

**Land Value Taxation Views,
Concepts and Methods: A Primer**

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and Thomas Hamilton
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**Lincoln Institute of Land Policy
Working Paper**

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Lincoln Institute Product Code: WP00JW2

Abstract

Land value taxation has evolved for more than a century into an approach that is being used to varying degrees in the modern economy. While land value taxation plays a critical role in each state's property tax system throughout the United States, land is not relied upon exclusively as a means of generating state or local revenue. There is no strict adherence to Henry George's original philosophy of a land tax as the exclusive revenue source for government. Rather, it can be postulated that a land tax, in the essence imagined by George, could be used to replace, modify and/or supplement the current property tax system. With a greater emphasis on land value taxation, issues of speculation, urban decay, urban-fringe leapfrogging, tax equity and fairness can be addressed. This paper examines land value taxation in its general form, the underlying concepts and principles of value, and describes the modern adaptations of land value taxation. Issues and methodologies surrounding the process of valuing land are explored with examples.

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Land Value Taxation Views, Concepts and Methods: A Primer

An Overview of Land Value Taxation

Introduction

At present, there are a number of countries that are making use of some form of land value taxation.¹ It is generally assumed that the main interest in property taxes is in its use as a local tax, in either urban or rural conditions, but mainly with urban reference. It is also important to recognize that introducing a land value tax would be commensurate with the elimination of or equivalent reduction in taxes on both real estate improvements (i.e., buildings) and personal property (i.e., machinery, equipment, and inventory). Implementing or furthering the tax on land must not be viewed as a tax increase, but rather an alternative means of allocating the tax burden. The intended result would be a reduction in or possibly the elimination of the regressive nature of taxing improvements and other mobile forms of capital. Again, assuming that we are concerned with a local tax, a major objective must be that it provides a reasonably equitable distribution of the costs of desired local service for those individuals and entities that benefit from the services provided. Redistribution of individual wealth is not a concern of an equitable and uniform land value taxation system.

Decisions concerning how revenue will be used and distributed will also affect the fiscal relation between national, state and local governments because the introduction of a land value tax would also change the relative taxation potential of different local areas. As several states use the property tax as an asset redistribution tool, new allocative mechanisms would be required to accomplish that objective. Therefore, even if a decision to introduce a land-based tax is taken, there are a number of subsequent, subsidiary problems to be faced to ensure that repercussions associated with potential land value changes (and imputed costs of pure land value taxes) are properly assigned to each parcel. In time, an efficient land market, with knowledgeable and capable buyers and sellers, will ensure proper land value adjustments that include the imputed costs of a land tax. To minimize the capital gains and losses accruing to specific landowners, an extended phase-in period might be used.

The idea of land value taxation has a long and varied history. It has operated, in a limited and varied fashion, quite well in Pittsburgh and Scranton, Pennsylvania. In these communities, land is taxed at a separate rate from improvements. Land value taxation also operates in parts of Australia, New Zealand, Denmark, as well as in several African countries.

Additionally, at least eight Nobel Prize winners have endorsed land value taxation, including the 1996 recipient William Vickrey. Vickrey contends, “It (*land value taxation*) guarantees that no one dispossesses fellow citizens by obtaining a disproportionate share of what nature provides for humanity.”²

If we are to consider the costs and benefits of a property tax system based to a greater extent on the value of land it is useful to understand the context of the tax itself. To better understand the rationale, motivation and methods of implementing this form of property taxation, we first trace its origins. While property has been taxed in various manners throughout history, often haphazardly, it was only in the latter part of the 19th century when standardization of property taxation techniques was deemed desirable.

Henry George

Land value taxes in force in the world today owe their existence to the thoughts and writings of Henry George. George was deeply concerned by the profits being made by land speculators in the California gold rush of the 1870s.³ From this experience arose his idea of a single tax on land values that would be sufficient to finance the entire needs of government.⁴ Generally, the concept of taxing the profits of the “rich” was gaining strength during this time period. Colossal firms with equally large profits were an outcome of the on-going industrial revolution in both the U. S. and Britain. In the United States, this view of undeserved “profit” accruing to owners was a primary factor leading to the adoption of the sixteenth amendment to the U.S. Constitution, permitted the federal income tax.

As for the property tax, a single tax on land was more plausible during this time period as government spending was but a fraction of its current level. Without various transfers for human services and national defense, federal spending and its revenues needs were significantly less in the nineteenth century than today. Local government functions were equally limited. Thus a single tax was conceivable and not so large as to be confiscatory.

George viewed the objective of the land tax not so much to raise revenue, as it was to break the power of the land speculators and to promote equitable and fair land development. This socialistic, free-trade aspect appears to be as important as revenue in George’s mind, and this aspect became more of his central focus as the idea spread. In parts of Europe, the particular land value taxation approach not only represented taxation on unimproved value, but also the abolition of rents and the nationalization of all industry. Clearly, such ideas were far removed from what could be called “free-trade.”

