



**NORTHERN TERRITORY VIEWS ON
MATERIALITY AND RELIABILITY**

SEPTEMBER 2005

**COMMONWEALTH GRANTS COMMISSION
GENERAL REVENUE GRANT RELATIVITIES
2010 REVIEW**

NT Submission

Materiality and Reliability

Summary

The Commission has sought State views on aspects of simplification, materiality and reliability in relation to Terms of Reference for the 2010 Review.

The following is a key point summary of the Territory's submission.

Key principles

- The Territory has interpreted the Terms of Reference as providing guidance to the Commission on simplification rather than prescriptive direction.
- The overriding principle guiding the work program is horizontal fiscal equalisation (HFE). While simplification is a key objective of the review, it should not be pursued at the expense of HFE.
- Simplification is consistent with HFE provided that it is not used as tool to change equalisation outcomes or address perceived inequalities in the way Goods and Services Tax (GST) is distributed between States.

Materiality

- The Commission's approach to materiality focusing on where differences between States are greatest is broadly supported.
- Assessments beneath a materiality threshold should be subsumed into larger assessments as it is consistent with both equalisation and with the objective of simplification.
- If "immaterial" assessments were to be treated as equal per capita, introduction of mechanical thresholds for materiality would significantly alter the scope and outcomes of equalisation and would not be consistent with the Terms of Reference.
- To maximise benefits of simplification forward-looking guidelines are appropriate provided that relevant safeguards are put in place where materiality is changing or is likely to change over time.
- Relevant safeguards could include assessing materiality over time or locking-in assessments.
- States proposing new disabilities should be encouraged to prove materiality however the Commission should retain a role of determining materiality where a State is unable to obtain data from other jurisdictions.

Reliability

- The Commission's broad approach to reliability of assessments is supported.
- Trade-offs between reliability and simplicity are not supported where there are valid differences between States.
- The use of judgement to capture differences between States is supported given the great diversity in the quality of data available to support valid conceptual cases.
- It is not clear that a rigorous statistical approach to equalisation would result in any greater simplicity, transparency or reliability or improved outcomes.
- Where there is a strong conceptual case that differences exist between States or population subsets in a State, every effort should be made to capture and quantify these differences.
- While comparable data quality from all jurisdictions is desired, it is difficult to achieve at a practical level.
- As a minimum test, differences between any two States or between population subsets within a State should be assessed.
- Use of econometric techniques should only be used where data is of sufficient quality for the technique to be valid. Model results should not be viewed as an end in themselves but should be judged in the context of all available information for each and every jurisdiction.
- Priority assessments for review include freight costs, debt charges and depreciation, gambling revenue and inpatient services.

Combining materiality and reliability test

- All material tests should be retained. Immaterial assessments should be subsumed into larger categories.

Implementation ahead of review

- Implementation of simplification options should occur as part of the 2010 Review rather than on a partial basis in Update years. This will allow for full consideration of disabilities and improvement of both data and methods used in assessments.

Introduction - the Terms of Reference for the 2010 Review and the Commission's approach

1. For the purposes of this and future submissions, the Territory has interpreted the Terms of Reference as providing guidance to the Commission on simplification rather than providing prescriptive direction. The overriding principle guiding the work program is horizontal fiscal equalisation (HFE).
2. Therefore as stated within the Terms of Reference, while simplification is a key objective of the review, it should not be pursued at the expense of HFE.
3. Notwithstanding this comment, the Territory agrees with the Commission that simplification and HFE can both be achieved. Simplification should proceed in a manner that does not alter the equalisation outcomes from the 2004 Review, all other factors being equal.
4. Simplification should not be used as a tool to change equalisation outcomes to address perceived inequalities in the way Goods and Services Tax (GST) revenue is distributed between States. These issues are more appropriately dealt with during the full review of methods for the 2010 Report.
5. Therefore a key test on the appropriateness of any method used to simplify assessments should be that it, by itself, does not change the scope of equalisation or its outcomes.

