

## 9 *Mason Gaffney*

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### **ADEQUACY OF LAND AS A TAX BASE**

More economists than not believe that land rent has superior qualities as a tax base. Their failure to push harder for focusing more of the tax burden on land stems partly from a belief that "there is no money in it." The following journalistic passage reflects this belief: "Authorization of the graded tax would be useless, however, unless the present freeze on local tax rates is rescinded. . . . A city would have to give up half its revenues from taxes on buildings to institute Pittsburgh's two-level tax plan."<sup>1</sup>

Like any persistent idea, this one has many sources. If there were but one, my work would be short, but each requires its own treatment. If they were all transparent errors, the reader could relax to enjoy an easy, entertaining exposé of fraud and gullibility; but some involve us in subtleties and brow-knitting.

To be sure, many economists still allege that the property tax is too low to affect land-use decisions anyway. So believing, they cannot be much concerned over adequacy of the base. In many jurisdictions they may be right, for rates below 1 percent still are found. In other areas rates are high, however, and everywhere rising. The property tax now raises \$35 billion a year, so adequacy of base should be a general concern.

There are cities on the land tax system which seem neither to skimp on public spending nor to have used up their land value tax base. Sydney and Johannesburg, the economic capitals of their respective continents, are the two largest: both are booming with reported high land values.<sup>2</sup> The system is common, although not universal and no-

1. *Courier-Journal* (Louisville, Ky.), 23 March 1969.

2. On Sydney see R. W. Archer, "Market Factors in the Redevelopment of the

where pure, in East Africa,<sup>3</sup> Australia, and New Zealand.<sup>4</sup> Partial building exemption persists in Western Canada, and in an episode of full exemption — around 1910 — a major criticism was the reverse of tax base destruction, that is, failure to curb land speculation!<sup>5</sup> In Pittsburgh, whose plan the above-quoted writer fears requires a higher tax rate, the current rate is 1.6 percent — compare 4 percent in Milwaukee. Hawaii's current shift to a graded tax shows no signs of destroying Honolulu's vertiginous land values. And so on.

So the whole issue might seem already resolved by experience. But each case is unique: there are always special factors and a host of forces at work. The profession is remiss in reporting all this experience. But even were it not, a priori reasoning is needed too. And since the needed studies are not at hand, we must rely all the more on our ingenuity.

I will, therefore, scout ten routes by which some economists conclude that land is too small a tax base.

Central Business Area of Sydney, 1957–66," *The Valuer* 20, no. 2 (April 1968): 3–19; and chapters by Harry J. Manning, A. J. Powell, N. M. Dunlop, R. T. M. Whipple, R. W. Archer, and W. J. Gately in *Urban Redevelopment in Australia*, ed. P. N. Troy (Canberra: Australian National University, 1967). A report on Sydney from the *Observer* (Sydney), 16 April 1960, is quoted at length in note 98 of this chapter. On Johannesburg's boom, see "Jo'burg Builds on More than Gold," *Business Week*, 15 February 1969, pp. 88–92. Sydney, Johannesburg, Wellington, New Westminster, Regina, and a number of smaller cities that also exempt buildings are surveyed in Bronson Cowan, *A Graphic Summary of Municipal Improvement and Finance*, International Research Commission on Real Estate Taxation (New York: Harper and Bros., 1958). Cowan documents a rise in the land tax base in each instance. It is altogether remarkable, after a generation of developmental economics, that there is no full-dress study of these outstanding success stories.

3. An excellent summary of some East African experience is in John Due, *Taxation and Economic Development in Tropical Africa* (Cambridge, Mass.: The Massachusetts Institute of Technology Press, 1963), pp. 102–118. Cities essentially on the land value tax basis are Nairobi, Dar es Salaam, Salisbury, Bulawayo, Kitwe, Lusaka, Ndola, Luanshya, and Blantyre. Another work is Harry J. Manning, "An Investigation of Property Rating Systems in South Africa and Their Possible Influence on Central Business Districts," *Australian Planning Institute Journal*, July 1969, pp. 77–87. Durban, Johannesburg, Pretoria, and Pietermaritzburg use total or partial systems of land value taxation.

4. In the dereliction of major foundations and endowed established scholars, it has fallen to the advocates to report on these developments. Periodic coverage is in *Land and Liberty* (London) and *Progress* (Melbourne). See also Cowan, *Municipal Improvement and Finance*, note 2.

5. See R. M. Haig, *Exemption of Improvements from Taxation in Canada and the United States* (New York: City Committee on Taxation, 1915), p. 190; and Yetta Scheftel, *The Taxation of Land Value* (Boston, Mass.: Houghton Mifflin, 1916), p. 285. Both are cited in Leon Silverman, "Municipal Real Estate Taxation," *Yale Law Journal* 57 (December 1947): 219, notes 117, 118.

**Estimates of Ground Rent and Land Value, *Omnibus Paribus***

"*Omnibus paribus*" refers to the status quo. "*Omnibus paribus*" rent is privately collected rent as measured today, after taxes (as on buildings) that may reduce it because they are shifted to land (a matter treated later) and after taxes that fall directly on land. This, too, is empirical in part. But the work is at hand and may be analyzed.

*Using "Rent" as Tabulated in National Income Accounts*

This would be too absurd even to mention, but that it is a diversion to confuse the young, and periodically some hasty older researcher seizes on it as relevant just because of the name.<sup>6</sup> Alfred Korzybski, S. I. Hayakawa, and others presumably taught us long ago to beware of verbal booby-traps and not to confuse words with things; and every student of beginning economics learns that economic rent of land has a different meaning than contract rent.

This figure omits the rent in business profits, imputed rents, and capital gains, for a beginning. I doubt if it begins to compensate for the overreporting of deductible costs and multiple write-off of old buildings and covert depreciation of land and other standard (albeit unconscionable) techniques for underreporting taxable net rental income. It warrants no shrift at all.

*Failure to "Pierce the Corporate Veil"*<sup>7</sup>

A familiar modern platitude has it that "in former times wealth was in the form of real property. In today's complex world, real estate is only one of several forms of wealth."<sup>8</sup> This introduces the point that the property tax fails to reach and tap corporate wealth as the income tax allegedly does.

The notion that real assets become intangible by virtue of incorporation is surely one of the more incredible myths ever to gain currency. A corporation is not a disembodied spirit. Indeed, Shaw Livermore traces the origins of the modern corporation to the big land companies of the early nineteenth century.<sup>9</sup> No one ever yet dined on Armour

6. A good analysis of the shortfall of the commerce department's definition is in Joseph Keiper, Ernest Kurnow, Clifford Clark, and Harvey Segal, *Theory and Measurement of Rent* (Philadelphia, Pa.: Chilton Co., 1961), pp. 97-98.

7. The phrase is Joseph Pechman's. See his "Further Comments on CTB," in B. I. Bittker, C. O. Galvin, R. A. Musgrave, and J. Pechman, *A Comprehensive Income Tax Base?* (Branford, Conn.: Federal Tax Press, 1968), pp. 117-118.

8. The quotation is synthetic, but paraphrases a number of repetitive books and articles on public finance.

9. Shaw Livermore, *Early American Land Companies* (New York: The Commonwealth Fund, 1939).

Packing Co. common nor filled his tank with Jersey Standard debentures. Layers of ownership are not additional assets, but additional claims on the same assets. Although they do lend themselves to manipulation, fraud, and image-building, the professors of economics should not include themselves among those gulled.

Stocks and bonds are just paper. Corporate net income is property income, most corporate property is taxable real estate, and the real estate tax cannot be avoided, like the personal income tax, by nondistribution, nor, like the corporate income tax, by padding costs.

In any jurisdiction the largest property tax payers are usually corporations. Few assessors trouble to rank their taxpayers and publish the results. One that does is Lane County, Oregon, with these results: S. P. Railroad, Weyerhaeuser, Pacific T. & T., Booth-Kelly Lumber, Mountain States Power, Pope & Talbot, Inc., Hines Lumber, U.S. Plywood, Rosboro Lumber, and Eugene Fruit Growers Association. These ten paid 21 percent of the total levy.<sup>10</sup>

#### *Using Book Values to Estimate Corporate Land Values*

It has for some years been obvious to anyone who follows securities that the book value at which companies carry land has only a remote relation to its true value. The same is true of governments and institutions. This has not prevented some writers from publishing studies of comparative return on net worth of firms, using book value as the measure of net worth (on the lame excuses that nothing better was available and that random errors would cancel each other out!). For our subject, these errors are not random at all, but biased to hide land because land is carried at low historical cost of acquisition. Plant and equipment acquired in 1900 really is worthless today, but land acquired then is normally worth many times its historical cost. Many corporations are either dozing on large old holdings or are in the business of holding resources while they appreciate. Corporate raiders have not been so obtuse about ferreting out undervalued land in recent years, and the business press is filled with the resulting excitement. A few examples follow here and several more may be found in Appendix I.

The Weyerhaeuser Co. holds more than 3.8 million acres. For some years, these lands were administered by some "individuals allowed to atrophy in nonproductive positions," according to President George Weyerhaeuser. But this did not prevent their lands from "constantly rising in value."<sup>11</sup> The new president's own program of reform is to

10. *Register-Guard* (Eugene, Oreg.), 21 November 1953.

11. "Weyerhaeuser Fells a Wooden Past," *Business Week*, 7 June 1969, pp. 76, 77.

borrow on his rising land values to — buy 1.8 million acres more land!<sup>12</sup> Land and timber are carried at \$117 million; Weyerhaeuser now speaks of its market value at “2 to 3 billions.”<sup>13</sup>

Weyerhaeuser lands in 1958 included 92,000 acres in and beyond the east end of Seattle.<sup>14</sup> In 1926 their holding was only 29,000 acres in the same area, indicating sales of ripe land to developers and repurchase of more land, in true Astorian (“buy at the fringe and wait”) style.

Castle & Cooke, Inc., producer of Dole Pineapple, C.&H. Sugar, Bumble-Bee canned seafood, and Cabana bananas, carries its land at \$26 million. *Forbes* suggests \$300 million as more current. “Land is swiftly replacing sugar and pineapples as Hawaii’s most valuable commodity, and Castle & Cooke owns more of it than anyone else.”<sup>15</sup> Underutilization of this land makes Castle & Cooke a prime takeover candidate. The acreage is 162,000. That this is worth more than the goodwill attributed to the “Dole” logo is suggested by the catastrophe suffered in the 1950s when they tried pasting it on other products.<sup>16</sup>

The status of several American corporations like United Fruit, Grace, Anaconda, and several oil companies as major landowners in Central and South America is well known. While foreign holdings are not potentially part of the United States tax base, they do betray the propensity of corporations to hold underdeveloped land (U.F. was successfully raided by Eli Black, amid talk of underutilized assets), and of course the military protection of these lands imposes costs on American taxpayers that would be abated if the Latin governments raised more taxes from these American holdings to defend and improve themselves.

The railroads are all major landowners on the basis of their rights-of-way, if nothing else. Hardly a man is now alive who remembers the

12. *Ibid.*, p. 80; “Weyerhaeuser Buys More Trees,” *Business Week*, 17 May 1969, p. 120.

13. A larger case of the same kind is International Paper. See Eleanore Carruth, “International Paper Sees the Forest for the Trees,” *Fortune*, March 1969, pp. 105–109, 197 and following; and “Ordeal at International Paper,” *Forbes*, 1 April 1968, pp. 28–29. International Paper has 6.5 million acres in the United States and 1.4 million more in Canada. It is regarded as vulnerable to a raid.

14. The source is confidential, but the information was gathered from public records.

15. “Land, Lots of Land,” *Forbes*, 15 December 1968, pp. 20–21.

16. “Hawaii Giant Jumps to East Coast,” *Business Week*, 28 October 1961, pp. 124–128. C. Brewer and Co., another giant Hawaiian landowner, buys and sells large Puerto Rican acreages through its Caribbean subsidiary. The acreages are in five figures; the values in eight (*Washington Star*, 2 September 1969).

20th Century Limited, the Olympian, Hiawatha, Zephyr, Cannonball, and other crack trains; and the rails and ties have been replaced and replaced, although not often enough. But the same old rights-of-way and urban yards and terminals remain as the enduring corpus of rail enterprises. Three and one-half percent of Milwaukee and most cities, and a larger share of Chicago, are rail yards, usually just off the downtown area.

But some 130 million acres were given the rails as grants. They retain 25 million or so, as well as extensive mineral rights reserved under lands they sold. Some have used their landownership to tie many buyers and lessees to exclusive shipping contracts (a power weakened by recent court cases).<sup>17</sup>

The New Mexico & Arizona Land Co., a subsidiary of the Frisco Railway, is purely a rent collector. It has about 750,000 acres, yielding income from oil, grazing, and uranium. In 1959 income was about \$500,000 a year, administration \$22,000, local taxes \$21,000! It carried its land at \$540,000, a little more than one year's income.<sup>18</sup>

If industrial corporations are ranked by value of assets, as estimated by *Fortune* magazine, six of the top eleven are mineral based: Standard Oil of New Jersey, U.S. Steel, Texaco, Socony Mobil, Gulf, and Standard of California.<sup>19</sup> John D. Rockefeller built up his power by control of lands, wells, transportation routes, and terminals. Today we may add chains of retail stations, whose land value exceeds improvement value even new, as elements of the power.

There are 324,000 gas stations in the United States, mostly in cities on hot corners, owned by oil companies. A new station site in California today runs around \$100,000. Improvements are \$65,000 when new,<sup>20</sup> after which they depreciate, while hot corners appreciate. Taking \$50,000 as a cautious low estimate of land value per filling station, 324,000 stations come to \$16 billion in land alone. As any motorist can see, the choicest corners belong to the major corporations.

A large share of the income of these oil companies is rent.<sup>21</sup> Some

17. Merrill Lynch et al., *Railroads Discover Oil* (New York, 1952); *San Francisco Chronicle*, 11 March 1958, p. 13. On Union Pacific, see "The Little Bookkeeper," *Forbes*, 1 March 1967, pp. 34-45. The landmark case is *Northern Pacific Railway Co. v. United States*, 356 U.S. 1 (1958). I thank Lt. John Wilson for advising me of this.

18. H. L. Oppenheimer, *Cowboy Arithmetic* (Danville, Ill.: Interstate Printers, ca. 1960), p. 77.

19. Editors, "The Fortune Directory: The 500 Largest U.S. Corporations," *Fortune*, May 1966, p. 266.

20. Jeremy Main, "Meanwhile, Back at the Gas Pump —," *Fortune*, June 1969, pp. 109-111, 202 and following.

21. Mason Gaffney, "Editorial Findings," *Extractive Resources and Taxation*, ed. Mason Gaffney (Madison, Wis.: University of Wisconsin Press, 1967), pp. 311, notes

mineral companies are little more than purely passive lessors collecting bonuses, rents, and royalties from drillers. The Kern County Land Co., with two million acres in the southwestern states, gets most of its income in this way, according to stock reports. Its farm income, although a small share of its total, is extremely resource-oriented, being based on control of the Kern River, rent from tenants, and range cattle. Having acquired some other firms, including the sprawling grounds of J. I. Case Co. in Racine, it is now in the Tenneco conglomerate.

