

Economic Effects of Taxes on Land:

A Review

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ABSTRACT. Land *taxes* may not be neutral in their economic impacts due to *liquidity* effects. Liquidity effects of land taxes may be in the form of *holding cost* effects or *capitalization effects*. Holding cost effects may occur when land is being withheld from development for non-financial reasons, such as the direct benefits of *landownership*. Capitalization effects may occur when there are imperfections in *capital markets* which prevent the acquisition of land for otherwise viable projects. Contrary to the analysis by *Bentick*, no liquidity effects should be expected due to variations in streams of land rent generated by different hypothetical *development projects* for a given site. Bentick's analysis relies on a misunderstanding of the nature of *land rent*.

THE LITERATURE on the economic impacts of taxes on land suggests that such taxes may have two complementary effects (cf. Becker 1969). These two effects involve liquidity, or the readiness with which individuals and firms buy and sell land. One of these is the effect on current landowners, who must bear holding costs in the form of land taxes and who are thereby encouraged to improve their properties to maximize return on investment or sell to someone who will do so. Netzer (1966) explains this holding cost effect as follows:

It is generally agreed that taxes on the value of bare land—the sites themselves exclusive of applications of reproducible capital in the form of grading, fertilizer, and the like—rest on the owners of the sites at the time the tax is initially levied or increased. The tax cannot be shifted because shifting is possible, under reasonably competitive conditions, only if the supply of sites is reduced. But the supply of land is, for all practical purposes, perfectly inelastic. Individual landowners will not respond to an increase in land taxes by withdrawing their sites from the market, since doing so will not affect their tax liability. Indeed, their only chance of reducing the burdensomeness of the tax relative to their income streams is to seek to raise the latter by encouraging more intensive use of the sites they own. Collectively, landowners cannot reduce the stock of land: If individual landowners wish to liquidate in the face of higher taxes, they must sell the sites to other owners. (p. 33)

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This does not, of course, imply that development or redevelopment of the sites will actually take place. The actual extent of the holding cost effect would seem to depend on the existence of land which could be developed profitably but is being withheld from development for non-financial reasons, such as the direct utilities (or benefits) of landownership (see Neutze 1987). For example, an individual may have a sentimental attachment to his home which prevents him from selling the property for redevelopment even though it would be quite profitable to do so. In this case, a holding cost effect would occur only if land taxes more than offset the direct utilities preventing landowners from supplying land for development.

Following Bentick's (1979) analysis, it might be thought that another type of holding cost effect could occur.¹ Bentick examines a hypothetical case involving a parcel of land held for development at some point in the future. In this case, the landowner believes that the value of the parcel can be maximized by postponing development. More precisely, the present value of the stream of land rents derived from a likely future development project is higher than that of an alternative project which could be developed immediately. Bentick shows mathematically that the effect of a land tax may be to give the stream of land rents from the immediately developable project the higher present value.² If it were correct, Bentick's result would be significant because it shows that taxes on land are not neutral in their allocational effects. This means that they may distort land markets by causing inefficient uses of land.

Upon examination, however, it becomes clear that Bentick's analysis is incorrect. The fatal problem with his analysis is its confusion regarding the normal base for taxes on land. This is usually defined as land value, or the value of a site as if it had no improvements. Land value and rent are not a function of the current use of land, but instead are a function of the so-called "highest and best use" of a site. As land economists use the term, highest and best use for a given site is a function of surrounding uses and is the use to which the site would be put if it were bare. As Gaffney (1969) puts it, land rent is best defined as: "the highest latent opportunity cost of land" (p. 141). Land rent does not change because the use of a site has changed. In other words, at any given time, land value is constant and does not change as one considers different potential uses for a site. Thus Bentick is incorrect in speaking of the land value or rent of a particular site as if it were a function of the use of that site; consequently, his analysis collapses.³ Since the value of a site is independent of the use of that site, a tax on land value will not have the impact on the timing of development claimed by Bentick (Tideman 1982).⁴ Given the flaw in analyses such as Bentick's, one would have to conclude that the only circumstance in which the holding

cost effect might be significant would involve land withheld from development for non-financial reasons.

The other component of the liquidity effect is simply the obverse of increased holding costs. This obverse component is due to capitalization of the tax, or the effect of land taxes on land value. Economists generally agree that increases in taxes on land result in decreases in land value.⁵ Capitalization of the land tax makes it easier for potential developers to acquire land and could thereby encourage development. Becker (1969) observes: "The benefit would be the equivalent of an automatic perpetual loan to the developer for purposes of land acquisition in the amount of the capitalized value of the land tax" (p. 25). This, of course, assumes that imperfect capital markets are preventing developers from obtaining sufficient capital for land purchases for otherwise viable development projects. This is largely an empirical question.