Materiality

6. The Territory broadly supports the Commission's approach in basing materiality on where the differences between States are greatest. The Commission should use its judgement in relation to the introduction of materiality thresholds with key focus directed to treatment of assessments considered as immaterial within the context of HFE.
7. The application of a number of mechanical materiality thresholds was tested as part of the work program undertaken by Heads of Treasuries for Ministerial Council in 2004. The thresholds used were a fixed dollar per capita and percentage of assessed revenues from the GST pool.
8. The results from this testing clearly indicate that application of mechanical thresholds to each factor in each component is likely to introduce significant bias in the distribution of GST revenue, assuming assessments beneath the threshold were to be treated as equal per capita. On this basis, introduction of the mechanical thresholds would fundamentally alter the scope of equalisation by effectively removing a range of assessments that capture differences between States.

9. Tables C2 and C3, included in Attachment C of the discussion paper illustrate the disproportionate effect on individual States. Assuming assessments under the threshold are discarded, Victoria and Queensland benefit significantly at almost every threshold level while the two Territories and New South Wales are disadvantaged. For example, using a percentage threshold to each factor in each component of $\frac{1}{2}$ per cent of GST revenue, the proportionate impact on shares of GST revenue would range from 0.01 per cent in South Australia to 18.8 per cent in the Northern Territory.
10. Although showing a different bias, the application of a percentage threshold to aggregated common factors at $\frac{1}{2}$ per cent of GST revenue also results in a changed scope of equalisation with a significant disproportionate effect on the Northern Territory of almost 6 per cent of GST revenue.
11. Application of \$ per capita threshold to aggregated common factors (as shown in Table C4) also shows a differential impact on jurisdictions, albeit at a significantly reduced level.
12. The introduction of a mechanical threshold therefore appears to imply a reduction in the scope of disabilities assessed, based on an assumption that the associated expenditure would otherwise be apportioned on an equal per capita basis.
13. The Territory does not support the treatment of immaterial categories as equal per capita. The Territory considers that a preferred approach to the equal per capital treatment of “immaterial” components/categories, if a mechanical approach was to be adopted, is to subsume the associated expenditure into related components/categories for which needs are assessed.
14. This approach is consistent with both equalisation and simplification of process rather than change in grant shares.
15. The Commission’s paper canvasses a number of other alternatives for the introduction of mechanical thresholds. At both national and individual State level these include: amount of redistribution; percentage of total budget; and a percentage of total amount redistributed.
16. The Territory does not consider it appropriate to adopt national measures as it would mask variations in impacts by State potentially leading to a changed scope of equalisation. National measures are likely to impact disproportionately on smaller States.
17. The use of quasi-statistical tests is not supported. It is unclear how tests based on say, standard deviation, would enhance equalisation outcomes or achieve simplicity. Particular problems emerge where factors involve judgment (this could preclude statistically valid use of standard deviations) or where standard errors relating to data vary by jurisdiction.

The Territory strongly supports the Commission's exercise of judgement in assessments and that there is a high risk of equalisation being undermined through the application of mandatory statistical tests.

***Can materiality be judged before an assessment is made?
Static or dynamic tests***

18. To maximise the benefits of simplification, it is clearly preferable for materiality to be judged prior to an assessment being made. Thus decisions on aggregation would be undertaken prior to the next review being commenced. There is a minor risk attached to a forward looking approach in that if levels of materiality are changing, or are likely to change then arguably assessments should not be aggregated.
19. This risk can be minimised by extending the materiality test to incorporate the past two reviews. Importantly, flexibility should be maintained within the guidelines for any State to justify disaggregation where circumstances change. The Commission should use judgement to retain a category where changing circumstances indicate it is appropriate.
20. A similar approach would also be warranted should a decision be made to treat immaterial assessments on an equal per capita basis.
21. A backward looking approach which requires assessments to be made and then deleted if immaterial appears counter-productive to the objective of simplification.
22. As a general rule, States proposing a new disability or reinstatement of discarded assessments, should be encouraged, as much as is practicable, to demonstrate materiality. In practice however, the Territory believes that the Commission should retain a role in determining whether new disabilities are likely to be material as part of the review process, due to the difficulty in an individual State, particularly a small one, obtaining data from other jurisdictions.

