



COMMONWEALTH GRANTS COMMISSION

DISCUSSION PAPER CGC 2002/13

THE LAND REVENUE ASSESSMENT

Prepared for the Commission's Staff Conference
November 2002

JULY 2002

CONTENT

Introduction	1
1999 Review Assessment Method	1
Issues in States' Main Submissions	3
Tax Capitalisation — An Elasticity Adjustment?	3
Treatment of Residential Investment Properties	6
Impact of Differences in Price Levels on Assessments	9
Other Issues	10
Conclusion	10
Attachment Economic Analysis of Tax Capitalisation/Elasticity Adjustment	11

INTRODUCTION

1. This paper reviews issues related to the assessment of land revenue that have been raised in States' main submissions. The two major issues are:

- (i) whether land tax is capitalised into the land value and, if it is, how this should be taken into account in determining the revenue base; and
- (ii) whether the value of residential rental properties should be included in the revenue base.

1999 REVIEW ASSESSMENT METHOD

2. This category covers State taxes on the ownership of land where the taxes are based on the assessed value of the land. It includes levies on property used to finance the planning and development of land within the metropolitan region.

3. **State Policies.** State policies on land taxes were broadly as follows:

- (i) most owner-occupied residential properties were exempt from land tax, implying industrial/commercial land was the main source of land taxes, but some tax was collected from residential land held for investment purposes and in some States from high value owner-occupied residential properties;
- (ii) land tax was progressive — a higher rate was applied to higher land values;
- (iii) in most States all properties below a threshold value were exempt, but these threshold values varied significantly among States; and
- (iv) tax rates also varied significantly among States.

4. Land Revenue was assessed using the estimated site value of rateable commercial and industrial land as at 1 July of each year as the revenue base. Because land tax was progressive, there was an adjustment for differences between States in the value distribution of the site value of properties.

5. Land values of industrial/commercial sites were supplied by State Valuers General. States had different approaches to valuing land. To achieve comparability of land valuations across States, the Commission, with the support of the States, engaged a consultant (the General Manager of the Australian Valuation Office) to review and adjust the valuation data supplied by State Valuers General. A further such review is currently being done.

6. **Scope of the Existing Revenue Base Measure.** In the 1999 Review, it was decided to exclude residential and rural land from the revenue base. Rural land was excluded because the standard policy was not to tax this type of land. While most States taxed land used for residential rental purposes, the Commission did not have data to separate residential rental land from owner occupied residential land and assumed that the standard policy was to exempt all residential land from the tax because:

- (i) most owner-occupied residential land was exempted in all States;
- (ii) a high proportion of residential premises were owner-occupied;
- (iii) the total value of the land component of residential rental properties with land value above the thresholds was thought to be insignificant compared to that of industrial and commercial land; and
- (iv) data on residential rental properties were not available.

7. Together, these assumptions implied that the value of taxable residential rental land was distributed across States in the same way as the value of commercial/industrial land.

8. The value of some other properties was also excluded from the revenue base because they were not taxed by any State. They were:

- (i) land owned by State and local governments and used for general government purposes;
- (ii) land vested in Local Authorities and Aboriginal Councils;
- (iii) land occupied by registered schools and tertiary institutions;
- (iv) land occupied by public benevolent institutions or charities;
- (v) land occupied by religious bodies for the purposes of worship, residences of ministers, religious training, and the provision of community care and housing; and
- (vi) the land of mining tenements.

9. **Value distribution adjustment.** Because States levied land tax at progressive rates, differences between States in the value distribution of the parcels of commercial and industrial land affected their capacity to raise revenue. States that had relatively more highly valued commercial and industrial land had a revenue raising advantage. The Commission calculated and applied a value distribution adjustment factor to the consultant's estimates of the site value of industrial and commercial land in each State to take account of these differences in value distributions. The data used to calculate this were provided by the States.

10. The framework of States' land tax policies has not changed fundamentally since the 1999 Review, although the land tax rates and the threshold may have changed.

However, it seems that the share of land taxes collected from land other than industrial and commercial land could now be significant. This may have implications for the land revenue assessment.

