



Land and Building Taxes: Contrasts in Time-Distribution

By Dr. Mason Gaffney

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Land and Building Taxes:
Contrasts in Time-distribution

Mason Gaffney

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Land taxes differ from building taxes, among other ways, in their time-distribution. Building taxes are highest when a building is new, then taper off with age. Land taxes should usually remain constant or rise over time.

The replacement of building taxes by land taxes therefore constitutes a species of extension of credit from the municipality to the builder -- more strictly, it is the present system of taxing buildings that constitutes a forced loan from builders to the fisc. A new building yields a fiscal surplus over public costs, as a rule, and often a deficit to the owner for some initial period. Old buildings constitute fiscal deficits, by which the owner tends in a sense to recover his earlier loan to the fisc.

Shifting to the land tax system would especially benefit builders who are hard pressed for credit.

That would not, in general, detract from public revenues, because at any given time there are buildings in every stage of the life cycle, and lower taxes on newly improved sites would be compensated by higher taxes on sites under old buildings. In older central cities, the old buildings are the majority. Nor would the change discriminate against the older places, for in due time they will be renewed and enjoy the new policy of impartiality towards youth.

The uneven impact of the change is largely among persons -- those benefit most who are most in need of credit. That is in

harmony with accepted public policy, but it achieves the end without subsidy or public assumption of large contingent liabilities, and without the double incubus of combined bureaucratic and lender conservatism and routinization.

The uneven impact of the shift may be seen by comparing the present values of the streams of future taxes to two taxpayers under the two systems. Let us name the affluent taxpayer, Mr. In, and the hard pressed borrower, Mr. Out. Mr. Out discounts future values at a higher rate per annum than Mr. In, because his friendly local loan company does not extend him the same terms as Mr. In, with his AAA credit rating. One of the ironic benefits of Out's position is that the present value of a stream of future taxes appears lower to him than to In.

The more remote the future taxes, the greater the relative difference of their present valuation by In and Out. Since land taxes tend to rise over time, while building taxes tend to fall, the impact of land taxes is much heavier on In than Out, while the impact of building taxes is only slightly heavier. So a shift from building taxes to land taxes favors Out to the discomfort of In.

Let us take a simplified numerical example. Suppose land values, and therefore taxes, are expected to rise by $g\%$ per annum indefinitely. Then the present value, P_L , of the land tax stream is:

$$P_L = \frac{a}{i-g} \quad (1)$$

where a is the tax in year one.

Suppose building taxes fall by $d\%$ per annum, then their present value, P_B , is:

$$P_B = \frac{a}{i+d} \quad (2)$$

$$(1) \quad P = \sum_{n=0}^{\infty} \left(a \left[\frac{1+g}{1+i} \right]^n \right) = \frac{a}{1 - \frac{1+g}{1+i}} = \frac{a}{\frac{1+i}{1+i} - \frac{1+g}{1+i}} \approx \frac{a}{i-g}$$

(2) Same proof as (1), substituting $(1-d)$ for $(1+g)$

Now let $\ln$ discount future values at 5%, and Out at 10%. Let $\underline{a} = 1\%$, and $d = 5\%$. The table below shows the present values of the tax streams to Out and $\ln$.

	Land Tax P_L	Building Tax P_B	$\frac{P_L}{P_B}$
Out	$\frac{\underline{a}}{.09} = 11a$	$\frac{\underline{a}}{.15} = 6.7a$	1.64
$\ln$	$\frac{\underline{a}}{.04} = 25a$	$\frac{\underline{a}}{.10} = 10a$	2.50
$\ln/\text{Out}$	2.25	1.50	—

The land tax looms 2-1/4 times larger to $\ln$ than to Out. The building tax looms only 1-1/2 times larger to $\ln$. Again, that is essentially because the land tax is deferred farther into the remote future.

[It is incidentally worth noting that the land tax tends to rise from its initial level as land values appreciate, while the building tax tends to fall. In the example, the land tax and the building tax raise equal revenues, $\underline{a}$, when buildings are new, but over time the land tax raises more revenue. That means that, to raise a given revenue, the land tax may be set so as to raise less revenue from parcels under new buildings.]

The building tax not only increases the capital requirements of builders, but throws on them a great deal of risk. The income tax, whatever its failings, has the virtue of falling off when evil days betide so that the fisc shares some risk with the builder. The

building tax is not based on income but on an initial capital outlay. It is at its maximum before there is much income, and it continues at a level based on gross outlay, regardless of income. It would be hard to contrive a tax calculated to throw more risk onto the builder in proportion to the revenues raised. It tends to make Messrs. Out poorer credit risks than they would be under another system of taxation, and beset with added difficulties the essential economic problem of putting capital in the hands of enterprising people.