

2025 Methodology Review

Wage Costs Consultation Paper

Tasmanian Government Submission

November 2023

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I Introduction

Tasmania welcomes the opportunity to respond to the Commonwealth Grants Commission's (Commission) Consultation Papers for the 2025 Methodology Review.

Tasmania also welcomes the Commission's decision to seek independent advice from Consultant, Professor Alison Preston, from the Department of Economics, University of Western Australia (Consultant) on the Commission's methodology to estimate state differences in wage relativities.

As a result, the Commission issued an addendum to the Wage Costs Consultation Paper responding to the Consultant's recommendations.

This submission presents the Tasmanian Government's comments on the current methodology used to assess wage costs and responds to the consultation questions in the Wage Costs Consultation Paper - Addendum.

While Tasmania supports many of the preliminary positions expressed by the Commission in the addendum, there are some areas of concern, as detailed in the following box.

Comments on current methodology

Tasmania is concerned that the indirect method currently used to measure geographic wage pressures may be inadvertently biased by other unidentified non-geographic influences.

Continued use of private sector wages as a policy neutral proxy for the market pressures faced by public sector employers

Tasmania has concerns that the level of uncertainty associated with the use of private sector wages as a proxy may be understated as there appears to be an inconsistent relationship between the two sectors in their response to wage pressures.

Continued use of the Characteristics of Employment survey (COES) data

Given the moderately large standard errors on the estimates of Tasmania's wage relativities, the COES sample may be too small for Tasmania.

Proposed approach to combine estimates of relative differences in states' wages across years

Tasmania questions whether the proposed changes appropriately balance the Commission's principles of practicality and contemporaneity.

Appropriateness of a 12.5 per cent discount

Tasmania contends that there is considerable uncertainty associated with the current private sector wage costs model and the choice of dataset, and believes that a 25 per cent discount is warranted.

2 Comments on the current methodology

While the Commission raises several specific questions in its Consultation Paper, Tasmania continues to have concerns that the current methodology does not sufficiently reflect wage pressures on the Tasmanian public sector.

Tasmania acknowledges the Commission's position that public sector wage levels vary across states and territories (states). The Commission's current methodology uses private sector wages as a proxy for the non-policy driven differences across states. The intention of the wage costs assessment is to measure what the Commission calls geographic effects.

In the Commission's Wage Costs Consultation Paper, the Commission notes that:

The assessment is designed to identify the difference in cost for states to employ similar workers. Non-geographic factors (such as education, skills mix and years of experience) that influence individual wages are controlled for in the model. This leaves only the geographic effects (such as local amenities, climate, attachment to a state, cost of migration).¹

However, data for the assessment years considered by the Commission in the addendum (2019-20 to 2021-22) contrast with the movement in the Commission's estimates of Tasmania's wage level relative to other states. As a result, Tasmania is concerned that the indirect method used in the Commission's model may be inadvertently biased by the omission of relevant non-geographic influences.

Tasmania believes it is possible the model omits one or more unidentified non-geographic influences that may materially affect wage costs. Tasmania would suggest that these unidentified factors may include employee health and employer characteristics.

In their final report, the Consultant referred to examples of controls for a typical wages model, including workplace size.²

While the Commission does not currently include workplace size in its model, economic theory and empirical evidence have long supported the presence of an employer size wage effect.^{3,4,5,6,7} That is, there is a strong positive relationship between the average wage paid by an employer and their size. It follows that if the average size of employers differs between states, this would impact the wages paid.

Compared to the national average, Tasmania has a higher proportion of its private sector workforce employed in small businesses with few employees. In addition, from 2018 to 2021, the proportion of employees working in Tasmanian businesses with fewer than 50 employees increased while the proportion of employees working in businesses with more than 50 employees declined (Figure 2.1).

¹ See 2025 Methodology Review Wage Costs Consultation Paper, paragraph 4.

² Preston, A. (2023). Wage Costs Consultant Report, p. 8.

³ Strand, J. (1987). The Relationship between wages and firm size: an information theoretic analysis. *International Economic Review*, 51-68.

