

but the earnings, illustrated by some railroads, may be nonexistent or so low as to justify at the most a value which would be only a fraction of cost minus normal depreciation. When a utility operates in many localities or states, the total worth of the corporation may be estimated by some satisfactory method such as capitalization of earnings. But how can the total be properly apportioned among various states or localities? Where should planes flying commercially over many states, or interstate trucking equipment, be taxed?

Financial institutions present a special problem because of holdings of securities. On their buildings and equipment, including expensive computers, they can be taxed on the same basis as other businesses. Difficulties arose when the law presumably applied property tax to such intangible property as bonds, mortgages, shares of stock, and bank accounts. For most families and businesses the law was not in fact applied to such property; when it was, grossly understated values may have been accepted. But responsible financial institutions whose records are open to the public would not be able to assert that a high quality \$1,000 bond with a market value of \$1,000 is actually worth, say \$150. To be taxed at rates applying generally would impose impossibly heavy burdens: a tax rate of 30 mills (3 percent) would take half of the total income of a 6 percent mortgage or other security.

Various methods have been developed to deal with the special problems

presented by the types of businesses noted in this section. Modifications of *ad valorem* property taxation may be used. Some states use a form of gross receipts tax for utilities. Insurance companies, in addition to taxes on tangible property, pay taxes on premiums.

### ***Constitutional and Statutory Ceilings on Property Tax Rates***

By provision of the state constitution or statutes, most states impose some limits on property tax rates. Localities are not free to impose property taxes without restriction. Practices and details, including those affecting the power of voters to approve rates above some limit, differ widely. The rate limit may apply to actual assessments or to those figures adjusted according to some equalizing figure as discussed later.

The restrictions may apply to some units of government and not to others when there is overlapping. Even though one or more types of taxing jurisdiction may be subject to a limit, the total tax rate may in fact rise as jurisdictions which are not limited react to pressures for increasing expenditures. New units of government (special districts) may be created with their own power to tax.

Debt service needs—interest and scheduled repayments—may be exempt from other limits. The results of tax rate ceilings in checking the growth of expenditures and in controlling actual burdens are not clear.

### III.

## Administration

Difficult problems of property taxation, and important effects, grow out of administration, chiefly assessment. Such has been the case for as long as this tax has been a major revenue source. Discussion is essential for an understanding of issues of practical importance and of opportunities for improvement.

#### ***Assessments Depend upon Judgments***

The base of the property tax — the amount to which the tax rate is applied — is an estimate of the worth of taxable properties. The estimates are called “assessments.” They are *judgments* of value. They have elements of arbitrariness and usually fall within a range of discretion which can be large.

The amount of tax due each year from a property does not necessarily result from a market transaction as do income and sales taxes — nor from a wage payment or a purchase. The property tax applies each year even when there has been no market transaction affecting the taxed property — no sale which gives an assured indication of an agreement between a willing buyer and a willing seller. The millions of families who live in houses they own do not make a cash payment (or receive money income) to show the market’s valuation of a year’s usage. For many business properties — buildings and equipment — sales are infrequent; and the income of the company results from the working together of several factors of pro-

duction so that the contribution of the property alone cannot be measured precisely.

For administration of property tax on the majority of parcels of real estate, machines, and so on, the facts needed for a correct determination of current worth are not available directly. Before sketching what can be done in estimating values (assessments) we shall examine the crucial issue of personnel for administration.

#### ***Assessing Staff***

Actual assessments are made in around 14,000 separate jurisdictions. Most are much too small. Staffing conditions differ tremendously.

An essential for good valuation for tax purposes is a staff of well-trained assessors. They should be professionally qualified, working on a full-time, not a part-time, basis. Selection and promotion should be on the basis of merit. Nevertheless, the notion that assessors should be elected still prevails in many places, with approximately half the states still providing for election. Critics say that this view reflects a misunderstanding of the nature of the job to be done.

This work is not a type for which voter choice of personnel is appropriate. The work of assessment should not involve *setting* governmental policy, the role of elected officials. The proper job is to carry out, that is to execute, policy

(1) according to rules set by lawmakers (who will be elected) and (2) on the basis of facts. Competence based on formal study and experience under supervision must be sought. If election is to remain as a basis of selection, all candidates can be required to meet at least certain standards. Perhaps passing a test to prove ability could be required of everyone standing for election. Then additional opportunities for study, incentives to do so, and rewards for success will help to improve the quality of performance. The International Association of Assessing Officers develops training materials and conducts courses of various types across the country.