With tax-free cash flow to spare, and landholdings everywhere, oil companies are moving into varied land purchases. Gulf Oil recently foreclosed on Reston, Virginia. Humble Oil has announced a 7,250-acre industrial development, Bayport, near Houston, adjoining Humble's 15,434-acre Clear Lake City. Both are conveniently sited to catch the demand generated by NASA's new \$250 million manned spacecraft center. Bayport's land alone may be worth \$60 million.<sup>22</sup>

The St. Joe Paper Co., a du Pont company, in league with the Florida du Pont estate, holds over a million acres in Florida. The book value is \$103 million. Estimated market value is \$700 million to \$1 billion.<sup>23</sup>

The Arvida Corporation, tied to Alcoa, holds one-eighth the assessed value of Dade County, Florida, with 80,000 acres, and has 28,000 acres in Broward County (Fort Lauderdale), 25,000 acres elsewhere in Florida, 200,000 acres on the Isle of Pines, and 30,000 prime acres in the Bahamas.<sup>24</sup> Penn Central bought it recently, along with Great Southwest in Texas and Macco in California, for \$88 million.

"These are only a wart on the pickle compared with the rest of our realty holdings," quoth Penn Central Director Howard Butcher III. "We are . . . large owners of undeveloped land in the center of big cities," says Penn Central Vice President William R. Gerstnecker.<sup>25</sup> The total value of Penn Central's nonrailroad land is estimated by *Forbes* at certainly over \$1 billion.<sup>26</sup>

As to newspapers, the larger the circulation the higher share of its cost is newsprint, with the result that the larger papers have become

10, 11, 379, note 26, 389, 393-394, 408-413, and works there cited. In the same book, see David Martin, "Resource Control and Market Power," pp. 119-138, on iron ore, molybdenum, nickel, timber, and gypsum; Walter Mead, "Resource Control as a Basis for Market Power: The Case of Timber," pp. 139-156; and Delworth Gardner, "Toward a Disposal Policy for Federally Owned Shales," pp. 169-196.

22. "Humble Oil Lays Out a New Texas Town," *Business Week*, 8 February 1964, pp. 67-68.

23. *Milwaukee Journal*, 11 July 1966, p. 15.

24. William Baggs, "America's Most Amazing Millionaire," *This Week Magazine*, 22 July 1956, pp. 8 and following.

25. "The U.S.' Greatest Realtor," *Forbes*, 15 February 1968, pp. 22-23.

26. *Ibid.*

major holders of timberland. Their central urban land is a major asset, too. The *Milwaukee Journal*, for example, is the largest property tax payer in the west side of Milwaukee's central business district.<sup>27</sup> It holds not only its plant site but two blocks north and northwest. Its fleet of trucks and network of storage depots require acres of land all around town.

The Leslie Salt Co. of Alameda County, California, consists mainly of 40,000 acres of concentrating ponds in one of the world's best sites for the purpose, the southeastern shallows of San Francisco Bay.<sup>28</sup> This land is now ripe for urbanization. After the usual fretting and shoving it should be worth \$10,000 an acre, or \$400 million, for reuse — a nice scrap value for a used asset.

General Development Corporation owns 190,000 acres of prime land on both Florida coasts.<sup>29</sup>

Most of the great cinema studios of Los Angeles have evolved into landlords and financiers, leasing their grounds to entrepreneurs who actually make the product or liquidating their choice land at high prices. Notable is the 180-acre tract of 20th Century Fox, now being converted piecemeal into Century City — by another corporation, Alcoa. A rival Los Angeles land developer is Great Lakes Carbon.<sup>30</sup>

Many corporations without inherited land are rapidly acquiring it, and not by chance, but because their financial strength gives them a comparative advantage in the special skill of "waiting" involved in holding land. Other new entrants are old holders who are just awakening to urban possibilities. They tend to favor holding and planning and land development, then "sell the land at a profit to others who do the actual building."<sup>31</sup> Recent entrants in urban real estate are Chrysler, Westinghouse, I.T.&T., Gulf & Western, Norfolk & Western, Penn Central, M.G.M., American Hawaiian, Sunset International Petroleum, Boise Cascade, Ogden Corporation, Occidental Petroleum, So. California Edison, Bechtel Corporation, Hallmark Cards, American Standard, U.S. Plywood, Champion Paper, Aetna Life, Prudential Life, Connecticut General Life, John Hancock (the big lenders are taking equity positions by insisting on a share of gross, or "kicker," when they lend), Reynolds Aluminum, Union Carbide, and others.<sup>32</sup>

27. Calculated from 1968 city tax rolls by Mrs. Pat Bevic and Mason Gaffney.

28. *San Francisco Chronicle*, 28 December 1955, p. 18.

29. *St. Louis Post-Dispatch*, 11 February 1962.

30. Eleanore Carruth, "Look Who's Rushing into Real Estate," *Fortune*, October 1968, pp. 160-164, 168 and following.

31. *Ibid.*, p. 160.

32. *Ibid.*, pp. 160-174.



Automobile manufacturers often seem as little land-based as any business (the proverbial factory in a cornfield), and they are less land-based surely than the oil companies. But large pools of assets always leak into land. Chrysler has put \$176 million into two hundred company-owned dealerships recently — indeed, control of dealerships is the club tiny American Motors fears most in struggling to survive.<sup>33</sup> Inspection shows dealerships to be primarily large parking lots for inventory on busy streets — in other words, valuable, empty land. Chrysler expects to have \$1.5 billion in its realty subsidiary's assets by 1975.<sup>34</sup>

Henry Ford's dream of perfect vertical integration is an American legend, leaving Ford holding land of all kinds all over the world. It also owns most of Dearborn, and lavishes land on its operations. The Rouge (Ford's giant steel mill at River Rouge) alone has 124 acres of parking; the company's administration building is sited on 75 acres of landscaping. Ford has for years held 4,000 acres in Dearborn totally bare and idle. At a 1969 urban price of \$40,000 per acre, that fallow reserve would come to \$160 million by itself.

An interesting exercise is to compare indicators of depreciable (that is, nonland) assets and total company worth. This is rough, but suggestive of a pregnant line of inquiry. Ford's prospectus of January 17, 1956, has depreciation of \$90 million for 1954, about double the average for the preceding decade (presumably due to faster allowable write-off).<sup>35</sup> Assuming a ten-year average tax life, which seems not too short for an industry with yearly model changes and political influence, this would mean \$900 million in depreciable assets. In 1956 the market valued the company's stock at almost \$4 billion. This suggests a high share of nondepreciable assets. Careful inquiries along these lines should yield striking findings.

Swift & Co. bought the old Miller & Lux cattle spread around Los Banos, California, about 1940. Later it sold parts but, "being able to see considerably beyond a steer's horns," retained mineral rights and is now drawing royalties.<sup>36</sup> Like the cinema studios, the packers in Chicago have been left with vast urban holdings by economic shifts. These were always mainly bare land, the stock "yards." Denver Union Stock

33. *Milwaukee Journal*, 12 July 1969, reporting testimony of Alexander Hammond before United States Senate subcommittee on monopoly, under Senator Gaylord Nelson.

34. Carruth, "Look Who's Rushing into Real Estate."

35. This is the S.E.C.-required statement of company assets issued to sell stock on the occasion when Ford first went public. It was drawn up by the company.

36. *San Francisco Chronicle*, 26 February 1953.

Yard Co. has 120 acres close to the heart of Denver which it let fall into desuetude until a recent raid attempt by Edwin Taff on this valuable underutilized land base awakened it.<sup>37</sup>

In California, corporate farming and landlording are common. Some big farm landowning corporations are J. G. Boswell, Natomas, various wineries, California Packing Co., Tejon Ranch, Earl Fruit, Di Giorgio Farms, Kern County Land Co., Newhall Corporation, Irvine Ranch, Miller and Lux, El Solyo, Sutter Basin, Spreckels Sugar, American Crystal Sugar, Salyer Co., O'Neill Co., Limoneira Co., Berylwood Investment Co., River Farms, and, of course, several oil companies and the Southern Pacific and Santa Fe railroads. Most of these have interlocking interests in food processing and retailing, oil, publishing, banking, and so on.<sup>38</sup> Among them they hold millions of acres and excellent water rights. Many specialize in directing the course of state and federal water projects to their benefit. Large farms are widely believed to enjoy economies of scale and use their land more efficiently, but if this is so it does not show up on the evidence of tax returns. A recent United States Department of Agriculture study shows that *most* — that is, more than half — of the largest farms in the United States reported net losses. As the farms grow smaller, the share reporting profits grows larger.<sup>39</sup> Professor Hendrik Houthakker found California specifically to be a state whose “farmers” report almost no net income from agriculture (although they report plenty of nonfarm income).<sup>40</sup>

The Yellow Cab Company enjoys the right to haul passengers in many cities of limited entry. What is this but ownership of the city streets? All utility companies are similarly favored, and many of them own prominent industrial sites as well.

The largest landowner in North Carolina is Westvaco, with over 300,000 acres.<sup>41</sup> Income is from rentals and accrual of value — the company leases timber rights to small loggers, a time-honored practice of large corporations, which tend to specialize in holding more than operating land.

In 1965 the *Wall Street Journal* reported a general “Corporate Land

37. “A Raider Wakes Up Denver Union,” *Business Week*, 6 September 1969, p. 58.

38. *Walker's Manual of Pacific Coast Securities*, published annually in San Francisco by Walker's Manual Co., is a good source on these securities.

39. Edward Reinsel, *Farm and Off-Farm Income Reported on Federal Tax Returns* (Washington, D.C.: Economic Research Service, United States Department of Agriculture, 1968).

40. Hendrik Houthakker, “The Great Farm Tax Mystery,” *Challenge* 15, no. 3 (January–February 1967): 12–13, 38.

41. *Raleigh News and Observer*, 27 May 1956.

Rush."<sup>42</sup> Many companies buy sites long before there is any specific purpose, to be available when and if needed. Industrial buying "for future expansion" is an old story. In the soaring sixties it is being replayed. There are just so many industrial sites big enough to hold, for example, an integrated steel works, so Bethlehem, Jones & Laughlin, and others are collecting them. To have several stockpiled is to have options to enter a variety of regional markets. To have a toehold in Rotterdam or Antwerp today as these cities become strategic in petrochemicals and space becomes scarce is to be "in."<sup>43</sup> Any natural shortage of space is compounded by speculators buying to protect themselves against other speculators who are guarding against the first, and so on in circles. This *ronde* greatly inflates aggregate industrial demand for land. With forecasted doubling of power demands every ten years, power companies are similarly engaged in buying sites for the next century and in establishing their future grandfatherhood against conservationists.

Retail chains of all kinds are land-based. A principle of urban land economics is that the share of land in real estate value is highest in retailing, with its critical location requirements. What is A.&P. but a string of ordinary buildings and managers on 4,600 superior sites completely surrounded by large parking lots?<sup>44</sup>

Unfortunately, there is no single definitive scholarly work to cite on the share of land in corporate assets. Some corporations, of course, are not land-based. The fragments above, however, dispose of the notion that a land tax would not tap corporate assets. Since land income has developed a partial immunity to income taxation through a host of avoidance devices, it may be that a land tax is the only way to tap many corporations.

#### *Relying on Assessed Values to Allocate Real Estate Value between Land and Buildings*

With reliable consistency, studies of property tax assessment discrimination show a pattern of underassessing land relative to buildings. The standard source today is the 1967 Census of Governments study showing assessment ratios (assessed values divided by market values) by class of property. In Wisconsin the ratio for vacant lots is

42. *Wall Street Journal*, 8 December 1965.

43. "Antwerp Comes of Age," *Newsweek*, 4 July 1966, p. 72.

44. A.&P. has 4,600 stores spread from coast to coast. (Safeway has 2,000.) See "Economics of the Supermarket Business," *Forbes*, 15 March 1966, p. 53. If the sites average \$200,000 each, A.&P.'s retail sites would come to almost \$1 billion, to which, of course, one must add warehouses, terminals, garages for their trucks, and so on.

23 percent, and for "commerce and industry" 55 percent, or 2.4 times as high as vacant lots.<sup>45</sup>

The census's study technique is the assessment-sales ratio. This technique probably understates actual discrimination, for two reasons: First, it omits properties that do not sell. Turnover is higher among smaller holdings, which are less likely to be underassessed. There may well be a tendency for local assessors to overassess properties of higher turnover in order to develop a high official assessment-sales ratio, used for county equalization. The higher the official ratio, the lower the local share of county taxes. Also, higher assessments themselves encourage sales of vacant land.

Second, it misses the element of latent plottage. In Milwaukee, wider residential lots are deliberately assessed less per front foot and smaller lots more. This is because the market values smaller lots higher. The lower value of the wider lots is not an attribute of the land as such, but of the humans in charge of drawing lot lines, so this practice represents underassessment of land. But the wider lots sell for less per front foot, so the sales data do not show the underassessment. It requires a mapping technique to draw this out. The same applies to any suppression of latent market value, such as covenants, low-density zoning, unfavorable long-term leases, etc.

This type of study does not tell us directly that the share of land is also understated within classes of improved land like "commerce and industry," although it surely suggests it. Other evidence confirms the suspicion. Here is some from Milwaukee.

Norbert Stefaniak has calculated and published average land assessments by census tract for industrial land in Milwaukee County for 1958.<sup>46</sup> I have made a land value map of the same area, based on recorded sales, of bare land, 1958–1962. There was no major rise of values until 1963–1964, nor much reassessment, so the values should be comparable. The underassessment is of a gross order. Table 9.1 is a sampling.

As to residential land in transitional areas, Milwaukee underassesses it egregiously by failing to reflect the competing higher use in values under old houses. Mrs. Pat Bevic checked for me the 1968 land assessments for twenty-eight half-blocks on Frederick, Maryland, and Oakland avenues from Locust to Bradford on Milwaukee's east side, where

45. U.S. Bureau of the Census, *Census of Governments*, vol. 2, *Taxable Property Values* (Washington, D.C.: U.S. Government Printing Office, 1968) Table 9.

46. Norbert Stefaniak, *Industrial Location within the Urban Area*, Wisconsin Commerce Reports, vol. 6, no. 5 (Madison, Wis.: Bureau of Business Research and Service, 1962), pp. 66–68.

scattered apartments are replacing old houses. Apartments carry a "mercantile" classification, and their land is assessed four to six times higher per square foot than adjacent singles, about \$.35 on the singles to about \$1.70 on the apartments. The apartment land assessment of \$1.70 per square foot reflects current market prices of around \$3.00 per square foot (the assessment ratio is .55).

Table 9.1 — Underassessment of Industrial Land, Milwaukee County, 1958–1962

Census tract number	Average land assessment per square foot	Equalized land valuation per square foot (assessment/.55)	Approximate market value from map based on sales
114	\$.50	\$ .90	\$2.50
116	.44	.79	2.25
126	.20	.36	3.00
168	.01	.018	.40
214	.08	.15	.40
83	.15	.27	1.50

Source: Norbert Stefaniak, *Industrial Location within the Urban Area*, Wisconsin Commerce Reports, vol. 6, no. 5 (Madison, Wis.: Bureau of Business Research and Service, 1962); market values estimated from map of land values based on actual sales described in the text.

This means that the land under singles is on the books at one-fifth of what it should be to get a true estimate of the land share in real estate. Most of the old buildings yield a cash or service flow just enough to pay a return on the land value, if that, and therefore have no residual value above the land value. Yet, when demolished, they are still being valued by the assessor as an 80 percent share of the real estate bundle.

This is not the universal pattern for the city. In retail and office centers, land value gets more objectively treated. There is a plottage factor problem that complicates land assessment where apartment builders have to assemble two or three parcels before building. But a study of several thousand demolitions from 1958 to 1968 shows that land assessments almost never reflect the imminence of demolition. If they did, they would absorb 100 percent of the value on the eve of demolition. In fact, they rarely approach it.