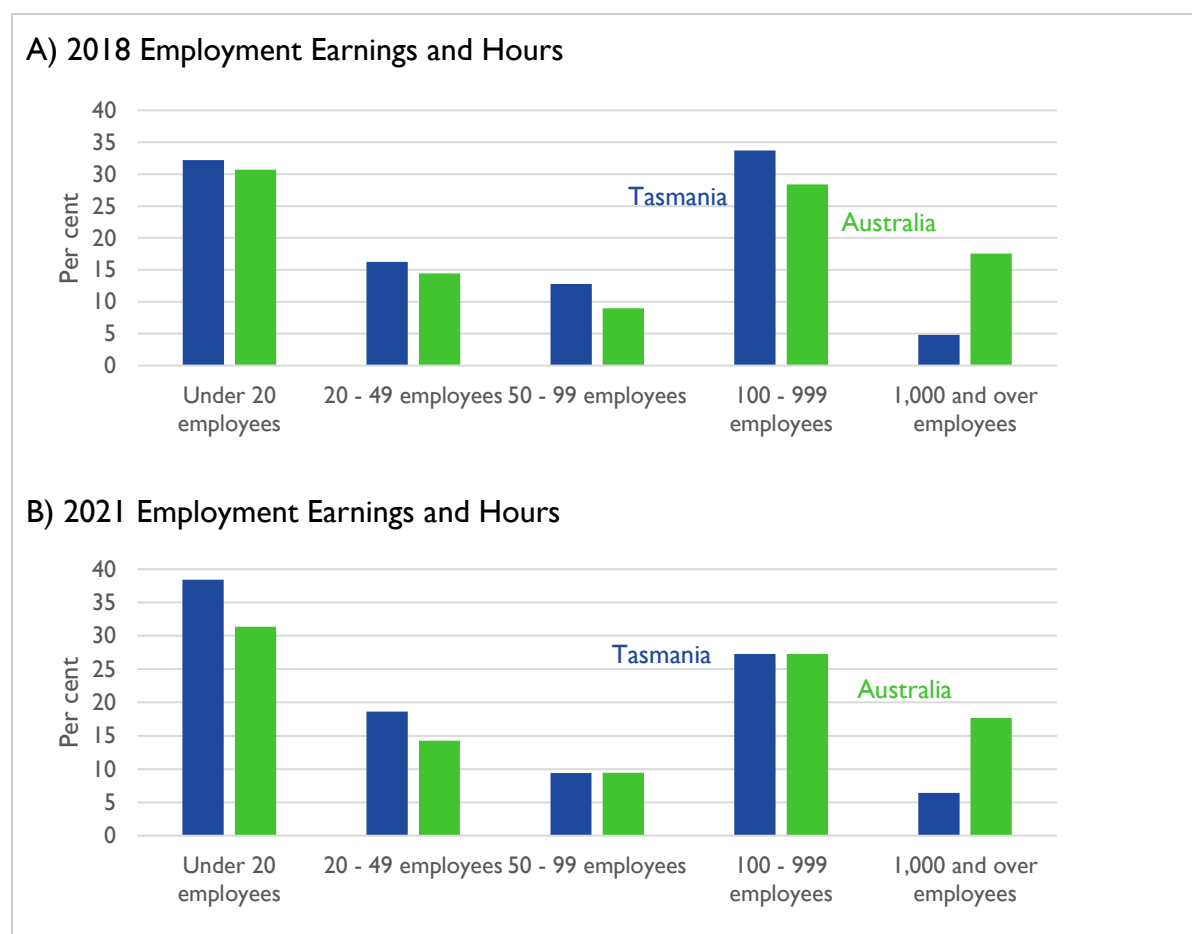
⁴ Brown, C., & Medoff, J. (1989). The employer size-wage effect. *Journal of political Economy*, 97(5), 1027-1059.

⁵ Oi, W. Y., & Idson, T. L. (1999). Firm size and wages. *Handbook of labor economics*, 3, 2165-2214.

⁶ Waddoups, C. J. (2007). Employer Size-wage Effects in Australia. *Labour*, 21(4-5), 809-835.

⁷ Cai, L., & Jeffrey Waddoups, C. (2012). Unobserved Heterogeneity, Job Training and the Employer Size-Wage Effect in Australia. *Australian Economic Review*, 45(2), 158-175.

Figure 2.1: Proportion of private sector employees by employment size



Source: ABS Tablebuilder

It is conceivable that relatively lower private sector wages in Tasmania, are in part due to its smaller workplace size and that this is not controlled for in the Commission's model. The public sector does not face this same downward wage pressure because it is a large employer. Therefore, a model that relies on Tasmanian private sector wage pressures may be overstating any downward wages pressure for the public sector.

