



# ***Improving the Net Lending Assessment: Addendum***

**Department of Treasury and Finance**

**November 2009**

## Summary of this addendum

Tasmania submitted its discussion paper *Improving the Net Lending Assessment: A Proposed Modification* in late August to ensure that all states would have an opportunity to comment on our proposal. Western Australia was the only jurisdiction to provide detailed comments on the proposal in its September 2009 submission. Some of these comments were legitimate and, by incorporating some of their considerations, we have been able to significantly improve the assessment method and the empirical evidence that underlies it. We are grateful to Western Australia for its comments, which we have addressed and incorporated in this addendum.

Western Australia also made a number of other comments that we consider to be incorrect – we have addressed each of these issues in detail in the main body of this addendum.

### *Revised assessment and results*

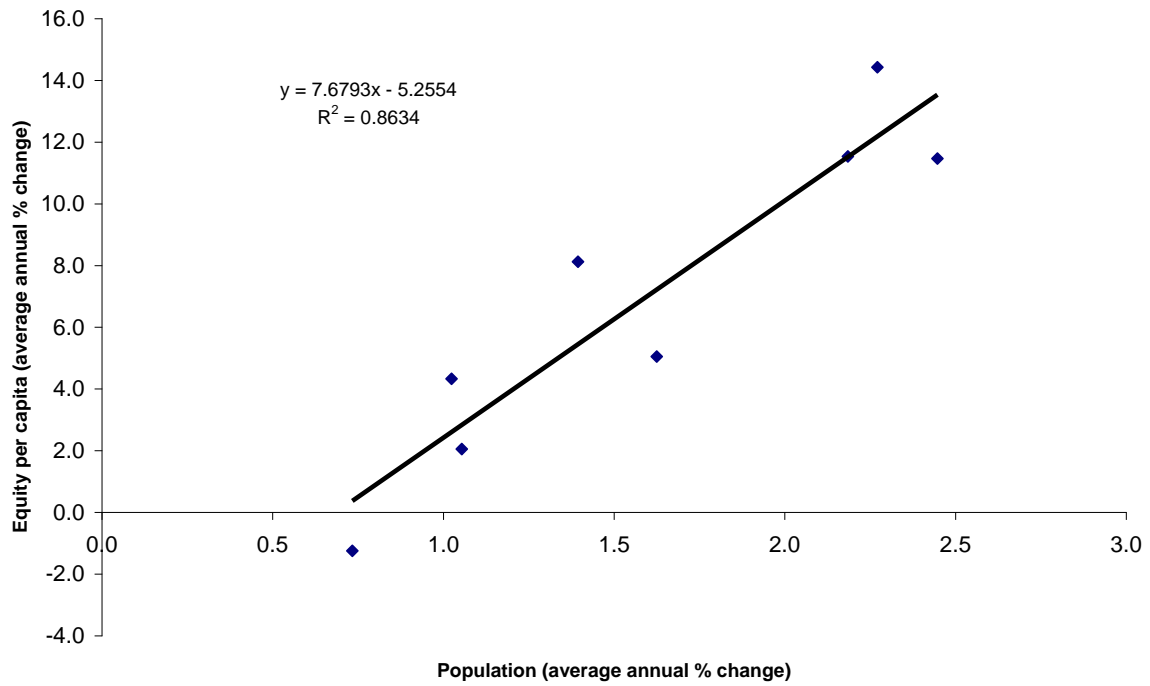
Following our consideration of Western Australia's comments, we have made the following changes to the way we have derived the equity revaluation disability factor:

- We have adjusted Northern Territory's equity data for 2004-05 and 2005-06 to remove its equity in Territory Housing, which was transferred from the PNFC sector to the general government sector in 2006-07 and which comprised over half of its total equity at that time. This adjustment makes the Northern Territory's equity data comparable over time and greatly improves the observed relationship between population growth and equity growth.
- We have used geometric annual averages of growth rates rather than arithmetic averages.
- We have shortened the time period used to analyse the relationship from five years to three years to reduce the impact of accounting changes.

The result of these changes can be seen in the revised Chart 1 overleaf, which demonstrates a strong relationship between population growth and equity growth.

Western Australia also pointed out an apparent error in the way our proposed assessment was implemented. We agree with their comments and have recalculated the results, which are shown in Table 1 overleaf. While this correction means that the proposed assessment would be much less redistributive, the results it produces, even with a 50 per cent discount applied, still far outweigh the impact of the net lending assessment. Equity revaluation disabilities still clearly offset population dilution disabilities many times over.

