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Geo-Rent: A Plea to Public Economists

Fred Foldvary
San Jose State University, ffoldvary@gmail.com

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INTELLECTUAL TYRANNY OF THE STATUS QUO

Geo-Rent: A Plea to Public Economists

FRED E. FOLDVARY*

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> *Ground-rents, and the ordinary rent of land, are, therefore, perhaps, the species of revenue which can best bear to have a peculiar tax imposed upon them. . . . The annual produce of the land and labour 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. . . . [A tax of this kind would be] much more proper to be established as a perpetual and unalterable regulation, or as what is called a fundamental law of the commonwealth, than any tax which was always to be levied according to a certain valuation.*
>
> —Adam Smith ([1776], 844, 834)

> *In my opinion, the least bad tax is the property tax on the unimproved value of land, the Henry George argument of many, many years ago.*
>
> —Milton Friedman (1978, 14)

MOST OF THE LITERATURE ON TAXATION, IN TEXTBOOKS AND articles, is confined to studying existing forms of taxes, namely income, payroll, sales, excise, tariff, value-added, estate and property taxes.

Consider the article by David Altig et al in the *American Economic Review* (2001) entitled "Simulating Fundamental Tax Reform in the United States." The authors examine "fundamental alternatives" to the U.S. federal income tax. "Fundamental", they explain, means "the simplification and integration of the tax code by eliminating tax preferences and taxing all sources of capital income at the same rate" (574). It is important to analyze

* Department of Economics, Santa Clara University.

such reforms, but the reforms simulated are not what I would call fundamental. They are only a restructuring of the existing income-tax code.

Here, I plead for more attention to truly fundamental reform. The idea is to tax the market value of land, exclusive of the value of improvements.

Some people might think that the ideas explored here are just a "pet topic" or "hobby horse," but I proclaim otherwise. These ideas are directly and importantly relevant to many aspects of public economics. The principles are empirically pervasive and compelling; they are testable and abundantly demonstrated in historical and cross-sectional studies. Finally, these lines of thinking carry certain lessons and policy implications that can be pursued incrementally and approached by practical politics and gradual reform. There is nothing impractical or "utopian" about the points I wish to see integrated into public economics. Whether they will ever be *politically possible* is a separate question, the answer to which is a function of our intellectual enterprise.

The large middle part of this article treats a series of mainstream topics. I develop that series of topics to show that mainstream literature has a way of dancing around the idea of taxing land value. But first the basic ideas call for clarification.

LAND AND ITS UNIQUENESS

"Land" includes all earthly space, not just solid surfaces. Land includes water areas and the electro-magnetic spectrum, but the most important potential source of public revenue from land is real estate sites.

The characteristics of land are well known. Land has a fixed supply. The space within some boundary can be neither expanded nor contracted. Land is fixed not only in extent but also in mobility, unlike people, who can migrate, or capital goods, which are more or less mobile. Land cannot be imported. Even in the case of buildings and other permanent structures, they differ from land in that they are created by human enterprise, and in that their creators decide where the structure will be located. Finally, land is not something to be discovered. Once people figured out that the earth was a sphere, and its approximate size, they knew that the land was "out there." Entrepreneurship is vital in discovering the best routes to land areas, it is

vital in discovering the potential value of those areas, but it is not vital in discovering that the land is out there. That was known all along.

GEO-RENT

The term "rent" is most generally defined as a payment for the use of any resource (Alchian 1991). "Land rent" could refer either to the actual amount paid by tenants or to the potential or economic rent. My analysis here is based on an assessment or estimate of what the plot-devoid-of-improvements would rent for in a market or auction. This has been called "ground rent" or "economic land rent," but those names and others are easily misunderstood. To ensure against the hazard of reasonable but erroneous inference, I propose an exotic label, *geo-rent*. "Geo" in Latin means earth or ground, and it also suggests George, as in Henry George.

A site's geo-rent is not based on the particular activity at that site. The geo-rent of a site containing lavish buildings and gardens equals what the geo-rent would be if, for some strange reason, those improvements suddenly disintegrated. A fully developed site has about the same geo-rent (per acre) as an adjacent vacant lot.

Suppose I own a 50-acre site that is pristine, unimproved. That site would rent for $100,000. Hence, the geo-rent is $100,000. The next year I build a large beautiful and successful shopping center on the site. My geo-rent is still only $100,000 (assuming the amount for which my site unimproved would rent has not changed). However, if my shopping center makes neighboring land more valuable, it *does* increase my neighbor's geo-rent.

The interrelation between one landowner's improvements and his neighbor's geo-rent is an interesting matter. Another interesting matter is a landowner's contribution to improvements on neighboring lands, such as sponsoring a new road. If the new road would increase his geo-rent tax bill, geo-rent taxation, it would seem, would reduce his incentive to sponsor such an improvement.[1] But here I leave these tangents aside, with the summary judgment that I do not think that such issues do much, if anything, to weaken the case for tapping geo-rent.

