some effects beyond the control of the States were thus acknowledged.

20. On each 'composition' effect, decisions were made as follows.

- (i) Industry structures in the States were largely free of policy influences. Each State public sector largely operated against the background of private sector wages as they prevailed in the *actual* industry structure of the States, and State wage settings reflected this<sup>23</sup>.

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<sup>22</sup> In a segmented market, wages in the public sector would either not be influenced or be only marginally influenced by wages in the private sector because of little or no mobility within the labour market. Further, the Commission could not find a meaningful relation between the actual prevailing wages and the benchmark (Table 4.3, CGC, 1996)

<sup>23</sup> One implication of this was that if a State were dominant in say, mining which pays above-average wages, this would influence wages in the public sector in that State.

- (ii) Differences in labour quality across States<sup>24</sup> potentially influenced wages. However, measurement of differences in wages due to more or less qualified or skilled workforces was considered difficult, and the private wage benchmarks were not adjusted to account for such influences.
- (iii) Differences in age-sex composition across States influenced private sector wages<sup>25</sup>. However, because wages data by age group were unavailable and States did not influence the gender composition of their workforces, either across sectors or occupations, the private wage benchmarks were not adjusted to account for age or gender influences<sup>26</sup>.

21. The Commission's 1999 Review report stated:

Differences in industry composition, occupation structure and labour force characteristics contribute to interstate wage differentials. Of these, we think that specific adjustments are required only to standardise the average wages to reflect the occupation structure of the workforces in the State public sector. That is, the wages input costs factor is intended to reflect differences between States in the generally prevailing wage levels for similar occupations in the local markets where the States compete for the bulk of their employees. Since industry composition and labour force characteristics are to a large extent beyond State direct policy influences, their effects on the general level of wages should be included in the measurement of the disability.

## **ELECTRICITY**

22. The Commission assessed the electricity cost disabilities by judgement in the 1993 Review, using data on electricity generation costs from the Electricity Supply Association of Australia (ESAA) as a guide. Differential disabilities were then applied to Western Australia, South Australia, the ACT and the Northern Territory.

23. In the 1999 Review, given the movements towards a competitive electricity market, the Commission believed that relative generation costs were likely to become increasingly irrelevant as an indicator of cost differences incurred in providing State

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<sup>24</sup> For example, the ACT has a higher average level of education in most industry categories. Refer to CGC, 1995.  
<sup>25</sup> Studies find that women are paid less than men when differences such as education, experience, occupation and industry are controlled for, but the difference is lower in the public sector. For example, see CGC, 1995.  
<sup>26</sup> Analysis in CGC 1996 showed that applying private sector wages by gender to Australian average State public sector composition of occupation by gender affected Tasmania (the factor would have reduced by 1 per cent), the ACT (a reduction of 1.6 per cent) and the Northern Territory (a reduction of 2 per cent).

services. It believed that the costs incurred by States would instead reflect the market prices of electricity and would converge as the national market developed.

24. On that basis, the Commission restricted its differential assessments to the Northern Territory, Western Australia and South Australia. The Northern Territory was considered to lack both raw fuel and infrastructure, and was not to be connected to the national grid. Western Australia also faced high electricity costs (although lower than those of the Northern Territory) because of its infrastructure and the availability of fuel used in electricity generation.

25. The Commission also accepted that South Australia would face a period of adjustment before it could take full advantage of the national electricity market. It decided to assess a transitional cost disability for South Australia, but to phase it out by 2004.

## **ACCOMMODATION**

26. In the 1993 Review, the Commission assessed office accommodation cost disabilities based on the average commercial rents in various real estate regions<sup>27</sup>, but discounted them by 50 per cent because of concerns about the quality of the data. The disability factors were then applied to 1 per cent of category expenditure as a measure of its importance in category cost structures. To ensure that State policy decisions on their office locations did not influence the factor, a standard distribution of offices by real estate regions was used to weight the discounted rent for each type of region.

27. In the 1999 Review, the Commission used 'effective rents' instead of face rents to take account of particular leasing arrangements<sup>28</sup> and increased the expenditure weights to 2 per cent of category expenditure to reflect the increasing propensity of States to lease rather than own office premises.

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<sup>27</sup> Such as Primary CBD, Secondary CBD, Primary Suburban, Secondary Suburban and Outside Capital City.

<sup>28</sup> Corporate Property Research, a private data provider, supplied and continues to supply the data.

## STATE VIEWS AND STAFF RESPONSES

### WAGES AND SALARIES

#### *State Views*

28. This section presents State arguments, grouped by issue. However, many of them are closely related and, for assessment and analytical purposes, they will need to be considered together.

29. ***Differential Assessment.*** New South Wales had previously suggested that differences in private sector wages across States are ‘compensating differentials’,<sup>29</sup> and that the Commission’s assessment reflected such differences.

30. Queensland argued, based on statistical evidence<sup>30</sup>, that non-State wage levels used to calculate the factor were not significantly different between States, and hence did not warrant inclusion in the assessment. Moreover, by examining the implied disability in non-state sector wages in each State, Queensland found that such differences were not statistically significant<sup>31</sup>. The results indicated that public sector wages were sometimes above and sometimes below private sector wages.