In 1888 George visited England and had been welcomed by the Liberal Party. The Liberal Party philosophy was that landlords (property owners) were the sole benefactors from all improvements to the land, and as such, they should pay taxes commensurate with the benefits. Legislation to establish some type of land tax was introduced by the Liberal government in the first decade of the twentieth century. An attempt was made to measure the full potential of unimproved value, site by site, discounted to the present, so that there would be no enhanced tax liability no matter what “improvements” were subsequently made. This task proved too much for the appraisers, and very little progress had been made by the time the Conservatives repealed the legislation in subsequent Parliaments.

George had much greater success in the developing countries of South Africa, Australia, and New Zealand, which he visited in 1890. These developing countries did not have an entrenched tax system with which a land tax had to compete. All these countries had

similar situations to the California boom as well, with spectacular, “unearned” profits going to particular landowners. The general public attributed these profits to simple luck, market manipulation or timing, rather than any skill on the part of the landowner in selecting or improving particular sites.

George’s site-value, single-tax arguments seemed to make good sense in the Californian boom. In fact, he was making two implicit assumptions: first, that the spectacular boom in land values would continue indefinitely, and, secondly, that appraisers would always be well supplied with evidence of unimproved land sales, so that improved sites could be valued easily by comparison. In practice, when the first condition was not fulfilled and an economic slump ensued, bankrupt tax authorities quickly abandoned the site value concept since the tax base eroded drastically.

Conditions in Australia in 1890 were in many ways similar to what they had been in California in 1870 and George’s ideas quickly became popular. He found, however, a subtle difference that puzzled him. The rural landowners favored free trade and capitalism, far from the land monopolists George often envisioned. As a result of George’s visit, the states of South Australia, New South Wales, and Queensland enacted taxes on unimproved value. Legislation allowing some form of land tax was passed in New Zealand and South Africa. Johannesburg adopted the idea, but Capetown did not. From South Africa, the concept spread to the British East African territories of Kenya, Uganda, and Tanganyika as well as Rhodesia. Apart from Denmark, these countries are now its leading practitioners.

Modern Adaptations of Land Value Taxation

In recent years the basic objectives of land value taxation have been considerably modified. A likely modern-day economic situation would be one where urban population was rapidly increasing and where some degree of inflation was likely to be sustained, perhaps due to unemployment concerns. It is clear that with the commitments of modern governments, land value taxation would, by itself, be hard pressed to raise sufficient revenue to cover all spending demands. A land value tax would be able to replace part or all of the current property tax system. However, the land value tax can be considered as a supplement to, while not entirely replacing, such taxes as the sales, income and other state and local taxes.

If a land tax substituted for a traditional property tax to some extent it would have several advantages, in terms of income incidence and incentive to invest. It would not be possible to base the assessments on the “original and indestructible powers” of the land. This was attempted in London under the Liberal (Lloyd George) legislation in the first decade of this century, but appraisers found the requirements unworkable. Valuing a particular site as if each was covered only with “sedge, grass or other natural growth,” and yet all other improved parcels (buildings) remained intact, was not a practical approach. In modern conditions one would expect roads and basic utilities to be present.

Even allowing for these less-than-perfect conditions for the land value tax today, it may be less regressive than the present U.S. property tax system or the British local rate. The degree of regressivity is, however, not considered so heavy as to detract seriously from

its general usefulness. A fundamental contrast between British and American points of view should, however, be noted here. Apart from the inelasticity of revenue, the main objection to the local rate in the United Kingdom is the relatively high burden that it could place on low-income households. To meet this hardship a “rate-relief” grant could be offered to reduce the undue hardship where the rate demand is abnormally heavy in relation to income. In the United States, one of the major objections to the property tax is its disincentive effect on development, over and above the regressivity concerns. Most states in the U.S. already provide some sort of property tax relief to low income owners, usually through homestead credits and exemptions. In the United Kingdom the extremely vocal complaints concerning the disincentive effects of taxation are due to income and corporate taxes.

Quite apart from assessment difficulties, a tax that exempts the more valuable element of the property, the improvement, can only be revenue-neutral when tax rates are relatively high. Otherwise, there are serious risks of inequality. Pittsburgh and Scranton, Pennsylvania have been successful because the land tax was discreetly implemented over a fifteen to twenty-year period. Also, tax policies in Pennsylvania allow for the use of other sources of revenue, especially local income taxes.

Benefits of a Land-Based Tax

It is clear that land value taxation is feasible. But for the tax to be implemented there must be sufficient and strong reasons to replace the current property tax system. Several obstacles exist; questions of political will, equity, financial viability and most basically a clear value determination.

Development and Redevelopment

A strong argument favoring land value taxation, as practiced especially by the Australians and South Africans, is that the tax encourages “appropriate” development. Such development can be equated with maximizing the usefulness of buildings on the appropriate site. In an accurate valuation, the net present value of all future developments would be included, so that there would be no additional tax to pay when further improvements were made. The owner has a strong incentive to erect structures that maximize return. There is no incentive to leave the site vacant or hold it for speculative purposes as typically occurs under a property tax system that taxes incremental improvements.