Tasmania suggests that the Commission examine the impact of controlling for workplace size in the wage cost regression model. Tasmania acknowledges that the current COES dataset does not include firm size. If some other data source such as ABS Employment, Earnings and Hours is assessed to be suitable then it could be used to estimate this effect.

Another factor that may be contributing to Tasmania's lower private sector wages relative to the national average is the link between poorer health and lower wages. ABS 2021 Census data indicate that the rate of long-term health conditions in private sector employees varies across states, which could also impact wages.

There is evidence that poor health can be a driver of lower wages.^{8,9,10,11} This relationship has been tested empirically to address the issue of simultaneous bias (low wages determining

⁸ Cai, L. (2009). Effects of health on wages of Australian men. *Economic Record*, 85(270), 290-306.

⁹ Contoyannis, P., & Rice, N. (2001). The impact of health on wages: Evidence from the British Household Panel Survey. *Empirical Economics*, 26, 599-622.

¹⁰ Halima, M. A. B., & Rococo, E. (2014). Wage differences according to health status in France. *Social Science & Medicine*, 120, 260-268.

¹¹ Cai, L. (2021). The effects of health on the wages of Australian workers: gender differences and the impacts of macroeconomic conditions. *International Journal of Manpower*, 42(5), 842-865.

poor health and vice versa). The wages regression model used by Mavromaras and colleagues to assess public and private sector differentials found that “a long-term health condition comes with a 7 per cent lower pay (5 per cent in the public and 8 per cent in the private sector)”.¹²

Tasmania suggests that the Commission also investigate the impact of including a health control variable in the wage costs model.

¹² Mavromaras, K., Mahuteau, S., Richardson, S., & Zhu, R. (2015). Public-private sector wage differentials in Australia: What are the differences by state and how do they impact GST redistribution decisions [revised], p.7.

3 Response to the consultation questions in the wage costs addendum

3.1 Do states agree on continuing to use private sector wages as a policy neutral proxy for the market pressures faced by public sector employers?

As noted, the assessment uses state wage relativities in the private sector as a proxy for labour market pressures experienced in the public sector. A key assumption of the assessment is that geographic effects will have the same impact on both public and private sector wages.

The Consultant was asked to advise on the methodology used to estimate state difference in wage relativities, including the use of the private sector as a proxy.

While the Consultant recommended on balance that the Commission continue to use private sector wages as a proxy for the labour market pressures in the public sector in each state, the Consultant observed the relationship between private and public sector wage relativities is not consistent in all states. A key weakness of the approach, the Consultant noted, is that “there are significant differences in the character and composition of private and public sector labour markets”.¹³

As set out in Section 2, Tasmania supports the use of a wage costs driver but is concerned that the current methodology may result in a wage relativity which understates the market pressures faced in the State’s public sector. In addition, when recent movements in wages are considered, there appears to be a divergence between the wage growth experienced in the public sector and that of the private sector.

If public sector wage pressures were similar to those in the private sector, then wage movements within each sector would be expected to be consistent with each other. However, a comparison of the growth in public and private sector wages over time indicates that they have not moved in unison.

The ABS Wage Price Index (WPI) for public and private sector hourly wages is considered a reasonable national indicator of the growth in wages in each sector over time (and is proposed to be used in an element of the Commission’s methodology going forward).

Figure 3.1 shows that in Australia prior to 2014, wage growth between the public and private sectors tracked quite closely. However, from 2014 there has been a divergence in wage growth between the public and private sectors nationally.

Table 3.1 shows compound annual growth rates for the private and public sectors since 2009. The five-year period from 2015 to 2020 has been characterised by a period of low wage growth compared to the previous five years. While slowing wage growth has occurred for both public and private sectors it has been more pronounced in the private sector.