[1] The effect on geo-rent would be smaller if the road is a toll-road, because then more of the value added is internalized, i.e., capture by the road owners.

ASSESSING GEO-RENT IS EASY COMPARED TO ASSESSING SALES, INCOME, OR PROFITS

I concede that geo-rent is a hypothetical. Geo-rent is based on two fictions. The first is that the site is devoid of improvements. The second is that it is being rented out. One occasionally hears criticisms of geo-rent taxation like this from the textbook by McConnell and Brue (2005, 300): "[I]n practice it would be difficult to determine how much of any specific income payment actually amounted to [geo-rent]."

Yet, professional real estate appraisers routinely separate a site's ground value and the improvement's value. This separation is typically required for fire insurance. Banks for mortgages also commonly require it. These parties estimate site value as a residual after the replacement cost of buildings, adjusted for depreciation. This process is combined with computerized contour mapping of site value per square meter, based on actual land-sale and lease data. The computerized mapping works to smooth out the assessments, and can be done to emphasize long-term trends rather than year-by-year fluctuations in land values (as is done today with the assessment of property-tax). Adam Smith (1776) advocates geo-rent taxation (832-844) and explains that separating out the value of improvements is not that big a deal (833, 844).[2]

Of course this is inexact. Of course there will be judgment calls by assessors, as well as some politicking in the details. But serious economics is comparative. All tax rules will involve inexactness, judgment calls, and politicking. Let's ask honestly how serious these problems are compared to other forms of taxation.

Sales, incomes, profits, imports, and estates are easily hidden. Deductions, cost accounting, and expenses are devilishly particularistic, involving whatever human activities the taxed party *says* are involved in generating sales, income, or profits. Documentation is a tangle of complex record keeping, and is very difficult to make accountable. Documentation is easily fabricated. Enforcement is intrusive and encroaches on civil liberties. The dimensions of earning sales, income, etc. are myriad, and all call for particularistic tax rules, each highly subject to arbitrariness and politicking because of the particularism.

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[2] George carefully rationalized the single tax in terms of Adam Smith's "canons of taxation." On the affinity between Smith and George, see Petrella (1984).

By contrast, it is impossible to hide land. It is impossible to shrink, move or disguise land. Moreover, the dimensions of valuing ground space are relatively few. The government can set general rules that apply universally. In contrast to income-tax records which are for good reasons kept from public view, the site-value assessments for geo-rent would be a public record, as in fact real-estate assessments are today. In principle, absolutely no record keeping is required, apart from title to the land. Compared to taxing income, sales, estates, etc., taxing geo-rent is objective, transparent, and non-intrusive. These virtues were emphasized by Adam Smith (1776, 848).

Those who allege a relative difficulty in separating the value of land from the value of improvements lose sight of the main policy issue. The relative efficiency of tapping geo-rent is that doing so imposes no marginal cost on additional income, sales, or personal property. Condominiums assign to each unit a fixed percentage interest in the association, which is also its percentage of the assessments. This percentage interest is often based on the site value of the unit relative to the other units, i.e. its location and size, irrespective of any personal property inside the unit, let alone the owners' income or spending.

Thousands of condominium associations are thus accomplishing what some claim is impractical. They tap the site value of a unit without reducing extra income or burdening extra spending or possessions. Residential associations, hotels, and other private communities do likewise with their rental charges and assessments. Some private communities such as shopping centers do practice modern sharecropping, basing some of their charges on the gross revenue of the tenant shops as a way of sharing risks, but this is not an essential feature of private-community financing.

GRADUAL REFORM: 20 YEARS TO 75 PERCENT

A shift to public finance from geo-rent would be politically difficult, which may help explain why it has not been done. The political difficulty, however, exists despite the fact that most homeowners, being also wage earners, would have a net gain if other taxes, including the property tax on improvements, were simultaneously abolished. But some current landowners, especially of urban commercial real estate, would have a net loss, unless we build in some kind of "compensation." Economists are

accustomed to saying that a tough transition—plant-closings, declining industries, retooling and retraining—should not deter the long-term good. The same should apply here.

I suggest the following transition to geo-rent taxation, if only to serve as a conceptual model:

Time 0: The new regime is enacted into law.

Years 1 through 10: The landowner continues to pay the roughly 25 percent of the geo-rent now implicit in his current property taxes. (If the property tax is 2 percent of land value and the capitalization rate (real interest rate) is 6 percent, that works out to about 25 percent of geo-rent, which is an annualized dimension.)

Year 11: He pays 30 percent.
Year 12: He pays 35 percent.
Year 13: He pays 40 percent.
Year 14: He pays 45 percent.
Year 15: He pays 50 percent.
Year 16: He pays 55 percent.
Year 17: He pays 60 percent.
Year 18: He pays 65 percent.
Year 19: He pays 70 percent.
Year 20: He pays 75 percent.
Thereafter: He pays 75 percent.