In the assumed conditions of steady growth, a land tax based on maximized land use value (i.e. market value) should lead to full development of the site. This implies that the risks of mistaken or excessive development are so small that they can be neglected. If risk is present or if the market is imperfect, large developments will not be undertaken. Even under a site value tax it may pay to leave a site vacant, to the extent that it may lead to a discreet disappearance of the owner, in the same way as can occur under a traditional property tax. Risks of this nature may be less likely to occur today under the more controlled conditions of urban development, given imposed zoning restrictions, more highly informed market participants and so on. Even in fast-growing economies all areas do not develop equally, and risk-adjusted returns determine the development process.

Nevertheless, any local authority that wanted to reduce the incentive to hold land for speculative purposes could contrive means of thwarting such speculators. As we know, the concept of “value” can be construed in many ways by taxing authorities.

The idea of a land tax serving as a general stimulus to development is often determined in the early stages of a country’s growth. In established economies, the situation is quite different and calls for more selective measures. Generally, there are two particular forms of development where control via taxation is preferred: urban sprawl on the fringes of a city and the promotion of urban renewal in the congested inner core. The latter is especially demanded when urban decay is present. Failure to control urban sprawl may promote development of tax havens in the suburban areas but also greatly adds to the cost of providing basic utilities and roads in the new areas. An especially prominent aspect is “leapfrogging,” where land is left vacant immediately outside the city boundaries with new developments starting only a short distance away. Such land normally pays a tax based on its agricultural valuation, so it is relatively inexpensive for speculators to hold. This application of a common tax rate to all property within specified boundaries is problematic, but less so with a land-driven tax.

Urban renewal concerns are viewed differently than the problem of sprawl because social well being, morals, local politics are involved. To the extent that fiscal needs allow, a redevelopment incentive must be provided. As the land as well as the improvements stagnate and succumb to increasingly inferior, sub-adequate uses, land value would eventually decline sufficiently to make redevelopment an attractive alternative. However, even in areas with an adequate tax base this does not seem to be the usual chain of events.

This process of enticing redevelopment in declining urban areas requires speculative behavior. Since the value of distraught property near the urban core is less than otherwise “normal” in a typical rent-gradient pattern from the urban core, purchasers of such property have an economic impetus to hold the property until the optimal point to develop it into its ultimate use. The result is an ultimate, improved parcel price greater than the cost of acquiring the land plus the holding cost of the land, the subsequent improvement cost, and normal developer profit.

However, once distraught land is purchased at a “low” price, this would trigger a revaluation of the property. Using a potential or highest and best use analysis, the holding cost of the land now becomes high, in turn reducing the holding time of the redevelopment. Ultimately, the revaluation effort spurs transformation of the property to its intended use. The purchaser would make a “normal” developer’s profit, over and above the cost of acquiring the land and erecting improvements. The longer the property is held in its subadequate state, the higher the holding costs, eroding the “normal” profits that developers would otherwise earn.

Equity and Fairness

As the circumstances above illustrate, an equitable tax must be based on market information and not on ad hoc judgment, even if valuations have to be extracted from “extreme” market transactions and conditions. As vacant parcel sales rarely occur in

developed areas, valuation of land is especially problematic due to the existence of improvements. As practiced in Australia and New Zealand, the depreciated replacement cost of the improvement is deducted from the total improved site value (actual or proposed). This brings up yet another possibility: demolition costs. In a developing city this factor may not be of great importance, since a large part of the process of development will consist of razing lower quality, less desirable structures and substituting structures greater use value. The combined effect of a potentially high demolition cost and a small depreciation factor could reduce the site value to zero or even a negative.

A simplified method of land valuation used in parts of Australia and New Zealand is to obtain a ratio that, on the average, represents a typical improvement value to overall property value. This serves as an application of the allocation method, as further discussed below. The overall property values are obtained from recent, market transactions. This method does involve forming some assumptions, and perhaps even may be arbitrary, especially when a percentage derived from one market is transferred to another market.

To what degree can we expect any land valuation method to solve the problems associated with controlling sprawl, while simultaneously enhancing urban renewal? A possible solution is to place two valuations on the land: one based on its present use and the other on its potential use. The difference between the two (or some percentage thereof) would then be collected when and if the site is converted to that potential use. The knowledge of having to pay a tax on the conversion might deter speculative holding, yet it is unlikely to motivate immediate development.

As for urban-fringe areas, the problem of land use intensity is relatively more simple to solve because the economic conditions are more or less those of a developing city—there would be sufficient vacant-site sales to accurately value property based on the sales comparison method.

Valuing land in urban blight areas is a more arduous process as limited numbers of vacant land sales makes it difficult to ascertain site values. If true land values have fallen to very low levels, as they do in “urban decay settings,” a moderate stimulus to redevelopment should emerge, given that the costs of demolition are not too high and potential profits can become sufficiently large. The local authority might meet this challenge by declaring a particular area a “development area” and perform the demolition itself. Subsequently, government could take several measures to enhance the site value, such as imposing a restricted or percentage tax rate, or even a complete exemption of the parcel for a limited period. An even more extreme measure would provide an outright subsidy for the type of redevelopment deemed appropriate.