Though familiarity with local conditions is essential for good valuation of real estate, a non-elected (permanent), professionally trained assessor can have as much knowledge of local facts as someone elected. As a practical matter, full-time assessors can have more time to search out, and to analyze, specialized knowledge of local conditions and to cumulate experience. The need for a variety of different kinds of specialized skills — for office buildings, factories of different types, shopping centers, recreational facilities, utility lines, multiple dwellings, and so on — adds to the desirability of staffs larger than possible in most offices with the traditional local selection.

Salaries and working conditions must meet competition. Private firms dealing in the sale, ownership, and management of real estate are often on the lookout for qualified appraisers. So are financial institutions making loans. Competent assessors will be attracted away from

government to private work at higher pay.

We now sketch the job to be done.

### ***Listing Real Estate and Other Properties Subject to Taxation***

Listing property on tax roll is a first essential.<sup>1</sup> Complete listing of real estate is a big undertaking and requires continuing effort.

The *land surface*, once it has been accounted for, would seem to be essentially fixed. In fact, however, changes which bear upon taxation do take place. Neighboring plots are consolidated and others are divided. Street widenings and other alterations need to be recorded. Mapping and the recording of surface area call for care; doing them well requires various skills.<sup>2</sup>

*Buildings* are put up, changed in ways that affect their value, and taken down. *Machinery* is purchased, used, and discarded. Business inventory rises and falls.

Good administration must keep track of these elements of the tax base. The task can be done well. But success requires more inputs of time, skill, and equipment than the typical unit of government will yet pay for. Reporting of building permits and inspections should cover a great deal of change from year to year. Aeronautical photography can be useful. Large assessing jurisdictions can effectively utilize equipment and staff which small units cannot afford.

The data must be recorded. One card for each piece of property can include the necessary factual information on lo-

1. Exempt real estate needs to be listed to assure a *complete* inventory. Such comprehensiveness will help to prevent overlooking some land and building which, wholly or in part, may be taxable currently or become so as a result of change.

2. Cadastres in some countries are registers of property and ownership. Maps may rest on detailed surveys. They may include a variety of information on topography, soils, and other features.

cation, size, materials, and other physical characteristics which affect value. One or more photos will be desirable.

### **Valuation**

Good valuation of the thousands of properties on a community's tax rolls requires accurate, up-to-date facts. Data on sales, leases, and other market transactions are essential; they can be obtained in large quantity — if the effort is made.<sup>3</sup> Too few localities, however, have done what is required to get the qualified manpower and other facilities needed to do the job well.

As noted earlier, one obstacle in several states is that assessment districts are still much too small to staff with the varied skills essential for good valuation of properties now within their boundaries. Minnesota in 1972 had over 2,000; six other states, including such large ones as Illinois, New York, and Wisconsin, had over 1,000 districts each. Hawaii, on the other hand, assesses on a state basis. Even the county, now the assessing unit in almost half of the country, will often be too small to have enough staff for various specializations.

Each parcel of real property — land and buildings — is, or is supposed to be, valued (assessed) once every few years. Techniques for valuation on a *mass basis* are required, as contrasted with the more thorough appraisals of banks and others for financing loans or private transactions on a few properties. Nominally, the law may call for assessment each year. In fact, no such frequency of serious review is practically possible. In the absence of broad changes such as

inflation (or deflation), it might seem the number of major changes from one year to another would not be too great to handle well on a four- or three-year rotation. But at best the task is large.

Business machinery, including leased computers and equipment, trucks, farm machinery, and aircraft will also present problems of valuation on a schedule frequent enough to keep figures realistic. Short-cut methods to adjust for depreciation are possible. Values used for income tax purposes are not necessarily accepted for property taxation. Business inventory, including work in progress or the stock on a retailer's shelves, may be valued annually or as some average. Household equipment when included at all is rarely assessed at amounts approximating probable worth. Art objects and minerals under the ground present special problems.

The needs for methods, procedures, data, and staff competence for valuing various kinds of properties — office buildings, factories, shopping centers, heavy machinery, forests, residences of many types (including mobile homes), banks, warehouses, motels, nursing homes, and so on — grow as the economy develops.