Here are a number of points that help to flesh out the scheme:

• The scheme applies also to government-owned land. The associated government agency, such as the Bureau of Land Management or the United States Postal Service, would pay geo-rent for the land it owns. This will improve government cost accounting and policy decisions.

• To which level of government are geo-rent taxes paid? This is an important question, but I wish to sidestep it here. For present purposes, one may imagine a system in which, like property taxes today, geo-rent taxes would be collected at the level of county

government. When such taxes are sufficiently large, they would flow both down to the city governments and up to the state and national governments.

• The other side of the scheme, not detailed here, is the *untaxing* of buildings, sales, income, etc. Thus, the scheme involves an enormous confiscation of land-wealth and an enormous *de-confiscation* of other kinds of wealth.

A reform like that suggested here would, of course, require a movement and public debate taking years, if not decades. Once enacted, during the first 10 years, the landowners pay no more in geo-rent than they are accustomed to paying. All this lead-up time will give people time to figure out what geo-rent taxation means, and to work out in markets the present values of land, in anticipation of the coming increases in levies.

NO EXCESS BURDEN

The writings of the Physiocrats, Adam Smith, David Ricardo, James Mill, John Stuart Mill, Henry George, Leon Walras, and Knut Wicksell, among many other economists, well recognize that the taxation of site values, as an inelastic factor, has no excess burden, no deadweight loss. Geo-rent merely gets transferred to government. The burden is borne by the owner in not keeping that portion of the geo-rent. The tax is not passed on to tenants, since a higher rental charge reduces the quantity of rental space demanded, while not reducing the fixed space supplied, and thus creates vacancies which induce landlords to keep the rent at the previous level to avoid losses. There is no excess burden on the economy other than the ordinary costs of tax administration (which, as noted, would be particularly low for this type of tax).

The financial burden is only on the owners who are current at the time the geo-rent tax is increased. What is not so well recognized in public finance is that, *after* the transition to geo-rent taxation, there is no burden on any *new* site owner. The price of land is capitalized down in proportion to the tax rate, so the payment of the tax is offset by the lower price of land. However, if we may neglect the consequences on the dependents and heirs

of the current landowners, after the transitional generation, no one suffers a burden.

The impact on the current landowners raises issues of "compensation." While advocates of tapping geo-rent for public revenue argue that it is equitable, because it pays back geo-rent generated by government's civic works, critics argue that the transition would not be equitable, because the financial burden would be concentrated on landowners. Robert Solow (1998, 278) states that while taxing geo-rent would be good for a new country, "Expropriating land values today would have no semblance of fairness." He adds, however, that if the transition is gradual or if there is compensation, then "the complaint of iniquity may lose validity."

An immediate tax shift to geo-rent, with other taxes reduced or abolished, could be compensated with special bonds whose face-value interest payments would decrease over time, with an effect similar to the gradual increase in the geo-rent tax rate suggested above. But compensation is a side issue. I say we try to sell the reform to the current landowners on its merits, just as we would argue for a reduction in trade barriers, as a worthy sacrifice, and offer our gratitude for their political cooperation. (I say this as the owner of a prime plot in Berkeley, California!)

MAINSTREAM LITERATURE: READ BETWEEN THE LINES

Mainstream microeconomic and public finance textbooks almost never bring the idea of geo-rent taxation into the sunlight. The respected journals, too, give very little attention to these ideas. The principles behind the idea of geo-rent taxation make sense, however. Indeed, those very same textbooks and journal articles establish many of the principles that sustain the idea. But the principles are scattered throughout the literature. The literature is compartmentalized in such a fashion that prevents students from seeing how the principles form a powerful idea. In this sense, geo-rent lurks between the lines of the public-economics literature.

Here I highlight eight mainstream topics where geo-rent principles surface: (a) "producer surplus," (b) deadweight loss analysis, (c) the Henry George Theorem, (d) capitalization, (e) public goods, (f) externalities, (g) club-good models, and (h) the Tiebout model.

Producer Surplus

Every microeconomics textbook shows the "producer surplus" as the area between the supply curve and the price. But no textbook that I have seen, with the exception of David Friedman (1996), has thought to ask who receives the surplus. If the industry is perfectly competitive, firms being price takers, there is no economic profit, yet the surplus is a return beyond costs. The surplus does not go to the owners of the firms, but, as Friedman states, flows through to the input factor owners. Going beyond Friedman, it should be clear that if markets for labor and capital goods, too, are perfectly competitive, they too have no super-normal returns, so the only other place the surplus can go to is to geo-rent. In a fully perfectly competitive model, "producer surplus" does not go to producers at all; it is a payment to landowners who have never produced a thing. It is really the non-producer surplus.

Deadweight Loss Analysis

Microeconomics textbooks explain the deadweight loss from taxation. They explain how the loss is lower with a more inelastic supply and demand. Professors have given thousands of classroom lectures showing that if the supply curve were perfectly vertical, there would be no deadweight loss. But they usually end the discussion by saying, "and so it is good to try to put such taxation on goods that exhibit relative inelasticity in supply or demand." Some textbooks go on to say that, because the supply of land is fixed, the taxation of land rent has no excess burden. A few books point out that Henry George proposed such taxation. None that I have seen point out that Adam Smith and John Stuart Mill did, too.