There are several other situations where land assessments typically are suppressed. "Classification" for a lower use is a key, one which belies Richard Hurd's basic principle of spatial continuity of land values. To be classed "residential" in a commercial area, or "agricultural" in a residential area, is to secure underassessment of land. Unsubdivided

land is especially favored. Mrs. Bevic checked an area of mixed use along the Lake Michigan bluff east of Lake Drive from Kenwood Avenue to Newport Street. Unsubdivided estates of one to four acres are at \$.04 to \$.21 per square foot, subdivided lots at \$.30 to \$1.00 per square foot. The cost of subdivision might be worth \$.10 per square foot (assessed basis), leaving a large residual assessment bias against subdivision.

This acreage bias inside metropolitan areas does not show in the Census of Governments study because it does not report on acreage inside SMSAs. Professors Daniel Fusfeld and Joseph Kowalski of the University of Michigan studied the underassessment of unsubdivided acreage in Michigan and found it to be much more extreme than other kinds of discrimination. "Administration of the local property tax in Michigan is approaching the proportions of a scandal," they write, and document the case with many particulars.<sup>47</sup>

The use of low-density zoning to suppress assessed land values is very common. Regardless of intent, which is many sided, it works as a tax dodge so long as the assessor goes along with it, as he usually does. To their credit, many assessors refuse to be put off. These taxpayers being wealthy, that means a trip to court. Judges are often not good economists, with the result that the tax dodge frequently works.

Another device that works as a dodge, regardless of intent, is the covenant. Some retail land is sold with a covenant not to compete. Such covenants are probably out of place in a free economy and should be unenforceable unless ancillary to some demonstrably creditable purpose. But today they do exist. Many assessors acknowledge them by lowering the value of the land subject to covenant, without the logical counterpart of raising the assessment of the supposed beneficiary by at least a like amount. The same holds for covenants against subdivision or any specified use. Thus, part of the public equity is purloined away.

To measure all these factors and others that combine in the underassessment of land requires an independent "audit" assessment. The audit, of course, must avoid the several biases toward malassessment.

The only way to do this is to gather data on sales of land, bare and also with old buildings on the eve of demolition, and piece them into a "cadastral" map, that is, a map of land values. From the map one measures the area in different value zones, totaling them for the city's land value.

This I have done for Milwaukee city and county. I secured records

47. Daniel Fusfeld and Joseph Kowalski, "Reforming the Michigan Property Tax," mimeographed (Ann Arbor, Mich., 1969) pp. 1, 4, passim.

of several thousand sales of bare land, most of it thanks to the cooperation of Thomas Byrne, late tax commissioner of the City of Milwaukee, and William Wieseler, deputy assessor at one time in charge of reviewing land assessments. I mapped the prices per square foot. From these data points plus horse sense, aerial photography, zoning maps, consultation, traffic counts, studies of parking lot income, retail rents, a field survey, condemnation appraisals, various maps, studies of consumer finance, a harbor commission appraisal, bid and ask prices, public takings, and many other sources that appraisers use, my co-workers drew in contours of equal land value.

There is a map for 1958–1962 data drawn by Paul Downing and another for 1963–1967 data drawn by Mary Rawson. These two individuals, of different outlook and background, could both apply the contouring technique to the same area, but using totally different sales data, and emerge with maps that seemed to differ only in the ways one would expect from known trends between the dates. This testifies to the practicality of the method.

The assessors divide Milwaukee into districts or “books,” and report the sum of taxable values by book. We painstakingly estimated the comparable values from our maps. This entailed (1) determining the exempt land by book (not reported by assessor), and (2) measuring the areas between contours in each book.

Table 9.2 reports the results for the 1963–1967 map. The degree of underassessment varies from book to book, but is everywhere pronounced. For the whole city in 1965, the *equalized* assessed value of land was \$748 million. Our sum of taxable land value is \$2,386 million, or 3.2 times as much. Note that this is a measure of *real* underassessment of land relative to buildings, and not merely of conventional underassessment that applies to all real estate.

The equalized assessed value of land and buildings was \$3,378 million. The equalized land assessment is 22 percent of that. Our land value estimate is 70 percent of it. I do not conclude that the share of land in the city’s real estate is actually that high. Probably the equalized full value is too low — certainly its land component is. We could have improved the map with more time and resources.

So I merely report our methods and the results. Ours is a pilot project and should be checked and replicated. On the other hand, until someone does so, ours is the only map of its kind and is therefore the only estimate of land values in Milwaukee that warrants any credence at all. That, of course, is why we had to do it — there was no easier way to get the information. It is not perfect, but there is no other estimate.

Most assessors of older central cities like Milwaukee hit nearer 40

Table 9.2 — Underassessment of Land, City of Milwaukee, 1965

Tax book district	Mapped value per square foot	Equalized assessed value per square foot	Equalized/mapped values
1	\$6.44	\$2.93	.45
2	1.34	.46	.34
3	3.45	.88	.26
4	1.48	.64	.43
5	1.88	.89	.47
6	2.06	.68	.33
7	2.16	.65	.30
8	1.28	.65	.51
9	3.44	.79	.23
10	10.18	4.87	.48
11	3.46	1.24	.36
12	1.53	.44	.29
13	1.75	.67	.38
14	2.26	.61	.27
15	1.59	.58	.36
16	1.61	.63	.39
17	1.63	.52	.32
18	.99	.38	.38
19	1.86	.55	.30
20	1.78	.59	.33
21	1.64	.35	.21
22	2.13	.65	.31
23	1.72	.39	.23
24	1.26	.55	.44
25	1.15	.26	.23
26	1.73	.60	.35
27	.71	.14	.20
28	1.07	.40	.37
29	1.07	.27	.25
30	.73	.19	.26
31	.27	.05	.19
Entire city	1.31	.41	.31

Source: Assessed values from Office of Tax Commissioner, City of Milwaukee; mapped values from author's map, described in text.

percent when asked to estimate land's share. Also, Allen Manvel's estimate of American land values, based on assessed values corrected by the Census of Governments' nonmapping techniques, comes only to 40 percent of real estate.<sup>48</sup> That my estimate is higher reflects the con-

48. Allen Manvel, "Trends in the Value of Real Estate and Land, 1956 to 1966," in U.S., National Commission on Urban Problems, *Research Report No. 12* (Washington, D.C., 1968), pp. 1-17.



sistent use of the principles of spatial continuity, mapping, and the building-residual concept. That is, I have defined land value as re-use value, looking always to the future, not the past. I should have gone further and included demolition cost as part of the price paid for land, but I did not. The main reason my estimate is higher is that I started fresh and so could not commit what Richard Hurd called "the chief error" of assessors, following last year's rolls and therefore getting behind appreciation of land and depreciation of buildings.<sup>49</sup>

Having a fairly careful and reliable estimate of Milwaukee city land values, it is possible to blow them up into a rough notion of aggregate national values on the assumption that Milwaukee is not eccentric. A city of 750,000, with taxable land value of \$2.4 billion, has \$3,200 of taxable land value per capita. At that ratio, two hundred million Americans would have \$640 billion of taxable land value. That is in keeping with Manvel's estimate of American land values at \$523 billion,<sup>50</sup> considering the roughness of the method. The difference however, is greater than it seems because Manvel found only \$320 billion of urban land value, much less than implied by the figure of \$3,200 per city dweller. Furthermore, the suburbs probably have more land value per capita than the central city, where I found the \$3,200 complement. Probably the technique of estimating land values by mapping leads to higher estimates of land values than Manvel reported from nonmapping techniques.

Manvel's farm figures are better confirmed than his urban figures, because the Department of Agriculture has reported farm land values for decades, while urban land values were ignored. But he found urban land values to be 40 percent of urban real estate, substantially less than the 60-70 percent suggested by my map of Milwaukee. If we accept his farm values, and *if* he has undercorrected for the underassessment of urban land, and *if* the suburbs have more land value per capita than the cities, and *if* substantial mineral, timber, water, recreational, franchise, license, and privilege values have escaped Manvel's net (as I believe); then his \$523 billion is low, and my \$640 billion is low, and the job of summing the elements of the land tax base remains unfinished. Manvel's estimate is the best available, but more remains to be done.

Why is land underassessed? There are several systematic biases at work that explain the effect.

One is the pressure of the income tax. Land is not depreciable, and

49. Richard Hurd, *Principles of City Land Values* (New York: Record and Guide, 1903), p. 127.

50. Manvel, "Trends in the Value of Real Estate and Land."

the Internal Revenue Service accepts the local assessor's allocation of value between land and depreciable improvement. Taxpayers then call on "their" friendly local assessor to help against the alien federal tax collector by overstating the share of real estate which may be depreciated, that is, the improvement. The federal income tax on real property thus faces a problem of competitive local underassessment, just like state and county property taxes. It may be that a federal board of equalization will be necessary to avoid erosion of the property base of the income tax.

Another bias is, of course, the wealth and political power of landowners and the selective responsiveness of courts to the lawyers that only wealthy litigants can afford. It is not worth the money to a small owner to fight an assessment. Land being a superior good, the well-known assessment bias in favor of larger owners is generally a bias in favor of land.

A third bias is the lag of assessments behind the market, which naturally favors appreciating land and penalizes depreciating buildings. Land assessments are typically raised belatedly in large jolts. For example, Arizona recently forced a reassessment of Phoenix, with the result that from 1967-1968 to 1968-1969 land tripled from \$56 million to \$181 million (while improvements fell by \$123 million, to keep the total sum about the same). Vermont underwent the same process of uniform statewide reevaluation last year, with similar results. Milwaukee boosted some of its land assessments in 1969, amid great ado, but still lags far behind the market in many districts. The "jolt effect" of this procedure is also calculated to inspire the maximum of protest.

The interdependence of land values is a fourth bias. The assessor who raises one value must raise several adjoining ones. Thus, he faces a group of protestors at once, all with the same alderman who can ask favors for a group which he would not dare seek for an individual. Assessor Watson of Los Angeles defended his underassessment of Governor Ronald Reagan's Malibu Mountains ranch by noting that if he corrected it he would have to raise 100,000 acres round about, held by Bob Hope, Marlon Brando, Jack Benny, and Edie Adams, among others.<sup>51</sup>

The fifth bias is the invisibility of minerals. Unlike most land resources, they lend themselves to concealment. Frank Bennett, chief executive of mineral-loaded Union Pacific, stated recently: "We don't even care to guess what they're worth. If we did, we'd have tax assessors all over the place." *Forbes* guesses they're worth over \$1 billion.<sup>52</sup>

51. *Los Angeles Times*, 25 January 1968.

52. "The Little Bookkeeper," *Forbes*, 1 March 1967, p. 35.

Few localities or states have put enough resources into mineral assessment to solve this problem, although private owners buy and sell mineral rights constantly on the basis of available information.

None of these biases is socially creditable, but each is effective in our system. So land is systematically underassessed. There is no warrant for using assessed land values as evidence of land's capacity as a tax base. But this has not prevented many scholars' doing it, contributing to a widespread underestimation of the share of land in real estate value.

Lest I be suspected of overstating the case, I append some exhibits from the chamber of horrors.

California enjoys a good national reputation in tax administration. Yet the *California Homeowner* magazine every few months publishes cases on the order of sales at twenty times assessed land value and has sponsored devastating studies of Alameda and San Diego county assessment discrimination, replete with such cases. Karl Falk, Chancellor of Fresno State College, cites the state purchase of 3,000 acres of Salt Point Ranch in Sonoma County for 62 times assessed value.<sup>53</sup>

The *Wall Street Journal* reports on 4,382 acres of undeveloped Leslie Salt land in Redwood City currently assessed at \$354,000, but mortgaged for \$70 million. Leslie is in the process of selling another \$176 million of bonds secured by the land (by a reclamation district device) to develop itself. Following court approval of the unusual bond issue, stock of Leslie Salt Co. rose in two days from \$108 to \$130.<sup>54</sup>

In Phoenix, the *Journal* reported assessments ranging from 80 percent down to one-tenth of 1 percent.<sup>55</sup>

In Georgia, the state has found counties where some of the land is not even on the tax rolls.<sup>56</sup> This is in the tenor of George Aull's wistful reports on South Carolina from Clemson over the years. In some southern jurisdictions, maps are not even used to locate land: individuals declare it like personal property. Until recently it was entered on one of two rolls, depending on the owner's race! The assessor of Jasper County, Missouri, was forced out by a landowning oligarchy when he brought in a soils expert from the state university who began to use soil maps in land assessment, the recognition of soil types resulting in large shifts to the local influentials.<sup>57</sup> A recent aerial survey of Edgar-

53. John Nagy, "Mayor Looks at Assessments," *California Homeowner* 7, no. 1 (March 1968): 3-7, 22; Karl Falk, "Slum Promotion Housing Policies," *Land and Liberty*, July-August 1969, pp. 83-84.

54. *Wall Street Journal*, 11 January 1965, p. 14.

55. *Ibid.*, 28 January 1965, p. 1.

56. *Ibid.*

57. Statement of Professor H. H. Krusekopf, an outstanding soil scientist from the University of Missouri, in private conversation with the author, 1962.

town, Massachusetts, made for planning and conservation purposes, incidentally turned up a good deal of land never on the assessment rolls.<sup>58</sup>

Land can be assessed correctly, and in some places it is. But in more places it is not, and we underestimate its taxable capacity to accept assessments as they are. Property tax reform is half a matter of upgrading assessment practice.

### *Goldsmith's Estimates*

Economists instinctively look to the National Bureau of Economic Research for numbers. Thus, Raymond Goldsmith's estimates of United States land values are widely cited as authoritative.<sup>59</sup> Yet they do not bear examination. They were generated as incidents to other work in an offhand and indefensible way.

It is not easy to retrace Goldsmith's steps; one must track interlocking footnotes from several sources. At the end of the trail, however, he simply takes residential land value as 15 percent of building value (which comes to 13 percent of land and building value). The basis of this allocation is the share of land in the cost of one to four family houses insured by the Federal Housing Authority, which was about 20 percent.<sup>60</sup> It is not explained why he cut this down to 13 percent.

This basis is then applied to nonresidential real estate as well. Corporate-held lands are valued at book value.<sup>61</sup>

These methods are not worthy of the faith with which the results have been cited by several economists. In the first place, FHA-insured houses are not typical. They tend to be new and on cheap land. Those not new are not very old — in 1967 the median age of insured existing homes was thirteen years.<sup>62</sup> To apply such data to a typical American city, most of whose dwelling units antedate 1920, is preposterous.

FHA clientele is lower middle class, which means the land share is low, land being both a consumer luxury and a rich man's hedge and the land share rising sharply with value.<sup>63</sup> The high land share in

58. John Farrar, a Town Commissioner, spoke on this at a conservation meeting on Martha's Vineyard, August 1969.

59. See Raymond Goldsmith's two books, *A Study of Savings in the United States*, vol. 3 (Princeton, N.J.: Princeton University Press, 1955), p. 12; and *The National Wealth of the United States in the Postwar Period* (Princeton, N.J.: Princeton University Press, 1962), pp. 186, 234, 238.

60. Goldsmith, *National Wealth*, pp. 186, 234.

61. Goldsmith, *Study of Savings*, pp. 12, 80.

62. Federal Housing Administration, Division of Research and Statistics, "FHA Homes, 1967," mimeographed (Washington, D.C., 1967), Table 13,S.

63. U.S., President's Committee on Urban Housing, *A Decent Home* (Washington, D.C.: U.S. Government Printing Office, 1968), p. 351, Tables 47, 48.

Beverly Hills or other enclaves of great wealth is missing from FHA data.

The FHA is most active at the expanding fringe of cities. A basic fact of urban land economics is that the land share rises toward the center. In Manhattan, for example, the share of assessed land value has always been higher than in the other boroughs.<sup>64</sup>

Goldsmith also seems to omit vacant lots and unsubdivided land.