11. ***Rationale of the Existing Method.*** In the 1999 Review, the Commission adopted the current assessment method of using commercial/industrial land value because:

- (i) it was simpler and less data intensive than a more comprehensive method;
- (ii) it did not need estimates of residential investment land, thus avoiding the introduction of errors, the size of which was difficult to judge; and
- (iii) revenue from residential rental properties was thought to be fairly insignificant at the time.

ISSUES IN STATES' MAIN SUBMISSIONS

12. ***Issues.*** Except for New South Wales, the States broadly support the current assessment method. The submissions focus on adjustments to the existing revenue base measure. The main issues raised concerned:

- (i) possible tax capitalisation into land value (an elasticity adjustment);
- (ii) inclusion of residential investment properties in the revenue base;
- (iii) impact of differences in price levels on assessments;
- (iv) whether Victoria's actual valuations should be used to calculate its value distribution adjustment factor; and
- (v) the treatment of mining tenements.

TAX CAPITALISATION — AN ELASTICITY ADJUSTMENT?

States' Views

13. **New South Wales's** principal concern with the land tax assessment is that the measure of revenue capacity does not account for the effects of interstate differences in revenue policies on the tax base. That is, it does not take into account the capitalisation of tax into the tax base (the site value).

14. In support of its submission, New South Wales included a consultancy paper which reviews the effect of different States' revenue policies on the property tax base. The

paper cites literature on the relationship between tax rates and property values due to tax capitalisation. The arguments rest on findings that increases in tax rates on land reduce the market value of land. That is, land values are inversely affected by tax rates. It argues that:

- (i) the Commission's assessments assume average tax rates are applied in all States;
- (ii) actual rates in each State differ from those average rates; and
- (iii) since land values are affected by tax rates, observed values cannot be used as the base — we should estimate what values would be if average tax rates applied¹.

15. **Victoria** argues that data on movements in land values over time do not suggest that States with low rates of tax have experienced the greatest growth in taxable property values. It notes that although Queensland has low tax rates, it has a declining revenue base while Victoria and Western Australia, which have relatively high tax rates on high value commercial/industrial properties, have experienced rates of growth in land values that have exceeded the national average growth rate.

16. Victoria concludes that there is no basis for an elasticity adjustment.

Comments

17. **Conceptual Argument.** We have had some economic analysis, outlined in the Attachment, done in response to the New South Wales argument. It indicates that, conceptually at least, capitalisation may exist under some circumstances. If the demand for land (or the use of land) is elastic, a land tax will reduce the total market value of land. However, there is no strong empirical evidence that demand for commercial/industrial (or even residential) land in most Australian cities is elastic. On the contrary, both the demand for and the supply of land in Sydney, Melbourne, Brisbane, Perth and Adelaide, where most of Australia's commercial/industrial land lies, seem to be fairly inelastic. If the demand for land is inelastic, then the economic analysis indicates that capitalisation of land tax may increase rather than decrease the total market value of land. If this is so, any capitalisation will generate an opposite effect to what New South Wales has argued.

18. New South Wales has argued that Land Tax, an annually recurring impost on property holders, is capitalised, but has not mentioned other State policies that may influence the value of properties. For example, how does the land tax influence differ from the 'one off' impact that the stamp duty on the purchase may have? And what is the influence of the provision of public goods such as freeways and rail connections. Even if increases in land tax reduces the value of land, other State policy influences may improve the attractiveness of properties and increase the value of land. Identifying any net effect on

¹ According to this argument, the higher the tax rate, the lower the observed market value of land due to capitalisation. Thus, had the average tax rate been applied in every State, the value of land in the States with a below average tax rate (such as New South Wales) would be lower than the observed one, and vice versa.

land values of all relevant differences between the policies of individual States and the average policies would be extremely difficult.

19. **Potential Significance of Impact.** Even if tax capitalisation had the effects argued by New South Wales, there is still a question of whether its impact on State grants is material or not. New South Wales has estimated impacts on standardised revenue for 2000-01 ranging from 17 per cent of the standardised land revenue for Tasmania (prior to the value distribution adjustment) to minus 22 per cent for the Northern Territory². Such effects would be significant.