31. South Australia referred to the national and regional characteristics of the Australian labour market and suggested that the Commission’s assumption of a predominantly regional nature of the labour market was not valid.

32. Tasmania questioned the need to assess wages costs disabilities across States because the wages of an increasing number of public sector employees were determined nationally. Tasmania believed that States neither faced significant cost differences nor had the capacity to influence wages paid to the majority of their employees. It also argued that industrial actions, and the involvement of the AIRC in setting wage rates comparably between States for a large group of public employees — particularly nurses, teachers and police — supported its conclusions. For skilled professionals, Tasmania was said to compete nationally and internationally, and act as a price taker.

33. The ACT argued that its public sector competed against the departments of the Commonwealth Government in the local labour market, and supported the Commission’s use of non-State sector wages as proxies. In supporting its claim, the ACT

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<sup>29</sup> Some studies differ on this and suggest that Governments may be paying such differentials when not needed.

<sup>30</sup> Regression analysis by Professor John Mangan of the Economics Department of University of Queensland, acting as a consultant to the Queensland Treasury, suggested: ‘*there appears to be no consistent or uniform pattern of Public Sector/Private Sector wages interaction across States*’.

<sup>31</sup> Refer to Table 4 of the attachment to the Queensland 2004 Review submission.

suggested that enterprise bargaining, and inclusion of individual worker's circumstances, would reinforce rather than diminish wage differentials between States.

34. The ACT suggested that the discounting of the wages costs factor should be reduced from 50 per cent to 25 per cent because:

- (i) of improvement in the reliability of the Average Weekly Ordinary Time Earnings (AWOTE) data; and
- (ii) employment structure and service delivery of the State and non-State sector were more comparable since the 1999 Review as a result of privatisation, outsourcing and sale of government assets.

35. The Northern Territory contended that skill level requirements of all State Governments were roughly the same and that States were effectively competing with each other as much as they competed with the non-State sector in their State. The argument was similar to that presented by Tasmania.

36. *Composition Effect.* South Australia argued that there were strong reasons (differences in industry structure, educational attainments and other compositional effects, measurement errors in data used and lack of up-to-date data) to continue to discount the raw factors. It suggested adjustments due to these differences — as was done for occupational differences — because such differences influenced wages across States<sup>32</sup>.

37. Tasmania also argued that the wages factor failed to account for differences in industry structure across States. It suggested that, if such differences were corrected for, the factor would correctly show a lower cost advantage for the State.

38. The Northern Territory suggested that non-State sector wages be corrected for differences in skill levels.

39. *Dominant Employer Effect.* Queensland suggested that because the State sector was the dominant employer for nurses, teachers and police, and could influence levels of wages for such occupations, no assessment of wage differentials should be applied to health, education and police categories. It argued that because of enterprise bargaining and the involvement of the Australian Industrial Relations Commission (AIRC), State sectors acted as wage setters for nurses, teachers and police.

40. Similarly, South Australia argued that the level of wages paid for teachers, nurses and police was that paid by other State Governments, not by the private sector. It proposed additional discounting for these occupations because the AIRC adopted interstate wages as benchmarks in its decisions.

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<sup>32</sup> The CGC, 1996 Research Report said that: "If differences in worker qualifications and skills result in differences in wages, some adjustment to the data to improve comparability between States could be justified. However, such adjustments have not been attempted because reliable data which relate average earnings to qualifications and occupation are not readily available".

41. Tasmania made similar arguments, reinforcing its argument about the State being a price taker.

42. The ACT on the other hand agreed with research indicating that wages were largely determined through external labour market forces and that no ‘dominant employer’ effect existed. This echoed the views expressed by the Commission in 1999.

43. *Alternative Data.* Victoria suggested that the Commission use data for the private sector’s gross taxable earnings — as in the payroll tax assessment — instead of the AWOTE data. The rationale was that it was more appropriate to use total remuneration, rather than wages and salaries, paid to the high-skills end of the private sector — with which the public sector compete. It suggested that, for the larger States, this could have been a source of disability that the smaller States, which might be said to compete with smaller private organisations, did not have. Victoria claimed that, in this regard, the larger States paid an earnings ‘premium’.

44. South Australia and the Northern Territory recommended that the new ABS Wage Cost Index be used for estimating changes in relative rates of wages between States from 1998. The index was said to offer the advantage of measuring changes in wage rates while controlling for the changes in the composition of the labour force, hours worked, characteristics of employees and their career paths.

45. The ACT argued for the use of total remuneration including fringe benefits, rather than wages.

46. *Other Issues.* South Australia, while giving in principle support for discounting of non-State sector wages for the ‘managers and administrators’ occupations in the 1999 Review, suggested that the discounting be increased because the public sector comprises less than 10 per cent in this category. The Northern Territory argued that the 1999 Review method did not adequately adjust for ‘head office’ effects.