The staff must have access to the evidence about factors which affect value — the physical characteristics of the property, terms of rental or sale, neighborhood developments, zoning and other governmental regulations affecting value, and trends in the region, and so forth. Assessors need time to gather information and to evaluate it judiciously. Some facts are a matter of public record. But getting and analyzing much of the evidence will require

3. Laws in over half of the states help by requiring the use of stamps on the recording of real estate transfers to include the price of sale. At one time Federal tax stamps to the value of one-tenth of one percent of the price had to be attached to the deed. When that tax was repealed, some states enacted comparable laws. In this way, they get information of great value for property tax administration. But in the other states this help to assessors is absent.

persistence and effort somewhat like that of a detective. Owners may be reluctant to reveal data which would support an increase in assessment.

Manuals are indispensable for good results — to guide in making particular assessments and to help assure uniformity. Preparing manuals and keeping them up-to-date is too big a job for localities (except perhaps the biggest cities). Generally a state agency can produce the best results most economically.

A few governments use computers successfully to handle masses of figures quickly. Routine aspects of relating new data to groups of properties can be handled electronically. Various sources provide information on a large variety of factors which affect the market prices of a broad group of properties, such as housing — number of bedrooms, square footage, number of bathrooms, materials of construction, garage space, and so on. When dozens of such factors are related systematically to past records of market price, the computer can receive new data and turn out new assessments for hundreds or thousands of houses of the various types. Such computerization can relieve assessors of much routine work and free their time for those aspects which require non-routine skills and human judgment. Getting such a system established requires much effort, but a large amount of preparation of basic methods and computer programs is now available. In addition, success will depend upon the accuracy and adequacy of inputs of data.

The law usually appears to require that tax valuation be the amount for which the property would sell under normal market conditions on a specified date, neither buyer nor seller being

under any special pressure. Laws have long called for valuation at full current prices ("full cash value," "true market value in money," "fair market value," or "true value in money"). But the general practice has been, and in most but not all states still is, to assess at much below prevailing market levels. Such undervaluation favors poor assessment. Errors are not so evident when amounts are relatively small. For example, an error of \$1,000 may not be so easily spotted as would one of \$4,000; and yet if assessments are 25 percent rather than 100 percent of current market price, the \$1,000 really means the larger amount. A property assessed at \$9,000 when the market price is around \$30,000 may be overassessed relative to others, but the owner may have great difficulty learning just how he is treated compared with others in the locality. His assessment is so far below what the law seems to call for that getting equitable adjustment can be much more difficult than when the standard actually set is that of the market.

Several states now make it legal to assess at half, or some other fraction, of market price. Such authorization may help in getting standardization and more equality. Yet experts are in widespread agreement that full value as the standard offers greater likelihood of achieving results of generally good quality.<sup>4</sup>

Protection from political pressure to grant favoritism is clearly desirable — but not always a reality. The amounts of tax resting on human judgments can be large. Temptations to keep the assessor subject to political pressure are understandable. Homeowners, farmers, businesses, and others may hope that the use of voting power can keep their

4. *Uniformity* of valuation will be the chief objective. In some cases, however, the revenue obtainable and borrowing power may in fact depend upon actual, as distinguished from "equalized," assessments.

assessments relatively low. This condition does much to explain the persistence of small assessment districts and choice by election. Opportunities for corruption have been, and in some areas remain, larger than inherently necessary.

There is no way to know how much abuse remains as a result of the assessor's need to make some use of discretion. Informed leaders report, however, that the combination of professionalization, public scrutiny, and improved methods of handling masses of data have brought substantial improvements in many places.

### ***Bases of Valuation***

Real estate, the basis of most tax, usually includes land and man-made capital. The greatest difficulties ordinarily involve man-made capital. Assessors utilize three general approaches.

#### ***(1) Sales Prices.***

*Sales prices* are the preferred guide when they are available. What are the terms of actual transactions at arm's length? For single-family houses, market transactions are frequent enough to give satisfactory indications of value for similar properties. Features of houses which affect worth—differences in size, materials, age, location, type of roof, and so on—can be studied and measured. The information can help in assessing houses that have not been sold recently. Sales data can often be used for assessing some commercial and other types of business properties, including many farms. To a meaningful extent such properties are often more or less standardized and are sold often enough to yield data for good results.