What should happen when something is found to be immaterial?

23. The Commission has identified a number of ways of dealing with an assessment found immaterial: discarding the assessment; assessment as part of a broader category or disability; or assessed on an equal per person or actual per person basis.
24. As noted above, the Northern Territory's clear preference is for aggregation of categories/components into larger assessments. This ensures that needs continue to be assessed.
25. The Territory does not support the treatment of immaterial assessments on an equal per capita basis.

26. Assessment as part of a broader category or disability also appears naturally suited where data is volatile, and there is reasonable uncertainty in relation to ongoing materiality of an assessment. An alternative approach, but less preferred approach is to lock these assessments in. Locking in assessments reduces the frequency of assessment rather than providing for any substantial simplification of processes.
27. The use of actual per capita where an assessment is deemed immaterial is more problematic as it possibly introduces a changed scope of equalisation as it does not allow for assessment of needs. However, where there are no policy differences between States and States cannot influence outcomes, actual per capita may be appropriate. An example is First Home Owner Scheme.

Should there be a cumulative test

28. Table 1 of the Commission's discussion paper illustrates the effect of removing all assessments that redistribute less than \$5 per person for a State.
29. The table indicates that the impact of this test on individual States varies widely and as a result the scope of equalisation is likely to be changed. As a result the Territory considers there should be cumulative tests in line with the principle that simplification should not be pursued at the expense of equalisation.

Materiality and transparency

30. The Territory considers that the Commission's current method of presenting its results for individual assessments is appropriate and enhances transparency.
31. Provided an aggregated common factor passes the materiality threshold, individual assessments of lower order should be presented at the current level of disaggregation.
32. The Territory considers that the work of the HoTs secretariat supports the retention of the individual category assessments as application of materiality thresholds to each factor in each component would fundamentally change the scope of equalisation.

How can the transparency of judgemental materiality tests be improved

33. The proposed approach to aggregate assessments found to be immaterial allows for the continued application of judgement by the Commission. In this context the Commission retains flexibility to retain assessments that are accurate but have a small impact on relativities if aggregation is inappropriate. The Commission would also not be unduly constrained where an assessment narrowly fell outside a materiality test.

Reliability

34. For the purposes of this section, this submission focuses on reliability of method rather than of data. The Northern Territory has submitted its views on reliability of data separately through the Data Working Party and considers the working party's report to be an accurate reflection of the views of members.
35. The Territory agrees with the Commission's interpretation in that reliability reflects confidence that the Commission and States have that an assessment is fit for purpose and accurately captures the differences between States it is intended to measure.
36. The broad features outlined by the Commission in its discussion paper of conceptual rigour, implementation, track reality and robustness are considered appropriate. The Territory agrees that predictability and stability do not necessarily relate to reliability of assessments.
37. The Territory considers there should be no trade-off between reliability and simplicity where there are valid differences between States. While simplicity should be pursued, the terms of reference do not contemplate adoption of simple methods where this would be inconsistent with HFE. Thus, if detailed or complex methods are required to adequately capture differences between States, these should be adopted.
38. There is great diversity in the quality of data available to capture the differences that exist at a conceptual level. The Commission currently recognises this and applies judgement in its use of data. This enables assessments to be made that capture differences that are conceptually valid rather than limiting assessments to where only very good quality data is available.

Assessing reliability

39. The Commission's current process of testing reliability of methods through scrutiny by States and external experts is supported. Sensitivity analysis is a useful tool in testing the robustness of an assessment, however it should be used to assist the Commission form a judgement rather than as a means in itself of determining reliability.
40. It is not clear that a rigorous statistical approach to equalisation would result in any greater simplicity, transparency or reliability or improved outcomes.