### *Staff Views on the Issues for Assessment*

47. Many of the arguments had been raised in past reviews. The more important and difficult issues continue to be:

- (i) the relationships, and possibly the direction of causality, between levels of wages in the public and the private sector;
- (ii) the effects on wages of differences in State policies concerning groups such as police, nurses and teachers, where States are the dominant employer, and the relevance of national benchmark salaries; and
- (iii) the effects on wages of differences between States in occupation mix; trade qualifications; education levels; industry; job; workplace relations; and firm characteristics (henceforth referred to as ‘characteristics’).

48. These issues are closely related and require examination of a host of influences — such as labour mobility, patterns of interstate trade, imperfections in product and labour markets, collective bargaining processes in both the public and private sectors and the legal environment in which they operate, objectives and fiscal position of State governments, and community expectations. Any or all of these could have material effects on wages outcomes in the public sector. Any empirical work, however, will need to be less ambitious.

49. *Differential Assessments.* The observation that public sector wages sometimes exceeded but also sometimes lagged private sector wages was not a fundamental driver of the 1999 Review approach or the hypothesis now being proposed. The basis of the 1999 Review was that if there was an implicit disability in the private sector, there was a similar disability in the public sector because the wages in the two sectors moved together over time, albeit possibly at different levels.

50. The lack of statistical differences observed by Queensland between non-State wages across States and their average over Australia could be due to:

- (i) the limited observations used to distinguish the small differences; and
- (ii) the high standard errors of the ABS surveys<sup>33</sup>.

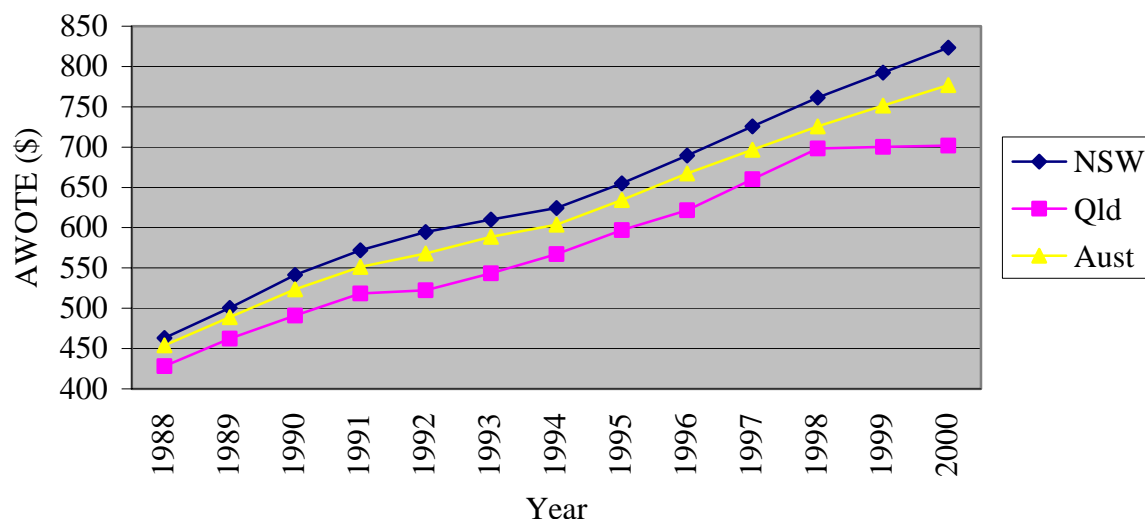
51. Figure 1 compares non-state wages for New South Wales and Queensland which are at the opposite ends of the range of the wages factor. It shows the persistence of the difference between the wage levels of the two States. It also shows that there is no obvious drift in the wage levels of the two States across the Australian average, which would be expected if the differences in wage levels were due only to statistical errors<sup>34</sup>.

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<sup>33</sup> Results of the tests change depending on degree of precision chosen. That is, the conclusions would be different if another significance level, say 5 per cent, were chosen.

<sup>34</sup> This is, however, not evidence that the differences between the two States necessarily reflect disabilities in public sector wages.

**Figure 1** AVERAGE WEEKLY ORDINARY TIME EARNINGS (AWOTE) FOR QUEENSLAND, NEW SOUTH WALES AND AUSTRALIA



Source: CGC Wages Input Costs data as provided by the ABS.

Note: The observation for 1997 and 1999 are interpolated.

52. However, the use of private sector wages as benchmarks implies that State government policies do not differentially influence private sector wages across States<sup>35</sup>, even for occupations that might have had strong intersectoral overlaps. It implies that public sector wages in a State are passive mirrors of private sector wages in that State. A consequence was that each State public sector was assumed to be insulated from the effects of wages and labour mobility to and from public sectors of other States, and that no national labour market existed for State public sector employment. On that basis, the 1999 Review assessment could be seen as presuming a regional character of the labour market for State public sector employees.

53. This presumption does not mean interstate differences in wages and salaries do not exist. It is possible that '(t)he argument may come down to the contribution that non traded services, mainly residential land and public and private travel time, make to the relative cost of living'<sup>36</sup>.

54. However, if 'observed differences in residential land prices are in fact more likely to be associated with relatively high demand for high value locations rather than with supply (topographical?) factors'<sup>37</sup>, they should still be reflected as disabilities.