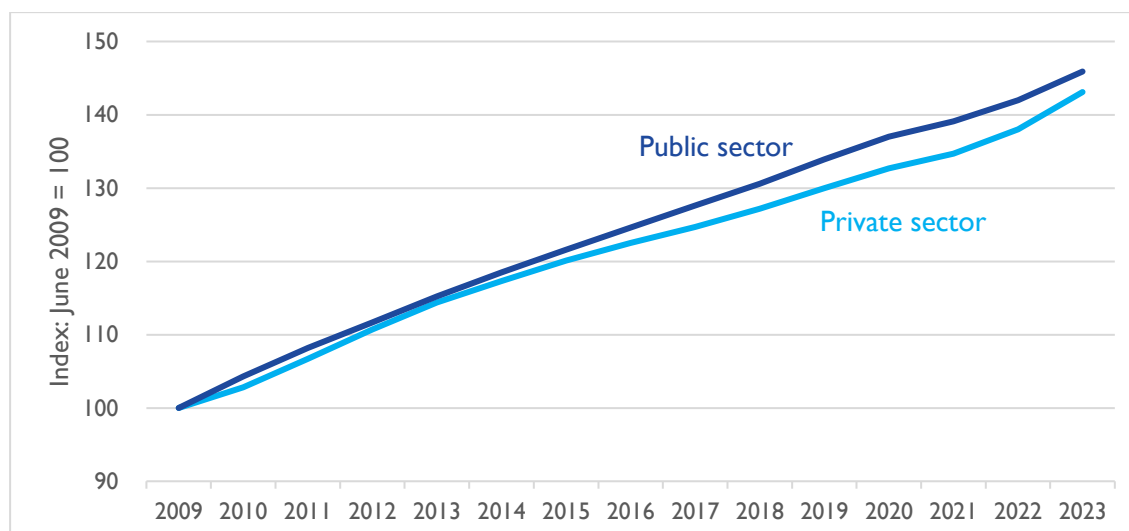
There have been several reasons put forward to explain the lower wage growth such as excess capacity in the labour market, decline in terms of trade, declining inflationary expectations, and changes in the relative bargaining power of labour.^{14,15}

¹³ Preston, A. (2023). Wage Costs Consultant Report, p. 19.

¹⁴ Australian Treasury (2017). Analysis of Wage Growth. *Technical Paper, November*.

¹⁵ Bishop, J., & Cassidy, N. (2017). Insights into Low Wage Growth in Australia. *RBA Bulletin, March*, 13-20.

Figure 3.1: Comparison of public and private sector wage growth for Australia, June 2009 - June 2023



Source: ABS Wage Price Index, June 2023, Cat 6345.0

Table 3.1: Public and private sector compound annual growth rates

Period	2009-2014 (%)	2015-2020 (%)	2021-2023 (%)
Private sector	3.2	2.0	3.1
Public sector	3.5	2.4	2.4

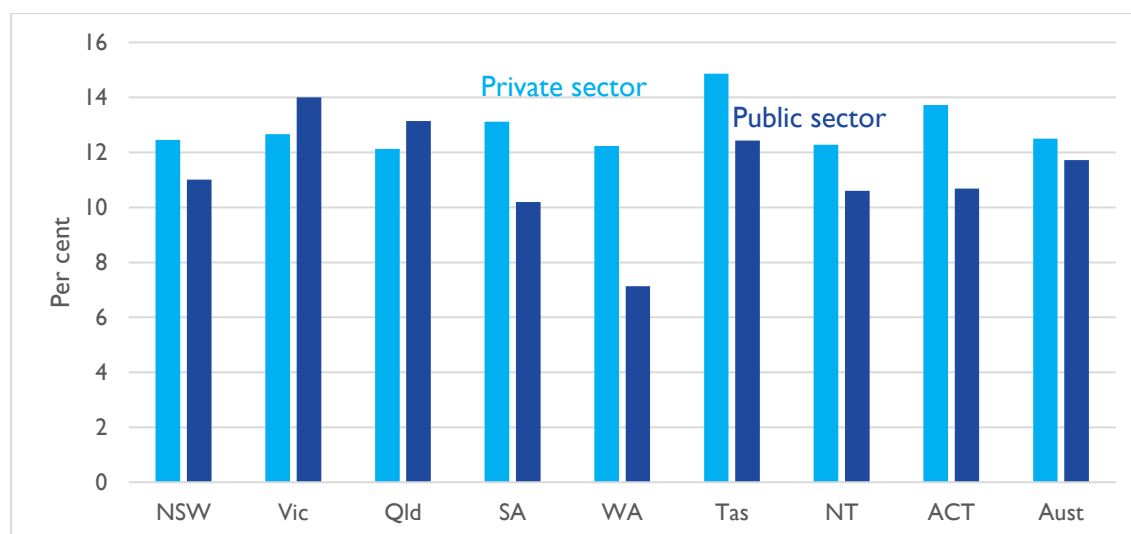
Source: ABS Wage Price Index, June 2023, Cat 6345.0

However, since 2020 national wage growth in the private sector has rebounded and is now faster than the public sector. Factors influencing the growth include a reversal of low inflationary expectations and increasing labour demand pressures.