#### ***(2) Income Capitalization.***

For apartment houses, office buildings, and many properties used for stores and other commercial purposes (which are not frequently sold and which differ from each other far more than do houses) values can be judged from the income they produce. For example, rentals can be capitalized on a basis which buyers and sellers accept. If the income is \$50,000 a year and on income computed in this was a 10 percent return is normal, then the capital value will be \$500,000. Much care in getting the figures, and much good judgment in applying them, are required. Persons familiar with terms of leases and what is going on in the market can help in setting guidelines. The portion of the total attributable to the land can be deducted to give the amount for the improvements.<sup>5</sup> Of course, this method has its own limitations. For example, future income is not always easy to judge. Moreover, speculative elements may not be reflected adequately in this method; the choice of interest rate to use in capitalization may not accurately allow for the uncertainties and the forces of speculation, positive or negative.

#### ***(3) Reproduction (or Replacement) Cost Minus Depreciation.***

Many properties, however, are anything but standardized. They are built to somewhat specialized requirements—factories, theaters, apartment buildings, office and shopping complexes and other stores, and so on.

For the land element, the problems need not, as a rule, be markedly difficult. Values of the land on neighboring plots generally relate to each other more or less closely and systematically; sales

5. An improvement may have negative value; that is, the land alone if unencumbered would be worth more than the capitalized value of income being obtained.

here and there can serve for a considerable area as the values provide linkage for the area beyond. Publication of maps showing all land assessments can provide a valuable check on uniformity, equality, and consistency.

The man-made capital elements presents the greatest problems. For these more specialized, perhaps "one-of-a-kind" structures, and for some large, nonstandardized, and often highly technical equipment, reproduction (replacement) cost less depreciation is usually the best method. What did it cost (or would it cost) to build this electric or telephone installation, factory or recreation center, paper mill or printing plant? How much has it lost in worth because of depreciation and obsolescence?

Estimates based on knowledge of persons familiar with conditions may be costly to make. Often the results are not fully satisfactory. Judgments play a larger role than might seem desirable. Inherently, the assessment of specialized structures and installations presents substantial difficulties. Construction costs change. Companies building today would not as a rule try to reproduce structures as designed in the past. Depreciation is almost always subject to debate. The figures used for income tax and business accounting purposes are not necessarily the most useful guides for property taxation. For example, businesses, in company accounts, frequently use the purchase price of land year after year regardless of changes in market values.

No summary as brief as this one can possibly explain the many factors which must be taken into account in assessing the vast variety of properties which make up the tax base. In general, satisfactory valuation of land can be ac-

complished more readily than can values for man-made capital.<sup>6</sup> The latter consists of many more types and in a range of conditions from modern and suitable to decrepit and inappropriate for the location. Parcels of land bear relatively close relations to others nearby. More or less standard rules help to estimate the effects of size, shape, and corner location.

Special methods are often used for public utility properties. Zoning and easements, minerals unseen below and air rights above, and other elements present problems requiring special evidence and methods.

#### ***Judging Quality of Assessment: Sale-to-Assessment Ratios***

Most cases of assessment inequity have probably been "moderate" rather than "large" in amount. But some inequality of assessment has been so great that, in relation to property holdings, owners and users have paid much less tax than have others. Study after study has revealed assessments that are grossly unfair. Shockingly unequal assessments have continued. Fortunately, methods for improvement have been tried, tested and improved upon. Progress has been made, substantially in some places, moderately in others — but scarcely at all in some localities.

As noted earlier, the public does not ordinarily have a solid basis for judging the quality of assessments, especially the extent of inequality. One method of evaluating assessments is the preparation and publication of "sale-to-assessment" ratios. Generally objective conclusions can be reached without unduly complicated study. How do prices of sales of taxed property in the free

6. One major city, the District of Columbia, utilizes a private board of persons engaged in real estate activities to review proposed land assessments and suggest improvements.

**Table 5**  
**Percentage of Assessed Value to**  
**Sales Price of Sold Properties,**  
**Single-Family Nonfarm Houses,**  
**Selected States, 1971**

State	Ratio (percent)
United States: Mean	34.0
Median	32.6
Oregon	87.1
Kentucky	83.8
New Jersey	58.3
Massachusetts	49.3
District of Columbia	47.5
Wisconsin	46.7
Michigan	41.5
Illinois	37.8
Ohio	36.9
Washington	36.1
Virginia	34.8
Tennessee	32.6
Pennsylvania	26.6
New York	25.8
Indiana	23.5
Colorado	20.7
California	20.0
Oklahoma	18.2
Texas	18.0
North Dakota	15.1
Louisiana	13.1
Minnesota	8.5
South Carolina	4.0

Source: 1972 Census of Governments, Volume 2, Part 2.

market compare with assessments? If House A was last assessed for \$15,000 and was recently sold for \$30,000, then the ratio of assessment to sale was 1 to 2 or 50 percent. If most other cases were about the same — 47 and 54 and 46 and so on — then the level seems to have been around 50 percent. Increasing use of such ratios gives assessors and their supervisors — and the public and often a state agency which has some oversight responsibility — a useful check.

