Local Gradualism

Eleven Additional Formulas

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In brief, the three main benefits claimed for a shift of taxes to land values are:

(1) Most voters pay less (out-of-town property owners and inefficient land users pay more).

(2) The shift needn't cost the local government anything at all - true revenue neutrality.

(3) A construction spurt and general local economic growth are likely to ensue (we shouldn't be surprised that if buildings are taxed less, then they'll be cheaper to operate and construct, and if we tax land values more, landowners are encouraged to develop their sites more fully, with a consequent containment of urban sprawl into the clean-and-green countryside).

There are studies (available from C.S.E.) which fully substantiate all of these benefits, but they are not the focus of this pamphlet. This booklet is about how to effectuate these benefits in the foreseeable future through taxing land values more. It does not describe land value taxation or its benefits. It deals only with implementation. It is not meant for the casual reader, but for the implementer.

Is it possible to implement land value taxation in the foreseeable future and enjoy the three benefits listed above without the eleven formulas listed in this booklet and the twelve formulas in the companion booklet (also published by C.S.E.)? Yes, if you're lucky enough to find a prospect who can figure them out, but clearly land value tax advocates would do well to know these formulas without having to rely on others.

We have found it highly useful to lead off a presentation to prospects by using the appropriate formula to inform the prospect exactly what rates we're proposing to him, otherwise he might never know exactly what we expect him to do or it might take a long time for him

to understand: "Yes, let's tax land values," he might think, "but exactly how should we do it?"

Let us suppose that in the foreseeable future we convert the voters and politicians to land value taxation through general theoretical research, education and rational argument (although it does not seem likely). We will nevertheless still need to resort to these eleven formulas (and the previous twelve) to actually implement the taxation of land values.

"But hasn't land value taxation been implemented in non-U.S. countries without the use of these formulas?" it might be asked. Probably not; surely these formulas were not explicitly used (since implementation overseas preceded publication), but non-Georgists must have levied their equivalents in order to implement whatever LVT they were able to obtain. Besides, the situation in the U.S. is unique because it has higher local taxes than in most other countries, assessments are widespread, and the tax rate on land assessments is linked (as in Canada also) to the tax rate on building assessments. Americans are also more disinterested in land value taxation, and are more anti-property tax than non-Americans in large part because they are pragmatic and un-ideological. All this complicates the implementation of land value taxation in the U.S. and additionally requires the use of these formulas.

It should be obvious that we will never implement the land value tax if we don't know how to do it, and for these the formulas are indispensible. But being formulas, they caan't be read at a thousand words per minute, but require slow but steady study. Don't expect or attempt recreational reading - just indispensible understanding. What is the good of philosophy without implementation?

Should we, then, engage in macroeconomic research, education and rational argument? *Absolutely yes*. It is our duty to do so, and no one can predict the future. The future is "not for us to see, what will be, will be." Besides, once the popular movement begins for land value taxation, then macroeconomic research and articles will become

invaluable and in great demand.

The reader will note that the formulas in this booklet are numbered 13 to 23. That's because the formulas in the *12 Formulas* booklet are numbered 1 through 12, and these are an additional eleven.

Keep in mind that all formulas used in this booklet are derivable from the basic property-tax formula, **Revenue = Assessments x rate.**

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Additional Formulas for Converting a One-Rate Property Tax to Two-Rate (While Maintaining Revenue-Neutrality)

13. What is the minimum building tax rate to be proposed if it is to be lower than the land tax rate?

BTRp > 80% x PTRs

where BTRp = proposed building tax rate, > = should exceed, PTRs = property tax rate wherein the building and land tax rates are the *same* (which they are for every city which has not yet adopted the two-rate property tax; but if the city has adopted the two-rate property tax, then use Formula #4 in the pink booklet of formulas to calculate what PTRs would be).

Example: If the current property tax rate is 3%, then don't suggest that next year's property tax rate on buildings be any less than 2.4% (80% of 3%). If necessary, you might have to suggest a higher rate.