Tideman et al (2002, 17) "estimate that the net gain (measured in real dollars of 2000), from shifting as much taxation to land as could be financed by collecting 90% of the land rent, would be $1308 billion or 14% of NDP in 2002 and $4,799 billion or 26.6% of NDP in 2042." Even if only a fraction of government revenue shifted from the types of taxes we know today to a geo-rent tax, the efficiency gains could be really substantial.

The elasticity insight remains compartmentalized. In public finance textbooks, when the discussion turns to tax policies, the insight is rather neglected, and the idea of taxing land value is usually nowhere to be found. It is as though there were some medicine available that we know cures

cancer, yet nobody takes it and no doctor prescribes it. Economists who study irrational behavior should take note.

The Henry George Theorem

Textbooks in public finance and urban economics sometimes contain a topic known as the "Henry George Theorem." It states that the public revenue that provides for the collective goods of an optimally-sized community equals the land rent of that community. As presented in Atkinson and Stiglitz (1987, 523-5), the representative agent's utility function is U(G,X), where G is a collective and X a private good. Output Y is a function of N workers:

$Y = f(N) = XN + G.$
$X = \{f(N)-G\} / N$
The wage is the marginal product of labor:
$\partial f/\partial N = X$
Therefore,
$\partial f/\partial N = \{(f(N)-G)/N\}$
$G = f(N) - Nf'(N)$
With land and labor the ultimate and original factors of production, rent (R) is the difference between total product Y and total wages:
$R = f(N) - Nf'(N)$
Therefore,
$R = G.$

The Henry George Theorem is so named because it echoes Henry George's (1879) single-tax proposal, that not only should land rent be the only general tax, but that it will be adequate to finance public goods. The theorem is accepted in public finance, but it is not applied. In upper-level public-economics textbooks such as Atkinson and Stiglitz (1987), it is presented, yet not invoked in policy discussions, and it is ignored in scholarly treatments of optimal taxation, tax reform, and public policy.

Edwin Mills (1998) goes further and constructs a comparative static model of a metropolis using a Cobb-Douglas production function with three factors, the third being land, which is a refreshing change from the usual two-factor analysis that tucks land into capital and then forgets that it's there. One theorem of the model is that a land-value tax has no effect on resource allocation. Yet he concludes (47) that despite is theoretical

attractiveness a significant taxing of geo-rent would deprive the owners of their beneficial uses, and would require compensation, leaving the tax "practically almost worthless" (47, 41).

Thomas Nechyba (1998) also has a model with land, calibrated to U.S. parameters. He shows that replacing taxes on capital with taxes on land can actually increase land values, despite the downward capitalization caused by the tax, because of the greater increase in capital and rent. According to the model (196), with an elasticity of substitution between capital and land of 0.5, which is within the estimated range, a revenue-neutral tax shift to land value increases capital goods by 122 percent and raises output by 89 percent.

Capitalization

The textbooks and mainstream journals recognize the idea of capitalization. Indeed, there is a great deal of literature about land prices reflecting the schools, infrastructure, and security in the neighborhood. But, again, the understanding is often compartmentalized; the insight is rarely applied in thinking about efficient forms of taxation and governance. Public economists rarely point out how the idea of capitalization favors geo-rent taxation: If local government taxes geo-rent, and it uses that money to provide infrastructure and security, it further enhances geo-rent, thus recouping some of its investment. If local government claims 50 percent of geo-rent, it has an incentive to enhance geo-rent. It is the half residual claimant. The arrangement is healthy, because government's local works directly affect the magnitude of geo-rent. The government's residual claimancy gives it an incentive to produce social benefits.

This government-as-improver process parallels capitalization as the basis for the private provision of collective goods, such as the common elements of condominiums financed by the periodic assessment of the owners. Private communities and condominiums demonstrate the connection between residual claimancy and capitalization.

Land values in many parts of the United States are very high, and one reason is supply-side restrictions. But much of the value reflects the capitalization of amenities. Today, government works are financed in large part by taxes on labor, profits, sales, and non-land real estate. The owners of land receive an implicit subsidy. This implicit subsidy is of great empirical importance, yet is not discussed in microeconomics textbooks, and is usually ignored in the tax analysis in public finance.

Public Goods

Public goods are usually defined as both nonrival and nonexcludable. The public finance literature often alleges "market failure" for goods such as streets, sewers, parks, security, and fire fighting. Once a collective good is provided, it is not practical or desirable to exclude persons. For example, even if one agrees that people can be excluded from a city park, it would not be desirable to have walls and gates to keep out the free riders.