The 1972 Census of Governments compared actual selling prices of spe-

cific properties, chiefly single-family houses, in 1971, with the assessments. Table 5 presents some of the findings.

Assessments were usually much below the market level. Wide *inequality* in *under*-assessment was also extensive. Yet, compared with similar surveys for 1956, 1961, and 1966, substantial progress had been made through much of the country; and in some areas, the results are better than may once have been deemed achievable.

Facts about the accuracy of assessments of more complex business properties are not generally obtainable. Sales of factories, warehouses, office buildings, etc., are rare. To get generally equal assessments of nonstandardized properties of about the same general type (apartment buildings, gasoline stations, or department stores) requires higher quality work than most communities provide. The levels of assessment sometimes vary from one type of property to another, perhaps intentionally. For example, discrimination against business properties may result from the desire to get the votes of homeowners. In other cases, however, assessments may favor companies to improve the community's competitive position, economic base, and employment.

Is it possible to test the general quality of assessments of types of properties not often sold? The data obtainable from more or less public sources can be assembled and analyzed in the government — or some private organization — provides a staff with the skills, time, and incentive needed. Properties are bought and sold in the free market. Rental contracts are made. New loans are arranged. Figures of appraisals for private purposes sometimes become available. Moreover, a state or other supervisory agency can arrange for detailed ap-

praisals of a sampling of taxed properties. If valuations made in this way conform generally with assessments, then the latter will inspire confidence. If not, there are indications of where changes are needed and probable magnitudes.

### Quality of Assessment Results

The 1972 census found that in 9 states residential property (nonfarm) was assessed at less than 15 percent of sales price. In 9 states assessments averaged 50 percent or more. Acreage and farms were often assessed at lower percentages of sales prices — under 15 percent in 18 states. Vacant lots were also assessed generally at lower percentages of sales prices than houses. (See Table 6.)

Inequalities within the same community (intra-area dispersion) and from one community to another (inter-area dispersion) are low in some places and many times as great in others. Table 7 shows 1971 figures for selected states. Low figures indicate uniformity — good quality — of assessment in this important respect.

### Opportunity for Owners To Get Assessments "Corrected"

An essential for good administration is an opportunity for the taxpayer to compare the valuation placed on his property with those on others in the area, and to press for correction if his seems to be out of line (too high). "On paper" it seems that every owner does now have access to facilities for appealing a tentative assessment or challenging one after it has been recorded on the rolls. Cheap, simple, informal procedures do seem to be provided by law. The realities, however, vary. Stages of appeal exist. Usually, there will be an opportunity to get a review by the assessor or one or more boards before going to court.

The actual procedures differ from state to state. Presenting evidence is usually required. Sometimes an owner who wishes to appeal a valuation can use the sales-to-assessment figures tabulated in the assessing office or by a state agency. Membership on the administra-

**Table 6**  
**Distribution of States According to Aggregate Assessment-Sales Price Ratios for Major Use Categories, 1971**

Statewide aggregate assessment-sales price ratios	Number of States				
	Single family residential	Multi-family residential	Acreage	Vacant platted lots	Commercial and industrial
Total, all ratios	51	51	50 <sup>a</sup>	51	51
Ratios of:					
Less than 15 percent	9	9	18	14	9
15 to 19.9 percent	5	5	7	6	6
20 to 24.9 percent	6	4	4	5	7
25 to 29.9 percent	5	4	4	8	5
30 to 34.9 percent	3	6	6	3	1
35 to 39.9 percent	7	2	6	5	3
40 to 49.9 percent	7	11	2	6	12
50 percent or more	9	10	3	4	8

a. Excludes District of Columbia.

Source: 1972 Census of Governments, Volume 2, Part 2.