As to applying a land share derived from residential data to commerce and industry, that is not permissible. The land share is highest in retailing, the more so now that retailing entails vast parking areas. We have seen something about filling stations and auto dealerships, to which we might add lumber yards, junk yards, open storage of all sorts, tank farms, parking lots, railroad yards, utility easements, industrial reserves, dumps, drive-ins, salt beds, terminals, and so on and on. In downtown Milwaukee, half the *assessed* value is land. In Manhattan, it is instructive to consider the Empire State Building. If ever a structure overdeveloped a site, the world's tallest building on a fringe site should be it. Yet in two transactions since 1950 the site was valued at one-third the total.<sup>65</sup> What this implies of the whole island, I leave to inference.

Several case studies may be cited. The *Whitstable Report* is a study of land value rating (that is, taxation) in an English city by valuer H. Mark Wilks, commissioned to report to the English Rating and Valuation Association. He began by valuing residential land.

It was soon noticed that the figures of rateable value we were producing were very much lower than those in the current orthodox valuation list. Indeed, at one time it was feared that the total rateable value would be so low that to produce the same rate income as at present, a rate poundage of well over 20 shillings would be necessary. . . . [But] our fears were groundless, for the loss in rateable value in the outer-lying residential areas was more than made good by the increase in the other areas.<sup>66</sup>

The report gives detail on how central, vacant and derelict land made good the losses.

64. Data supplied by Philip Cornick, Institute of Public Administration. Earlier data in the annual *Reports of Commissioners of Taxes and Assessments, City of New York*. A good published source is H. M. Lewis, W. D. Heydecker, and R. A. O'Hara, *Land Values* (New York: Regional Plan of New York, 1927).

65. "How the Big Deal Was Made," *Business Week*, 2 September 1961, pp. 69-72. Prudential Life bought the site for \$17 million while Stevens-Glancy bought the building for \$34 million. The 1961 deal was more complex, but it entailed a ground rent of \$1,020,000 compared to a rent of \$3.2 million for land and building together.

66. H. Mark Wilks, *Rating of Site Values: Report on a Pilot Survey at Whitstable*, abr. ed. (London: Rating and Valuation Association, 1964), p. 12.

Paul Wendt has documented the higher land share in the central business districts of San Francisco and Oakland, and Bronson Cowan has done the same for Sydney, Johannesburg, Wellington, and other cities that tax only land value.<sup>67</sup> A much higher share of local taxes comes from the center when only land is taxed. The same relationship holds in Fresno, as reported by Griffenhagen-Kroeger, Inc., to the California legislature.<sup>68</sup> Eli Schwartz and James Wert found the same in Bethlehem, Pennsylvania.<sup>69</sup>

Another study is my Milwaukee cadastral map discussed above. As stated, my co-workers and I estimated market land values by tax book districts. We divided these by the equalized full value assessment of land and buildings. The resulting fraction is an estimate of the share of land in the value of real estate. (See Table 9.3.)

The districts with low land shares comprise at least three kinds. Numbers 24 and 28 are far out, on the south side of the city between Oklahoma Avenue and Howard Avenue. This is the less prestigious side of town, newly built, fairly filled up. Numbers 4, 8, and 9 are in and alongside the black ghetto on the near north side, buildings are old but dense. Number 9 has breweries, together with blighted depressed residential land of low value. Numbers 17, 19, and 13 have valuable industrial plants.

Districts with high land shares are of different kinds. Those above unity probably reflect acutely lagging assessment: Numbers 27 and 31 are largely vacant, highly speculative, on the extreme south and north-west respectively. Number 29 is just inside number 31 and partly resembles it. Number 10 is downtown and its leapfrogging western edge. Number 14 includes Mitchell Street, the older south side shopping area.

Extension of the map into the suburbs inside Milwaukee County shows similar patterns. The land share is low in tight, fully built bedroom suburbs: Shorewood and Whitefish Bay. It is low in industrial suburbs with blue-collar housing: Cudahy, South Milwaukee, West Allis. The land share is high in sprawled suburbs with empty land:

67. Paul Wendt, *Dynamics of Central City Land Values*, Research Report 18 (Berkeley, Calif.: Real Estate Research Program, University of California, 1961), pp. 40, 42; and Cowan, *Municipal Improvement and Finance*, passim.

68. Griffenhagen-Kroeger, Inc., "The Effects of Tax Exemption for Improvements and/or Personality," mimeographed (San Francisco (?): Assembly Interim Subcommittee on Tax Exemption, California Legislature, November 1962), pp. 25-40.

69. Eli Schwartz and James Wert, *An Analysis of the Potential Effects of a Movement Toward a Land-Based Property Tax* (Albany, N.Y.: Economic Education League, 1958), pp. 19, 23.

River Hills, Oak Creek, Greendale, Greenfield, Franklin. It is moderate in complex suburbs subject to offsetting influences: Glendale, Wauwatosa, Brown Deer.

On the whole, these findings bear out Wilks's findings in Whitstable, although the Milwaukee patterns are much more complex. Some of the districts and suburbs include a variety of conditions and defy sweeping characterization. But one thing is crystal clear. Goldsmith's transfer of the land share in a few new FHA residences to all urban

Table 9.3 — The Share of Land in Value of Real Estate, Milwaukee, 1965

Tax book district	Market land value by mapping (per square foot)	Equalized assessed land and buildings (per square foot)	Land value/land and buildings
1	\$ 6.44	\$9.54	.68
2	1.34	2.25	.60
3	3.45	3.99	.86
4	1.48	2.80	.53
5	1.88	3.59	.52
6	2.06	2.92	.71
7	2.16	2.54	.85
8	1.28	2.79	.46
9	3.44	6.61	.52
10	10.18	9.69	1.05
11	3.46	4.68	.74
12	1.53	2.52	.61
13	1.75	4.26	.41
14	2.26	2.22	1.02
15	1.59	2.42	.66
16	1.61	2.25	.72
17	1.63	3.34	.49
18	.99	1.40	.71
19	1.86	3.70	.50
20	1.78	2.92	.61
21	1.64	1.85	.89
22	2.13	3.35	.64
23	1.72	2.44	.70
24	1.26	2.18	.58
25	1.15	1.30	.88
26	1.73	2.79	.62
27	.71	.66	1.08
28	1.07	2.02	.53
29	1.07	1.22	.88
30	.73	.93	.78
31	.27	.14	1.93
Entire city	1.31	1.86	.70

Source: Assessed values from Office of Tax Commissioner, City of Milwaukee; mapped values from author's map, described in text.

real estate is a momentous error that dominates his estimates and probably destroys any value they might have.

### *Kurnow's Estimates*

Another source widely cited is Ernest Kurnow.<sup>70</sup> Kurnow's basic source is tax assessments. He accepts their allocation of value between land and buildings. Errors are possible, but "in all likelihood there is a tendency for such errors to cancel each other."<sup>71</sup>

Believing so, he does not even correct for the assessment bias shown by sales-assessment ratios of the Census of Governments and other studies, and of course does not correct for the greater degree of underassessment revealed by mapping of land values. His estimate of land values is no better than its sources, which we have already found to be imperfect.

Another error by Kurnow is to assume that the value of the buildings rises in step with indices of construction costs.<sup>72</sup> Recent research by Douglas C. Dacy and others has revealed that these indices rise faster than costs per unit of new output, due to technological advance.<sup>73</sup> As to existing stock, it suffers extreme obsolescence and is not worth anything approaching its reproduction cost.

Kurnow's estimates are therefore no more valid than Goldsmith's.

70. See Ernest Kurnow's three studies, "Distribution and Growth of Land Values," in *Theory and Measurement of Rent*, pp. 155-168; "Land Value Trends in the United States," *Land Economics* 36, no. 4 (November 1960): 341-348; and "Measurement of Land Rent and the Single Taxers," *Commercial and Financial Chronicle* 190 (August 1959): 834.

71. Kurnow, "Land Value Trends," pp. 342-343.

72. *Ibid.*, p. 344.

73. Douglas C. Dacy, "Prices and Productivity in the Construction Industry" (Ph.D. diss., Harvard University, ca. 1962); also cited in *House and Home*, May 1963, p. 11, and in "Productivity and Price Trends in Construction Since 1947," *Review of Economics and Statistics* (1965): 406-411. See also R. J. Gordon, "A New View of Real Investment in Structures 1919-1966," *Review of Economics and Statistics* 50, no. 4 (November 1968): 417-428.

Michael Sumichrast, chief economist of the National Association of Home Builders, estimates land costs rose 300 percent in 1951-1969. The cost per square foot, excluding land, of "finished areas" rose 44 percent, or slightly less than the consumer price index. The portion of cost of a housing unit imputed to onsite labor fell drastically from 33 percent to 18 percent, 1950-1969. The wholesale index of construction materials rose 11 percent, 1964-1968 - land cost, by contrast, rose 16 percent *per year*, 1951-1969. See National Association of Home Builders, *Economic News Notes* (Washington, D.C., 1969).

It is also true that the interest rate rose greatly and that this is a major cost of housing. But it is not relevant to the allocation of real estate value between land and buildings. It multiplies the carrying costs of both, and land more than buildings. Cf. Appendix II to this chapter.



It is probably a coincidence that they were not far apart for 1956 (\$212 billion by Goldsmith, \$249 billion by Kurnow).<sup>74</sup> While they might thus seem to support one another, analysis of their sources has shown instead that each merely confirms that the other is also too low.

*Heilbrun and Netzer on Adequacy*

James Heilbrun and Dick Netzer write favorably of land value taxation, but fault it for inadequacy of base.<sup>75</sup> Neither, however, treated the question in enough depth so that these should be regarded as firm positions or definitive studies. Basically, Heilbrun uses the data of Goldsmith and Kurnow, and Netzer cites Heilbrun.

Netzer, however, qualifies Heilbrun by questioning the low share of land reported by Goldsmith, and cites some contrary data. One is the *Whitstable Report*, discussed above. The other is an unpublished study by Ronald Welch of California. Welch figured that California buildings in 1962 were worth 1.35 times the land, which makes the 1962 California land share 43 percent.<sup>76</sup> Welch, with the State Board of Equalization, was presumably basing this on equalized assessments. We have seen evidence above of relative underassessment of California land.

In subsequent writing, Netzer has shed his doubts about the revenue adequacy of land, in part on the basis of Manvel's data, and has graciously authorized me so to state.<sup>77</sup>

To summarize these data on *omnibus paribus* estimates of land value and rent, I conclude that land value today is at least half of real estate, and probably more. How much more depends in part on how one defines land value. I define it as the salvage value of land for reuse. It depends, too, on methods of inference from sales. The correct method requires a map and an ability based on experience to interpolate spatially and value the unknown from the known. Mapping gives a higher estimate of land value than other methods.

The measure of land value also depends on how rigorously one goes about applying the economic concept of opportunity cost to resources whose latent value is suppressed by institutional constraints. In arid regions, for example, water rights are worth more than land surface,

74. Kurnow, "Distribution and Growth," p. 157.

75. James Heilbrun, *Real Estate Taxes and Urban Housing* (New York: Columbia University Press, 1966), pp. 150-154; and Dick Netzer, *Economics of the Property Tax* (Washington, D.C.: The Brookings Institution, 1966), pp. 210-212.

76. Letter from Ronald Welch to Dick Netzer, cited by Netzer, *Economics of the Property Tax*, p. 211.

77. Dick Netzer, *Economics and Urban Problems* (New York: Basic Books, 1970), p. 198.

but they are immobilized by inept property laws, unmarketable, untaxable, and unmeasured. Some of the water right value appears in that of land to which the right attaches. Thus, San Francisco's right to the Tuolumne River firms up city land values. But San Francisco only uses 20 percent of its rights. The rest is dead and shows up nowhere.

Again, the measure depends on the inclusion and proper appraisal of franchise values: cab permits, frequency assignments, rights of way, easements, rights to emit pollutants, air and shipping routes, utility monopolies, and an endless list of gross and petty privileges which yield rents and constitute forms of land tenure which should be assessed and taxed (if not eliminated or reregulated on economic marginal cost principles).

There are inadequate recent estimates of these values which were done with insight into the basic distinction between the franchise and the holder's input of real depreciable capital to improve it. More of such studies and such insight would surely add a large figure to the land value tax base.

#### Land Value Increments

Most analyses neglect to note that current increments to land value, including those not "realized" by sale, are current income. That may ring strangely in some ears, because our income tax does not treat unrealized accruals as current income. But it is standard doctrine among the aristocracy of tax theory, to whom it is part of the "Haig-Simons" definition of income,<sup>78</sup> espoused by Joseph Pechman, R. A. Musgrave, William Vickrey, the Canadian Carter Commission, and many others.<sup>79</sup> I will not repeat the rationale here, but cast my lot with the Haig-Simons apostles.

78. The idea is that increased command over goods is part of individual income, whether or not consumed in a given period. The classic statements were made by R. M. Haig in "The Concept of Income," in *The Federal Income Tax*, ed. R. M. Haig (New York, 1921), pp. 7 and following; reprinted in R. A. Musgrave and Carl Shoup, eds., *Readings in the Economics of Taxation* (Homewood, Ill.: Richard D. Irwin, 1959), pp. 54-76; and by Henry Simons in *Personal Income Taxation* (Chicago: University of Chicago Press, 1938), pp. 61-62, 206.

79. Joseph Pechman, "Comprehensive Income Taxation: A Comment," 81 *Harvard Law Review* 63, and sources there cited; R. A. Musgrave, "In Defense of an Income Concept," 81 *Harvard Law Review* 44, at 44, 60; William Vickrey, *Agenda for Progressive Taxation* (New York: Columbia University Press, 1947); Royal Commission on Taxation, *Report of the Royal Commission on Taxation*, vol. 3 (Ottawa: Queen's Printer, 1966), p. 39; and U.S., Congress, House, Committee on Ways and Means, *Tax Revision Compendium of Papers on Broadening the Tax Base*, 86th

These men have been preoccupied with the income tax. Many of them have abandoned practical hope of including current accruals in the tax base with the thought that this would require razor-sharp assessment of value each year. That does not mean increments are any the less income. Rather, it means they are a form of land income that to a high degree escapes and will continue to escape income taxation. Being thus unpreempted, they are eminently eligible for local taxation.

A. C. Pigou's complaint against taxing land on the base of capital value is that the capital value of ripening land is high relative to current ordinary income.<sup>80</sup> That is true, but it is no vice. The extra tax is in effect a tax on current unrealized appreciation. I have developed this theme elsewhere<sup>81</sup> and will summarize it here. Two simple models make the point, although more would be better.

One is unused, ripening land. Current ordinary income is nil. Given good foresight, land value grows like money in the bank, that is, at compound interest. That means that each year the value grows by a fixed percentage of the value. Given good assessment, the property tax is also a fixed percentage of the value. The tax is therefore a fixed percentage of the yearly increment.

Algebraically, let  $V$  = capital value,  $t$  = tax rate, and  $i$  = interest rate. Current increment income  $(\Delta V) = Vi$ , and the tax levy  $(T) = Vt = t(\Delta V/i)$ . Annual reassessment is, of course, best, but not nearly so critical as with the income tax, since the base of tax includes all accumulated accruals, and current accrual is a small part of the whole.

Model two is land yielding ordinary income that rises yearly at a

Cong., 1st sess., 1959, papers by Brazer, Sneed, Blum, Steger, Surrey, and White; cited in Pechman, "Further Comments on CTB," pp. 117-118. See also The Ford Foundation, *The Law and the Lore of Endowment Funds* (New York, 1969). This report has made quite a sensation by advising foundations to regard accruals as income.