This formula is very important. Unfortunately, the property tax in most U.S. cities is now so high that it is not politically possible to immediately replace the entire building-assessment tax with a land-assessment tax, although we would like to proceed as rapidly as possible toward that goal. If a city should attempt to shift the property tax from building to land assessments faster than the above formula envisages, then those property owners whose building-to-land assessment ratio is considerably less than the citywide building-to-land assessment ratio would be faced with a suddenly larger property tax bill; we would like them to put a more appropriate building on their land-site, but they would more likely protest (with probable success) to their city officials and block any two-rate reform. Two-rate land reformers shouldn't want to threaten these property owners with bankruptcy, nor should they wish to ensure a likely defeat for their efforts. We don't need to create opposition. Those who want to do everything all at once, usually end up accomplishing nothing at all.

14. What increase in the land tax rate should be proposed if there will be a dollar abatement against all building assessments?

$$LTRi = \frac{(Nb \times Ab) \div (ECP + PPY)}{LA}$$

where LTRi = the proposed increase in the land tax rate, Nb = the number of buildings in the city where the abatement is less than the building assessment (but if abatements can exceed the building assessment for particular buildings, then Nb = the total number of buildings in the city), Ab = the tax abatement on each building assessment, ECP = Estimated Collection Percentage of the property tax for the coming year, PPY = percentage (of next year's property tax) of what is owed from previous years, and LA = total citywide land assessments (which in benighted one-rate cities, will be the same as the current property tax rate). Add the current tax rate on land assessment to LTRi to get the entire land tax rate needed next year by the locality; this will maintain revenue neutrality.

How to Use the Formula: First determine (Nb x Ab), then (ECP + PPY), then LA, then you can solve the formula.

(There are some who simplistically think that if there is a government expense - due, perhaps, to a building tax abatement - one needs only to divide it by the relevant land assessment to arrive at the land tax rate needed to fund it; that's nearly correct but not exactly correct. For instance, Hartford, Conn. has an ECP of 92.5% and a PPY of 3.7% [3/3/98 phone call with Bob Raymond, Hartford Tax Collector's Office]; Washington, Pa. has an ECP of 90% and a PPY of 7.5% [1998 Budget]; land value tax advocates better take ECPs and PPYs into account if, say, they don't want to try to go to St. Louis and end up in Memphis.)

Example: If there are 1,000 buildings in town (Nb) and their assessments are to be abated by $100 each (Ab), only 85% of the property tax is expected to be collected (ECP) but 5% of next year's property tax of what is owed from previous years will be collected (PPY) and LA is $10 million, then LTRi = 0.011. LTRi and LTR should use the same unit of measurement. For example, if LTR is in percent, then LTRi will also be in percent; if in mills, likewise. (We can assume that the ECP for a tax on land assessments will be the same for a tax on land-and-building assessments). This supposes the abatement is to be funded by an increase in the land tax rate, provided the abatement can exceed the building assessment. If the abatement cannot be

more than the building assessment, and if Nb is then 900 such buildings (instead of 1,000), then LTRi = 0.01. LTRi and LTR should use the same unit of measurement.

A dollar abatement on building assessments has definite advantages. It can be increased each year and can aid low-income property owners even more than if the property tax rate on building assessments was less than on land assessments.

15. What increase in the property tax rate should be proposed if there will be a dollar abatement against all building assessments?

$$PTRi = \frac{(Nb \times Ab) \div (ECP + PPY)}{LA + (BA - [Nb \times Ab])}$$

where PTRi = the proposed increase in the property tax rate, Nb = number of buildings in the city where the abatement is less than the building assessment (but if abatements can exceed the building assessment for particular buildings, then Nb = the total number of buildings in the city), Ab = the tax abatement on each building assessment, ECP = Estimated Collection Percentage of the property tax for the coming year, PPY = percentage (of next year's property tax) of what is owed from previous years, and LA = total citywide land assessments (which in benighted one-rate cities, will be the same as the current property tax rate). Add the current property tax rate to PTRi to get the property tax rate needed next year by the locality; this will maintain revenue neutrality.

How to Use the Formula: First determine (Nb x Ab), then (ECP + PPY), then LA, then (BA - [Nb x Ab]), then you can solve the formula.