**Table 7**  
**Assessment Uniformity, Single-Family Nonfarm Houses,**  
**Selected States, 1971**

Composite coefficient of intra-area dispersion		Coefficient of inter-area dispersion	
State	Percent	State	Percent
United States-median	22.5	United States-median	14
Kentucky	12.5	Utah	4
Michigan	14.6	Iowa	5
New Hampshire	15.0	Maryland	5
California	15.7	Oregon	5
Oregon	16.5	California	8
New Jersey	16.9	Ohio	8
Hawaii	17.2	Kentucky	9
Florida	18.1	Colorado	10
Massachusetts	18.2	Illinois	10
Ohio	19.5	Michigan	11
Vermont	21.2	Kansas	13
Tennessee	21.4	Delaware	14
Minnesota	22.2	Minnesota	14
North Carolina	22.5	Connecticut	16
Illinois	23.0	Missouri	17
Indiana	23.1	New Jersey	21
Georgia	23.6	Washington	21
Washington	23.9	North Carolina	22
Arizona	24.7	Maine	24
Louisiana	25.1	Wisconsin	24
Texas	25.7	South Carolina	25
West Virginia	25.7	Alabama	26
Missouri	26.5	Pennsylvania	26
New York	26.8	New York	32
South Carolina	27.9	Mississippi	33
Alabama	28.1	Massachusetts	40
Pennsylvania	30.0	Louisiana	42

Source: 1972 Census of Governments, Volume 2, Part 2.

tive boards of review is not as a rule based on proof of special capacity and competence for judging property values. Often appellate board personnel are part-time; many are elected; some serve *ex-officio*. Boards frequently review decisions for which their own staffs were responsible. Rules of procedure may be informal. Reasons for actions to revise the original figure, or decisions to let it stand, are not as a rule spelled out. Opportunities for favoritism and stubborn refusal to grant relief can be substantial; results can go unchecked.

Cases going to court set precedents for values in an area. Assessors may then feel bound to utilize about the same figures even when the judges may not, really, have designated the most accurate amounts.

#### *Equalization of Assessments*

Local assessment of property leads to differences in the general levels of valuation from one place to another. The differences from one district to another — 35 percent in one district, 30 percent next door, 25 percent elsewhere — even

if there is general equality within localities, can be large enough to have real significance if more than one level of government uses assessment made by others. For example, assume that town officers make the assessments while school boards which have different boundaries, or the county, also rely on them. Assume Town A values at around 40 percent of market and Town B at 33 percent; then a single tax rate by the school district part of which lies in each town will impose unequal burdens as between residents in A and those in B.

Some adjustment is needed. *Equalization* of assessments is designed to do so. And it is used for another purpose when, for example, a state uses assessments in allocating grants to localities.

Suppose that the state in making grants for schools desires to provide funds on some basis which will recognize differences in local conditions — perhaps to give relatively more to poorer than to more prosperous districts. What index of local economic conditions is available? The value of property would seem to be relevant. But if assessments are not on the same basis from one town to another, they can hardly give accurate indications of differences. And if they are used without correction, localities will have a positive incentive to under-assess to give an appearance of being less well off than is actually the case. A level of 20 percent could lead to the appearance of having less economic ability, and require relatively more grants from the state than a level of 30 percent.

“Equalization” is the process which states have devised to deal with such disparities. A state staff compares local assessments on some systematic basis.

Sales-assessment ratios are widely used. Some independent appraisals of samples of properties in various assessing districts are occasionally made. Percentages can be published for use in adjusting actual assessments to give “equalized” figures.

### *Use of Private Appraisal Firms*

Communities sometimes hire private companies to reassess all properties. Firms making a business of mass appraisal for tax assessment can employ a staff much larger than that used permanently; they can concentrate personnel to cover the entire area within a relatively short period of time. They can employ uniform standards over the area; as specialists they may use methods which are better than those employed by regular assessors. The locality will also usually get new listings and descriptions of property and perhaps other data and records.

The background of need for such mass appraisal varies but generally grows out of the rate of change in recent decades. Many localities have undergone growth and change of real estate values which have been faster than assessors have been able to allow for fully.

As assessments get out of date, the rolls accumulate a large proportion of inequities.<sup>7</sup> Unquestionably, then, a comprehensive reassessment may be needed. The permanent local staff is too small to do a complete job. It may not have some of the skills needed. Its maps and other records may have lagged. Assessors may be reluctant to admit that existing assessments are as poor as is the case. Moreover, local officials may be subject to local pres-

7. All properties may be valued at, say, 30 percent of market price but as of different dates. If older properties are on the tax roll at 30 percent of a valuation (at the last routine assessment) of the early 1960's, newer properties will be at 30 percent of values of late 1960's. Much inequality results.

asures of various types, and at a great disadvantage in making large changes.