Professor Pincus report

41. The broad thrust of Professor Pincus' analysis, that equalisation methods would be better focused and understood if the overall approach was statistically rigorous, is reasonable as a theoretical proposition. However, it is unlikely that the quantity and depth of data required to base equalisation on purely statistical methods will be available in the foreseeable future. Equalisation methods are necessarily based on the constructive estimation of parameters for largely conceptual models, rather than on more conventional data-driven process of model selection.
42. The simplification proposal involving the equal per capita assessment of weights/factors statistically indistinguishable from 1.0 also needs to be considered with regard to the quality of available data. The majority of statistical data collected in the Northern Territory, for instance, is subject to large standard errors, a problem that is inversely proportional to population size. Weights assessed for larger jurisdictions although often relatively small in magnitude, would therefore be more likely to be statistically significant than those for smaller jurisdictions.
43. The Northern Territory supports Professor Pincus' comments that more detail could be published in relation to the use of judgement by the Commission.

Dr McHugh report

44. The Northern Territory generally supports the findings of Dr McHugh. In particular, Dr McHugh supports the use of judgement and expressed confidence in the Commission's framework for its use. Dr McHugh identified a number of cost weights as immaterial and the Territory supports further analysis of the appropriateness of these weights.

Reliability and fiscal equalisation

45. HFE is the key principle determining the distribution of GST revenue. As such where there is a strong conceptual case that differences existing between States or between population subsets in a State, every effort should be made to capture and quantify these differences. It is recognised that the availability, quality and timeliness of data will differ widely between assessments, however it is incumbent on the Commission to continue to exercise its judgement based on all available information.
46. HFE is likely to be undermined by the absence of an assessment where strong conceptual differences exist.
47. Differences between any two States or between population subsets within a State are critical to ensuring the effectiveness of HFE. Demonstration of these differences should be the minimum test for an

assessment to be considered. In theory comparable data from all jurisdictions is preferable, however in practice is difficult to achieve.

48. Jurisdictions that have unique characteristics and/or are small or have disabilities considered as outliers are likely to be disadvantaged in providing comprehensive data across all States. For example Indigeneity is a significant issue for the Territory. Data is collected accordingly in the Territory but may not be collected to the same level of detail in other jurisdictions where the proportion of Indigenous people is lower.
49. The Commission should not dismiss an assessment purely on the basis of available data only being from one State. If a State can demonstrate that the costs of servicing different population subgroups are different and the data are reliable, the results could be applied more broadly to assessments at a national level.
50. The use of econometric techniques should only be used where data is of sufficient quality for the technique to be statistically valid. Model results should not be viewed as an end in themselves but should be judged in the context of all other available information.

Combining materiality and reliability tests

51. This submission has argued the preferred approach in relation to assessments found immaterial is to aggregate into larger assessments.
52. Reliable and material assessments should be retained. This leaves consideration of assessments which are considered unreliable but material. Assessments in this category should be thoroughly reviewed with a view to retention rather than elimination. Review options include: improving source data; use of different data sets; application of alternative methods or aggregation/merging with a like assessment.

Priority areas for review – immaterial assessments

53. The following section contains a range of assessments that the Territory considers are immaterial. The list is not exhaustive but is indicative of the approach the Territory considers is appropriate to simplify the assessment process. In addition, the Territory considers that a similar approach could be applied to certain material assessments where combining categories would result in simplification.

Humanitarian refugees and diplomatic students

54. The adjustments for humanitarian refugees and diplomatic students have minimal impact on States' share of GST revenue. These adjustments could be combined or aggregated to existing education weights to simplify the assessment.

Inpatient Services socio-demographic composition factors

55. The Commission could review whether the current age bands (13 in total) have a material impact on the redistribution. Where an age band is considered immaterial, the Commission should aggregate this group with similar age groups and disabilities. Reducing the number of age bands may significantly reduce data requirements, however this option should only occur providing it does not significantly impact on equalisation outcomes.