20. However, those estimates may overstate the differences in States' effective tax rates. Using the rates implied by sample data supplied by States and the Commission's value distribution adjustment factor, the implied adjustment factors we have calculated are smaller than those derived by the consultant. This is shown in Table 1. For example, Victoria's difference changed from 10 per cent to 1 per cent (line *b* compared to line *a* in Table 1) and Tasmania from 17 to 3 per cent. The ACT's difference, however, increased from 2 to 10 per cent and, under these alternative assumptions, the New South Wales capacity would be increased by 3 per cent rather than reduced by 3 per cent.

21. It is noted that the New South Wales estimates assumed full capitalisation and no tax deductibility of land tax. These assumptions may also lead to an overestimate of the effects because:

- (i) the conclusions from the literature on the degree of land capitalisation are inconclusive — for example, Palm and Smith's study³, the key study cited by the New South Wales consultant, gives an estimate of capitalisation of about 60 per cent; and
- (ii) land tax is tax deductible under Australian company and income tax laws, implying that the rate of capitalisation would be reduced by the company tax rate, which is 30 per cent.

22. If the assumptions of zero tax deductibility and full capitalisation are replaced by these two figures, the impact of capitalisation on the standardised revenue would be much lower, although it may still be significant. As shown in Table 1, the effects range from 4 per cent for the ACT to minus 11 per cent for the Northern Territory (which does not levy land tax at all) and are between plus or minus 2 per cent for the other States.

23. We did not do sensitivity analysis on, or reality checks for, the discount rate used because Palm and Smith's study seems to suggest that when the discount rate changes, the estimated extent of capitalisation also changes.

24. It is difficult to be confident about how capitalisation should affect the capacity of States to raise land revenue. There is uncertainty regarding the extent of

² The New South Wales study also changed the value distribution adjustment factors and the end effects are not as large as the intermediate ones.

³ Oded Palm and Barton A. Smith, New evidence on property tax capitalisation, *Journal of Political Economy*, 1998, vol. 106, no. 5, pp1099-1111.

capitalisation in general, doubt about the direction of capitalisation, no empirical data that measures the extent of capitalisation in Australia, and doubt about the impact of a given level of capitalisation on standardised revenue calculated by the Commission.

25. In the absence of robust data on the extent of capitalisation in Australia, including information on whether that extent would vary from State to State, any capitalisation adjustment would be heavily reliant on Commission judgement. The Commission is not inclined to include a capitalisation adjustment in the assessment.

Table 1 IMPACT OF CAPITALISATION UNDER DIFFERENT ASSUMPTIONS, 2000-01

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Aust
Effective tax rates (ETR) from sample data (%)	1.19	1.10	0.89	0.88	0.95	1.17	1.47	0.00	1.07
Effective tax rates using actual revenue and the revenue base implied by NSW analysis (%)	1.68	2.32	1.64	2.21	4.34	5.90	2.54	0.00	1.96
Overall adjustment factors implied by NSW study (a)	0.967	1.099	0.959	0.964	1.117	1.170	1.021	0.778	1.000
Adjustment factors using effective tax rate implied by sample data (b)	1.030	1.008	0.955	0.953	0.970	1.025	1.100	0.733	1.000
Adjustment factors using effective tax rate implied by sample data, and land tax deductible and 60 per cent capitalisation (c)	1.013	1.003	0.981	0.980	0.987	1.011	1.042	0.888	1.000

(a) Calculated as the ratio of standardised revenue calculated in the NSW study, allowing tax capitalisation to CGC standardised revenue from U2002, the implied effects of tax capitalisation.

(b) Calculated using the formula: $(1/4)/(1/(4+(ETR_i-ETR_{Aust})))$. 4 is the discount rate used in the NSW analysis.

(c) Calculated using the formula: $(1/4)/(1/(4+(ETR_i-ETR_{Aust})*0.7*0.6))$.

Source: Table 7, page 360, 2004 Review Submission, New South Wales.