80. A. C. Pigou, *The Policy of Land Taxation* (London: Longmans, Green, 1909), pp. 17-20.

81. See Mason Gaffney, "Tax-Induced Slow Turnover of Capital," *Western Economic Journal* 5, no. 4 (September 1967): 308-323; and "Coordinating Tax Incentives and Public Policy: The Treatment of Land Income," in *Economic Analysis and the Efficiency of Government, 1969 Report of the Subcommittee on Efficiency in Government* (Washington, D.C.: U.S. Government Printing Office, 1970), pp. 405-415. The manuscript was originally prepared for the Brookings Institution seminar, "Role of Incentives in Public Policy," and is to be published by the institution ca. 1971. The *Western Economics Journal* account is truncated by space limitations. The full manuscript is being published in four sections by the *American Journal of Economics and Sociology* 29, no. 1 (January 1970): 25-32, no. 2 (April 1970), no. 3 (July 1970), and no. 4 (October 1970). No. 4 includes a completely general proof by William Vickrey that comprehends all specific models.

fixed percentage rate,  $g$ . Let:  $a$  = annual ordinary income in year zero,  $i$  = interest rate, and  $V$  = capital value.

$$V = \frac{a}{1+i} + a \frac{1+g}{(1+i)^2} + \dots + a \frac{(1+g)^\infty}{(1+i)^\infty} = \frac{a}{1+i} \cdot \frac{1}{1 - \frac{1+g}{1+i}} = \frac{a}{i-g},$$

and

$$V \cdot i = a + V \cdot g.$$

Ordinary income,  $a$ , does not cover interest on value,  $V \cdot i$ .  $V \cdot g$  just fills up the difference. But  $V \cdot g$  is the yearly increment of value. A tax based on  $V$  therefore taxes ordinary income and accruing increments in one stroke.<sup>82</sup>

If future rent is to be heavily taxed, there will be less current value and less appreciation. One might think that increments would thus be destroyed, but that is not so. Economic value does not simply disappear without a trace, any more than physical matter and energy may be destroyed. Heavy land taxation asserts the public equity in land and socializes ordinary rent: that is familiar doctrine. It socializes capital value and increments in the same manner. That is, the right to levy future taxes has a present value, too. The public cannot usually sell its right to levy taxes. But it can and does take current cash out of unrealized increments to this present value in the same way private owners do, viz., by banking them.

Thus, to oversimplify, debt expansion soundly grounded on a rising tax base is current income. It is part of what the public may spend currently from the tax base, without reducing the net worth of the public equity.

Lest this seem an alien and reckless doctrine, recall that local debt has been rising for the last twenty years in step with rising local taxes, which are mortgaged to public debt. And recall that we have been applying the doctrine to federal finance now for thirty-five years or so. The rationale has been in terms of rising gross national product, which shrinks debt relative to tax base. At the federal level we may have overdone it by failing to foresee the rise of interest rates and tax loopholes. But that is no reason for accepting a double standard when appraising the adequacy of land as a tax base.

82. For a general mathematic proof, see note 81. A nonmathematical way to perceive this is as follows: Today everyone observes that anticipated inflation is a cause of higher nominal interest rates. The converse is that land speculators can bear the higher rates because land is appreciating. The appreciation covers the extra interest. But by the same token they can cover higher land taxes from current land appreciation.

How much is added to the land tax base by including current increments? As shown above, these increments are automatically included if we assess land rigorously on the basis of current market value. The operational outcome of this argument, therefore, is that we should be thoroughgoing in assessing land on the capital value basis, disregarding current realized income. That in turn implies accepting the mapping approach to land assessment, by which we found in Milwaukee the land share of real estate to be up toward a maximum estimate of 70 percent instead of the 40 percent or so found by nonmapping methods. The extra 30 percent is a very crude index to the base that is added by including increments, at least under current conditions.

A major reason why most assessors fail to believe the evidence the market gives them, to map it and apply it to adjacent land, and thus to report a high land component in real estate, is that they really do not fully accept the capital value basis. There is strong pressure to fall back on current use and current income and low historical values instead. But once it is accepted that value accrual is current income, and that it is only tapped by a property tax based on capital value, then assessors will follow the market and assessed land values will rise sharply.

The total of unrealized, unmeasured, untaxed land value increments in recent decades must be staggering, to judge from a few clues. Take farming. One does not look for capital gains in a declining industry. But the rise of farm land values has added some 50 percent to net farm income every year for the last twenty. Not only are these increments part of a land tax base, they are virtually exempt from and immune to other taxes. Any farmer who pays a tax on sale of land simply is not reading his J. K. Lasser. Indeed, the farmer who pays taxes on income of any kind is becoming something of an eccentric, and a good share of the value of farm land derives from its ability to shelter nonfarm income. Recent studies by Edward Reinsel show that *most* large farmers report net losses.<sup>83</sup> Houthakker found net income tax payments by Texas farmers to be . . . negative!<sup>84</sup> California farmers were not far ahead. Income taxation no longer reaches the wealthy owners of the richest farm land. This benefit is capitalized into land values. Only a land tax can recoup it.

Another important untaxed increment is that of minerals. Some 20 percent of the area of the United States is under lease for oil. Minerals normally appreciate slowly from zero when submarginal up to some

83. Reinsel, *Farm and Off-Farm Income*, p. 25.

84. Houthakker, "Great Farm Tax Mystery."

high value when severed. This accrual goes untaxed, even though exploration is expensable, and then the accrued untaxed increment is deductible under percentage depletion when realized. The share of rent in realized well-head value of oil is 50 percent or more,<sup>85</sup> and comes to several billions yearly. If we assume that all minerals appreciate from zero value up to severance value when ripe and that the stock of reserves remains constant, then we have an estimate of yearly appreciation: it must equal current withdrawals. In fact, publicly announced ratios of reserves to output do tend to remain roughly constant in most mineral industries at about 12:1; and these are economically usable reserves—there is no degradation of the quality of the reserves. We should add that output is growing, so to maintain the 12:1 ratio the reserves must grow, and additions to reserves always exceed current withdrawals by a large factor. Much of the gross addition to reserves is in the form of reevaluation of deposits long known. But whether that, or completely new findings, or simply the ripening of existing stocks toward severance, it represents accrual of economic power to the owners: current income.

Virgin timber is steadily rising in value. Not much remains, but about one-third of the United States remains timber *land*, and it has risen for thirty years. Unit values are low, but 700 million acres at \$50 each can still send a lot of children through school.

The largest single element is urban land. The only remotely accurate estimates of urban real estate values are by Allen Manvel and the Census of Governments study, not beginning until 1957. The estimate doubled from about \$700 billion in 1957 to about \$1,400 billion ten years later, or close to \$70 billion yearly. This rise hardly reflects an increase of the stock of buildings. During much of the decade building, especially residential, was slow, while the standing stock depreciated as usual. Urban blight outpaced urban renewal in many areas, urban rents took off, locational obsolescence of buildings accelerated with new expressways, and the crisis of our decaying, obsolete, superannuated cities became a leading national issue. The share of land in the cost of new housing rose by every account.<sup>86</sup> So whatever the share of land in urban real estate may be, it rose in the decade. That means urban land values must have more than doubled. They surely accounted for much of that \$70 billion annual increase.

This is not a rate of increase one should project into the future. It is

85. Gaffney, ed., *Extractive Resources and Taxation*, p. 410.

86. The productivity of labor and materials rose greatly, offsetting much of the apparent rise of construction costs (Dacy, "Prices and Productivity"). The productivity of land fell sharply, due to lower density.

simply one that has occurred, has virtually escaped taxation, and now has become part of the potential base of a tax on land values.

By comparison, the public equity and its growth are small. The property tax levy has about doubled in ten years since 1959 to over \$30 billion. Local debt has grown from \$43 billion almost to \$90 billion in the same period. This debt expansion of \$4 billion yearly may be added to the explicit tax levy for a full account of the cash the public has been taking out of property annually; and it may be added to the increment of market land values, the private plus the public share.

If this seems to involve the assumption that *all* property taxes come out of land rent, that is the intent. The next section explains the reasoning.

### The Equity Position of Land

We have looked at land values and increments as things are, "*omnibus paribus*." Many analysts like Kurnow go no further. Heilbrun and Netzer advance feelers that untaxing buildings might add to residual land income.<sup>87</sup> They do not follow through, however, which leaves them with doubts about adequacy of the base.

Other analysts give great weight to the effect on land rent of untaxing buildings, and see no loss of tax base. Paul Douglas writes that "the mass of homeowners, businessmen, industrialists, and developers would stand to gain at least as much, if not more, by the reduction of taxes on their building improvements as they would stand to lose from the increase of taxes on land values."<sup>88</sup> If that is implicit, Ebenezer Howard was explicit. His proposed *Garden City of Tomorrow* was financed entirely from ground rents.<sup>89</sup> The following passages render the gist of his views on adequacy:

The leases under which all building sites are let do not, therefore, contain the usual covenant by the tenant to pay all rates, taxes, and assessments levied in respect of such property, but, on the contrary, contain a covenant by the landlord to apply the whole sum received . . . into a public fund, to be ap-

87. Heilbrun, *Real Estate Taxes*, p. 154; and Netzer, *Economics of the Property Tax*, p. 212.

88. U.S., National Commission on Urban Problems, *Building the American City* (Washington, D.C.: U.S. Government Printing Office, 1968), p. 399. The quotation is from a minority report written by Chairman Paul Douglas, signed by him and three others.

89. Ebenezer Howard, *The Garden City of Tomorrow* (Cambridge, Mass.: The Massachusetts Institute of Technology Press, 1965).

plied to public purposes, among these being the rates levied by public authorities, other than the municipal authority, of the city. . . .

The "*rate-rent*" which the farmer will be willing to pay into the treasury of Garden City will be considerably higher than the *rent* he would be willing to pay to a private landlord, who, besides increasing his rent as the farmer makes his land more valuable, *will also leave him with the full burden of local taxation resting upon him.* . . . [Last line of italics mine.]

We are now in a position to see that the rate-rent which will be readily paid by farmer, small occupier, and allotment holder, would be considerably greater than the rent he paid before: (1) . . . and (4) by reason of the fact that the rent now paid is *rate and rent* while the rent formerly paid left the rates to be paid by the tenant. . . .

The rate-rent of a well-planned town, built on an agricultural estate, will amply suffice for the creation and maintenance of such municipal undertakings as are usually provided for out of rates compulsorily levied.<sup>90</sup>

Again, Bronson Cowan reported that untaxing buildings in the Transvaal, Australia, and New Zealand increased the demand for land and sustained its value even though it became the sole tax base.<sup>91</sup>

Theory supports Cowan, Howard, and Douglas. The taxable surplus in any local jurisdiction can only be the excess value generated above the external opportunity cost of mobile labor and capital. This is identical with land rent. After-tax returns to mobile labor and capital seek a common level throughout the economy. Local land supply is inelastic; local labor and capital supply are elastic. Therefore, any tax nominally levied on buildings must reduce land rent. Conversely, lowering building taxes must increase land rent by an equal amount. Taxable surplus is not lost or destroyed by untaxing buildings; it simply pops up elsewhere.

Land is the equity interest in the municipal corporation. Rent is the earning on common stock, what remains after other costs. If the tax cost on buildings falls, land rent rises by the same amount, just as earnings on common stock would rise by the amount of any fall of interest on bonds. There is a Newton's Third Law in economics, a conservation of economic energy. This is nothing more than good book balancing: everything must be accounted for.

Suppose a locality could stop taxing buildings altogether and replace the revenue from outside grants. Does anyone doubt that this bonanza would raise local values? Land rent would rise by the amount of the grants. Now if the source of the "grant" is a tax on local land

90. *Ibid.*, chap. 3, p. 67, chap. 2, pp. 63, 64, chap. 5, p. 81.

91. Cowan, *Municipal Improvement and Finance*.



rent itself, the land tax simply takes rent which is simultaneously replaced by building exemption. If the total tax levy remains the same, there is no general invasion of the rent now privately collected. Some particular parcels may suffer and others may gain, as in any change of public policy. But the tax base remains intact.

The matter is obscured by the fact that the nominal tax rate must rise, in order to tap the rent in this new manner. I say "nominal" because the tax as a percentage of total real estate value will remain about the same (or, indeed, fall, if there is increased building). But as a percentage of land value it must therefore rise.

Suppose the present rate on land value is at such a level as to take one-third of present ground rent (after building taxes). Exempt buildings and this same rate will take one-third of the added ground rent, that is, one-third of the former building taxes. To recoup the other two-thirds, the tax rate must rise.

To complete the example, suppose the original ground rent equaled the building taxes. Untaxing buildings then doubles ground rent. The original tax on land took one-sixth of this higher ground rent, the original building tax took three-sixths, so the new tax on land alone must take fourth-sixths.

Next, by how much must the tax rate rise to maintain the same levy? Now we are juggling several factors. A simple case would be if land values were to remain the same. The tax rate must rise by the same proportion that the base falls. That proportion is the share of buildings in real estate value. If buildings are half, the rate must double.

But would not land values fall under this higher rate? Wouldn't the higher rate be capitalized into lower land values, leading to a further rise of the tax rate? If there were no change but a higher rate on land, "yes"; but when this accompanies lower rates on buildings, then "no." This is one of those unusual cases when algebra can clarify rather than muddle a point, so, let:

$a$  = original annual ground rent (after building taxes but before land taxes),

$i$  = interest rate,

$t$  = original tax rate,

$B$  = building value,

$L$  = original land value,

$L'$  = new land value when buildings are untaxed, and

$t'$  = new tax rate necessary to maintain same levy.

According to tax capitalization theory,

$$L = \frac{a}{i + t}, \quad (1)$$

$$L' = \frac{a + tB}{i + t'}. \quad (2)$$

Clearing denominators, and subtracting equation (2) from equation (1):

$$i(L - L') + tL - t'L' = -tB.$$

To maintain the levy:

$$t'L' = t(L + B). \quad (3)$$

Substituting

$$L = L', \quad (4)$$

therefore, from equation (3),

$$t' = t \frac{L + B}{L}. \quad (5)$$

Equation (5) takes account of tax capitalization. It leaves us with the surprisingly simple conclusion that the new tax rate may be forecast on the basis of existing ratios of building to land. Just multiply the present tax rate by the present base divided by land value — what the simple man would do anyway! But be sure to use true current land values estimated properly from current markets by a good mapper-assessor (see above). Current assessed land values are much too low.

A corollary is that land values will remain unchanged by the tax shift, just as in the simple case before the algebra (above). The land tax simply extracts from ground rent the same amount which is added to it by untaxing buildings. There is no “confiscation,” unless the *levy* rises.

A simple way to grasp how untaxing buildings raises land rents lies in the feudal basis of our law, which is good fiscal theory. The sovereign is a super-landlord administering the royal estate. He asserts his right in the land by collecting taxes, which he may do in various ways. But whatever the nominal base, these are alternative means of gathering rent from vassals on the royal estate. There is a limited taxable surplus, which he can destroy but not exceed. What he takes by one means he cannot take by another. He is always taxing the same real estate; he is just taxing it in different ways.

If equation (5) seems too simple to cover all factors, it is. Actually  $L'$  will be higher than shown in equation (2), for several reasons which I treat below under the rubrics of spillovers, excess burdens, and re-

allocation. Equation (2) accounts only for the removal of the tax on existing buildings, with no account of incentive effects. And in fact it even understates the impact of the one factor it does treat.

That is because of the timing of building taxes: high when a building is new, dropping towards nothing when it is old. Land value being defined as renewal value, it is more depressed by taxes that come early than late in building life. So the land value tax base,  $L'$ , will rise more than shown by equation (2). The expression  $t \cdot B$  is too simple and too low. It should be replaced by the present value of all future building taxes annualized by the capital recovery coefficient. To do so will increase  $L'$  a great deal, depending on particulars.