The "free rider" doctrine, however, tends to treat public goods as though they have no location in space and time. Somewhere, out in the ether, there is a public good and some users who cannot be made to pay for benefits. But the benefits of most real-world public goods fall within an ambit that is territorial. Accordingly, those benefits become capitalized into the market price of land within that ambit. Those using the civic services are included by proximity; it is costly for far-away users to visit a neighborhood park. Residents, businesses, and customers willingly pay more because they benefit from the territorial goods. Most users therefore do make payments that are proportional to such amenities, since they must pay to use land. But the payments are made to the landowner. The market-failure doctrine for public goods is turned on its head: Users do tend to pay in an indirect sense, and government policy creates the free riding of the landowners, at the expense of the extraneous taxpayers. Rather than correcting any deficiency of markets, policy is *iatrogenic*, that is, illness caused by the doctor. Streets, parks, and security suffer from free riding because the doctor made it that way. This insight is rarely found in mainstream sources.

Externalities

A similar sort of blinkered compartmentalization goes for textbook discussions of externalities. The mainstream literature rarely highlights the point that, whether by geo-rent taxation or by private contract, the tapping of geo-rent promotes internalization of externalities. If the government depends on geo-rent, it has a strong incentive to increase geo-rents, or to ameliorate externalities. Public revenue from site values thus is an important way to internalize territorial costs and benefits. The failure to tap geo-rent exacerbates externalities. Private communities do base their finances on site

rentals, and we are less inclined to identify the positives and negatives within a private community as "externalities." Territorial amenities have been internalized within property relations and pecuniary effects.

Club Models

Although there was previous analysis of excludable collective goods, including the model of Tiebout (1956) discussed below, James Buchanan (1965) established club theory by adapting the Samuelson public-goods model to goods that are excludable and subject to congestion. The model determines the optimal size of a club in which the members obtain utility from the club good, disutility from crowding, and no utility from camaraderie. In the Buchanan model, the cost of the good is divided equally among the members.

The Buchanan model is suitable to something like a swim club. The Buchanan model is non-territorial; it does not address location and geo-rent. Some literature does examine territorial clubs, but many of the models and presentations of club theory intended to be general have ignored land, even when they seek to be applied to civic goods, making them not only incomplete but also inapplicable to real-world municipalities.

In their textbook *The Theory of Externalities, Public Goods, and Club Goods* , Richard Cornes and Todd Sandler (1986) presented a general theory of public goods and club goods with no mention of territory or location. The book's index has no entries for land, rent, capitalization, territory, or location. Only on the last page of the book (275), they wrote, "Another suggested research direction concerns the inclusion of a spatial dimension to club analysis." They added, "More work on spatial clubs appears warranted, since *no general* analysis of spatial clubs exist" (italics in the original). By 1986, the public-goods literature already had the Henry George Theorem (Stiglitz 1977, Vickrey 1977), as well as a substantial body of theory concerning location, capitalization, and rent going back to Hotelling (1938) and far back to von Thünen (1842). Cornes and Sandler's omission and last-page suggestion reflect economists' general regard for land as tangential rather than central to the theory of public goods.

In their second edition, Cornes and Sandler (1996, 367) did include the analysis of Scotchmer (1994), in which the fee for local public goods is the payment of a land tax. Cornes and Sandler state, "We view the land tax instrument to be more problematic when individuals are heterogeneous" because some obtain more utility from the public good than others (367).

An individual could limit his land holding to reduce his land tax while still consuming the same amount of public good.

Instead of recognizing the virtues of tapping geo-rent, they only point to a possible imperfection, such as that somebody who enjoys a local park will own a tiny lot nearby and pay a land tax lower than his share of the cost. This, say Cornes and Sandler (367), is a "perverse incentive." But such free riding is rampant with income and sales taxes, in which tax payments have hardly a gossamer relation to any benefit. Tapping geo-rent is being judged in isolation by the standard of perfect efficiency, rather than in comparison to other means of taxing people to pay for collective goods. This "perverse incentive" proposition is also made in an institutional vacuum. In practice, as Hamilton (1975) points out, rules can mitigate the problem. City lots tend to have a uniform size, either with zoning or with covenants. Moreover, much of the utility of dwellers comes from complementarities, from the lot and improvements (house and garden) as well as from a set of civic services, so as analyzed by Ellickson (1971), heterogeneous utilities are of little empirical significance.

Evidently Cornes and Sandler (1996) did not consider the Scotchmer material to warrant entries for land or rent in their 2nd edition index. On the last page (552) of the 2nd edition, the authors repeat their earlier suggestion of research into the spatial dimension, and again assert that there exists no general analysis of spatial clubs, this time much less justified. (Foldvary (1994) did analyze spatial clubs in some generality!)

William Fischel (1998) puts a different twist on zoning, saying that zoning provides a way to collect land rent by granting developers exceptions in exchange for fees. But development impact fees distort development by placing a charge on a particular activity rather than having a uniform levy rate on all geo-rent. While it may seem efficient to let those benefiting from a development pay for the related infrastructure, it in effect has the opposite effect from that sought by Henry George: those who build get taxed, while those who let their lands lie idle are not taxed. Moreover, the impact fee may end up taxing capital and labor along with geo-rent.