TREATMENT OF RESIDENTIAL INVESTMENT PROPERTIES

States Views

26. The current measure of the land revenue base is value of commercial and industrial land. Both Western Australia and the ACT questioned whether this measure accurately captures States' relative revenue raising capacity. Western Australia argues for extending the base to residential investment properties. The ACT argues for an adjustment to take account of the impact of past Commonwealth policies on the volume of public housing (and thus the size of the private rental market).

27. **Western Australia** argues that the value of taxable residential land could be higher than the value of commercial/industrial land. They note that the value of

commercial/industrial land used by the Commission for Western Australia for 2000-2001 was \$12.3 billion, while the total value of taxable land in Western Australia was \$30.8 billion. They argue that the difference is residential investment properties.

28. The **ACT** claims the prior actions of the Commonwealth, the conditions attached to the Commonwealth State Housing Agreement (CSHA) and the level of publicly owned housing stock forced upon the Territory at self-government, have resulted in the over-provision of public housing in the ACT, to the detriment of a privately owned rental market. As the CSHA does not allow the States to reduce the extent of housing stock, it reduces the ACT's capacity to raise land revenue from private renters.

Comments

29. The standard policy is to exempt almost all principal places of residence, but some States do impose land tax on the excess value above a threshold, even on owner-occupied residential properties. Unless it becomes a common element of land tax policy, we are not concerned with that issue and intend to continue to see it as an above standard policy of the States that apply it. It is, however, standard policy to apply land tax to residential rental property and, conceptually at least, the measure of the land revenue base should include the value of such properties. In practice, it has not been possible for State Valuers to dissect the value of residential land into rental properties and owner-occupied residences. There must be data available on the value of residential land subject to Land Tax, but it may not be valued on a comparable basis across States and may include the taxable value of the owner-occupied properties that are taxed.

30. **Potential Significance.** It appears that the value of residential investment land is large and is not distributed across States as the Commission has implicitly assumed. Table 2 shows some estimates and indicates that the value of residential investment land could be larger than the values of commercial land in most States, and vary considerably between States. These estimates seem to be supported by the estimates presented in the consultant's paper in the New South Wales submission⁴. However, Table 3 may cast some doubts on the significance of revenue from investment residential land because land is only a component in house prices and the value of the land component in many investment houses may be below the threshold. Nevertheless, we can no longer assume that it is not significant. The Commission will seek additional information from the States and consider the best way of dealing with investment residential land.

31. **Options.** There are two options:

- (i) to continue the existing method of assessment; or
- (ii) to include the value of residential investment land in the revenue base.

32. Conceptually, option (ii) is better because the share of residential investment properties in total land revenue appears to be substantial and there is a high probability that capacities differ between States. A change to include the value of these properties would

⁴ We are not sure how the consultant's estimates were obtained and would like further information on this.

appear to be material, but determining a standard threshold and then collecting data on that basis may be challenging.

Table 2 VALUE OF COMMERCIAL AND RESIDENTIAL LAND AS A PROPORTION OF TOTAL VALUE, 2000-01

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Commercial	46847	29215	15354	12294	5287	1081	1271	1351
Residential Investment/private landlord ^(a)	74425	28260	23281	14402	4896	1051	1886	739
Total	121272	57475	38635	26696	10183	2132	3157	2090
Commercial proportion (%)	38.63	50.83	39.74	46.05	51.92	50.70	40.26	64.64
Residential Investment proportion (%)	61.37	49.17	60.26	53.95	48.08	49.30	59.74	35.36
Share of commercial/industrial land tax in total land revenue (%) ^(b)	60.0	54.1	59.4	41.9	35.8	47.5	58.4	na

(a) Based on percentage of all households rented from private landlords for each State, as indicated in the ABS statistics.

(b) Sourced from table 7, page 360, 2004 Review Submission, New South Wales.

Source: 1999 ABS Housing Survey catalogue 4182.1 to 4182.8, Table 3.

Table 3 MEDIAN HOUSE PRICE AND TAX THRESHOLD VALUES

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT
	\$	\$	\$	\$	\$	\$	\$	\$
House median price ^(a)	312 800	265 800	170 800	160 900	138 900	114 800	190 600	184 200
Tax threshold value	205 000	85 000	200 000	10 000	50 000	1 000	No threshold	Not imposed
Tax on properties valued at the median price	\$1932	\$562	0	\$527	\$311	\$1923	\$2859	Not imposed

(a) The land component would be much smaller.