**Chart 1 – Growth in population and equity per capita, 2005-06 to 2007-08**



**Table 1 – Net impact of revaluation\* and net lending assessments**

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total
	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m
<b>Equity revaluation assessment - difference from average</b>									
2005-06	1,249	24	-1,295	-307	267	99	16	-53	0
2006-07	1,155	-110	-973	-464	248	143	20	-18	0
2007-08	1,156	-52	-1,038	-570	354	168	30	-47	0
<b>Net lending assessment - difference from average</b>									
2005-06	-196	-4	203	48	-42	-16	-3	8	0
2006-07	-220	21	185	88	-47	-27	-4	3	0
2007-08	-220	10	198	109	-67	-32	-6	9	0
<b>Net impact</b>									
2005-06	1,053	20	-1,092	-259	225	84	14	-45	0
2006-07	936	-89	-788	-376	201	116	16	-15	0
2007-08	936	-42	-841	-462	286	136	24	-38	0

\* A 50 per cent discount has been applied to the disability incorporated in the equity revaluation assessment

## **Background**

Tasmania submitted its discussion paper *Improving the Net Lending Assessment: A Proposed Modification* in late August 2009 to ensure that all states would have an opportunity to comment on our proposal. We were grateful to receive comments from a number of states by email and in submissions.

Western Australia, in particular, provided a very detailed critique of Tasmania's proposal in its capital submission. Western Australia raised a number of important issues that we felt we needed to address, and we have attempted to do so in this addendum. Some of Western Australia's criticisms were legitimate and we have tried to address these. Some of their other comments were flawed or incorrect in Tasmania's view, and we also considered it necessary to respond to these.

Based on Western Australia's comments, we have been able to improve the proposed modification, in particular the empirical basis for the assessment. We request that the Commission, in considering our proposed assessment, also take into account Western Australia's comments and this addendum.

## **Empirical data**

Western Australia argued that Tasmania's empirical case for a revaluation disability is weak, noting that:

- the statistical relationship shown in the charts was weak, with low  $r^2$  values;
- arithmetic average growth rates had been used, when a geometric average would be more appropriate;
- the five-year period analysed was too short to establish a relationship; and
- the regression line should be constrained so that national equity growth corresponds to national population growth.

### *Statistical relationship*

We acknowledge that the statistical relationship shown in the paper between population growth and equity was not as strong as we would have liked. However, thanks to Western Australia's comments, we realised that the reason for this poor statistical relationship was the fact that Northern Territory appeared to be an outlier. Upon further investigation, we became aware that Northern Territory experienced a major (53 per cent) drop in its equity in 2006-07 due to the transfer of its housing authority (Territory Housing) from the PNFC sector to the general government sector. This policy decision had a major impact on the statistical relationship shown in the discussion paper.

Using information from Territory Housing's annual reports, it was a relatively simple task to remove the value of Northern Territory's equity in this PTE in 2004-05 and 2005-06 to make its equity growth figures comparable over time. Once these adjustments were made, the statistical relationship between state population growth and equity growth became very strong indeed. As can be seen in Chart 1 in the summary section above, the  $r^2$  value is now at 0.86, which is very high. To put

this in perspective, this is stronger than the relationship between public transport operating subsidies and urban population shown in Figure 17-1 of the Commission's draft report and which forms the basis of the urban component of the Transport Services assessment (in which no discount is applied).

Other modifications also contributed to the result in Chart 1 – see comments below on averaging methods and the time period.

Note that correcting Northern Territory's data also increased the slope of the regression line (and therefore the disability factor).

#### *Averaging methods*

Tasmania accepts that using a geometric average growth rate may be more appropriate than an arithmetic rate. We have recalculated the equity and population growth rates using a geometric average, and have used these in Chart 1 – we note that the difference was almost negligible in any case.

#### *Time period*

We were surprised at Western Australia's comment that five years is too short a period to establish a relationship; we expected that most states would criticise five years as being too long. In contrast to Western Australia's view, we consider that it would actually be more appropriate to move to a three-year period in calculating the relationship – this is still long enough a period of time to remove annual volatility, but short enough to reduce the impact of accounting changes (see note on this later). If the Commission elects to incorporate Tasmania's proposals, we recommend using a three-year period of time.

While we do not support the use of a longer time period for the assessment, our examination of longer time periods continued to find that a positive relationship exists between population growth and equity growth.

#### *Constraining the regression line*

We do not see why it is necessary to constrain the regression line 'so that national equity growth corresponds to national population growth'. However, we accept that the way the regression line is calculated may have implications for the assessment method, which are addressed later in this addendum.

#### *Revised chart*

Taking all of these issues into consideration, we have revised the original chart in our previous discussion paper to produce Chart 1 in the summary section above.

### **Net financial worth**

#### *Negative relationship*

In its submission, Western Australia recalculated the relationship between net financial worth growth and population growth (Figure 2 in their submission). This showed a negative, rather than a positive, relationship.