On the surface it appears that direct expenditures by local governments are a relatively easy manner in which to promote core renewal and control suburban sprawl. This may take the form of subsidies for demolition and particular forms of development or in restricting developments that compete with the redevelopment effort. It is impossible to accurately predict the outcome of such action on developers or speculators who actively withhold land for an increase in prices. Clearly it would impact their decisions, with the

extent depending on relative risk and time preferences, interest rates and other related factors. However, one expects that such planning and control measures would decrease the attractiveness of speculation and ultimately inspire development.

As pure land value assessments assume an undeveloped site, a land value tax may be more effective in promoting development as compared to traditional valuation of both land and improvements. A pure land tax would result in lower values and taxes in decaying areas and higher values and taxes in growing areas. In any case it is unlikely that any effective improvement will be made without public and political support to enable this relatively unique approach. Naturally, taxpayers view any change in valuation and taxing methods with skepticism. This is especially true for those taxpayers that knowingly or unknowingly benefit from the inequities present in the current systems. Thus the implementation of a land-based tax is most likely in jurisdictions where a majority of the public has lost faith in the current system. Unfortunately, while the public generally demands equity, few are willing to pay for it.

Land Value Concepts and Principles

Although the concept of value is based on individual-specific criteria, the principle of market value is more concrete. *Market value* for a specified good represents the price or monetary value at which the good is exchanged between a buyer and seller. Further, the exchange must take place between knowledgeable persons, who are fully aware of all characteristics and factors that are relevant to the transaction. The transaction must occur based on the free will of both parties, and not be made under duress. The exchange must be at “arm’s-length,” without special relationship between the parties. For the selling price to be considered market value, all parties must recognize the current use of the property, as well as all potential uses.

From a valuation perspective, however, the underlying question involves which “market” of buyers and sellers must be considered, the current market or the potential market. While this distinction may be fairly obvious in a fully developed residential area where the current and potential markets are one in the same, the distinction is less obvious in areas in transition.

Potential (Highest and Best) Use Value

Underlying Henry George’s views on value is the concept of highest and best use. In short, it is that use which generates the highest net return to the owner over time. The concept of highest and best use requires some judgement from the appraiser in determining what use, perhaps among several possibilities, returns the greatest value to the owner.

In assessing the highest and best use, four aspects must be considered. First, the use must be physically possible on the particular site. This may be as simple as the acreage of the site, or may pertain to soil and substructure characteristics. Secondly, the use considered must be legal, meeting all zoning requirements. Third, the use must be financially feasible, providing a reasonable rate of return to the owner. Finally, the possible use must

be the most productive one, yielding the highest net return. Within these criteria, one is left with a single highest and best use.

Consider an urban parcel used for agricultural purposes. Under a highest and best use concept, the current use is probably not its highest and best use. If the land is to be properly appraised, then another use meeting all the above criteria will be employed in determining value. In this example, that highest and best use is probably either a residential or commercial use. Appraising the land in this manner yields its market value.

Conversely, the highest and best use of land in a rural area may be for agricultural purposes, as there may be no demand for residential or commercial development. Appraising the land as something other than farmland might violate any one of these criteria.

Cost is another concept often associated with value. In fact, many tax jurisdictions assess property, especially commercial or industrial property, by utilizing some reproduction cost data. But the philosophy of market value and highest and best use is not directly tied to the cost of property. While cost does influence what buyers and sellers are willing to accept or pay for property, many other factors including the current use, are relevant.

Current Use Value

Use value is another term closely tied to our notions of market value and highest and best use. But use value is a theory having to do more with taxation than value. In most cases, if a person is selling property, they want the highest possible return, regardless of the intended use of the buyer. But with property taxes, owners do not want to pay taxes on the potential (highest and best) use of their property. Thus in most areas, lawmakers have enacted legislation that assesses at least some types of property based only on its current use, or “use value.”

In most areas, use value for property taxation is applied to property deemed to be agricultural. The resulting assessed value is based on its present use as farmland, not its highest and best use. This typically results in a lower assessment than if the land were valued based on its highest and best use and assessed per its market value. Many jurisdictions also apply this concept to residential property as well, especially when such property lies in a commercial district.

One standard for a use value assessment would be to value the property at its market value but restrict the possible uses to the current use. However the concept of use value is not necessarily based on the market, and it can be determined in several other ways. Further deviations from the concept of market value and highest and best use are commonly used. Many jurisdictions do not restrict the use to the current one, and then ascertain market value. More common and where permitted by the various state constitutions, lawmakers or the tax authority simply assign a per acre value. This is especially true in the case of farmland. Value may vary by soil productivity, crops, yield, grain prices, interest rates and other factors.

Most discussion in the paper is based on the concept of potential or highest and best use, since this process yields a singular, common value. The same discussion is applicable to areas or properties where use value notions are used. But it is important to consider that the appraisal process might yield different values for market value or for assessed value if the use or other characteristics are relevant in that determination.

Basic Principles of Value

In order to understand the intricacies of the various methods used to value land, there are also several underlying principles of value that must be considered. These include: anticipation, balance, change, competition, consistent use, contribution, increasing and decreasing returns, progression and regression, substitution, supply and demand, and surplus productivity.

Anticipation

Value is the present worth of future benefits derived from the property. These benefits may take any of several forms, such as a stream of income or less tangible benefits, such as agreeableness. Estimates must be made of these future benefits in order to determine value.