<sup>35</sup> Such as through levels of payroll tax, through wage setting processes in the public sector, by influencing unions' bargaining processes directly or indirectly, or through legislative processes or other policies.

<sup>36</sup> South Australia Submission to the 2004 Review, p 45.

<sup>37</sup> Ibid, p 45.

55. Staff have examined a range of studies of interstate wages differentials. Although specific analysis sometimes fails to be conclusive, there are indications that interstate wages differentials exist even after many possible influences are controlled for. At the minimum end of such differences is the 'State of Residence' effect. If interpreted as one element of cost-of-living (COL) differences, they appear to exist even if no assumption is made about the regional or national nature of labour markets. Results on 'State of Residence' effect from some Australian studies are shown in Table 2 for male employees<sup>38</sup>. The models use logarithm of earnings. Thus, for example, earnings of male employees in the private sector of NSW in the first mentioned study in Table 2 was on average 5.7 per cent higher than those in Tasmania, the ACT and the Northern Territory considered together.

**Table 2** STATE OF RESIDENCE EFFECTS

| Study   | NSW   | Vic    | Qld    | WA     | SA     | Tas | ACT   | NT |
|---|-------|--------|--------|--------|--------|-----|-------|----|
| Earnings of Public and Private Sector Employees in Australia: Is there a difference? <sup>(a)</sup> |       |        |        |        |        |     |       |    |
| Private   | .057* | .009   | -.015  | .069*  | -.022  |     | 0     |    |
| Public  | .014  | .016   | -.033  | -.010  | -.032  |     | 0     |    |
| Employee Income Relationship Between the Public and Private Sector in Australia <sup>(b)</sup>      |       |        |        |        |        |     |       |    |
| Private   | .039* | .003   | -.017  | .020   | .021   |     | 0     |    |
| Public  | -.002 | -.013  | -.049* | -.067* | -.059* |     | 0     |    |
| Unions, Firm Size and Wages <sup>(c)</sup>  |       |        |        |        |        |     |       |    |
| Model 1   | 0     | -.028* | -.047* | -.035* | -.070* |     | -.015 |    |
| Model 2 <sup>(d)</sup>  | 0     | -.028* | -.045* | -.032* | -.065* |     | -.011 |    |

Note: The numbers are estimated coefficients from regression models. \* means significant at 10 per cent level.

Sources: (a) Estimated coefficients on log of wages, Paper 514, Department of Economics, The University of Melbourne, April 1996. The sample did not distinguish between Tasmania, the ACT and the Northern Territory.

(b) Estimated coefficients on log of wages, coefficients, Borland and Lye in: CGC 1995.

(c) Paul Miller and Charles Mulvey, The Economic Record, Volume 72, No 217. The reported coefficients are over and above a separate capital city effect of 0.061 and 0.043 respectively for the two models.

(d) Model 2 includes firm size as a variable.

56. A recent cross-country study by the London Economics Intelligence Unit also attributed different cost-of-living indices to different Australian capital cities<sup>39</sup>.

57. Tasmania's position, while arguing for similar end-results, appeared contrary to that of Queensland. While Tasmania argued that differential assessments should not be continued because it was a price-taker, Queensland argued that interstate differences arose because State Governments influenced wages. Moreover, if Tasmania were generally a

<sup>38</sup> For non-market reasons, the labour market for females appears to operate differently from that for males. The labour market for males appears to provide a better comparison.

<sup>39</sup> The study is based on 170 goods and services. In a list of 131 cities, number one being the most expensive, Sydney is rated 55th. Melbourne is at 61, Brisbane and Perth are equal at 78 and Adelaide is at 85.

price taker, its private sector might have faced a similar situation, and the private sector wages data used for assessment purposes would have reflected the price taking responses.

58. *Composition Effects.* The 1999 Review factor differed from ‘pure’ COL differences because it included influences on wages due to other differences in the average characteristics across States between the private sectors, and between the private and public sectors. This means that in each State, and for each occupation, policy-neutral public sector wages were assumed to be proportional to actual wages paid to an employee with average characteristics and working in the private sector, with average characteristics, of that State.

59. It is known, however, that average characteristics of State public sector employees are different from those in the private sectors. Some indicators of differences are shown in Table 3.

**Table 3** PRIVATE AND PUBLIC SECTOR EMPLOYEES — SELECTED CHARACTERISTICS

| Characteristics                       | Male    |        | Female  |        |
|---------------------------------------|---------|--------|---------|--------|
|                                       | Private | Public | Private | Public |
| Education                             |         |        |         |        |
| Degree (per cent)                     | 10      | 26     | 12      | 31     |
| Not complete high school (per cent)   | 35      | 23     | 41      | 22     |
| Experience (years) <sup>a</sup>       | 19      | 22     | 17      | 19     |
| Occupation                            |         |        |         |        |
| Professionals (per cent) <sup>b</sup> | 10      | 25     | 12      | 32     |
| Clerks (per cent) <sup>b</sup>        | 7       | 14     | 35      | 38     |
| Union affiliation (per cent)          | 35      | 75     | 28      | 65     |

(a) Calculated as age reported at the time of survey, minus age left school.