It is important to realise that Tasmania is proposing an equity revaluation assessment. We discussed the net financial worth relationship in our discussion paper only as an aside because we noted that it did not seem to demonstrate population dilution. We accept (in fact, it is somewhat of a relief) that, given different time periods and calculation methods, the slope has been observed as being negative, as would be expected if population dilution exists.

In addition, we think there are errors in Western Australia's calculations. The formula they have used to remove net lending (bottom of page 8 in their submission) is inconsistent with the basis of the Commission's formula in the net lending assessment because of the way that it adds/subtracts half of a year's net lending. Also, while they have said that they have fitted a line constrained to match national growth rates, in Figure 2 they actually appear to have taken the growth rates of the eight states. This is not the same thing as national growth rates, because it means states are weighted equally rather than according to population share, and this will affect the slope – in this case we expect that their approach exaggerates the downwards slope of the regression line.

#### *Time lags in HFE*

Western Australia argued that its revenue boom during 2006-07 and 2007-08 created liabilities in that these revenues would be equalised away in future years. It said that these liabilities were not recorded in GFS. It argued that not recognising these liabilities would distort any analysis of net financial worth and population growth.

We found this argument slightly disingenuous. Using Western Australia's logic, all states would have a bunch of unrecorded liabilities and receivables for various assessment categories – this would not be a Western Australia-specific problem! Moreover, if this logic were to be taken seriously and net financial worth were to be adjusted according to these liabilities, it would have implications for the Commission's net lending assessment, and discounts would probably have to be applied to reflect these apparent problems with GFS net financial worth data.

### **Critique of Tasmania's conceptual case**

#### *PTEs and profitability*

Western Australia argued that while state population or demand increases the dollar profitability of PTEs, it does not increase per capita PTE profitability because PTEs must invest in additional infrastructure to meet this demand.

Western Australia is assuming that every new PTE customer needs a full EPC share of that PTE's infrastructure. This is clearly untrue. Additional customers may need little or even no new infrastructure. Under population growth the fixed costs of a PTE can be shared over a greater number of customers – the greater a state's population growth, the faster the fixed costs per capita of PTEs decline.

We also note that under the planning laws in most states, new customers of some PTEs (for example, electricity, gas, water, sewerage) effectively fund their own additional infrastructure needs through developer contributions (usually

incorporated into property prices), after which the ownership of the newly created assets is transferred to the PTE.

### *Policy influence*

Western Australia said that changes in state equity were policy influenced (through equity injections, dividends and equity sales). They also said that Tasmania's analysis was distorted by changes in accounting practices.

There is no question that equity change is policy influenced to a certain extent – however, the chart/disability factors that we have derived are based on average policy and we can see no reason why policy influence should greatly affect the slope of the line in our chart. Overall, government policy is a minor factor in equity change – analysis undertaken by ACT in its September 2009 submission suggested that asset revaluations (which are not policy influenced) contributed to around 75 and 80 per cent of the annual change in states' equity in 2006-07 and 2007-08 respectively.

Also, we applied the generous 50 per cent discount specifically to address policy influence.

Changes in accounting practices could be seen as a concern, and we have proposed a shorter time period (of three years rather than five) to reduce the impact of these as much as possible. That said, equity revaluations, whether driven by accounting changes or any other factor, do reflect the point-in-time worth that governments recognise and make decisions on. Hence, it could also be argued that changes in accounting practices are not a major concern.

Note that in our revised chart we also adjusted Northern Territory's equity to remove the impact of Territory Housing being transferred between sectors – this greatly improved the observed relationship between equity and population growth.

### *Scarcity of assets*

Western Australia disputed Tasmania's argument that the assets of PNFCs, particularly land, will increase in value as population increases and they become relatively scarcer. They pointed out that in the case of capital, the supply of assets is not constrained. In the case of land, states have unused or rural land that can be released as population grows. They presented a graph that they said showed no clear relationship between house prices and population growth for Australia's eight capital cities.

Aside from the limitations of this analysis (such as using residential house prices as a proxy for land, and comparing capital city data with whole-of-state data), Western Australia's assumption that governments can, let alone do, release land in response to population growth seems unrealistic. If this was indeed the case, it is difficult to explain why real land prices would increase at all in the long term. Yet all available evidence shows that real land prices have grown significantly in Australia, undoubtedly largely due to population pressures.

## **Tasmania's assessment method**

Western Australia said that Tasmania's assessment method was inconsistent with its derivation of the disability factor, and that the method contained additional steps that were not necessary or correct to include. Western Australia recalculated the assessment results using what it considered to be the correct method, and found that the results were much less redistributive.

After some consideration we accept that Western Australia's comments appear to be correct and that, given the way that we have derived our disability factor, their formula for assessing needs would be more appropriate and simpler.

However, we would note that even using this corrected method, the assessment results are still significant, and that revaluation disabilities, even with a 50 per cent discount applied, still far outweigh population dilution impacts. Refer to Table 1 in the summary section above.