Remarkably, Fischel (1998, 11) states that "property taxation cannot achieve any significant efficiency at the state level." This, he says, is because states are too large for Tiebout effects, and states can internalize the benefits of development. This ignores the efficiency gains of shifting away from deadweight-loss-causing taxation, a gain that Fischel recognizes two pages later (13). Fischel (1998, 15) also accuses site-value taxation of high administrative costs in "the knife-edge goal" of "getting almost all land rent." This is a straw-man, since the real-world cases of geo-rent taxation

have not sought to measure and collect the full geo-rent exactly, and in fact there are numerous cases of successful implementation (Andelson 2000).

Championing zoning, Fischel (1998, 16) states that "the zoning system does not have to be all that accurate." Yet for some reason, geo-rent taxation must be "knife-edge" precise. As is well-known, zoning is a blunt, highly politicized, and highly discretionary instrument. It often becomes perverse. By comparison, governmental rules for assessing geo-rent would be much simple, transparent, universal, and relatively free of politicking.

The Tiebout Model

The landmark model of competition among communities in the provision of collective goods is that of Charles Tiebout (1956), which, as Bruce Hamilton (1991, 672) stated, offered an "antidote to Samuelson's rather gloomy results." Paul Samuelson (1954, 388) had stated categorically, "*no decentralized pricing system can serve to determine optimally these levels of collective consumption*" (italics in the original).

Tiebout's analysis shows that this conclusion does not hold for local civic goods. The consumers can select the communities which best satisfy their preferences. In the Tiebout model, unlike the Buchanan club model, the provision of the club goods is held fixed. Consumers reveal their demands for collective goods through a choice of community, and competition among communities assures that local collective goods are provided at minimum cost. Residents dissatisfied with their community's civic goods will leave, resulting in, at the limit, homogenous communities with respect to the public goods desired by the residents. Joseph Stiglitz (1983) points out that pure homogeneity is not necessary to the Tiebout conclusions if there are productive interactions among people, if there are transportation costs, and if people have different utility functions for land.

Though Tiebout in his model recognizes space with respect to congestion, it is unfortunate that the model itself has no spatial dimensions and no land rent. It was unfortunate both because it made the Tiebout model incomplete and because much of the subsequent Tiebout literature also ignores land. As stated by Hamilton (1991, 673), "the tax instrument is of critical importance if the efficiency or even existence of a Tiebout equilibrium is to be achieved." And as stated by Blankart and Borck (2004, 455), "Problems arise in the Tiebout model if public services are financed by distortionary taxation."

The value of a city park diminishes with the distance from the park. Therefore, *ceteris paribus*, those closest to the park will have a higher geo-rent. The most efficient way to finance the community is from the geo-rent, not by equal dues payments. The Tiebout model will reflect the territorial ambit of goods only when land and location are taken into account.

The spatial dimension has been recognized in the Henry George Theorem and by analysts who have incorporated the capitalization of civic goods into site value. The empirical studies of Wallace Oates (1969) found evidence for the capitalization of the benefits of local collective goods and of property taxes.

Buchanan and Goetz (1972) found that the internalization of what otherwise would be externalities would occur if the communities are proprietary and if competition equalizes the value of the externality. "Tax shares would have to be related to the size of the *locational rent* component in individual income receipts" (35; italics in the original). "If all valued 'space' should be privately owned and if competition among proprietary ownership units were effective in all respects, allocational efficiency might emerge" (40). Tyler Cowen (1988, 14) notes that models such as that of Buchanan and Goetz "offer the intriguing suggestion that Tiebout's model is better suited to analyses of collective goods provision through proprietary communities."

HOW LARGE IS THE GEO-RENT TAX-BASE?

One of the pitfalls surrounding the idea of tapping geo-rent is that it is closely associated with Henry George's *single*-tax ideal society. Authors such as Mankiw (2004, 168) and McConnell and Brue (2005, 300) point out that geo-rent taxation alone could not cover the current levels of government spending. But that point works only as a criticism of eliminating all taxes aside from geo-rent taxation, not as a criticism of the principle of tapping geo-rent.

I have the further impression that many economists think that geo-rent is a tiny portion of GDP. That notion seems to lead some economists to figure that even if geo-rent taxation is efficient, it is empirically of small import. Dick Netzer (1998, 116) notes that the proposition that "the potential revenue from land value taxation" is insufficient "is widely held today."

In a chapter entitled "rent, interest, and profits," Salvatore and Diulio (1996) have an exercise, "What are the criticisms of the single-tax movement?" One criticism offered is that "rents in the United States today amount to just about 1% of GNP, while taxes are 25% of GNP" (355).

In the official GDP accounts by the Bureau of Economic Analysis in the Department of Commerce, the only category termed "rent" is "rental income of persons," which in 2004 was put at an annualized estimate of $150 billion, or less than 1.5% of GDP. This "rental income" is net of expenses such as property taxes and mortgage interest, but the bulk of such expenses are also returns on real estate which are being paid to lenders and the government!