A "new start" requires outside help. The locality will ask mass appraisal firms for bids on a contract to get records and assessments up to date on a uniform basis. For once, everything will be valued by the same yardstick. The locality with its regular staff can hope to keep abreast of the changes that come — though in fact it may fall behind because of lack of determination and staff. The companies claim specialized capacities of various kinds; many of them have accumulated a vast amount of experience. For knowledge of local conditions they can utilize persons from the area, as employees and as consultants. The figures proposed will presumably be open to public scrutiny and open to appeal and change.

Utilizing mass appraisal firms effectively presents problems. Competitive bidding may be required by law and should help to keep costs down. But difficulties arise because the quality of results can vary, and the low bid may be possible because the company does not intend to devote the effort required for a really good job. The community cannot in advance determine the difference between top-notch as compared with mediocre results. Local officials will have little experience in specifying the requirements, selecting a firm, and checking the processes and results. To whom can the locality turn for help? The International Association of Assessing Officers has material to assist in guidance. So do the tax authorities of some states.

### ***Setting the Tax Rate***

Each unit of government — county, town, school district — will determine

its tax rate for the year. A town, for example, will compute the dollar amount of property (the assessment) which will be subject to its tax — perhaps \$100 million. It then estimates the amount of revenue it must have from this source — perhaps \$900,000. A rate of 0.9 percent (9 mills per dollar of assessment) will yield the necessary amount. Then if from the same area the school district needs \$4,000,000 (4.0 percent) and the county \$700,000 (0.7 percent), the total rate for these three governments — 5.6 percent or 56 mills — will be applied to the assessed valuation.

Because assessments are usually much below market prices, the "effective" tax rate, i.e., the rate in relation to actual values, is lower than the quoted (millage) rate. If assessments are half of the current market prices, then a 5.6 percent rate is in effect — 2.8 percent of what the property is worth.

Sometimes the tax rate and the budget of which it is a part may need explicit voter approval. More generally, the local officials have authority to set the figure; they of course are subject to election. Voters have more influence on the local tax rate than is generally true for Federal or state taxes.

Property taxation permits gradualism in rate and burden changes. To meet revenue needs, city councils, school boards, and other bodies can make small changes in the tax rate. Rates are often carried to several decimal points — to less than one-tenth of the one percent — 5.7602. Such rate adjustments contrast with the more substantial actions which are ordinarily required to legislate changes in rates of existing income or sales taxes.

## IV.

# Who Bears the Burden of Property Taxation?

How are American property tax burdens distributed among various groups — by income class or age or size of family? How much is the actual tax as a percentage of income? Are differences in burden related reasonably to acceptable criteria of fairness? Is it really true, as often asserted in recent years, that the property tax is one of the most regressive and, if so, is it therefore most subject to condemnation?

### **Complexity of Tax Shifting: Introductory Comments**

The person who really bears the tax on a factory or other property will often be different from the one who writes the check. Sometimes the picture of property tax shifting and the final incidence will be clear; economic analysis may support the impressions of the "man in the street." Much tax, however, comes from properties that present questions of tax shifting which are more complex.<sup>1</sup>

Occasionally, the process of shifting may seem to work rather clearly — as from building owner to tenant when a lease agreement specifically provides for the passing on of a tax increase. Often, however, the process is both obscure and slow.

The period since World War II has been one of extensive acceptance of

rising property taxes. The community whose members wish to pay more for schools, or for some other activity, can do so without being held back by the rest of the county, the state, or even the country as a whole. The same power also means that taxpayers can express dissatisfaction and reject budgets which will require tax increases. Except on some business property people in the locality bear the tax more evidently for what they get from expenditures than in the case of state and Federal taxes.

Property tax rates when expressed as a percentage may seem small. But they apply to *capital values each year*. Often they are "high." Therefore, comparison of property tax rates with income or sales tax rates can be deceiving. A 3 percent property tax equals 33 percent of the *pre-tax* income from a property which yields 6 percent to the owner. The property tax is half of the yield after tax. An increase of 0.5 percentage point would reduce the amount remaining after tax in such a case by one-twelfth, *i.e.*, equal to an income tax rise of about 8 percent. Of course, as we shall see, some of the increase in tax may be shifted to consumers or others.