The WPI data suggest that private and public sector growth do not appear to respond in unison and that the private sector has been more sensitive to labour market and economic pressures than the public sector.

A comparison of wage growth between the states over the last five years shows the relationship between public and private sector wage growth differs across states (Figure 3.2). It also shows that for most states with lower relative public sector wages under the Commission's model, wages increased faster than the national average. In contrast, states with higher relative public sector wages, had slower wage growth than the national average. This may suggest there has been some convergence in relative public sector wage levels in recent times.

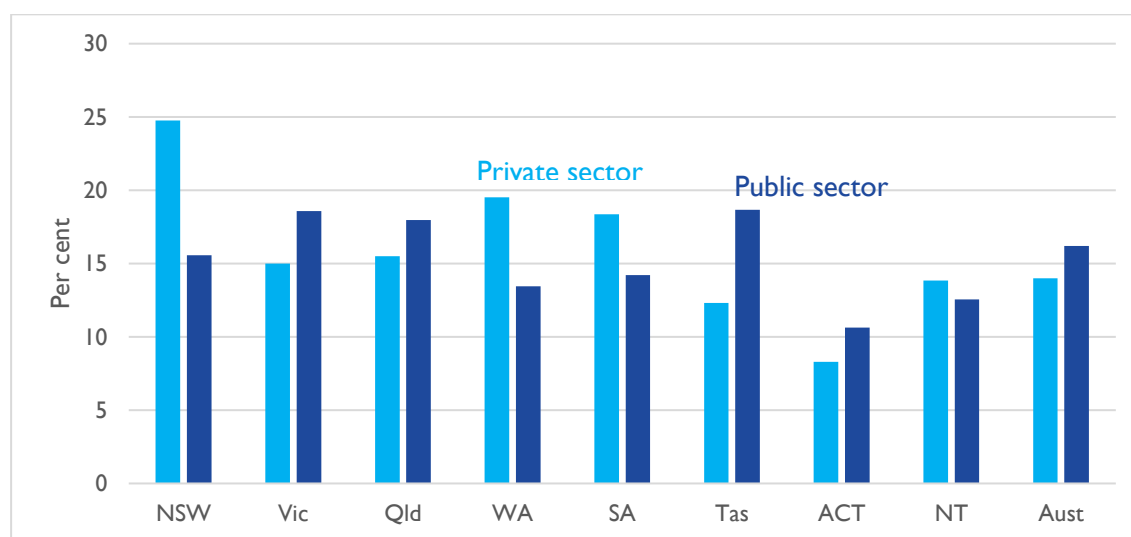
Figure 3.2: Growth in Wage Price Index, June 2018 to June 2023



Source: ABS Wage Price Index, June 2023, Cat 6345.0

Figure 3.3 shows growth in Average Weekly Earnings (AWE) over a similar five-year period from November 2018 to May 2023. It also shows the relationship between the public and private sectors is not consistent and that for most states with lower relative public sector wages, AWE has increased faster than the national average.

Figure 3.3: Growth in Average Weekly Earnings, Nov 2018 to May 2023



Source: ABS Average Weekly Earnings, May 2023, Cat. 6302.0

It is Tasmania's view that these differences increase the level of uncertainty in the use of a private sector proxy. It is conceivable that differences in the character and composition of the public and private sectors may be causing an inconsistent, and sometimes divergent response to wage pressures. While Tasmania acknowledges the extensive controls included in the model which attempt to counteract these compositional differences, Tasmania contends that significant uncertainty remains.

3.2 *Do states agree that the Commission should continue to use all private sector employees to proxy for public sector drivers of costs?*

Noting significant differences in the character and composition of private and public sector labour markets, the Consultant recommended that consideration be given to using the female private sector wage structure as a proxy for wage pressures in the public sector, given the different sex composition between sectors (65 per cent of public sector workers are female).