Limited space prevents full treatment here, but a simple approximation is possible. The building tax,  $t \cdot B$ , cuts into land values by almost as much as though it lasted at its peak for the full life of buildings. But it doesn't. For simplicity assume it lasts half the life of buildings and then stops and that this depresses land values as much as though it lasted the full life of buildings. Assume building ages are evenly staggered. Then half the sites yield no building taxes, yet *all* the land values are depressed by the capitalized value of the building taxes even though these are being collected from just *half* the sites! Thus, the building tax cuts the land portion of the tax base by double the value of the building base being taxed.

In a new city this factor would not amount to much. But in an old central city where 90 percent of the buildings are very old — that is, in Boston, Newark, and other crisis spots — untaxing buildings would suddenly multiply the tax base.

All economic principles must be tried and proved at the margin. On marginal land there is no surplus above nonland costs, hence no taxable capacity of any kind. Any local tax on marginal land, or people, or buildings, or outputs on marginal land, makes it submarginal.<sup>92</sup> E. R. A. Seligman faulted land taxation on the score that marginal communities could have no local tax base.<sup>93</sup> But that is true of any tax. The difference is that land taxes on marginal land are zero, letting the rentable land support government. Other taxes impose added costs on no-rent land and so sterilize it.

A final proof that untaxing buildings will raise land rents is the premium that tax-exempt institutions pay for land. The Chrysler Building in New York is tax exempt because it is owned by Cooper Union,

92. David Ricardo, "On Tithes," *Principles of Political Economy and Taxation* (Homewood, Ill.: Richard D. Irwin, 1963), or any edition.

93. E. R. A. Seligman, "The Single Tax," *Essays in Taxation*, 8th ed. (New York: The Macmillan Co., 1913), pp. 66-99.

so the lessee pays a ground rent premium equalling the unlevied taxes.<sup>94</sup> Any sale-leaseback deal by which a business borrows the tax exemption of a church, college, or public district exemplifies the same principle, and such deals are legion.

All of the reasoning here assumes an open economy, with elastic supplies of nonland inputs. If the building tax were federal, one might have to assume other elasticities, a matter I discuss elsewhere<sup>95</sup> (and see below). But, of course, property tax decisions are local, and the present assumptions fit.

Nothing said above rules out the possibility that the new tax rate,  $t'$ , levied on bare land, must exceed the old rate,  $t$ , levied on land and buildings. While this poses no economic problem, it poses psychological and legalistic blocks in some minds. There are several possible solutions on the same fairy tale level of make-believe, which the irony of law and politics makes "realistic": (1) remove or raise limits on the nominal tax rate,  $t'$ ; (2) express tax limits in terms of the rate on all real estate, even though buildings are not taxed; (3) raise assessments to 100 percent of market value. If that does not suffice, go higher. The law which has allowed fractional assessment cannot consistently prohibit multiple assessment; and (4) include the public equity along with the private equity in land as part of the tax base.

### **The Excess Burden of Building Taxes**

The analysis above treats only of taxes actually collected from existing buildings. It says nothing of how the threat of building taxes suppresses buildings and replacement and so destroys taxable surplus before it is created. But that, too, is important. After all, a main reason for preferring land taxes is to avoid impairing incentives.

Building taxes reduce the intensity of site improvement. Just as they sterilize marginal land, the "extensive margin," so they abort marginal intensification of superior or rentable land, the "intensive margin." The aborted outlays include increments to height, quality, perhaps coverage, and, most damaging, earliness of renewal.

The aborted outlays would have created new rents above cost and thus increased taxable surplus. To abort them is a deadweight loss, an "excess burden" from building taxation. It is not building exemption that truly threatens the tax base, but building taxation. The lagging

94. Harold B. Meyers, "Tax-Exempt Property," *Fortune*, 1 May 1969, p. 79.

95. Gaffney, "Tax-Induced Slow Turnover"; and Mason Gaffney, "Land Rent, Taxation, and Public Policy," in *Proceedings of 15th United States Annual Meetings, Regional Science Association*, ed. Morgan Thomas (in press).

rate of new taxable construction in the United States today dramatizes how serious the threat has become.

Referring back to equation (2), here is a second reason why it understates  $L'$ , the land value tax base. The first reason is that  $tB$  understates the true gain in ground rent from untaxing buildings as shown above. The present reason is the removal of deadweight loss, or excess burden. We should add a term to the numerator for the rent added by intensification and renewal.

Anyone who has ever learned about diminishing marginal returns can duplicate the basic rationale of excess burden, so I will not labor it. Two special aspects do bear comment, however.

The first is economy of scale in buildings and rooms. As these get larger, diminishing returns do not take the form of higher cost per square foot of floor, for costs fall. What diminishes is the marginal demand of the individual buyer or renter. Taxing buildings is similar to reducing buying power, forcing everyone into smaller quarters. So it forestalls the realization of economies of scale in building. Walter Morton has written about this at some length.<sup>96</sup>

I believe Morton has given the question a wrong emphasis, however, by ending his analysis with the loss of scale economies. That is an element, but what happens is more interesting. There is a substitution of land for capital to consider as well.

There is a trade-off of land for capital in supplying floor space. Expanding horizontally requires less capital per increment of floor, but requires more land than expanding vertically. To oversimplify, unit nonland costs fall (economies of scale) when one expands horizontally, but rise (diminishing returns) when one builds upwards.<sup>97</sup>

Now, taxing buildings has the same substitution effect as raising building costs relative to land costs. It puts a premium on holding down building costs. One does this by spreading out rather than rising up, using more land to save on capital. It puts an artificial premium on achieving all economies that save on capital, including scale economies.

Morton is right that building taxes make buyers take less floor space than otherwise. But the reduced space they do take will be supplied with more *relative* emphasis on economies of scale from horizontal

96. Walter Morton, *Housing Taxation* (Madison, Wis.: University of Wisconsin Press, 1955).

97. This is often offset by the higher quality and external economies of upper floors, where access or view are at a premium. Space prevents elaborating this matter here.

spread, because added floorage is gained with minimum added cost and hence minimum added taxable valuation.

There is still a net loss of scale economies. But the greater loss is in the capital-using third dimension (and the fourth, treated next). Land is used more extensively. The scale economy that this most impairs is the social economy of scale of city, market, and society. As each person adds his bit to the spatial barriers among people he worsens access among parts, raises area-sensitive costs, and shrinks the central market and cultural centers.

In terms of tax base, one might now guess that taxing buildings could add to land values by raising the demand for space for horizontal expansion. And this is one element in the picture. It raises the danger that untaxing buildings might reduce the demand for land and reduce the land tax base, as builders go up instead of out.

But economics always involves appraising the net balance of counter forces. In this case, there is a more powerful counterforce. It is true that taxing buildings adds to what a buyer would bid for, say, the hundredth front foot, but it lowers what he will pay for the first ninety-nine. That is because he cannot use the first ninety-nine as intensively. The optimal parcel becomes larger, but the unit rent will be smaller.

In graphic terms, visualize a plotting of land inputs (abscissa) against the marginal *net* (after all associated costs) product of land (ordinate). With no building taxes the curve arches high, then drops steeply. Impose building taxes and the curve flattens. It falls throughout, of course, because taxes add to associated costs. But it falls more on the left and center, less on the right.

The result is that while every land user bids less for land, bids for smaller units using more capital per front foot of land fall relatively more than bids for larger units. So units get larger. This resolves the paradox that building taxes raise demand for space but reduce ground rents.

So beginning from where we are now, untaxing buildings will add to what people bid for smaller parcels of ground, but will reduce the aggregate need. The demand for what is now the outer exurban fringe will be relocated to the upper floors of more central buildings, as well as to all floors of new buildings on the great reservoir of derelict land more central than the outer fringe. In this shift there may or may not be a change in aggregate ground rent. But there will certainly be a spectacular fall of public costs, the area sensitive costs of supplying infrastructure in the sprawling fringe. Thus, the need for a tax base will fall a great deal while the base may at worst fall a little, and at best will rise.

The second special aspect of excess burden is in the fourth or temporal dimension. There is an excess burden in the deferral of site renewal. Any tax which varies with the use to which land is put biases the owner in favor of the lighter taxed use. That means the building tax favors old buildings over new.

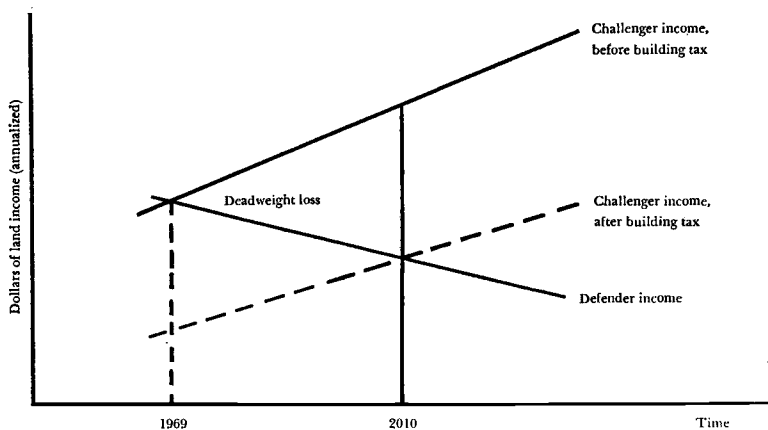


Figure 9.1. Excess Burden of Building Tax, Temporal Aspect

Figure 9.1 shows the excess burden of deferred renewal. The economic time to renew a site is when the standing building ("defender") ceases to earn a return on the scrap value of the site, as imputed by the outstanding "challenger." But challengers pay much more taxes than do defenders. The scrap or renewal value of land is reduced by the full present value of future building taxes. This defers renewal. The unrepaid rents of the deferred renewal period are a deadweight loss.

Figure 9.1 is simplified. Space forbids elaborating on how challenger income is computed, and how building taxes magnify the growth rate of value of "ripening" land and prolong speculative withholding. The general point is that land held unrenewed to avoid building taxes is yielding less taxes under present policy than it would under land value taxes.

### Spillover Benefits

Land rent has three basic sources: nature, public works, and the net benefits that spill over from private land uses to benefit others' land. There is constant grumbling about negative spillovers, leaving an im-

pression that these outweigh the positive, but if they did there would be no cities, no clustering tendency at all. In fact, land values still rise sharply to the center of cities. And land values are continuous, because builders prefer to anchor onto going neighborhoods.

Here is a fourth term for the numerator of equation (2). Untaxing buildings and taxing land stimulate building. They encourage compactness, pulling buildings in from scattered isolated outposts where they dissipate their benefits, and the value of teamwork is lost in overcoming the friction of space among the buildings. These policies let a city—and farmers and miners too—realize to the full the economies of spatial agglomeration. These economies are “synergistic,” that is, the whole is worth more than the sum of its parts. The extra value adds to land rent and taxable surplus.

To scatter buildings is to waste synergistic surplus, prodigally. The surplus is a valuable social resource that a sage policy will husband and utilize for public good.

Many economists have written on synergistic economies of agglomeration.<sup>98</sup> The sources of its power are many. They include shar-

98. Urban synergism has been described and in part analyzed in the following: Alfred Marshall, *Principles of Economics*, 8th ed. (London: Macmillan and Co., 1947), pp. 794–804; Henry George, *Progress and Poverty* (New York: Modern Library, n.d.), bk. 4, chap. 2; Sargent Florence, “Economic Efficiency in the Metropolis,” in *Metropolis in Modern Life*, ed. R. M. Fisher (Garden City, N.Y.: Doubleday and Co., 1955), pp. 85–124; Robert Futterman, *Future of Our Cities* (Garden City, N.Y.: Doubleday and Co., 1961), chap. 2; Wilbur Thompson, *Preface to Urban Economics* (Baltimore, Md.: The Johns Hopkins Press, 1965), chap. 1; Mason Gaffney, “Urban Expansion,” *Land, 1958 Yearbook of Agriculture* (Washington, D.C.: U.S. Government Printing Office, 1958), pp. 503–507; and E. M. Hoover, *Location of Economic Activity* (New York: McGraw-Hill, 1948), chap. 8.

The power of synergism in a specific city is graphically pointed out by the *Observer* (Sydney), 16 April 1960, as follows:

The record £51 a foot that the British E. Alex Colman group offered for the Sydney City Council's property at the top of Martin Place a couple of weeks ago seems to suggest that the Sydney land boom is far from over . . . .

Sydney's land prices have been rising since the war, but the past seven or eight years has been the most remarkable price period. And the most dramatic of the price rises have taken place in the northern part of the city, particularly that *once-depressed section of old warehouses*, State public service offices, and old insurance buildings between Hunter Street and Circular Quay. The coming of the Quay railway, the huge new buildings (Unilever, I.C.I., and, soon, A.M.P. and British Tobacco) that are spreading along the harbour at the north end of town, have stimulated a remarkable redevelopment of the northern city area. . . .

Back in Pitt Street towards Hunter Street there has been redevelopment aplenty. Insurance offices are *no longer dull, brown, squat stone buildings dated 1890*; they have become steel, concrete, and glass monsters. And there are plans for more



ing common costs, pooling risk and raising load factors, widening markets and allowing greater specialization, spreading information, fostering innovation, whetting competition, widening choice, facilitating social contacts, and so on. Nothing less than many books can do justice to synergism. The "Yellow Pages" are volume 1. Here I merely note it as a large addition to the land value tax base.

Untaxing buildings and taxing land also speed replacement, removing old junkers which blight their environs and replacing them with modern buildings which uplift neighboring values.

### The Reallocation Effect

There is yet a fifth term for the numerator of equation (2). This is an increase of ground rent,  $a$ , that occurs as land changes hands from the credit-strong to the credit-weak. Daniel Holland and I have written on this elsewhere.<sup>99</sup>

Equation (2) involves the assumption of simple capitalization theory that realized ground rent remains the same as the land tax rate rises. This conventional assumption understates the tax base. In practice rent will certainly rise, as the land tax puts the squeeze on sleeping owners and speculators.

This is essentially a matter of credit rationing. Raising the tax rate on land works to substitute a tax cost for the interest cost of holding land. Interest costs are discriminatory, favoring the wealthy and established. Tax costs are more impartial, and if the assessor does his job right, they are completely impartial. Changing an interest cost into a tax cost therefore raises the holding costs of many present owners rela-

changes. . . . It is inevitable that with such interest in rebuilding and development city land values should rise. However, the pace of that rise in recent years has certainly been hectic. . . . Will they keep up? One thing about high land prices and development is that they are self-generating. The growth of a big office sector near the Quay brings added demands to the area — for retail shops, for example. . . . Certainly some sort of saturation point for office space will eventually be reached, at least the backlog of demand will be overcome, and only new pressures will need to be catered for. But this should not mean any falling in the city land prices, at least in the city's northern section. And, of course, if all this attention north of Hunter Street looks like turning the Southern half into a low-priced Cinderella sector, no doubt something will "turn up" to redevelop, rebuild, and revalue. [Italics mine.]

99. Daniel Holland, "The Taxation of Unimproved Value in Jamaica," in National Tax Association, *1965 Proceedings of the Fifty-Eighth Annual Conference on Taxation*, ed. Walter J. Kress (Harrisburg, Pa., 1966), pp. 23-46; and Mason Gaffney "Ground Rent and the Allocation of Land among Firms," in *Rent Theory*, ed. F. Miller, University of Missouri Research Bulletin 810 (Columbia, Mo.: Missouri Agricultural Experiment Station, 1962), pp. 30-49, 74-82.

tive to alternative owners whose need for the land is greater and causes sales from less to more productive users.

Thus, land taxes are not fully capitalized on the lines of equation (2). As the rate rises, some land shifts to new owners who impute it a higher ground rent.