Balance

For an individual property, balance relates to a state of equilibrium in the productive agents (land, labor, capital and entrepreneurial skill). In essence, improvements on the land will be directly related to the size and type of lot. The principal also relates to the neighborhood. In a residential neighborhood, certain commercial facilities are required. A development without complementary commercial property would lack balance. Likewise, certain types of improvements conform to the general improvement level of the surrounding properties.

Change

The concept of value is not constant as various forces lead to a constantly changing marketplace. Those forces include the government, general economic activity, societal and physical forces. This fluid situation leads to a market where value is inconstant. Market value estimates are made as of a certain date, the value before or after this date is likely to differ.

Competition

The potential for profit leads to a competitive marketplace. As the number of buyers increases, prices are driven up, and conversely as the number of sellers increases. Excessive competition leads to a marketplace that is out of balance. An appropriate level of competition leads to a market where neither buyers nor sellers have control of the market.

Consistent Use

This principle means that both the land and the improvements must be valued under the same basis. For example, valuing the land and improvements as a residence. This principle is especially relevant in land in transition and in areas bordering other use types.

Contribution

This refers to a component's impact on the value of the entire property. One must not simply add the cost of components to obtain a value estimate of the entirety. Taken together, the components may complement one another and thus be worth more together than separately. Likewise, adding a component to a property may add less than its cost to the value of the whole. This principle is especially important when considering the impact of additions to existing property.

Increasing and Decreasing Returns

Adding additional productive agents to a fixed group of other productive agents will generally increase value. As one adds these agents to the fixed assets already present, it is likely that value will at first increase by an increasing rate, up to a point. This is referred to as increasing returns. But the successive increases in these productive agents after a certain point will still increase value, but by smaller and smaller amounts. Such returns are described as decreasing. This forces us to consider if the cost of additional assets is justified by the increases in value.

Progression and Regression

This concept of value pertains to how the subject property relates to surrounding properties. Association with better properties (higher priced) drives up the value of lower-priced property. Similarly, if a higher valued property is girdled by lower valued properties, then its value will be forced down.

Substitution

A property's value is directly influenced by the cost to acquire a similar asset. This one must consider the value of the subject property in relation to the cost of obtaining a property that has a similar utility. To the extent that properties are more similar, they become easier to substitute for one another.

Supply and Demand

Two groups in the market place, sellers and buyers, influence a property's price. This relates directly to our principle of competition. All else constant, as the number of buyers increase, the price of the property will be driven up. Conversely, as more sellers of similar property enter the market, prices are forced down. Clearly, many other factors can affect the supply or demand for property, such as the government, and general economic activity.

Surplus Productivity

Surplus productivity refers to the income earned by land. This is the net income after the costs for other productive factors (labor, management and capital) are taken into account. Land value is dependent on the costs of these other productive elements.

Land Valuation Methods

Land valuation theory identifies six methods for ascertaining land value. These approaches are:

1. sales comparison;
2. ground rent capitalization;
3. cost of development;
4. allocation;
5. extraction; and
6. land residual.

While any of these methods may be a valid valuation process, the nature of the site (i.e., vacant or improved) dictates which method is most suitable. As a general rule, the sales comparison, ground rent capitalization, and cost of development methods are most appropriate when the land is vacant. The allocation, extraction, and land residual methods are typically utilized when there are improvements to the land.

Vacant Land

Sales Comparison Approach

The sales comparison approach to land valuation uses a direct comparison of recent market transactions for vacant land. This can include truly vacant land as well as land that is being considered as though it is vacant. Since this approach uses actual market transactions for land, it is the preferred method of appraising land. In the process of obtaining values, sales of similar parcels are analyzed, compared and appropriately adjusted (through generally accepted appraisal techniques) to indicate the value of the parcel being appraised. The approach is based on the principle of substitution, which means that land of similar utility will yield similar prices in a competitive, open marketplace.

Comparison between land parcels will include the property rights being transferred, legal encumbrances, zoning, financing issues, conditions surrounding the sales of similar properties, general market conditions at the time of sale, property location, available utilities, size, shape, frontage, topography, location, view, and, ultimately, highest and best use. With so many factors to weigh, one can see how different appraisers obtain different land values. The same can be said about the value of any asset.

As with any valuation process that requires the principle of substitution, determining if particular sales are truly comparable is inversely related to the age of the sales—older sales of properties are less comparable, all else equal. Ideally, recent sales are preferred. However, it can be difficult in many markets to find recent sales that have sufficient factors in common, such as usefulness (utility), rights, location, size, etc. This leads us to find and use other techniques to value a site.

Most property tax systems, including the land tax, require a reliable method of determining value. Traditionally, this has been the sales comparison approach as the land valuation assignment requires a sufficient quantity of recent vacant land transactions in the local marketplace (neighborhood, market area, etc.). On the urban fringe, it may be likely that vacant parcels sell on a frequent basis. This relatively high level of transaction activity within reasonable time periods will allow us to value subject properties based on recent indicators of market demand and supply convergence, i.e. the market price.