(b) Australian Standard Classification of Occupations (ASCO).

Source: Table 2, Borland, Hirschberg and Lye 1998, *Earnings of Public Sector and Private Sector Employees in Australia: Is There a Difference?*, *Economic Record*, Vol. 74, No. 224: 36-53. For the Experience variable: Borland, Hirschberg and Lye 1996, *Earnings of Public Sector and Private Sector, Employees in Australia: Is There a Difference?*, Research Paper Number 514, Department of Economics, University of Melbourne.

60. By not accounting for the impacts of these differences on wages, the Commission implicitly ignored ‘composition’ effects — that is, those due to characteristics that are generally material to determining wages<sup>40</sup>.

<sup>40</sup> A large number of studies has established the influence of these factors on wages. For example, see *Elliot and Murphy, The Relative Pay of Public and Private Sector Employees, 1970-84, Cambridge Journal of Economics (1987)*. Composition effect also relates to ‘compression’ of wages in the public sector — that is, wages are relatively more uniform compared with the private sector, possibly meaning a wages ‘premium’ at the lower, and

61. Staff are inclined to recommend to the Commission that the influence of composition differences across States on private sector wages should be examined.

62. ***Dominant Employer Effect.*** Concerning occupations potentially subject to the dominant employer effect, the Commission concluded in the 1999 Review that the relative effects of regional and national market, and possible spillover effects between sectors, were similar to those for other occupations.

63. While there is some evidence that the proportion of public service employees in an occupation influences earnings of all employees in that occupation<sup>41</sup>, it does not necessarily follow that variations in wages across States disappear, or are any different from other occupations. While there may be some interstate benchmarking, the process of wage setting is subject to the constraints of individual State budgets, and levels of wages for other public service occupations and those generally prevailing in the private sector. It cannot be assumed that any interstate differences in wages for these occupations are due to policy effects alone.

64. To the extent that State arguments relate to the AIRC's use of interstate benchmarking, we could not find supporting evidence. As quoted in the submission by South Australia<sup>42</sup>, the AIRC stated that:

(t)he information ... does not lead us to the view that we should fix the salaries of Tasmanian teachers at the same level as those in any other State or Territory. It does, however, assist us considerably in determining the salaries claim as it provides a broad picture of teachers' salaries across Australia in the 1990s.

65. The above judgement by the full bench of the AIRC also suggested that it rejected interstate wages benchmarking or other agreements as the bases for arbitration. Similarly, comparing current wages for nurses and teachers across States as in Table 4 and Table 5 respectively, we could not see clear patterns of interstate parity in wages.

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a wages 'deficit' at the higher end of skills. Moreover, some studies establish that levels of wages in capital cities and non-capital areas are different.

<sup>41</sup> For example, see Jacobsen, 'Spillover Effects from Government Employment', *Economic Letters*, 39 (1992).

<sup>42</sup> South Australia's submission to the 2004 Review, p 46, referring to the Australian Industrial Relations Commission's decision Number T1383.

**Table 4** NURSES — PUBLIC SECTOR WEEKLY SALARY BY STATE AS AT JUNE 2002<sup>(a)</sup>

|   | NSW    | Vic     | Qld <sup>(b)</sup> | WA      | SA      | Tas     | ACT     | NT      |
|---|--------|---------|--------------------|---------|---------|---------|---------|---------|
| Registered nurse, level 1, year 7                         | 861.20 | 860.60  | 816.65             | 875.70  | 835.65  | 810.75  | 863.50  | 862.39  |
| Registered nurse, level 4,<br>year/grade 1 <sup>(c)</sup> | NA     | 1040.40 | 1268.75            | 1231.00 | 1264.30 | 1160.20 | 1198.35 | 1197.75 |

(a) The rates of pay were derived from the most recent public sector nurses' agreement certified by the Australian Industrial Relations Commission. In case of New South Wales, the rates of pay were derived from the relevant State Public Sector Award.

(b) Certified Agreement expired at 31.05.2002.

(c) Interpretations should be proceeded with cautions because the levels of nursing classification across States may not be strictly comparable. In particular, no comparable figure for New South Wales can be drawn because New South Wales has a different nursing classification compared to other States.

NA = not available.

Source: Australian Nursing Federation, *Nurses Paycheck*, Vol 1, No. 3, June-August 2002: p 18-22.

**Table 5** SCHOOL TEACHERS' ANNUAL SALARIES JULY 2002 BY STATE<sup>(a)</sup>

|  | NSW    | Vic    | Qld    | WA     | SA     | Tas    | ACT    | NT     |
|--|--------|--------|--------|--------|--------|--------|--------|--------|
|  | \$     | \$     | \$     | \$     | \$     | \$     | \$     | \$     |
| 4 year trained, 4 <sup>th</sup> increment <sup>(b)</sup> | 45 204 | 43 289 | 45 524 | 42 426 | 46 359 | 43 454 | 41 500 | 48 068 |

(a) Annual salaries, except for New South Wales which are based on award rates, are based on certified agreements rates.

