Analytical Approach to LVT

by EARL A. HANSON

THE method used by Mitchell S. Lurio in the August HGN for estimating groundrent is interesting and helpful in focusing attention to the problem of shifting the incidence of property taxation to land value. Such an analysis, however, does not come to grips with the need for new definitions in tax laws to permit a proper application of land value tax theory.

Critics of land value taxation will argue that a $3,000 annual tax on land with a market value of zero is not consistent with tax laws. Murray N. Rothbard in an essay on "The Single Tax" published by the Foundation for Economic Education states that: "A 100 percent tax on rent would cause the capital value of all land to fall promptly to zero. The first consequence of the single tax, then, is that no revenue would accrue from it."

We might dismiss the Rothbard objection on the basis that he has confused economic value with sale price of land, believing that the declining sale price of land (with an increasing tax) is accompanied by a declining economic value. Here is where the analytical approach suggested by Mr. Lurio can be used to good advantage to clearly establish the effect of heavier land value taxes with diminishing taxes on improvements.

Economic value as I will use it is the annual total yield or potential yield of a site or improvement. Two components make up the economic value, the tax accruing to government and the equity accruing to the owner.

The relationship may be stated as

$E = O + T$

Annual economic value is	E
Owner's annual yield is	O
Annual tax is	T

It is obvious in the above formula that if O became zero it would not follow that E and T would become zero. This, however, does not explain away the Rothbard proposition that as the sale price, which is the owner's equity capitalized, diminished, the tax would diminish and therefore the tax, Mr. Rothbard's reasoning is consistent with present tax laws. Before there can be a really substantial shift in property taxes from improvements to land values, it would appear necessary that some term such as "economic value" should replace or be used in addition to "market value" in property tax laws.

I would like to develop the problem presented by Mr. Lurio using a site valued at $25,000 and a building valued at $100,000, which values would be present market values (owner's annual equities capitalized) under present tax rates. Rather than an overnight transition to full land value taxation a uniform transition will be made over a five-year period. I believe this will more clearly develop the relationship between market value, economic value and taxes.

In Table I it is assumed that the economic factors contributing to the economic value of the site have remained constant through the five-year period. A more typical pattern, in a healthy economy, would show an increasing economic value and consequently an increasing revenue for governmental services

Market price in initial year	$25,000
E – annual economic value, 12% of market price	3,000
Initial tax, 3% of market price or 25% of E	750

TABLE I — LAND

Year	Tax % of E	T Annual Tax	O — Owner's Annual Yield	E — Annual Economic Value
Initial	25%	$ 750	$ 2,250	$ 3,000
1	40%	1,200	1,800	3,000
2	55%	1,650	1,350	3,000
3	70%	2,100	900	3,000
4	85%	2,550	450	3,000
5	100%	3,000	0	3,000

TABLE II — BUILDING

Market price in initial year $100,000
E — annual economic value 12% of initial market price 12,000
Initial tax, 3% of market price or 25% of E 3,000

Year	Tax % of E	T Annual Tax	O — Owner's Annual Yield	E — Annual Economic Value
Initial	25%	$ 3,000	$ 9,000	$12,000
1	20%	2,400	9,600	12,000
2	15%	1,800	10,200	12,000
3	10%	1,200	10,800	12,000
4	5%	600	11,400	12,000
5	0	0	12,000	12,000

TABLE III (I and II combined)

Initial market values: Land $25,000, Building $100,000

Year	Total Tax	Yield to Owner	Annual Economic Value
Initial	$ 3,750	$11,250	$15,000
1	3,600	11,400	15,000
2	3,450	11,550	15,000
3	3,300	11,700	15,000
4	3,150	11,850	15,000
5	3,000	12,000	15,000

TABLE IV

Initial market values: Land $100,000, Building $25,000

Year	Total Tax	Yield to Owner	Annual Economic Value
Initial	$ 3,750	$11,250	$15,000
1	5,400	9,600	15,000
2	7,050	7,950	15,000
3	8,700	6,300	15,000
4	10,350	4,650	15,000
5	12,000	3,000	15,000

By a similar analysis we may show the result of a transition to full land taxation and building tax exemption from an initial year land market value of $100,000 and building market value of $25,000. This would be more typical of a slum property.

Obviously slum ownership would become unprofitable early in the transition. This discouragement of slum ownership and land speculation combined with tax exemption for all improvements could produce the incentive for home and apartment building on a scale never before realized.

I am grateful to Mr. Lurio for his suggestion that an analytical method should be used to show the advantages to be gained by land value taxation. When the theory of land value taxation finally gets public acceptance we must be ready with precise proposals to show what laws are needed to implement the theory.

In another comment on Mr. Lurio's "Method For Determining Groundrent," James Hair of Cincinnati asks if it is not probable that the tax savings will be reflected in higher land value, since for instance, in California even the climate is reflected in the value of the land or site. Mr. Lurio says that in his example he assumed that other things remain the same. If the tax saving on buildings is reflected in higher land values then the city should collect the additional rent so brought into being.

Mitchell S. Lurio replies:

I was glad to read Mr. Hanson's article because he knows exactly what I was getting at and his figures show the effects over a five-year term. Instead of using the letter "o" to represent the owner's yield I think he ought to use the letter "y" since "o" could be confused with a zero.

Mr. Hanson defines "economic value" as the "annual yield or potential yield of a site or improvement." Thus the words "economic value" may be confusing, and when used, require that we state whether we are referring to a site or to an improvement or both.

As far as Mr. Rothbard is concerned, Mr. Hanson has already pointed out his error, namely his failure to see that a declining sale price of land due to an increasing tax does not change the rental value of the land, other things being equal. As most of us know, land should be assessed on the basis of its annual value or rental value, in which case the necessity of multiplying a higher and higher tax rate by a lower and lower market value is obviated.

It is good to know that a few people have studied the figures and have given them serious thought.

Both ground rents and the ordinary rent of the land are a species of revenue, which the owner in many cases enjoys without any case or attention of his own. Though a part of this revenue should be taken from him, in order to defray the expense of the state, no discouragement will thereby be given to any sort of industry. The annual produce of the land and labor of the society, the real wealth and revenue of the great body of the people, might be the same after such a tax as before. Ground rents and the ordinary rent of the land are, therefore, perhaps, the species of revenue which can best bear to have a peculiar tax imposed upon them.

Adam Smith, *The Wealth of Nations*