GST Administration Costs and First Home Owners Scheme

56. GST administration costs and First Home Owners Scheme are costs directly related to the Intergovernmental Agreement on the Reform of Commonwealth-State Financial Relations. The Commission assess both these categories on an actual per capita basis. The redistributive impacts of both these assessments are small. It should be noted that the redistribution from GST administration costs category is due entirely to the different population figures used by the Commission and the Australian Taxation Office. The Territory believes these categories could be aggregated and assessed as a component of General Public Services.

Federal and drug dependent prisoners

57. The assessments for federal and drug dependent prisoners, separately, redistribute less than \$1 per capita for all States. The Commission should review the weights to determine whether it could aggregate these adjustments into existing weights.

Economic Activities – Economic environment factor

58. The economic environment factors within the Economic Activity categories generally have immaterial impact on the redistribution. However, the combined impact of the factors is significant. Therefore, the Commission should continue to measure the economic environment disabilities with a view of amalgamating these assessments.

Homelessness and General Welfare – Humanitarian refugees

59. Dr McHugh's report on cost weight lends support for the removal of the humanitarian cost weight because data quality and the immateriality of the assessment. The cost weight for humanitarian refugees is applied to only 0.2% of Australia's population and subsequently the total redistribution is about \$0.5 million and or less than \$0.50 per capita for each jurisdiction. The Territory's preference is for the cost weight to be aggregated. If this is not possible, the Commission could consider removing the factor.

Priority areas for review – unreliable methods

60. The Territory has identified a number of assessments that could be enhanced by a review of their underlying method.

Freight Costs

61. Freight costs are a material influence on the cost of government services. The Commission assess freight costs using a proxy measure, which is subsequently used to determine the costs for WA and SA.
62. The Territory has previously acknowledged the difficulty associated with measuring embedded freight costs. In Dr McHugh's opinion, the Territory is unlikely to provide a comprehensive estimate of its freight costs due to data restrictions. Subsequently, there are difficulties in undertaking a reality check to test whether the assessment reflects real world outcomes.
63. However, the Territory has undertaken its own analysis of freight costs using a range of alternative methods and these methods have yielded results similar to that of the Commission. Nonetheless, the Territory considers that further work could be undertaken to increase the reliability of the assessment.

Debt Charges and Depreciation

64. Method changes to the debt charges and depreciation assessments over the last three reviews have resulted in significant redistribution changes. While the Commission has made significant progress to improve the reliability of these assessments in the 2004 Review, there is opportunity to enhance the assessments further, in particularly capturing the unique circumstances of the Territory.
65. A reality check of the debt charges and depreciation assessments show large discrepancies between what the Territory actually spends and what the Commission assess the Territory needs to spend in these areas. In addition, the ABS report on data found that the historical data used in the debt charges assessment was not fit for purpose.
66. The optimal solution to improve the reliability of the debt charges and depreciation assessments is for the Commission to work with the States during the 2010 Review to refine the methods.

Gambling Revenue

67. The gambling assessment is unique in that the Commission employs a sub-global measure to estimate the revenue base. The base (gross household disposable income) is discounted to recognise that other factors influence gambling levels.

68. The Territory believes that the direct relationship between income and gambling is tenuous. In his 2004 review of methods, Pincus noted that a Productivity Commission survey showed that the proportion of income that gamblers spent on gambling varies inversely with income. The Territory would like to see the assessment placed on a firmer basis during the 2010 Review.

Inpatient Services

69. The Inpatients services socio-demographic composition factor is considered unreliable because it is data intensive. The factor assesses separate weights for 1040 population sub-groups. The Territory believes that simplifying the socio-demographic factor may lead to greater confidence in the assessment, however this option should only be considered providing it is consistent with the principle of HFE.

Implementation ahead of review

70. The Territory considers that each Review determines the methods to be adopted for the following five years. Method changes are not contemplated between major Reviews and are not supported by the Territory.
71. The Territory's preference is that implementation of simplification options takes place as part of the 2010 Review rather than on a partial basis in Update years. This will allow for full consideration of disabilities and improvement of both data and methods used in assessments.