A parallel effect comes about from untaxing buildings. We have seen that the building share in real estate is higher for the poor than for the rich.<sup>100</sup> Untaxing buildings adds to everyone's power to bid for land ( $t \cdot B$  in equation [2]). But it adds more to the power of those with higher ratios of building to land.

The combined effects of credit rationing and building taxation now act to pen up the poor and middle classes on a remarkably small share of the land in every city. Their potential demand for living space is suppressed. Since they have so little, the price elasticity of their demand for more must be greater than that of the rich, who have so much already. Removal of present barriers to the full expression of their demand should therefore result in a net rise of imputed ground rent.

#### **Stimulus to Growth**

A sixth addition to equation (2) should be a dynamic growth factor. Untaxing buildings will attract capital and let a city flourish. Growth prospects add to land values above and beyond current rents. As shown earlier, the resulting accrual of land value and of city borrowing power are current income.

#### **Screening out Marginal Capital**

Many argue for taxing buildings because they believe buildings impose public costs and congestion. They view building taxes as benefit taxes or as a kind of generalized user charge reflecting social costs, serving both to distribute taxes equitably on a benefit principle and to prevent marginal building that adds to public costs without yielding commensurate taxes. What I have called an "excess burden" above they would deny, thinking the added land rents from intensifying to be more than balanced by added public burdens and crowding. They regard the marginal increments of capital on land as fiscal-deficit generators, and the building tax as desirable because it screens them out.

If this be accepted, then it would follow that government should not encourage the private landowner to intensify to a degree where mar-

100. President's Commission on Urban Housing, *Report on Urban Housing*, p. 351.

ginal private returns equal marginal private costs. Society is wise to impose a tax on buildings and so eliminate marginal capital inputs. That which appears slightly supramarginal to the private landowner is submarginal to society. If we exempt buildings the total land tax base might be adequate, but the base associated with marginal building increments would not cover their marginal social costs.

In a closed economy this fiscal philosophy has little bearing, for there is no necessary net increase of public costs when people and capital move to one place by leaving another: they load the schools of A by unloading those of B. It is relevant, though, to the typical local taxing jurisdiction, to whose condition this paper is oriented by its assumption of an open economy. Does a locality want to screen out marginal outside capital to hold down public costs and crowding?

The argument for repelling fiscally submarginal increments of capital by taxing buildings has several weaknesses:

1. Screening out capital does not screen out people. The building tax screens *in* buildings that become marginal by virtue of senility, and these are prime generators of fiscal deficit. We often hear that New York City is frightful because of overinvestment there, but look again. What makes Manhattan frightful is what is *not* there, the capital that has fled without replacement. Harlem is intensely peopled; it is not intensely improved. The buildings in Harlem are virtually worthless. Indeed, although Manhattan has captured much more than its share of the new offices built in the United States for twenty-five years, this floor space is contained in only some hundred buildings on some hundred sites, a negligible fraction of the land in Manhattan.

2. Screening out capital does not screen out nuisances. Gas stations, parking lots, slums, billboards, junk yards, auto dealers, open storage, untended vacant lots, airports, cemeteries, railroad yards, dumps, drive-ins, tank farms, trucking terminals, condemned buildings, and old lumber yards are all certified nuisances without benefit of intensive capital invested in buildings.

3. Improving private land serves to lighten loads on public streets and public places, as much as or more than the reverse. The allocation of people between common land, which lacks tenure protection, and private land is biased toward the common because of the difference in terms of access. Part of the solution lies in user charges for occupying public space. The other part surely is to avoid any policy calculated to discourage full use of private space.

Much of the space in semipublic private buildings is open to the public: lobbies, arcades, aisles, elevators, escalators, and let us not forget washrooms (imagine taxing a private owner for providing public

washrooms!) And everything about a private residence or apartment that makes it more livable keeps people more at home and off the public space.

As to transportation and utilities, the entire third dimension of a city's distributive network is privately supplied. Since horizontal extensions of roads and utilities are subsidized in several ways, and since vertical transportation substitutes for horizontal, it saves a city millions of dollars. It saves more yet when we consider that the person leaving the elevator at street level is likely to be on foot and to use mass transit.

As outer growth is subsidized, there is some sense in taxing outer growth, to compensate. But building taxes do not discriminate between outer and central growth, they hurt it all. They are no substitute for an economical set of user charges to inhibit overspill.

In fact, the net effect of taxing buildings on the urban fringe is not to reduce public costs at all. That is because, although there be less total private building, it is much more sprawled when buildings are the tax base, since many landowners defer taxes by deferring building. The sprawl magnifies public costs. Public infrastructure costs in the urban fringe increase more with the area serviced than the population serviced: they are "area sensitive" more than "people sensitive."

4. On the whole, positive spillover from new capital in a city outweighs the negative. That means there are increasing returns to urban growth and density. There is a simple objective test of this bald assertion, independent of your or my subjective reaction to jostling in Times Square. The test is unit land value, which measures the net excess of service flow above cost. Unit land values tend to vary with size of city and density within cities.

When a city elects to allow immigration and to grow, it incurs added costs, no doubt of it. Those who resemble Oscar Wilde's economist, knowing the cost of everything and the value of nothing, naturally then condemn growth. But the larger city also enjoys benefits. Which is greater? The net balance shows up in land rents and values.

The criterion of success or failure is not anything as complicated as value per capita, although larger cities rank higher in this too. It is simply land value per square foot. There are few cities that could not raise these by becoming larger and denser. There is nothing in San Jose worth as much as Market Street in San Francisco; nothing in San Francisco worth as much as State Street in Chicago; and nothing in Chicago worth as much as Wall Street in New York.

The thinking of many people on this subject is dominated by an illusory congestion problem that is owed to unbalanced growth and

bad planning. Thus, between bucolic York and Lancaster, Pennsylvania, for example, there is a murderous three-lane strip of the Lincoln Highway with a maximum of overcrowding and peril, serving a small population. Its overloading exemplifies short-run increasing costs, not long-run; a fourth lane adds more to capacity than to cost. Better yet, of course, is to develop the second and third dimensions of the transit network, focusing urbanization on a center, converting primitive roadside stands, stultifying roadhouses, and culturally deprived youth drive-ins into markets, pleasantly appointed lounges, and gyms or youth centers.

Overloaded pipes and wires of all kinds signalize short-run increasing costs, but not long-run. Overloading is a signal to replace small lines with larger ones or individual systems with community systems, achieving in the process great economies of scale. Car-choked streets manifest increasing social cost of cars, but not of transport. They are a signal to tax cars and to promote mass transit, again achieving savings.

There is such a thing as true ultimate long-run congestion, when a city center suffers from absolute shortage of space. In this extremity the best way to ration the use of limited space is not to tax private buildings, but rather to socialize the rent from the public space by imposing user charges on it. Such user charges are not only consistent with the taxation of land values, they *are* taxation of land values—public land in this case. The revenues they yield should be added to what the land base will yield.

There is a hostile tradition between land-taxers and user-chargers which masks the consistency of the policies. Historically the land taxers were often right, because high user charges (“average-cost pricing”) are not economical when a system can lower costs by adding capacity; and user charges often are based on monopoly pricing, always bad. But user charges on scarce common space, exemplified by parking meters, are quite obviously just the collection of economic rent from scarce public land.

Thus, the argument for taxing buildings to ration the use of common space and to limit public costs leads to an argument for collecting rent from scarce public land and adding this to the anticipated land tax revenues.

The rehabilitation of the fiscal respectability of apartment houses in older suburbs, like Shorewood, Wisconsin, has begun, and exemplifies some of the points made above. Shorewood turns a good fiscal profit on its new high-rises and is the envy of neighboring municipal officers who see the gains but have yet to overcome the prejudices of their constit-

uents. A key to the success, however, is the scarcity of school children in apartments, which limits the generality of the object lesson.

The problem of local finance of public schools in a dynamic, migratory society is profound. Every open economy is motivated to screen out young people in varieties of ways, including tax policy. Sending children to school is not an "external diseconomy" in any proper social sense — it is merely made to appear so to local taxpayers. The solution here is surely some attendance-based payment from central treasuries to local school districts or even a social dividend modeled on the "G.I. Bill" paid direct to individuals. These would offset the bias against people that now dominates many suburbs, which fear dilution of their tax base through free immigration. This does not imply abandoning the property tax as often assumed, because the property tax may be imposed by state governments, too.

#### **Mercantilist and Hamiltonian Arguments**

Another defense of building taxation is based on a "fear of goods." It is a concern that to untax buildings would unleash competitive forces that would overbuild, flood the market, lower rents, and so, among other things, impair the tax base. It is compounded by a concern that to tax land would force unused land on the market and force down all land prices. The latter is encouraged by many land tax advocates who see the benefits of their policy largely in terms of reduced land values.

Economists who understand the meaning of a free competitive market will recognize this defense as an implicit advocacy of artificial scarcity and monopoly pricing. To tax buildings in order to restrict supply and raise or maintain rents is to use the tax system as a cartelistic tool. Indeed, exactly this policy was used by Brazil when it taxed new coffee plantings in an effort to valorize coffee in the face of a supposedly inelastic demand.

Historians who recall Alexander Hamilton's or Edward Gibbon Wakefield's public land policies will recognize the philosophy of artificial land scarcity. Hamilton purported to uphold land values by withdrawing most federal lands from sale, maximizing revenues by selling a low quantity at a high price and mortgaging the rest to the public debt. Maintaining the revenue base was nicely coordinated with a policy of maintaining rents, holding down wage rates, and avoiding competition from the produce of western lands. The modern advocate of building taxation does not articulate his rationale so explicitly — the conflict with full employment and antipoverty programs would be too

obvious. But it is doubtful if he would find much to fault in Hamilton's ideas.

Implicit in that rationale are these assumptions: that the demand for floor-space is not very elastic, that property values would be lower in a free market, and that intervening in markets to maintain property values is a proper function of government. All these are debatable at best. The last is pernicious or worse.

As to elasticity of demand, the greatest fear of market-glutting is expressed by those who see the untaxing policy as affecting just one class of buildings, typically offices. "This town just doesn't need many offices" is the refrain. This overlooks the obvious fact that the proposal is to untax all buildings, not just offices. The market would preside over a *balanced* growth and renewal, with more of most things. There would be changes of proportions, to be sure. Apartments and factories would expand and gas stations and billboards would contract, at least relatively, and would move to cheaper land. New buildings would displace old ones. But a new equilibrium would develop in which all uses survive, in new proportions and locations. Some new building would entail demolition of older buildings, tempering the net increment to supply.

Again, the central renewal would draw in a good deal of building that would otherwise go to fringe areas. It would *relocate* much of the building, rather than add to net supply. In the process it would reduce the pressure to extend public works to outer lands and therefore would keep those lands out of the urban market. It is an observable fact that the premature and sprawled extension of roads and utilities in urban fringes, in response to the artificial scarcity of land created by Hamiltonian policies, produces an artificial *abundance* of land in the long run. To focus development on the ripe central land is to keep it off the green outer rings of the urban circle and to avoid the kind of glut that has periodically weighted down land prices in major depressions. This is the analogue of a familiar finding by students of industrial organization about the "price-umbrella effect" of cartels.

Avoiding urban sprawl also reduces public outlays and so reduces the *need* for a tax base. The only way a city can have a tax base is to generate a taxable surplus. The only way it can generate a surplus is to be efficient. The way to make it most efficient is to develop the ripe, rentable, surplus-generating central land and spare the heavy costs of extending infrastructure into the lean, premature, sprawled, submarginal urban fringe.

The net result of present policies is to drive capital away from the rentable center, where it yields a surplus above the sum of private and

public costs, out to the fringes where it absorbs public costs so great as probably to exceed the sum of private and public benefits — viz., rents and taxes. That is, in an overall social accounting these fringes are submarginal. They only appear rent-yielding to private owners because of gross public subsidies milked from richer central land.

The policy of taxing land values would focus building on land that yields a surplus to society as well as its private owners. It is economically inevitable that developing better land in preference to worse land yields greater taxable surplus. The most visible gain to perceive is the spectacular decline of infrastructure costs, which vary as functions of line-length and area serviced more than functions of people served. Equally weighty but more subtle would be the gain of synergistic urban power from better mutual access of parts.

Next, note that every metropolis is divided into dozens of tax jurisdictions, all competing with each other. This chapter's consistent assumption of an open economy is tailored to the realities of these fragmented jurisdictions. Each can increase its share of the market of its metropolis. Even if there is some inelasticity of demand for the floor space of the whole metropolis, there is much more elastic demand for the supply of each taxing jurisdiction.

Also overlooked is the complementary nature of buildings and land. Tall buildings may substitute for land, but all buildings use land. To restrict building supply and add to its cost by taxing buildings creates an artificial scarcity of buildings, not of land. It reduces builders' demand for land and cuts deeply into land values (see above). It protects the value of old junkers by suppressing competition from new buildings. The new buildings would out-compete and devalue the old in two ways. One is the obvious, the quest for customers. The other is the quest for land. New buildings devalue old by pulling the ground out from under them. So taxing buildings maintains building values by suppressing land values. This is not a net increase of tax base, nor is untaxing buildings a decrease.

The problem of inelastic demand must be addressed, however, when taxing land unfreezes the market so that the effective land supply rises, *and* untaxing buildings lets the new land supply be used, *and* the jurisdiction is a large share of some market for floor space.

In the days of Hanseatic city-states, many a city had its defined hinterland to serve — and exploit. If the city doubled in size, its unit rents would probably fall. The attitudes framed in that era persist today: limit competition, milk the hinterland. This is the essence of historical "mercantilism."

Even then, demand was more elastic and the world more dynamic



than the city influentials usually perceived. Economic history may be written as a progressive succession of open, expansive cities displacing former champions grown restrictive, mercantilist, and stagnant. Today, trade routes and territories, like everything, are more changeable, and urban monopoly powers more vulnerable to interlopers.

So the city that seeks to exploit a monopoly of location is asking for extinction. Still, there are such monopolies, and the question must be faced. Suppose a city has one and can exploit it. What is the result of taxing land, untaxing buildings, and opening the gates to competition? The result is a redistribution of rents and land values from city to hinterland. There is no loss of tax base to the area as a whole. Indeed there is an increase, because monopoly always involves excess burdens.

Here we have a case where the provincial urban self-interest conflicts with the wider public interest. The solution is to pass state or federal laws that prevent urban monopolies from exploiting their hinterlands. Such laws would be state-ordered exemptions of buildings from the property tax.

Finally, what would happen to the tax base if all cities in the United States taxed land and not buildings? Now we move into a new set of issues. Hamiltonian policies of land withdrawal and artificial scarcity, applied nationwide, hold down wage rates and the impudence of labor, as the great Federalist explained. They avoid a glut of goods (or floor space) that might lower prices (or rents). Thus, they do raise unit land rents and values by redistributing income from labor to land. Taxing land and untaxing buildings are anti-Hamiltonian policies that would release the natural abundance of land to the market and lower unit rents and values.

There is no serious possibility that this would destroy the land tax base. It might, however, lower the base. The problem is not one of public finance, for a higher tax rate can recoup the revenue. The problem is distributive. Is it equitable to raise wages, lower prices, and lower land income?

This is partly a question of individual belief, but it is also a question of consistency with accepted public policies and precepts. The results of land abundance would generally be consistent with basic public policies: (1) promoting full employment; (2) combating inflation; (3) combating poverty; (4) equalizing the distribution of income and wealth; (5) favoring earned over unearned income, for reasons both of equity and incentives; and (6) letting free competitive forces determine the relative rewards of different inputs.