(b) Commencement date are different between States, range from August 2001 to July 2002.

Source: Australian Education Union (<http://www.aeufederal.org.au/Industrial/Salaries/teachers.html>).

66. It seems, however, that public sector wages in a State could potentially influence those in other States. Proposed research by Commission staff would attempt to examine this possibility and test the extent to which the State public sector labour market is regional in character. Because some studies emphasis the need to examine occupation at a fine level, and because of starkly different distributions of employees between sectors at a fine level, this work will need to be undertaken at as fine a level of occupation as data permit (and at a finer level than that used by the Commission in 1999).

67. Accepting the argument that large States have to pay 'premiums' to their senior public sector employees would reinforce the notion of insulated State labour markets. Otherwise, large States could plausibly attract labour from public sectors of other States to avoid paying 'premiums'. On balance, Commission staff are not inclined to recommend that this argument be pursued.

68. **Alternative Data.** Under any of the proposed approaches, it would be better to use total earnings rather than wages and salaries as the basis for calculating the factor because the total compensation packages capture the wider impacts on State budgets. However, if taxable gross earnings data are available only as aggregates at the State level,

they may suffer deficiencies similar to those of the AWOTE data in analysing effects of different types of determinants<sup>43</sup>.

69. Staff are of the view that the ABS Wage Cost Index could be useful in updates<sup>44</sup>.

### *Staff Views on Options for Assessment*

70. The apparent simplicity of the 1999 Review assessment masks a range of assumptions that should be tested. They relate to the appropriateness of private sector wages as policy neutral benchmarks for any or all occupations, the particular manner in which such wages are used in the assessments, and the manner in which wage signals and/or labour mobility operate within and across sectors and States. An important context for examining these issues is the sensitivity of grant redistribution to small variations in the wages and salaries factor.

71. Given the interrelated nature of the issues, an integrated assessment framework based on sound concepts is necessary.

72. Staff do not currently think that an Equal Per Capita (EPC) assessment is consistent with the equalisation principles. There appears to be sufficient indication that interstate differentials exist even when many possible influences are controlled for. This is most clear for the State of residence or COL effects.

73. The 1999 Review factor differed from pure COL differences because it did not adjust for composition effects. This suggests that one option (henceforth 'Option 1') would be to continue to use non-State sector wages as benchmarks<sup>45</sup>.

74. In doing so, the proposed research will look first at the broad range of influences that determine wages and dissect levels of non-State wages into many determinants. It would then examine if and how State-specific composition of private sector characteristics — in particular those relating to industry structure, union activity and firm size structure — impact on public sector wages. Finally, it would examine if variations in wages for dominant occupations are different from those for other occupations and whether such differences necessarily imply differential policy neutral effects across States.

75. The analyses would also differentiate between the levels of wages in capital and non-capital locations, and between genders. However, interpreting the extent to which

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<sup>43</sup> Such deficiencies relate generally to the aggregate nature of the AWOTE data that does not allow analysis of 'dominant employer' or 'composition' effects.

<sup>44</sup> The Wage Cost Index only allows comparisons of levels of wages between States over time. It could be useful for updates if its construction is consistent with the assessment method.

<sup>45</sup> 'For most studies of public sector labour market outcomes, (the benchmark) has been the private sector', *Recent Developments in Public Sector Labour Markets, Robert G Gregory in: Volume 3, Handbook of Labour Economics, 1999*. Whether this is an appropriate benchmark depends on whether they are set at competitive levels. Other possibilities might be rent, or different predisposition of job seekers to work in the public sector.

each influence is policy neutral may not be straightforward. In reflecting the policy neutral effect of each influence in the assessment, some judgement will be required.

76. Attachment C outlines the statistical approach to this work as Task 1.

77. The second option (henceforth 'Option 2') is an extension of Option 1, and would analyse public sector wages in each State in relation to two plausible alternative benchmarks because they often form the bases for real-life negotiations. They are:

- (i) the comparable private sector wages in that State; and
- (ii) the public sector wages in other States.

78. Some empirical studies analyse wages in the two sectors jointly because one sector may be a reference point for comparability with, and capture spillover effects from the other. However, such studies focus on different types of effects depending on the sector in focus. Thus, the work that would be undertaken would test whether, in each State, the relative effect on public sector wages of private sector wages in that State and the public sector wages in other States are similar in a policy neutral sense, particularly if it can be assumed that fiscal capacity and bargaining processes are comparable across States. The statistical analysis is more complex than Task 1.

79. Attachment C outlines the statistical approach as Task 2.

80. A third option (henceforth 'Option 3') would be to analyse the public sector labour market as a separate entity<sup>46</sup>.

81. Conceptually, this is not very different from the analysis of the private sector at a broad level. The profit constraint on wages is replaced with a budget constraint, and market forces are replaced with political constraints. However, there are important differences. The private sector is not a single market<sup>47</sup> and varies enormously by size and composition. This is relevant because the size of the workplace appears positively correlated with the degree of unionization and level of wages. The public sector is much more homogeneous.