Source: REIA, Market Facts, June Quarter 2001

33. **Potential Problems of the Existing Method.** The main disadvantage of the existing approach is that if the differences between States in the share of commercial and industrial land in total taxable land were large, the measure of the revenue base used would misrepresent States' relative revenue raising capacities. Since available information indicates this may be the case, investment residential land should be included in the revenue base.

34. **Data Requirement.** However, doing so could be data intensive, as it would require a split of residential land values into investment properties and owner occupied properties. Given that land taxes are progressive and there is a tax threshold in most States, the data would also need to be classified into relevant ranges.

35. Alternative estimates of the value of investment residential land might be possible using data from the ABS Housing Survey. However, some large assumptions would be required, implying the estimates could be subject to large errors. The distribution of rented investment property values across States will be difficult to obtain. Although the Real Estate Institute of Australia collects monthly house sales and prices, they are not available by rental and owner-occupied properties. The ABS Housing Survey suggests that renters tend to be on lower incomes than homebuyers and tend to be single. Therefore, it seems reasonable that rental and owner-occupied properties would not have either the same average price or the same value distribution as total residential properties, and the difference could not easily be estimated.

36. The different land tax treatment of commercial and residential rental properties may cause a further complication. In some States, the minimum threshold value differs by type of property. Queensland applies a different exemption threshold to residential properties (\$200 000 compared to \$100 000 for commercial/industrial land). This may also need to be taken into account.

37. *The relative importance of public housing.* The ACT's argument that past Commonwealth policies mean it has a greater proportion of public housing (and a lower proportion of private rental housing) than the other States could be tested as part of the examination of investment residential property. The resolution of the issue will partly depend on whether there have been opportunities since self-government was granted to the ACT for any effects of past Commonwealth policies to be overcome, the availability of data to measure any current effects and their materiality.

38. *A Tentative View.* The Commission's tentative view is that the land revenue assessment for the 2004 Review should include investment residential land in the revenue base, if comprehensive, comparable and robust data are available.

IMPACT OF DIFFERENCES IN PRICE LEVELS ON ASSESSMENTS

State Views

39. **New South Wales's** consultant argues that the Commission's assessment does not allow for the differences in average property prices between States in applying the effective all-State land tax schedule. This means, it argues, that any high property tax rates imposed in a State with low average land prices (such as Tasmania), would be applied to all properties in a State with high average property prices.

Comments

40. The all-State effective tax rate applied to each value band within the progressive tax approach taken in the assessment is a weighted average of each States' tax rates. The weighting being determined by each State's contribution to the total value of land in that value band. Consequently, the impact of a State with higher tax rates but low

land prices is limited by its share of the total land value and an allowance for differences in average values does not seem necessary.

OTHER ISSUES

41. *Issues Related to Data.* **Western Australia** argues for a correction of apparent understatements of increases in commercial/industrial land values provided by the two largest States, and for a review of the value distribution adjustment to take account of the standard policy to aggregate commonly-owned properties in calculating land tax liability. These issues will be considered by the land valuation consultant.

42. *Victoria's actual data.* **Victoria** argues that data from its actual biennial valuations should be used as the basis for the calculation of the value distribution adjustment. It reports that all land in Victoria was valued on a common date for the first time at 1 January 2000 and land will be revalued biennially. Unless the Australian Valuer-General thinks any adjustments needed to make the Victorian data comparable with other States would render it unacceptable, Victoria's actual data will be used in the assessments.

43. *Mining tenements.* **Tasmania** repeated the argument it made in the 1999 Review that mining tenements are a source of revenue and, conceptually at least, should be included in the assessment. It proposes they be included if the valuation data has been improved.

44. In the 1999 Review, it was decided that the standard policy was not to tax mining tenements. The Commission has no evidence that this standard policy has changed. Consequently, it believes the current approach of excluding mining tenements should be continued.