Example: If there are 1,000 buildings in town (Nb) and their assessments are to be abated by $100 each (Ab), only 85% of the property tax is expected to be collected (ECP) but 5% of next year's property tax will be collected from what is owed from previous years (PPY), LA is $10 million, and BA is $30 million, then PTRi = 0.278. LTRi and LTR should use the same unit of measurement. For example, If LTRi is in percent, then LTRi will also be in percent; if in mills, like-

wise. If the abatement is to be funded by an increase in the property tax rate, provided the building abatement can exceed the building assessment. If the abatement cannot be more than the building assessment, and if Nb is then 900 such buildings (not 1,000), then PTRi = 0.251. PTRi and PTR should use the same unit of measurement.

16. What increase in the land tax rate is needed to replace a projected government expense?

$$LTRi = \frac{Exp. \div (ECP + PPY)}{LA}$$

where LTRi = increase in the land tax rate, Exp. = projected government expense, ECP = expected collection percentage from the property tax, PPY = percentage (of next year's property tax) collected from what is owed from previous years, and LA = total citywide land assessment. LTRi plus the current land tax rate would enable the new property tax to raise enough revenue to cover the replaced expense. *Caveat:* A too-large increase in LTR will threaten a substantial portion of the property owners in town with bankruptcy because they would suffer a too-sudden increase in their property tax . See formula #13 above.

How to Use the Formula: First determine Exp., then (ECP + PPY), then LA, then solve the formula.

Example: If a projected government expense is $100,000, only 85% of the property tax is expected to be collected (ECP) but 5% of next year's property tax will be collected from what is owed from previous years (PPY) and LA is $10 million, then LTRi = 0.011. LTRi and LTR should use the same unit of measurement. For example, if LTR is in percent, then LTRi will also be in percent; if in mills, likewise.

17. What increase in the land tax rate is needed to replace taxes other than on buildings?

$$LTRi = \frac{Taxes \div (ECP + PPY)}{LA}$$

where LTRi = increase in the land tax rate, Taxes = the revenue produced by the non-building taxes being replaced, LA = total citywide land assessments, ECP = expected collection percentage from the

property tax and PPY = the percentage of next year's property tax collected from what's owed from previous years. *Caveat:* see formula #13 above.

How to Use the Formula: First determine Taxes, then (ECP + PPY), then LA, then solve the formula.

Example: If taxes to be replaced other than on buildings come to $100,000, only 85% of the property tax is expected to be collected (ECP) but 5% of next year's property tax will be collected from what is owed from previous years (PPY), and LA is $10 million, then LTRi = 0.011. LTRi and LTR should use the same unit of measurement. For example, if LTR is in percent, then LTRi will also be in percent; if in mills, likewise.

18.What increase in the land tax rate would pay for the property tax deferral (to the time of sale or exchange of the their property) for both elderly and unemployed owner-occupying homeowners?

$$LTRi = \frac{(TD - TR) \div (ECP + PPY)}{LA}$$

where LTRi = land tax rate, TD = the tax deferral, TR = the repaid taxes from the deferrals of previous years, ECP = the city's expected collection percentage from the property tax, PPY = percentage (of next year's property tax) collected from what's owed from previous years and LA = the total citywide land assessments. If LTRc (current land tax rate) is added, then the total new tax rate on land assessments would be arrived at.

How to Use the Formula: First determine (TD - TR), then (ECP + PPY), then LA, then solve the formula.

Example: If the *net* property tax deferral is $100,000 (TD - TR), only 85% of the property tax is expected to be collected (ECP) but 5% of next year's property tax will be collected from what's owed from previous years and LA is $10 million, then LTRi = 0.011. LTR and LTRi should use the same unit of measurement. For example, if LTR is in percent, then LTRi will also be in percent; if in mills, likewise.

19. What increase in the property tax rate would pay for the

building tax deferral (to the time of sale or exchange of their property) for both elderly and unemployed owner-occupying homeowners?

$$PTRi = \frac{(TD - TR) \div (ECP + PPY)}{LA + BA}$$

where PTRi = property tax rate increase, TD = total cost of the tax deferral, TR = tax deferrals repaid from previous years, ECP = expected collection percentage (of next year's property tax), PPY = percentage (of next year's property tax) collected from what is owed from previous years, LA = total citywide land assessments, and BA = total citywide building assessments.

How to Use the Formula: First determine (TD - TR), then (ECP + PPY), then (LA + BA), then solve the formula.