While the Commission agreed that this would improve the conceptual validity of the model, the Commission judged that the trade-offs, increasing the risk of policy influence and reducing the available sample size, did not justify this change.

Tasmania has concerns about the sample size in the current data set used for the wage costs assessment (see response to 3.3 below), and therefore agrees that reducing the sample size by more than half would negatively impact the reliability of the estimates. However, Tasmania also agrees that the compositional differences between the public and private sector is a weakness of the current approach that should be addressed.

One possibility would be to remove industries from the sample that are not relevant to the public sector, or where there is a difference in direction between the private and public sector wage level. For example, as noted by the Consultant, Western Australia has higher relative private sector wages but lower relative public sector wages than the national average. This would appear to be inconsistent with the conceptual case of the wage costs assessment. Notwithstanding the controls used in the Commission's model, it is conceivable that the influence of Western Australia's mining industry may be a factor in this inconsistency.

In cases where an inconsistency exists, Tasmania would support further investigation to identify the source of this inconsistency. Where inconsistencies can be identified, the Commission could consider removing that industry or occupation from the model. In the example mentioned above, employment in the mining industry is almost entirely in the private sector so arguably it has limited relevance to the public sector. It may be that removing private sector mining from the model may not significantly reduce the sample size but could improve the model's reliability.

3.3 *Do states support the continued use of the Characteristics of Employment survey data?*

The Commission has used the COES data in the wage costs model since it replaced the ABS Survey of Employment and Training (SET) data in 2014-15.

In any given year, the COES sample size for Tasmania is approximately 200 for the private sector and 50 for the public sector. When split across the 19 industry groups, there are 10 industry groups in which the private sector sample size for Tasmania is less than 10 people, and 7 of these groups have fewer than 5 people representing an industry. The COES sample therefore may be too small for Tasmania. This is demonstrated in the comparisons of state geographic wage structures by sector contained in the Consultant's final report. Given the moderately large standard errors on the estimates of Tasmania's wage relativities, when industry and occupation are considered, Tasmanian wages across

both public and private sectors are not different from New South Wales at a statistically significant level.¹⁶

An additional concern for Tasmania is that COES may be missing information on relevant non-geographic factors. As laid out in Section 2, Tasmania contends there is a conceptual case for the inclusion of control variables for employee health and employer size, neither of which are captured in the existing COES data.

Tasmania notes that there has been considerable development in the availability of representative, linked datasets since the 2020 Methodology Review. For example, the ABS Linked Employer-Employee Database (LEED) combines employer information from the Business Longitudinal Analysis Data Environment (BLADE) with employee information from personal income tax data. Tasmania understands it also contains demographic information about employees as well as information about the firm such as industry and size. Tasmania would support the Commission investigating alternative data sets to allow a more robust, representative analysis of wage costs drivers.

3.4 *Do states agree the Commission should use hourly wages rather than weekly wages as the dependent variable?*

Tasmania supports the Commission's proposal and notes that the move to hourly rather than weekly wages as the dependant variable was supported by the Consultant. This change would address problems experienced with the model when there are short term disruptions to hours worked such as during the recent pandemic.

3.5 *Do states support including usual hours of work in the model as three categories, part-time, full-time and more than full-time hours?*

Tasmania supports the advice given by the Consultant to the Commission to reduce the complexity of the model and possible endogeneity between the dependant variable (hourly wage) and the five proposed hours worked independent variables with three simple dummy variables for part-time, full-time and more than full-time hours.

3.6 *Do states support replacing imputed work experience and imputed work experience squared with five-year age groups?*

The Commission's current work experience variable is based on an employee's current age less an estimate of the person's age when completing education to impute potential work experience. The Commission acknowledges that this approach involves strong assumptions regarding time spent on educational attainment and time spent in full-time employment.

As noted by the Consultant, potential experience does not consider periods out of the workforce which is more evident in the case of the female dominated public sector.

On the recommendation of the Consultant, the Commission proposes to simplify the work experience variable by replacing it with age dummy variables in five-year age groupings. The Commission notes this has little effect on state coefficients but has the benefit of reduced complexity.

¹⁶ See Preston, A. (2023). Wage Costs Consultant Report, Table 3 and Figure 2, p.13-14.