For such transactions to be considered valid, they must meet several criteria; motivated and informed buyers and sellers who have no other personal or business relationship, the transfer does not involve a religious, non-profit or government entity, and a full transfer of property rights. The appraiser must only consider what are arms-length transactions to better understand the true marketplace.

To use the sales comparison approach, one must conduct some type of market research and verify the data used in the analysis. Sources of information will include recorded deeds, sales disclosure forms, published sales listings—including, but not limited to multiple listing service (MLS) data, interviews with brokers and other real estate professionals, and any private sources of data. Some amount of data verification must be performed to ensure its validity and consistency.

In addition to general data, there are many ways to differentiate useful land measures. Many different methods are used such as front-foot, the square foot, acreage, site or lot, and units-buildable. Depending on the land type (residential, single family vs. multi-family, agricultural, commercial or industrial), each marketplace will logically use one distinct measurement method that most accurately depicts market participant needs. For example, the front-foot method works well with downtown retail-commercial land since exposure is directly linked to its visibility on the property's "front." Residential sites are typically valued on a lot basis or by the square foot for irregular or unique lots. Agricultural and industrial land is typically sold by the acre. Additional important features such as roadway, rail or water access typically incur a dollar or percentage increase for such lots when valuing commercial or industrial sites.

Finally, adjustments must be made to adapt each comparison parcel to the particular subject parcel. Differences in financing, sale date, locational and physical site characteristics must be accounted for to modify the comparable properties to "look and feel" like the subject property that is being valued. Adjustments can either be in dollar or percentage terms. If adjustments are in dollar terms, the order of adjustment is not important. However, when percentages are used, it is very important to first adjust for the date of sale and for special financing. Subsequently, physical differences are adjusted in

percentage terms and applied to an intermediate, date of sale / special financing adjusted price.

Once differences between the comparables and the subject are accounted for, a reconciliation process is conducted to generate a final value estimate for the subject property. As with valuing improved property, those comparables requiring the fewest (in number and magnitude) adjustments are considered more “comparable” and therefore are more indicative of the subject’s value. They are weighted more heavily in the final value estimate.

However, several circumstances often make the direct sales comparison method difficult to apply. For example, if the level of market activity decreases, or in areas where sales activity is typically slow such as in rural areas, or in the fully developed parts of an urban area. Other methods of land valuation must be used, and they do exist.

Sales Comparison Examples

Example #1: An urban retail building lot has an 80-foot frontage on Retail Avenue and a lot depth of 80 feet. Comparable vacant land sales indicate that similar 80 foot-deep lots are selling for \$1,250 per front foot. Using the front-foot method, this lot would have an estimated value of \$100,000 (80 front-feet times \$1,250 per front-foot).

Example #2: A residential suburban lot has 30,000 square feet, but irregular in shape and size. Comparably irregular lots are selling for \$2.00 per square foot. The estimated value of this residential suburban lot is therefore \$60,000 (30,000 square feet times \$2.00 per square foot).

Example #3: A 640-acre farm is currently being used to produce wheat. Three other wheat farms in the same general area (similar soil type, slope, productivity and riparian rights) have sold within the last year for \$1,800 per acre. This farm has an estimated market value under this method of \$1,152,000 (640 acres times \$1,800 per acre).

Ground Rent Capitalization Approach

Ground rents can be converted into market values through direct capitalization. This method of valuation is based on the principle of anticipation; one anticipates receiving an amount into the future and places a value on these future payments. Ground rent is the amount paid for the right to use and occupy land according to the terms and conditions of a lease. By capitalizing this ground rent, the market value of the owner’s leased fee interest is obtained. This method is useful when there exists an active, open and competitive market for land leases, and when a market-derived capitalization rate can be extracted from other competing properties.

All aspects of the ground lease terms must be analyzed to ensure that no extenuating circumstances exist in the comparable land lease agreements. If any exist, and such circumstances are atypical for the market, this individual land lease must be considered less similar than what is typical for the market. Just as in the sales comparison approach to land valuation, similarity between comparables and the subject must be determined and appropriate adjustments must be made.

In the context of land value taxation, ground rent capitalization is useful when there are both no vacant land sales *and* no improved property sales exist or are inappropriate to use. In this instance, alternate uses—such as a parking lot that has period-to-period renters—may yield a parcel’s land value. If a parking lot has an income stream, this anticipated income stream can be discounted (or capitalized in the case of a single period), forming the parcel’s value estimate. For agricultural properties, the net income derived from using the land to produce crops or animals can be similarly discounted or capitalized into value. Variations in productivity, such as carrying capacity, production yields and so on must be considered. The primary difference between rural and urban/suburban ground rent capitalization is the unit of comparison: acres for agricultural sites, square footage for urban/suburban land. With either type of parcel, a periodic income value per unit of comparison is obtained, such as dollars of net rent per square foot. For rural land this would be equivalent to cash flow per acre.