CONCLUSION

45. In summary, the thrust of the tax base approach to land assessments is capturing the relative revenue raising capacities of the States and should be retained. However, information indicates that land tax revenue from residential rental properties could be substantial and the values of those properties should be included in the measure of the base unless data does not permit it. At this stage, the arguments for a tax capitalisation adjustment are neither convincing nor well supported by empirical evidence. Other data issues will be followed up in the course of the Review. Since no States commented on the practice of employing the Australian Valuation Office as the consultant to review States' land valuation data, we will continue doing so.

ATTACHMENT

**ECONOMIC ANALYSIS OF TAX CAPITALISATION/ELASTICITY
ADJUSTMENT**

1. The framework of land tax capitalisation used in the research commissioned by New South Wales is an ‘income flow’ approach to valuing properties.¹ It estimates the value of an asset based on the principle that an asset is worth the present value of future returns to the asset. While this may be true, there are other factors which may severely limit the extent of tax capitalisation, or even work in the opposite direction.

2. First, economic theory tells us that how the total value of land responds to a land tax will be influenced by the elasticities of the demand for and supply of land. The more elastic the demand for and the supply of land, the more likely the total value² of land falls. On the other hand, the more inelastic the demand for and supply of land, the less the total value of land falls (or the more the total value of land may rise).

3. This is illustrated in Figure 1 which shows the case of different assumptions about the demand elasticity. It shows two extremes: perfectly elastic (the solid horizontal line at P_0) and perfectly inelastic (the solid vertical line at Q_0). The supply is indicated by the sloped lines, SS — without land tax, S_lS_l with a lower land tax and S_hS_h with a higher land tax.³

4. When demand is perfectly elastic, capitalisation of land tax decreases the total value of land,⁴ the higher the tax the lower the total value of land (the area P_0EQ_hO with a higher tax as compared to the area P_0FQ_lO with a lower tax). The degree of the reduction in the total value also depends on the elasticity of supply — the more elastic the supply the more reduction of the total land value.

5. On the other hand, when demand is perfectly inelastic, ‘capitalisation’ of land tax does not change the total value of land at all — the higher the land tax the higher the total land value, as indicated by the area P_hCQ_0O with a higher tax as compared to the area P_lBQ_0O with a lower tax.

¹ The paper mentioned that there exist two alternative approaches to measuring the market value of an asset: the cost approach and the market data approach.

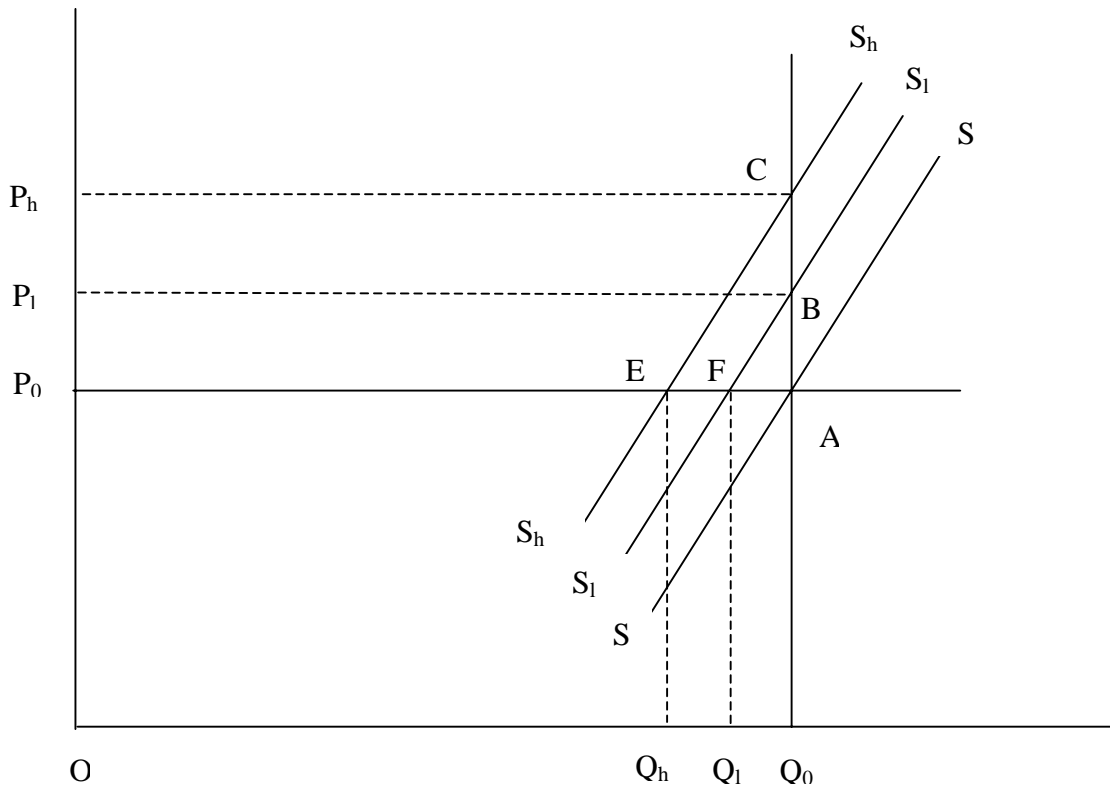
² We use total value in this paper because the focus is on equalisation. This differs from the price of land, because quantity also plays a part, although in terms of land, quantity may not change very much if the demand for and supply of land are fairly inelastic.