Tasmania supports the proposed change to the model to reduce complexity.

3.7 *Do states agree with the Commission's proposed criteria for including control variables in the model?*

Tasmania supports the Commission adopting the Consultant's recommended approach to start with a simplified model and progressively add control variables that have a strong conceptual case for their inclusion until there is no improvement in the estimative power of the model. This ensures the model is kept as simple as possible without compromising its reliability.

Tasmania has raised two additional control variables in Section 2 that are believed to have a strong conceptual case for inclusion. Tasmania would support the Commission investigating whether the inclusion of employer size and employee health would further improve estimative power of the model.

3.8 *Do states support using a less complex model by replacing industry group categories with industry division categories and removing the interaction terms with gender and every other independent variable?*

Tasmania supports replacing the detailed industry group (292 categories) with fewer broader industry division (19 categories). According to the Commission this does not significantly change state coefficients in the model but has the benefit of reducing standard error.

On this basis Tasmania would support the change to reduce the number of industry variables in the model.

3.9 *Do states agree with the proposed approach to combine estimates of relative differences in states' wages across years?*

Tasmania agrees with the Commission's observation that the estimates of relative wage levels using COES data are volatile and imprecise due to the sampling error inherent in small samples such as COES.

To address this problem, the Commission proposes to reduce volatility by effectively increasing the COES sample size by combining estimates generated from every survey year since 2016-17. Estimates from each year are to be updated with contemporary data, indexed to the assessment year, and weighted according to the recency of the data and the variance in the estimates.

The Commission considers this approach is appropriate as wages are recognised as relatively stable and that the volatility in the estimates is largely due to sampling error.

Before the annual COES data became available, wage cost factors were effectively fixed until new data became available every five years. Tasmania supports the continued use of annual data so that any trends in labour costs are captured between reviews.

Tasmania also supports in principle measures to reduce the volatility of wage relativities estimated by the model. The wage cost assessment redistributes a significant amount of GST between the states and volatility in the estimates increases the challenges for states in preparing budget forecasts.

However, Tasmania questions whether the proposed changes appropriately balance the Commission's principles of practicality and contemporaneity. As observed by the

Consultant, the Commission's proposed method of pooling and weighting wage relativity estimates over several years is considered complex (although statistically sound). This contrasts with other measures proposed by the Commission for the wage costs assessment that aim to reduce complexity, such as reducing the number of variables in the model.

While more contemporaneous years will be given a higher weighting than earlier years in each assessment year, Tasmania is concerned that with an increasing number of annual estimates being included in the pooling methodology in subsequent assessment years, relative wage costs may become less responsive to changing trends in the labour market.

The complexity of the proposed manipulation of COES data adds to the concerns raised in this submission at section 3.3 regarding the suitability of the COES data. Tasmania suggests that until a more reliable and less volatile data source becomes available, the Commission considers a more appropriate balance between volatility, complexity and contemporaneity when using COES data in its wage cost model than is proposed in the consultation paper.

3.10 *Do states agree that a 12.5 per cent discount remains appropriate?*

It is acknowledged that the Commission's proposed changes aim to simplify the model and reduce the volatility of its wage costs relativities. However, Tasmania does not agree that a 12.5 per cent discount remains appropriate.

Tasmania contends that there are significant uncertainties in the current wage costs methodology that have not been addressed by the proposed changes. As laid out in this submission, these relate to the indirect method to measure geographic wage pressures. In particular, these include:

- the divergence between private and public sector wage pressures;
- that the model may inadvertently include uncorrected non-geographic biases; and
- the use of a small sample survey.

As a result, Tasmania considers the overall level of uncertainty to be higher than is currently judged.

It is also noted that because of concerns about the reliability of data and the use of proxy variables in its urban transport regression model the Commission only applies 75 per cent of the regression model expense estimate. Tasmania considers that a similar level of uncertainty exists with the wage costs regression model and therefore 75 per cent of wage cost differentials from the model should have an impact on relativities, effectively a discount of 25 per cent.

4 *Acronym Table*

Acronym	Definition
ABS	Australian Bureau of Statistics
AWE	Average Weekly Earnings
BLADE	Business Longitudinal Analysis Data Environment
COES	Characteristics of Employment survey
LEED	Linked Employer-Employee Database
SET	Survey of Employment and Training
WPI	Wage Price Index