Thus one would not necessarily expect a liquidity effect to occur, for example, in response to higher land taxes adopted as part of a shift to land value taxation. Unless there are significant impediments to development in the form of non-financial constraints or imperfections in capital markets which can be overcome by the holding cost or capitalization effects, then there will be no liquidity effect.⁶ Taxes on land may not be neutral, but contrary to Bentick's analysis, their non-neutrality is not due to differences among hypothetical streams of land rent for given sites. Finally, it should be noted that the liquidity effects which may occur serve to overcome existing inefficiencies in land markets rather than to create new inefficiencies.

Notes

1. This is the analysis which I followed in my empirical studies of land value taxation in Pittsburgh (Bourassa 1987) and McKeesport and New Castle (Bourassa 1990).

2. In Bentick's hypothetical case, he assumes that the two development projects are mutually exclusive; in other words: "project 1 uses specialized and fixed buildings which cannot be used in project 2 or elsewhere and . . . the time of commencement of project 2 is too short to allow these structures to be amortized" (p. 861). He also assumes that the immediately developable project yields one dollar of land rent per year in perpetuity and has a present value, P_1 , of $1/r$, where r is an appropriate discount rate. The other project yields c dollars per year after a period, t . The present value of the second project, P_2 , is $e^{-rt}c/r$, where e is the base of the natural logarithms. The delayed project will be preferred if $e^{-rt}c/r > 1/r$. In this case the critical value of t is $t' = (\ln c)/r$, and the second project will be preferred only if $t < t'$. If a tax on land value, b , is introduced, then for the second project to be preferred, the following must be true: $e^{-(r+b)t}c/(r + b) > 1/(r + b)$. In this case, the critical value of t is $t'' = (\ln c)/(r + b)$ and now the second project will be preferred only if $t < t''$. It is clear that $t'' < t'$ and, therefore, that the second project is less likely to be preferred after the tax than before.

3. Douglas (1980) makes this same error.

4. For an example of the traditional analysis which shows that land taxes do not have an effect on the timing of development, see Neutze (1969).

5. The relationship between the tax rate, b , and the capitalized market value of the land, L , is $L = E/(r + b)$ where E is the economic rent of the land (before any tax) and r is the discount rate (Becker 1969). It is clear that, as b approaches infinity, L approaches zero. This must be qualified in view of Feldstein's (1977) assertion that the tax on land is not fully capitalized. He writes:

The essential oversight of the classical analysis is to ignore the fact that land and produced capital are alternative components of individual life-cycle wealth. Each generation wishes to accumulate a certain level of wealth with which to finance retirement in old age. If the tax on pure land rent reduces the value of land, a larger amount of the desired wealth must be accumulated in the form of produced capital. The tax on rental income thus induces an increase in the equilibrium capital stock and therefore in the equilibrium ratio of capital to land. This raises the marginal productivity of land and reduces the rate of interest at which net land rents are capitalized. Part of the tax on pure rent is thus shifted in the form of a lower net yield on capital and a higher wage rate. Moreover, the price of land does not fall by as much as the traditional theory predicts (pp. 350-1).

6. The correct interpretation, therefore, of my Pittsburgh, McKeesport, and New Castle results is that there were no impediments to development which could be offset by the liquidity effects of higher land taxes. Changes in the tax on land had no significant effect in any of the three cities.

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Capital Shortages and Economic Stimulus

CAPITAL GAINS tax cutting is frequently proposed as a way of increasing investment and thus stimulating employment, production, and economic growth. What seems strange is that a device which worked in the past, accelerated depreciation, gets little or no mention.

Indeed, there is an absurdity in talking about inadequate saving, in any developed economy particularly in a time of heavy unemployment. Capital in the sense of money capital is merely currency or deposit money that is dedicated to the purchase of capital goods (machinery inventory and plants). Such capital can be created at will by government. A government could offer to put up a suitable percentage of the funds to be newly invested by industries. It could give tax credits (which could be saleable) for a portion of new investment.

But the government should, and this is a fundamental point seldom if ever made, require that some form of transferable ownership rights (usually in the form of stock certificates) be issued to government for the funds thus provided. Such "securities" could be added to state and federal pension funds, (thus the Social Security fund) and the taxes presently supporting such funds could be reduced to further stimulate the economy. The government should not be in the business of distributing gifts to the already wealthy as it would be without such a provision or with a capital gains tax preference.

The unreasoning objection that would immediately be raised to such a proposal is that this is government ownership, SOCIALISM. This concern should be easily dismissed by having such securities separately managed in a pool that would be staffed by volunteers from the investment industry, (it should be an honor to serve), or the securities could be non-voting. Foundation and college endowments seem to find volunteer managers frequently so this suggestion is not especially novel.

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Walras-Pareto Conference at Lausanne

EDITING ECONOMISTS and ECONOMISTS as EDITORS was the theme of the September 26-27, 1991, symposium at the University of Lausanne, Lausanne, Switzerland. Thus, most suitably, were celebrated the first century of the University's existence