82. The labour market conceptual framework of the public sector seems to be based on demand for and supply of labour, fiscal capacity and flexibility, and other key characteristics such as the union structure, institutional structure and the legal environment<sup>48</sup>. Differences due to the nature of labour demand are sometimes taken into

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<sup>46</sup> The public sector labour market is studied in its own right because it is large. (In 1995, the labour force in the public sectors were: Australia, 20 per cent; Japan, 6 per cent; USA, 14 per cent and Sweden, 31 per cent).

<sup>47</sup> For example, large firms may behave differently from smaller firms (Bender, 1998 as quoted in the Queensland 2004 Review submission).

<sup>48</sup> There are a number of studies in the US local government settings. Very generally, per capita income, public sector expenditure, employment conditions and relative pay, and voters' attitude are important factors that explain intergovernment variation.

account<sup>49</sup>. The higher relative unionization in the public sector, and its impact on wages, is also an area of active research. Statistical methods attempt to account for interdependence of wage settlements across bargaining units and geographical areas, generally keeping the private sector wages in context as one measure of opportunity costs.

83. The nature of the proposed analyses and the necessary data are somewhat different from those for Option 1 or Option 2. Because of the trend towards each government agency becoming responsible for its wage-setting and for individualising pay through performance schemes, analysing this option would require a great deal of information on wage setting environments at a workplace level. Lack of information and reference studies in the Australian setting will prevent this option being progressed in the short-term.

84. It is proposed that Task 1 will be the central element of the proposed analysis. It will focus on attempts to replace, if necessary, the simple rules behind the 1999 Review assessment, with alternative rules — again, simple if possible. Task 2 may provide an alternative way of developing rules if the statistical issues can be satisfactorily resolved.

## **ELECTRICITY**

### *State Views*

85. Victoria suggested that the Commission should assess an electricity cost disability based on policy-neutral data rather than it being assessed by judgement — that is, the Commission should either remove the factor or establish an independent benchmark<sup>50</sup> to improve accuracy. However, it did not support this position with either evidence or data.

86. South Australia objected to the decision to phase out its disability by 2004 and suggested the use of electricity retail prices recorded by ESAA to estimate price differences between States. It argued that despite the National Electricity Market, it continued to experience higher costs in generating, transmitting and distributing electricity that were due to technical and geographic reasons rather than State policies.

87. The ACT used the average retail electricity prices provided by ESAA for the period from 1992-93 to 1999-2000 to argue that:

- (i) no State participating in the National Electricity Market, including Tasmania, had a disability;

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<sup>49</sup> For example, bargaining may increase wages but reduce employment due to the inelastic nature of demand, or increase both wages and employment by increasing levels of demand for public sector goods and services.

<sup>50</sup> For example, by type of generation capacity. Victoria further suggested that 'alternative measures of the true, policy-adjusted cost of electricity were available, and data could be obtained for CGC use'. Victoria will be asked to make the data available to the Commission.

- (ii) the disability factors for Western Australia and the Northern Territory were too generous, and should be 1.3 and 1.6 respectively<sup>51</sup>; and
- (iii) the component weight should be reduced from 1 per cent to 0.4 per cent.

88. The Northern Territory suggested that factors should continue to be assessed to reflect the higher costs it faced in relation to electricity. Comparing retail prices of electricity across States, the Territory supported the Commission's judgement in the 1999 Review factor.

### *Staff Views on Issues for Assessment*

89. No firm views have been formed on either the issues or the suggested data sources<sup>52</sup>. During its workplace discussions, South Australia provided some material evidence to support its claim. Based on this and a tentative browsing of ESAA data, staff are inclined to recommend that there is a case for revisiting the 1999 decision to discontinue the assessment of a disability for South Australia from 2004. However, staff would seek further information and data from South Australia to understand the extent to which it is a policy neutral disability.

## ACCOMMODATION

### *State Views*

90. Tasmania questioned the need to assess accommodation cost disabilities. It argued that the additional costs of leasing infrastructure used in the provision of services would have been factored into the decision a State made when deciding to buy or lease, or even sell and lease back. It argued, therefore, that it was inappropriate to assess above-average rental costs.

91. The Northern Territory suggested the use of Australian Valuation Office data in relation to the accommodation factor, particularly for Darwin and Hobart.

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<sup>51</sup> 1999 Review values were 1.5 and 2.0 respectively.

<sup>52</sup> Such as *Electricity Prices and Cost Factors*, Staff Research Paper, Productivity Commission, 2001.

*Staff Views on Issues for Assessment*

92. In the Commission's general framework, expenditure needs, if any, are assessed regardless of the source of funding. As such, staff are uncertain if Tasmania's argument is relevant to the assessment, and are not currently inclined to recommend that it pursues this argument. Commission staff will examine the data from the Australian Valuation Office.

## AN OUTLINE OF PROPOSED STATISTICAL ANALYSIS

This Attachment presents an empirical explanation of how Commission staff propose to model and resolve some of the conceptual issues raised by the States in relation to wages and salaries input costs. Two approaches to investigating the drivers of States wage and salary differences were proposed in the main paper<sup>53</sup>. Professor Jeff Borland of the University of Melbourne will act as a referee for the statistical analysis. Although only one version of model specification is presented, variations of it may be feasible.