Ground Rent Capitalization Examples

Example #1: Suppose there is a vacant parcel in a downtown marketplace and no relevant recent vacant land sales exist. However, there are two nearby lots that are currently being used as parking lots and these lots have waiting lists for spaces. The subject parcel has sufficient space for 100 parking spaces and each space could net (after all operating expenses) \$70 per month. That would yield \$7,000 per month in net operating income or \$84,000 per year. (Based on market information, there is sufficient demand for these 100 additional spaces at prevailing rates.) Further, a market study indicates that a reasonable capitalization rate would be 8.4% on an annual basis. Therefore, the ground rent capitalization value of the land, used as a parking lot, would be \$1,000,000 (\$84,000 divided by the 8.4% rate).

Example #2: Consider the 640-acre wheat farm example described earlier. The owner can rent his land and receive a net income of \$144 per acre per year, or \$92,160 for the entire farm. If the capitalization rate for similar types of wheat-production land (based on soil type, slope, productivity and riparian rights) is determined to be 8%, then the capitalized value of the property is \$1,152,000 (\$144 per acre times 640 acres (\$92,160) divided by 8%).

Cost of Development Approach

This method is used whenever the current use of the land is the highest and best use of the land. This method can be used in residential, commercial and industrial subdivisions where some typical form of development is the normal pattern for real estate. Planned subdivisions are one example of this. These can create a more efficient, “highest-priced” land use scenario because the legal, social, economic, and physical restraints for a platted development have been pre-approved by the local government and the local marketplace.

Subdivision development creates lots (from a larger, single parcel) based on physically, economically and legally determined uses that meet the needs of the local market place. Since the lots created in a subdivision are vacant, the resulting structure of the subdivision is a large number of available parcels. Once these parcels begin to sell,

appraisers have valuable information in conducting individual appraisals of parcels using the sales comparison approach.

The appraiser must take into consideration the demand characteristics and forces for specific lots within the subdivision. In a typical subdivision, the most desirable lots will sell first, and usually at a premium. As time progresses, there will be less demand, relative to the supply, for the remaining lots—assuming general market conditions don't shift or radically change. Therefore, appraisers must not unilaterally place the same value on all lots. Rather, adjustments must be made in valuations to account for parcel-by-parcel differences in utility and desirability. Failure to consider such site-specific information is a common pitfall of mass appraisals.

Cost of Development Example

Example #1: Consider the 80-acre development described in the sales comparison example section above with a total asking price of \$2,760,000. The 80-acre site can be converted into multi-family residential lots. A market analysis shows that investors are willing to pay up to \$5,000 per dwelling unit for parcels in this general market area. Based on specific characteristics and zoning, this 80-acre site will be divided with one-half of the site (40 acres) having a maximum of 6 units per acre whereas the other one-half (40 acres) will have 8 units per acre. Thus, the total number of dwelling units is 560 units (40 acres times 6 units per acre—240 units—plus 40 acres times 8 units per acre—320 units). Market information shows that the higher number of units per acre, the higher the land value.

Further, a market study has shown that of this final price per dwelling unit, 25% is attributed to site development—streets, sewers, water, planning, etc., 25% is attributed to overhead and sales expenses—commissions, accounting, legal expenses, permits, and 25% is attributed to developer profit and interest expenses during construction. The remaining 25% is the value of the raw land plus the incremental value added by improvements to the land. Using this final 25% figure we can see that the improved land has an aggregate value of \$34,500 per acre on average (25% of the total price of \$2,760,000).

Improved Land

Allocation Approach

In densely populated urban areas, vacant sites are typically quite rare. This creates a problem of estimating prices for land by direct market comparison. At the same time, sales of vacant parcels in rural areas are typically few and far between. Therefore, land may need to be valued by another method.

Allocation is based simultaneously on the principles of balance and contribution (see pages 9-10). Generally, similar properties feature improvements in comparable proportions, and the improvements contribute to the overall property value in relatively similar proportions. Even though balance and contribution, together, aid in valuing the land component of an improved parcel, final land value estimates may not be conclusive

due to functional, physical and economic differences in the actual improvements attached to the land.

Using the concept of contribution, a portion of the property's total value is from the land. Land has value and improvements generally contribute to its value. Based on market contribution estimates from comparables, an indicative land contribution is given to the land component. Information necessary to attribute a land proportion include site values in prior years, land to improvement ratios for similar properties, and land component percentages from newly constructed sites.

Allocation Example

Example #1: In a local market area it is seen that site values represent 16.67% of total property value. In this case, land is in proportion to improvements by the ratio 1 to 5 (one part land, five parts improvements). Therefore, for a property whose total market value is \$150,000, the land value from allocation is 16.67% of \$150,000, or \$25,000. Likewise, we can see that 5 parts of improvements would be 5 times that of land, or \$125,000 (\$25,000 land value times 5 equals \$125,000). This accounts for the total improved site value as a \$25,000 land value plus the \$125,000 improvement value yields the overall property market value of \$150,000.

Extraction Approach

Extraction, also called abstraction, is a variation of the allocation method in that land value is determined by reducing an improved property's total value by an amount equal to the depreciated cost of the improvements attached to the land. This method of land valuation is based on the principle of substitution, in that a similar improvement could be substituted for the subject property. An implied land value can be obtained by first estimating total property market value by the sales comparison approach and then applying the principle of substitution to subtract the depreciated cost of actual improvements on the property. This procedure is very common in conducting highest and best use analysis for parcels.