The BEA's "rental income of persons" includes rental payments for both the sites and the buildings, adjusted down for the deprecation or "capital consumption" of the improvements. Without capital consumption, the rental income is $166 billion, and that includes the imputed rentals of owner-occupied houses and the mortgage interest paid. This "rental income of persons" is personal income, excluding the rental income from land owned by corporations as well as the implicit opportunity-cost rental value of land held by governments and nonprofit agencies. Furthermore, corporate-owned land is severely understated in corporate reports, because land is valued at the historical purchase price, not current value.

That economists would believe that the GDP rental income figures comes anywhere close to being the total land rent is quite remarkable. Other official data come closer to the actual geo-rent. The Bureau of Labor Statistics of the Department of Labor reported that consumer units spent an average of $13,283 on housing in 2002, one third of total spending (BLS 2004), including the imputed rental of owner-occupied dwellings. The BLS reports 112,108,000 "consumer units" (households), so the total spent for housing was $1.5 trillion, ten times the "rental income" figure of the BEA. That the $150 in BEA rental-income accounts have little connection with actual geo-rent becomes even clearer when compared to the 2003 home mortgage debt of $7.2 trillion (Financial Services Fact Book 2005), total mortgages of $9.3 trillion in 2003 (Financial Services Fact Book 2005), and a housing stock of $15 trillion (National Association of Realtors 2005).

Property taxes in the U.S. are about $300 billion per year (Youngman and Malme 1993), with $228 billion going to local governments (Fisher 1999). If a landlord collects $20,000 in annual rent and pays a property tax of $9,000, the "rental income of persons" here (not subtracting depreciation) is only $11,000, because the reported amount deducts the landlord's property-tax expense. Similarly, homeowner and condominium

association dues are deducted out in arriving at "rental income of persons." This category "rental income of persons," then, both includes elements other than geo-rent (notably, rental payments for improvements such as buildings), and excludes much of the geo-rent of the land.

Moreover, as Gaffney (1970, 194) concludes, the untaxing of buildings, which is part of the geo-rent taxation proposal, will raise ground rent by an amount about equal to the loss of building taxes. Narrowing the property tax to geo-rent only, therefore, would increase the geo-rent tax-base by about the same amount as the building tax-based removed.

Studies of geo-rent have been conducted by Steven Cord, Mason Gaffney, Mike Miles, and others. Mason Gaffney (1970, 181) finds that site value is generally at least half of real estate value, which would imply that for the housing stock alone the site value would be about $7.5 trillion.

For private lands, much of the revenue from geo-rent is hidden in interest payments, corporate profits, and capital gains, implying that it isn't showing up in "rental income of persons." For example, the way that building-owners may treat "depreciation" is unrealistic and even nonsensical. Suppose Bob buys a building for $275,000 (excluding the land value) and rents it out for $40,000 per year. On the premise that a building is used up in 27.5 years, the tax code allows him to deduct $10,000 each year. And then he deducts his real expense (maintenance, etc.) of, say, $5,000, so the column shows only $25,000 in rental income. Suppose that after 27.5 years, Bob sells the building to Sam. Now Sam starts deducting depreciation all over again. Capital consumption is to a large degree a legal fiction.

One bids less for land that has tax liabilities and on which profits are lower. Untax the economy, and the economy would produce greater output, which would be capitalized into higher geo-rent. Even if the geo-rent today were accurately calculated, it would be far less than the potential public revenue, because of capitalization effects of the *untaxing* side of the scheme. As noted, the scheme would involve geo-rent payments from government agencies. That, of course, will brings a corresponding increase in government spending, so the matter of geo-rent of government lands is not pertinent to the present issue. However, it is worth noting that for government lands, the geo-rent is utterly opaque (Foldvary 1989), and that would have to change.

Using a variety of data, Steven Cord (1985, 1991) puts geo-rent at around 20 percent of GDP. Mike Miles (1990) comes up with a similar figure using data from the Bureau of Economic Analysis. The totals include

government lands, but these estimates do not include the increase in geo-rent that would occur with the elimination of market-hampering taxes.

The amount of actual and potential site revenues warrants much more research, but these findings indicate that the tax base is substantial, most likely in the range of 50 percent of all-level government tax revenues. Interestingly, if both punitive taxes and transfer payments were eliminated, the geo-rent would about equal government spending for goods and services, in accord with the Henry George Theorem! At any rate, any allegation that land rent is too small to be of policy significance would have to be well argued.

OTHER ADVANTAGES OF TAPPING GEO-RENT

While this article will not necessarily serve as a manifesto for the idea of tapping geo-rent to fund community goods, there are a number of further advantages that merit passing mention.