For both tasks, the 'Education and Training Experience Survey' Unit Record Files (URF) data from the Australian Bureau of Statistics will be used. The data provide detailed information on job and worker characteristics at the individual-level, and are available for 1989, 1993, 1997 and 2001. Data over longer time periods are used to find relationships that are less sensitive to political and economic cycles.

### TASK 1

This work relates to using private sector wages as benchmarks. Private sector wages in the States will be regressed on all measurable labour market influences using human capital theory as the basis. Each effect will be examined for policy neutrality, and the estimates for each effect will be used to construct policy neutral measures of wages by State. In doing this work, particular focus will be on examining the potential effects of:

- (i) composition of industry, firm size and level of union membership; and
- (ii) dominant employer.

#### *Examining Industry, Union and Firm Size Effects on Public Sector Wages*

Empirical analysis will be used to establish whether, and to what extent, measures of such effects influence public sector wages. Some issues of interpretation are mentioned below.

- (i) **Industry Effects.** This effect could be interpreted as due either to differences in labour productivity across industries or employers' 'ability to pay' (including differences due to rent sharing)<sup>54</sup>. The effect is likely to be different across States.

If this effect is interpreted as being due to differences in labour productivity, only Australian average effects would be relevant

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<sup>53</sup> These approaches are consistent with the standard factor analysis framework used by the Commission.

<sup>54</sup> Inter-industry wages differentials are often substantial. For example, *Krueger Alan B and Summers Lawrence H, Efficiency Wages and the Inter-industry Wage Structure, Econometrica 56(2), March, 259-93, 1988* finds that, after controlling for labour quality, workers in high-wage industries receive non-competitive rents.

because, for assessment purposes, wages must relate to the average level of productivity and should have no effect on the assessment.

However, if the effect relates (at least to an extent) to employers' 'ability to pay', there is a need to examine whether the estimated differences in wages in the private sector are due to this effect, or explains some of the differences in public sector wages across States.

- (ii) ***Firm size.*** Like the industry effect, this could be interpreted as either labour productivity or employers' ability to pay. Since the composition of firms by size varies across States, and wages appear to vary by firm size, its effect on wages in the private sector might be expected to differ between States.

If this relates (at least to an extent) to employers' ability to pay, there is a need to examine if measures of differences in wages in the private sector are due to this effect, or can explain some of the differences in public sector wages between States.

- (iii) ***Union effects.*** Similarly, this could be interpreted as either labour productivity or employees' ability to bargain. Currently, wage effects, if any, arising from different patterns of union membership in the States' private sectors implicitly influence wages and salaries factors.

If this relates to employees' ability to bargain, there is a need to examine if measures of differences in the private sector wages are due to this effect cause, or explain some of the differences in public sector wages between States.

- (iv) ***Migrant (Z<sub>s</sub>).*** Some studies have established that some groups of migrants may, on average, be paid less for similar measurable characteristics, due to discrimination or some adverse labour market characteristic such as fluency in English.

If this effect is due to differences in labour market characteristics, and hence productivity, it would have no effect on the factor because standardised measures of wages must relate to the standard level of productivity. If not, a State-specific, rather than the standard, proportion of such population may be used as a weight for each State. In this case, it would probably contribute to the differences in the each State's factor, depending on whether they have more or less access to potential migrant employees.

On average, 'underpayment' applies also to female employees. However, it could be assumed that no State has more or less access to potential female employees (except possibly for the Northern Territory), and a standard proportion for females could be used, with no relative effect on the factors.

If the analysis showed that these effects were material, they would be reflected in measures of standardised wages for each State and each occupation, using the estimated coefficients weighted by the Australian standard, or in some cases the State-specific, characteristics.

### ***Dominant Employer Effect***

This will be investigated by modifying the regression specification for the private sectors and including additional variables to reflect measures of ‘dominance’. One measure is the proportion of employees in public sector by occupation. This impact will be analysed on its own and through its impacts on coefficients relating to other effects such as the ‘composition’ effects or both.

It would affect relative measures for States only if the measures of standardised concentration<sup>55</sup> of relevant occupations vary between States.

## **TASK 2**

This task would analyse public sector wages in each State, with reference to two benchmarks: ‘comparable’ private sector wages in that State and public sector wages in other States — that is, whether wage setting in each State could be viewed in part as a reaction to what the other States are doing. The statistical issues could be complex.

Analytically, many of the statistical constructs and features of Task 1 would be used. One key difference is that the focus would be on estimating not only influences of individual determinants of private and public sector wages in each State, but also influences due to wages in all Australian States, excluding the State being considered<sup>56</sup>. Three entities would be analysed for each State. The other difference is that further analysis would be done to examine the estimated coefficients for these entities in relation to each other.

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<sup>55</sup> That is, standard concentration of the public sector relative to actual concentration in the private sector.

<sup>56</sup> The coefficients for the industry structure, union and workplace size effects specific may be constrained so as to be equal for all State public sectors because comparing these with the private sector is not meaningful.