³ The supply curves differ from the traditional ones in which a tax is directly applied to the transactions (and hence the market value is different before and after tax), because land tax is not imposed on the sale of land: rather, it is imposed on the holding of land. What it shows here is that land tax is assumed to be factored-in in the costs of land ‘supply’, either totally or partially. Because land tax is reflected in the costs, the supply of land will be affected by the land tax – the higher the land tax, the higher the supply curve is shifted up.

⁴ In the diagram, value is presented as the area of the rectangle set by the given origin and the intercept of the demand and supply curves (i.e. supply times price).

6. This suggests that the issue of land tax capitalisation should rely on the estimates of the elasticities. Unfortunately, there is little empirical guidance on the demand and supply elasticities of land, internationally or in Australia. This in turn presents practical difficulties in considering the implications of capitalisation in the context of fiscal equalisation.

Figure 1 ELASITICITY AND CHANGE IN TOTAL VALUE OF LAND DUE TO DIFFERENTIAL LAND TAXES



7. The imposition of a tax on the holding of land shifts the supply curve of land up because owners of land can pass some of the tax on to consumers, as long as the supply of land is not perfectly inelastic.⁵ There are several reasons for this. One is that land is immobile — users of land cannot choose a piece of land in Victoria and use it in New South Wales. Differences in land tax rates between States may have limited effects on demand for land in a State. Another is that State land tax applies to all land in that State, hence it affects every landowner and increases the costs of the whole industry in that State. Because of this,

⁵ The supply here is either land directly or indirectly, through properties such as buildings. Generally not all the land (or buildings on it) is completely 'occupied and there are always some vacancies. Higher prices can increase the supply by reducing the vacancy rate, or may increase the density through land refill or building reconstruction. Land supply can be very inelastic but not perfectly inelastic.

even in a perfectly competitive environment, the industry supply curve will move upwards, passing some of the tax to consumers. This is exactly the elasticity effect.

8. Second, the literature (see for example, Hilber C.A.L. and C.J. Mayer 2001⁶) also indicates that while capitalisation of property tax may exist, capitalisation of public goods provision may also exist. Most studies focus on local land tax and local public goods provision. But this can be extended to the State level, since State land tax is used in providing public goods to the State residents. The literature shows that property values are affected by the provision of public goods. The better the public goods, the higher the property values. So the overall effect of capitalisation of land tax and the use of land tax in the provision of public goods is hard to discern. This is probably why most empirical studies show no consensus on the rate of capitalisation.

⁶ Hilber C.A.L. and C.J. Mayer, 2001, 'Land supply, house price capitalisation and local spending on schools', version: November 2 2001, website: <http://www.ideas.uqam.ca/ideas/data/Papers/woppennzl392.html>.