Note, additionally, that the accrued increment of land values from

any base year you choose to the present has largely escaped income taxes. To tax the values now is simply to tap this great reservoir of accrued, untaxed income.

### **Regressivity and Maximum Tax Load**

Housing taxes proportioned to housing values bear heavily on the poor. One reason is that a unit of shelter commands a minimum floor value, however miserable, simply because it lets a person survive in a community. Above this floor, higher rents command higher quality out of proportion to the higher rent.

A parallel reason is economies of scale in building, the factor Morton emphasizes. Double the cost and you may quadruple the space in a building.<sup>101</sup>

For these reasons it is generally believed that housing values (and taxes based on them) do not rise in step with income, which severely limits possible property tax rates. Margaret Reid has challenged this view,<sup>102</sup> and a debate rages. The resolution which the debaters have yet to see lies in the fact that outlay on buildings rises with income slower than outlay on land. The share of land in housing values tends to rise with value of house and lot together.<sup>103</sup>

The plight of many marginal people in small houses sets an upper limit on the building tax rate. There is no such general limit on land taxes. While there are individual instances of poor people holding valuable land, this is almost a contradiction in terms. In general the land tax is progressive, for two reasons. One, it is not shifted, so only an owner and not a tenant bears it. Two, the ownership of land is highly concentrated. As a consumer good, land is a superior good and a status symbol. As an investment, land promises capital-gains type income with minimal management problems, traits that attract the wealthy buyer.

Unlike most progressive taxes, land taxes do not suppress incentives or distort allocation.

Therefore, there is no upper limit to the tax rate that may be applied to land, either on distributive or incentive grounds. Untaxing buildings removes the usual objections to raising property tax rates. It lets a community socialize as much of its taxable surplus as is possible under any system of taxation.

101. The same thing applies to most commodities and argues against sales taxes, excise taxes, value-added taxes, and the like.

102. Margaret Reid, *Housing and Income* (Chicago: University of Chicago Press, 1962).

103. President's Commission on Urban Housing, *Report on Urban Housing*, p. 351.

**Conclusion**

Although this chapter is long, it is too short for the issues raised. There is scope for challenge, supplementation, and qualification of the findings. Nonetheless I stand by the following major conclusions.

1. Land values today equal or exceed building values in the United States.

2. Land value increments are current income, just as real as "ordinary" income. They should be taxed as they accrue, and a tax on land values does so. Increments to the public equity in land are current public income and should be monetized by debt expansion.

3. Untaxing buildings raises ground rent by an amount equaling the loss of building taxes, whence it may be recaptured by raising the tax rate and without lowering land values.

4. Untaxing buildings removes an excess burden of indirect taxation and so raises the tax base.

5. Untaxing buildings stimulates the generation of net spillover benefits captured in ground rents, further raising the tax base.

6. Taxing land promotes a reallocation of land to intensive users now screened out by credit rationing. This further raises ground rent and the tax base.

7. Untaxing buildings and taxing land generates growth and growth expectations. These add to land value increments which are part of the tax base.

8. Building taxes are not effective as a user charge to screen out submarginal people or capital from a city. User charges on congested (but not other) public facilities are effective. They are ways of collecting ground rent, and are part of the land tax base.

9. Hamiltonian and mercantilist arguments are based on monopoly or class thinking. They are either self-defeating or incompatible with modern public policy.

10. Untaxing buildings removes the legitimate reasons for limiting property tax rates.

The reader might now easily conclude that I feel confident that land is an adequate tax base. Of all the issues surveyed which warrant further study, however, there is one that should command priority and give us pause.

That is the *stability* of land values. They collapsed in 1819, 1836, 1857, 1873, 1893, and 1929. While the causes of instability would be greatly abated by taxing land values on a continual basis, they can be aggravated by a vacillating policy with assessments chronically lagging the market.

It is quite clear today that twenty-five years of untaxed, unearned increments have aroused a new fervor for taxing land values. As we translate this into policy, let us be certain we are changing our basic thinking, not just responding reflexively and primitively to a cyclical stimulus. If it be the latter, we would only be playing out predestined roles in the modern revival of an old tragedy. If it is the former, we can use land taxation to help stabilize the property tax base by promoting orderly, measured urban development.

#### APPENDIX I

Further reports of corporate land holding are the following:

The California oil market is dominated by Shell, Union Oil, and Standard of California (Socal). Invading giants Gulf, Jersey Standard, Continental, Phillips, and Atlantic are making hardly any headway. The reason: "Shell, Socal, and Union already had all the best locations. They also had all the locations with the best potential" ("Costly Beachheads," *Forbes*, 1 May 1969, p. 23).

United States Life Investment Corporation has an investment portfolio of \$300 million, "much of it in real estate" ("Making Land Holdings Part of the Business," *Business Week*, 9 August 1969, pp. 92-94).

"Financial houses and insurance companies [are] now moving strongly into real estate development." Like many major corporations, they manage their land through subsidiaries. Some corporations with large real estate subsidiaries are Signal Companies, Inc., Weyerhaeuser, Ford, Chrysler, Leslie Salt, Humble Oil, Goodyear Tire and Rubber, Ogden Corporation, and Socal (*ibid.*, p. 94).

Fibreboard Corporation of San Francisco has 25,000 acres on the north shore of Lake Tahoe which it is developing to forestall a county move to zone it for open space ("and some have greatness thrust upon them") (*ibid.*).

Lockheed Corporation, "like many large aerospace companies, acquired large tracts around the country with an eye to expansion, but later changed its plans" (*ibid.*).

Pillsbury Company acquires retail sites for its subsidiary, Burger King. Burger King, a franchise business, may be only an interim use in many cases (*ibid.*). The need for interim uses probably explains a great deal about the current explosion of franchising.

Bethlehem Steel's midwestern mill at Burns Harbor is "located on a 3,300 acre Lake Michigan shore site, . . . superbly situated in terms of steel markets and transportation," according to Bethlehem Steel in a recent advertisement. Bethlehem has ten other plants as well. By polluting surrounding air and water, steel mills tend to enjoy a species of de facto easement over more land than

they own outright, as well. User charges on emitting effluents, which I have identified as part of the land tax base, would capture this rent.

The basic asset of Di Giorgio Corporation is 18,550 acres of rich farm land in California and Florida. As it appreciated, Di Giorgio took tax-free cash from this accruing income by borrowing on it. They sold 3,600 acres circa 1968 for \$4.3 million, or nearly five times book value of \$885,000 ("Faces Behind the Figures," *Forbes*, 1 August 1968, pp. 48-50). Di Giorgio is a younger corporation, so that historical cost of land is not as small as with the older giants.

Georgia-Pacific Corporation owns 4.5 million acres of timber land, second only to International Paper ("Watch that Waistline!", *ibid.*, 1 February 1969, p. 26).

The successors of M. A. Hanna and associated corporations controlled by George M. Humphrey own a mountain of high-concentrate iron ore in Minas Gerais; Iron Ore of Canada (Labrador), which works North America's richest iron deposits; Carol Pellet Company and other interests in the Mesabi; a Dutch storage and dock company; Koolanooka mines in Australia; nickel mines in Oregon; 3.4 million shares of National Steel stock worth about \$200 million; 500,000 shares of Jersey Standard; 410,000 shares of Texaco; \$2.1 million of Shell Oil; \$1.2 million of Continental Oil; Consolidation Coal Co.; and a large-enough bloc of Chrysler stock to name its chairman ("Where Do the Humphreys Go from Here?", *ibid.*, 1 November 1965, p. 17). George Humphrey was widely regarded as the most powerful member of Dwight Eisenhower's cabinet and a representative of "business." If he represented "business," then "business" is a euphemism for resource ownership.

Coal companies, of course, own coal land. Many historically belonged to rails. Today, liquefaction of coal is nearing the threshold of feasibility and major oil corporations are buying coal corporations, as well as collecting parcels of potential coal land from individuals ("Grimy but Glamorous," *ibid.*, 15 March 1968, pp. 68-70).

Engelhard Hanovia is the family holding company controlled by Charles Engelhard. Precious metals' mines are a primary holding, interlocked with giant Anglo American, the diamond-centered empire of Harry Oppenheimer. Oppenheimer owns one of the largest stables in South Africa and is said by Engelhard to prefer to do business with other horse fanciers, which it is hard to be without owning a grand spread of land. Engelhard was a frequent caller at the White House under Lyndon Johnson. His resource-oriented investment policy is premised on continuing inflation ("The Engelhard Touch," *ibid.*, 1 August 1965, pp. 20-25).

One indicator of how much or little of corporate asset appreciation represents new capital is the volume of new stock issued. The rest of it represents appreciation of existing assets and plowback of ordinary income of existing assets — often the two are hard to distinguish. Yet the volume of new issues has for years been very small relative to the rise of aggregate values of common stock. It vanishes into negligibility compared to the aggregate value of common stock. The total market value of the common stock listed

on the New York Stock Exchange alone was about \$530 billion in 1968 ("The Market's Judgment," *ibid.*, 1 April 1968, p. 50). The great rise of corporate stock valuations has not represented mainly new capital from outside, but appreciation from inside. Since plant and equipment depreciate and obsolesce and since good will is fickle (remember Rinso, Victrola, Packard, Collier's, Cities' Service, Pierce-Arrow, and Pears' Soap?), that seems to leave land in a prominent role.

The conspicuous fact that the Dow-Jones averages can hit 900 without evoking a flood of new issues seems the clearest sign that the appreciation is of non-duplicable assets. For how could duplicable assets even double in value without inspiring intense duplication?

The 52-acre urban land base of Paramount Pictures Corporation recently became too valuable for moviemaking. The conglomerate owner, Gulf and Western Industries, Inc., is offering it for sale. This follows the trend of 20th Century-Fox, which sold its Beverly Hills lot for Century City in 1961 and has halted plans for a studio on its 2,700 acres at Malibu, presumably to sell it (and perchance to claim capital gains treatment of the profit because the alleged plan was to use the land in its business?). Universal City Studios keeps 420 acres in North Hollywood. The urban location lets it reap a good income from tourists, a hotel, and office buildings along with television films. M.G.M. is considering sale of its 182-acre Culver City lot (estimated value: \$45 million) and 2,000 acres in Conejo ("Paramount's Lot," *Newsweek*, 10 November 1969, p. 84; *Time*, 4 August 1969, p. 71).

Union Camp Corporation, a paper company, owns almost 1.6 million acres in the southeast. Some is "much too valuable to grow trees on," according to UCC President Calder. Several new interchanges are on their land. A company study turned up 40,000 acres they held worth more than \$400 an acre — some for minerals, some for urban uses ("A Tree is a Tree?", *Forbes*, 15 February 1969, p. 42).

One division of Continental Can Company is Continental Forestry Company which owns 1.3 million acres of woodland in seven southern states (*ibid.*, 1 September 1968, p. 16).

Radio stations are priced higher than ever today, despite television. WINS, New York, brought \$10 million in 1963; WOL, Washington, D.C., \$1.2 million in 1965; KILT, Houston, \$7.2 million in 1968. These prices represent more than ten-fold appreciation in each case ("A Loss Can Be a Profit," *ibid.*, 15 April 1968, pp. 53–59). As the frequency right or "intangible" appreciates, IRS policy lets buyers write up the depreciable equipment, even though it has already been fully depreciated once from cost. Thus, in effect they depreciate the frequency right as it appreciates; and it appreciates all the more because it can be depreciated again by the next buyer.

The Lykes Corporation owns 400,000 acres northwest of Lake Okeechobee in cattle and citrus, a stockyard, 250,000 acres in Texas, Lykes Pasco Packing Company, a shipping company, and Youngstown Sheet and Tube. Lykes acquired Youngstown because they anticipate "violent inflation" and therefore

want natural resources (that is, appreciation). Youngstown owns its own iron and coal ("Minnow Swallows Whale," *ibid.*, 1 April 1969, pp. 30-31).

A great deal of land value hides under the fringed skirts of "good will" and "going concern value." The rash of recent tender offers suggests many shrewd investors believe the assets behind the corporate front are worth more without than with the present management. *Forbes* notes that, while book values universally fall below asset values, many corporate shares still sell for less than book value. The suggested reason: "investors may be so dismayed by the company or its management that they don't want its stock at any price." These companies' management is, then, a negative input that holds its property income below opportunity cost. They list sixty-four "loaded laggards" (*ibid.*, 1 June 1967, pp. 59-60).

The Long Island Railroad cannot make money or meet bonds, but its land had a scrap value of \$65-\$95 million in 1965 ("At Long Last," *ibid.*, 15 July 1965, p. 38).

Processing-fabricating companies are generally forced to integrate vertically and become resource-holders, if they did not begin that way. A recent example is American Smelting and Refining Corporation (Asarco). As Kennecott integrated forward, Asarco integrated backward into mining ("Challenge & Response," *ibid.*, 15 October 1964, p. 46).

Anyone may extend this list indefinitely simply by reading the business press.

## APPENDIX II

### THE EFFECT OF HIGH INTEREST RATES

A major paradox of modern land markets is how land prices keep rising in the teeth of higher interest and tax rates. Higher capitalization rates are supposed to lower land prices:

$$V = \frac{a}{i + t}.$$

There is a fourth variable in the capitalization equation, however: ground rent ( $a$ ). Ground rent equals the product of land value times the sum of interest rate plus tax rate. Since land values, interest rates, and tax rates have all three risen for twenty years, the implication is that land rent has risen faster than any one of them — *much* faster. To be sure, there are other possible reasons, notably higher expectation of growth and inflation, not covered in the above equation. But it is hard to avoid inferring some disproportionate growth of current land rent as well.

Thus, the implication of high interest rates is that the growth of land values, great as it is, is an inadequate index to the growth of the underlying land tax base which is land rent.

A corollary is that the public is tapping an ever *smaller* share of land rent,

even though tax rates have risen! To keep the public share constant, tax rates must rise in the same proportion as interest rates; and this they have not done.

The equation implies that rent is shared between the public and private claimants in the proportions of the interest rate and the tax rate. The public share is  $t/(t+i)$ ; the private share is  $i/(t+i)$ . As  $i$  rises, the private share rises with it; the public share falls.

Most dialogue about tax rates overlooks this basic relationship altogether. The talk is entirely in terms of the nominal tax rate, in a vacuum. Present rates are called "high" by reference to past rates. But the ability of a given rate to tap the real base—ground rent—depends entirely on the relationship to interest rates, shown above. The higher go interest rates, the less rent is tapped by any given tax rate.

Today, 9 percent is a fair stab at the relevant interest rate; 2 percent at the relevant tax rate. That means the public share of rent is about  $2/(2+9)$  or 18 percent. It follows that there is ample scope for raising more revenue from ground rent.

A second corollary follows. The higher go interest rates, the less sensitive are land values to tax rates. Land values are sensitive to the sum of  $(i+t)$ . When  $i = .09$ , and  $t = .02$ , a doubling of  $t$  raises the sum from .11 to .13, or by 18 percent, and thus lowers land values by only 18 percent.

Even this fall is premised on the tax rise's being "onerous" (Marshall's usage), that is, not being compensated by increased public service or lower taxes on buildings. As shown above, there is no fall of land values at all when higher land taxes are balanced by lower building taxes. Again, there should be no fall if the added levies are sagely spent on improved "services to property." Even "services to people," if well conceived, often raise land values by enhancing a community's livability. If people can consume "services to people" only by tenure of land in a locality, the service value is captured by land rents and values.

What is now being shown is that a jurisdiction already taxing nothing but land values can raise the rate and levy out of all proportion to the decline in tax base that might result, even though it distribute the proceeds as a social dividend, fight a costly, losing, remote war, pay off old debts, or put gold bars in orbit. If it spends the money more productively, it will, of course, benefit correspondingly.