Because improvements "contribute" to overall property value, we can reduce the overall property value by this contribution. The residual is the value of land. It is presumed by most appraisal professionals that land "has" value. This is an important relationship to acknowledge—land has value, and improvements contribute to value. Further, once we are able to remove the value of various improvements to the land, we are left with a land value estimate that can be directly compared to, and included with, vacant land value indicators in a direct sales comparison effort.

Extraction Example

Example #1: Assume an improved property has a market value of \$150,000. The cost to construct the improvements that exist on this property (in new form and utility) is expected to be \$145,000. At the same time, due to physical wear and tear, functional tastes and preferences (more generally, depreciation) the improvements to the property as they currently exist are worth \$20,000 less than the reproduction cost new. In other

words, all forms of depreciation attributable to this property total \$20,000. Consequently, the current improvements have a value of \$125,000 (\$145,000 of new construction cost less \$20,000 of depreciation). Deducting this from the total site value of \$150,000 leaves a land value of \$25,000, based on the extraction approach to value.

Land Residual Approach

Similar to the allocation method, the land residual technique is based on the principle of balance along with the concept of contribution. Also, the agents of production—capital, labor, coordination, and land—are assumed to be in a state of equilibrium. This procedure is quite useful when there are few individual land sales or are difficult to properly adjust via the sales comparison approach. Specifically, this method can be used for income producing properties with well-supported data.

To implement the land residual technique, either actual or hypothetical improvements that represent the highest and best use of the land are determined. Then, an annual net operating income is estimated based on an expected holding period for the property. Of this amount, a proportion is allocated to the improvements (which contribute to overall value) and the remainder, known as the *land residual*, is capitalized at a market-determined rate. By capitalizing this land residual annual net operating income at an appropriate land rate the resulting value is that of land. This method is often used in feasibility studies for evaluating alternate uses of the land.

Land Residual Example

Example #1: Assume we have a property with an annual net income of \$250,000. Improvements to the land are valued at \$1,000,000. A market study has shown that a land capitalization rate in the local market for competing property is 12.5%, with improvements having a capitalization rate of 15%. This data would indicate that the income attributed to the improvements is \$150,000 per year (15% of the \$1,000,000 improvement value). Therefore, due to the concept of contribution, land must receive the remaining \$100,000 of total net income (\$250,000 total NI less the \$150,000 of NI from the improvements). We can then capitalize the land net income contribution at the appropriate land capitalization rate to yield a land value estimate of \$800,000 (\$100,000 divided by 12.5%).

Land Valuation Summary

We all assume that the amount of land is relatively fixed in its current supply. Land use can change over time fairly easily, but what we are doing is shifting proportions of various uses of land. These changes can affect the supply of various land types in a local market as it responds to changes in the legal, social, ethical, financial, and physical constraints associated with individual land parcels and the associated demand for these types of uses. Several principles of value must be considered in valuing land.

In all appraisal assignments, whether valuing individual parcels or applying mass appraisal techniques, value estimates are more reliable when fewer adjustments are necessary. Therefore, the direct sales comparison approach of vacant land is often the

preferred method, since adjustments are not needed. When this preferred method is not feasible, other methods, based on sound economic principles and market information, can be used to estimate the true source of a parcel's value: the land. Ultimately, appraisers attempt to uniformly apply valuation techniques and obtain justified values for each parcel. These values, regardless of the improvement, will represent the true value to the landowner and will be the basis for the owner's share of the jurisdiction's tax liability.

Conclusion

Land value taxation has progressed and evolved since Henry George presented his ideas in the last century. Variations of land value taxation have been implemented in limited cases around the world with varying degrees of success. Despite the complexities of many taxation schemes, such as the income tax, a clear concept like land value taxation has much merit. The issue of speculative land holding on the urban fringe and the societal costs associated with it can be partially mitigated through land value taxation. The benefits of holding land in a less-than-optimum condition will be lowered through land valuation based on potential use and using the methods presented in this paper. This will force landowners to consider developing land more quickly because of the added overhead of paying taxes on its event use. Urban renewal efforts are less certain, but the same process will give beneficial tax relief to owners of distressed urban land so that they will be enticed to redevelop their parcels.

Implementing some form of land value tax requires some level of dissatisfaction with those systems currently in place. Change, especially if it involves taxes, is usually viewed with public distrust. But greater and more available information in today's society has increased the level of public awareness of inequity, particularly tax inequity. As the current property taxation methods have fostered and perpetuate those biases, a sound, fair alternative method is a tax on land.

Notes

¹ The terms “land value” “site value,” and “unimproved value” are used interchangeably to indicate a tax base on the original value of the land before improvement, or its highest and best value when the property is developed.

² This is from a 1997 update of a feature that originally appeared in *Incentive Taxation*, November 1991. A full description can be obtained by contacting: Robert Schalkenback Foundation, 41 East 72nd Street, New York, NY 10021, or Center for the Study of Economics, 2000 Century Plaza, #238, Columbia, MD 21044.

³ See C. A. Barker, *Henry George*.

⁴ See C. A. Barker's, *Henry George*, Chapter 17.

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