- *Geo-rent taxation would reduce sprawl.* Current tax policies tend to discourage the development of urban land, because the fruits of those developments are directly taxed. To the extent that those policies are replaced by policies that tap geo-rent, the landowner is incented to develop his land. Recall, an underused site pays the same geo-rent tax as a developed site. The untaxing of production combined with the tapping of geo-rent will induce infilling of the city center, making for a more compact city, agreeable to mixed use and pedestrian activity. Hence, the demand-side push for sprawl is diminished. Moreover, the supply-side pull toward sprawl would also be diminished: Today, sprawl landowners are subsidized by extraneous taxpayers who pay for the roads, sewers, schools, fire-fighting, and security in the sprawl neighborhoods. If those services depended on the community's geo-rent, the pull toward sprawl would be reduced.

- *Dampening cycles:* Today, a factor in cycles is real-estate speculation. An economic boom increases the price of land, and speculation can drive prices even higher. Geo-rent taxation would mean that there are

no "killings" to be made in land, since 75 percent of the geo-rent would flow to the government, not the landowner. Tapping geo-rent would dampen the real-estate cycle, which in turn dampens the business cycle (Foldvary 1997).

• *Tax-base of last resort:* Technology promises to make capital and people ever more mobile, and encryption promises to make money and enterprise less visible. Put differently, technology threatens to make conventional taxation more difficult. Tapping geo-rent may well be the revenue source most suitable for the 21st century. Technology will never enable the landowner to hide his land or move it off-shore.

PRIVATIZING THE NEIGHBORHOOD

Fortunately, real-estate practitioners pay no attention to textbook economics. Increasingly, new communities are developed within a nexus of private ownership and contract. In the United States, four-fifths of new housing developments involve membership in homeowner associations (Community Associations Institute 2005). In China, all major new developments have walls, guards and private governments (Webster 2002). In Russia (Lentz and Lindner 2002) and South Africa (Jürgens and Gnad, 2002; Landman 2002), wealthier citizens privately provide for their safety in gated communities. The empirical fact on the ground is attracting increasing academic attention from many fields, including urban studies, legal scholars, and anthropologists, and there have been international scholarly conferences to explore private communities (Glasz 2005).

The great challenge concerns existing communities of the traditional governmental structure: How are they converted to a nexus of private property and contract?

Robert Nelson (1999) has proposed a policy for converting neighborhoods to residential associations, similar to the policy in St. Louis, where neighborhoods may privatize (Foldvary 1994). Under Nelson's plan, state law would permit property owners to petition to form a neighborhood association within a proposed boundary. Approval would require an affirmative vote both of 90 percent of the total property value affected and 75 percent of the individual unit owners. The relevant governments would

then authorize a transfer of services and property such as streets to the association, accompanied by tax credits in compensation for the reduction of government expenses. All property owners in the privatized neighborhood would be required to be members of the association and pay assessments. Since they would already have title to the real estate, there is no financial impediment, as there would be if they had to buy the land afresh.

Conversion to civic associations would not only partially privatize local governance, it would also result in a shift in public finances, with lower taxes to the city, replaced by association assessments which would be much closer to geo-rent. The association would get revenue from payments either equal per member or based on front footage or property value. The economic ideal would be payments based on geo-rent, because the rent would most closely reflect the value of the community services. But even if there is, say, an equal payment by the real estate owners, if the properties have about the same market value, the payments would have the effect of tapping geo-rent, with no excess burden.

My proposal (Foldvary 1994) for a neighborhood conversion makes the membership in private communities strictly voluntary and open to any real estate owner. Any person or organization having title to land would be able to partially secede, to withdraw property and services from governmental jurisdiction, and create its own governance. The government could require an exit fee or on-going rental payments to compensate for its services that the private community would still benefit from. If most of a neighborhood wishes to privatize but some do not, those wishing to remain directly under the government would continue to be under government jurisdiction, and there would then be agreements for the joint provision of services such as streets that service both members and non-members. While this may result in a more complicated arrangement than that of Nelson, I believe it is important to maintain the voluntary nature of civic associations as much as possible.

CONCLUSION

The shunting aside and disparagement of public revenue from geo-rent has distorted economic analysis and contributes to iatrogenic economy-hampering fiscal policy. We need a broader and more integrated

public economics that recognizes the fundamental role of land in economies and fully incorporates the analysis of public revenue from geo-rent. We will then not only have a more complete and accurate science of economics, but also economists will then offer better remedies for economic problems.

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ABOUT THE AUTHOR

Fred E. Foldvary obtained his Ph.D. at George Mason University and teaches economics at Santa Clara University, California. He also writes a column as senior editor for *The Progress Report* online journal, www.progress.org, and at SCU is an associate of the Civil Society Institute. He won the Atlas Foundation's Antony Fisher International Memorial Award in 1995 and was first-place winner in 1992 of the Community Associations Institute Research Foundation's Award of Excellence. Foldvary's main areas of research include public finance, public choice, social ethics, and the economics of real estate. His books include *Soul of Liberty*, *Beyond Neoclassical Economics*, *Public Goods and Private Communities*, *Dictionary of Free-Market Economics*, and (co-edited) *The Half-Life of Policy Rationales*.