Example: If the *net* building tax deferral is $100,000 (TD - TR), only 85% of the property tax is expected to be collected (ECP) but 5% of next year's property tax will be collected from what is owed from previous years (PPY), LA is $10 million, and BA is $30 million, then PTRi = 0.0028. PTRi and PTR should use the same measurement. For example, if PTR is in percent, then PTRi will also be in percent; if in mills, likewise.

20. What increase in the land tax rate would replace the revenue lost by putting a percentage limit (perhaps 5% or 10%) on the increase in what any property owner is to pay over the previous year's property tax bill?

$$LTRi = \frac{RL \div (ECP + PPY)}{LA}$$

where LTRi = increase in the land tax rate, RL = the property tax revenue lost due to the percentage cap or limit, ECP = the city's expected collection percentage from the property tax, PPY = percentage (of next year's property tax) collected from what is owed from previous years (PPY) and LA = total citywide land assessments. If the current land tax rate is added to LTRi, then the total new tax rate on land assessments would be arrived at.

How to Use the Formula: First determine RL, then (ECP + PPY), then LA, then use the formula.

Example: If a property tax limitation on individual property-owner

tax payments results in a revenue loss of $100,000, only 85% of the property tax is expected to be collected (ECP) but 5% of next year's property tax will be collected from what is owed from previous years (PPY), and LA is $10 million, then LTRi = 0.011. LTRi and LTR should use the same unit of measurement. For example, if LTR is in percent, then LTRi will also be in percent; if in mills, likewise.

21. How are land assessments to be adjusted if there is substantial inflation and infrequent re-assessments?

Land assessments should be automatically increased every quarter to offset inflation (as long as this can be legally done). This quick adjustment will not obviate the need for an accurate re-assessment.

Example: If inflation has increased prices 3% during the previous quarter, then at the beginning of the next quarter, all land assessments should automatically be increased by 3%.

22. How can we determine the land and building tax rates for components of the total property tax (such as debt service, recreation, library, etc.)?

Multiply the component's percentage of the total revenue proposed for next year's property tax by the proposed land tax rate to arrive at the land tax rate for the component, and then multiply that percentage by the proposed building tax rate to arrive at the building tax rate for the component.

Example: If debt service will cost 10% of next year's total property tax revenue, then it will also be 10% of the proposed total land and building tax rates for debt service (keeping in mind the problems associated with accurately determining next year's revenue).

23. If the future ratio between the building and land tax rates is known, then what will be the building and land tax rates?

$$BTRp = \frac{Revenue}{(r \times LA) + BA} \qquad LTRp = BTRp \times r$$

where BTRp = proposed building tax rate, LTRp = proposed land tax rate, r = ratio, LA = total locality-wide land assessments, BA = total locality-wide building assessments, and Revenue = next year's revenue from the property tax. If the ratio is to be 2-to-1 (which seem to

intrigue many city hall prospects), this formula, suggested by C.S.E. Trustee Fred Karn, Jr., can be used: Revenue = (LA x 2BTRp) + (BA x BTRp). *Caveat*: the usual concerning revenue (see below). If the ratio is other than 2-to-1, then substitute for 2 in the above formula; *i.e.*, if it is to be 3-to-1, then Revenue = (LA x 3BTRp) + (BA x BTRp).

Example: If the revenue to be raised by the property tax is to be $1 million, the LA is $10 million, the BA is $30 million, and the proposed future building-land tax-rate ratio is to be 2-to-1, then the BTRp will be a 2% increase: $1 million divided by (2 x $10 million) + $30 million = 2%. LTRp will then be 4% (2 x 2%).

Addendum concerning "revenue":

"Revenue" in these formulas can be surprisingly tricky. It is not a publicly available figure and many budget directors will often inadvertently give you this year's property-tax revenue rather than next year's. They certainly won't know the revenue figure without looking at their involved budget sheets, which they might not gladly or accurately do. They should disregard future discounts, penalties, delinquencies, back payments from previous years, exemptions, etc., except when transferring taxes other than on buildings, but they may not. Your prospects may not tell you how they are defining revenue. Be sure you know how to handle "revenue" in your formulas.

"Here are two simple principles, both of which are self-evident:

"(1) That all men have equal rights to the use and enjoyment of the elements provided by nature.

"(2) That each man has an exclusive right to the use and enjoyment of what is produced by his own labour.

"There is no conflict between these principles. On the contrary they are correlative." - Henry George