State sales tax rates — 4 or 5 percent or more — are often higher than effective property tax rates. But the latter apply anew each year on the same

1. A recent summary analyzes the current thinking and discusses problems of measurement. Dick Netzer, "The Incidence of the Property Tax Revisited," *National Tax Journal*, Dec. 1973, pp. 515-35.

property. Many items subject to sales tax will be useful many years; a 4 percent sales tax at purchase will average to less than one percent for each year of usage — much less than the annual property tax on a house or utility property. Moreover, comparison of property taxes with retail sales taxes requires assumptions about shifting — who actually bears the burden?

### **Land: Capitalization of Tax**

Earlier we noted two elements of property taxation — land and man-made capital. As regards tax shifting, these two present significantly different aspects.

Land brings a flow of benefits. Some go to the owner, some to the government. For example, total benefits may be worth \$1,400 a year. The owner can get them for himself if he uses the land, a payment from someone who rents. But law will not permit him to keep the total. The government insists upon, say, \$400. The owner may retain the \$1,000; or he may pay some as interest on loans to finance the purchase.

What determines the total yield from a piece of land? Demand and supply, but with special aspects.

The supply of land is essentially fixed by nature. The amount in a community is not affected by the property tax. Whether renting or selling, landowners, one can assume, will try to get the highest prices possible. Demand will permit them to get some price — as in the case of demand for eggs or shoes. But there is a difference. The price of eggs will affect the number supplied. But the quantity of land is not produced in response to differences in price.<sup>2</sup>

Suppose that the tax on land has been raised. How might owners try to shift the increase? They cannot alter the amount of surface area. Ordinarily, then, there is no way to get a higher rent; the tax change itself does not raise demand for the land unless the spending in the area of the larger tax revenues makes it more desirable. The supply of land is fixed.<sup>3</sup> Generally, the owner must bear the burden of a tax increase.

The value of land is not, ordinarily, and for the most part, the result of creative activities of the present owner, or those in the past.<sup>4</sup> Broad economic forces determine the worth of land in its pure sense (as a product of nature). As a locality grows, land values frequently rise. More people and more businesses compete for limited space. And, of course, local government spending on streets, schools, and other public facilities has much to do with the worth of land.

A buyer will pay a price based on his estimate of the worth to him of the flow of future income — net, after property tax. Therefore, the tax on land values affects the price of the parcels. The greater the tax, the lower the price of land. Let us illustrate the process called *tax capitalization*.

Land, we assume, will be owned in perpetuity. The price agreeable to a willing buyer and a willing seller depends upon a simple relation —

$$\frac{\text{Expected annual net income}}{\text{Yield obtainable from other assets (of equal quality)}}$$

If the income before taxes is \$1,300 and the tax is \$300, then how much would

2. Exceptions do occur as "land fills" turn marsh and coastal areas into usable land or as hills are leveled.  
 3. Where an owner has not been getting as much rent as possible, a tax increase may nudge him to try to exploit the existing rent potential more fully.  
 4. Increasingly, governments require developers to build or finance sewer, street, school, and other facilities normally provided by governments.

a buyer be willing to pay? The answer depends upon yields he can get from other assets of equal quality. If 5 per cent, then he will pay \$20,000.

$$\begin{array}{r} \text{Gross income } \$1,300 - \text{tax } \$300 = \\ \text{net } \$1,000 \end{array}$$

$$\begin{array}{r} \text{Yields of comparable properties, 5\%} \\ = \frac{1,000}{.05} = \$20,000 \end{array}$$

The \$20,000 is the capital sum which will bring, net, the income expected from this property. An owner hoping for a higher price, will have no place to turn; nor can he for a time slow down production, as can a manufacturer, to get a new balance of supply and demand that will permit a higher price.

Now let us assume that tax rises by \$100 a year but no other changes.<sup>5</sup>

$$\begin{array}{r} \text{Gross } \$1,300 - \text{tax } \$400 = \text{net } \$900 \\ \text{Price} \qquad \qquad \qquad = \$18,000 \\ \text{Capital value decline} = \$ 2,000 \end{array}$$

Any person buying afterwards, however, is no worse off because the annual tax is \$400 instead of \$300. He paid a lower price. But he would benefit from a tax cut.

### **Tax on Buildings and Machinery**

Shifting of a *change* in tax on buildings, equipment, or business inventory involves a process quite different from that for land. With the passage of time, the final resting place of the tax — its incidence — can differ from the initial impact.

One case seems clear. The typical homeowner bears the tax on his house

except, of course, for the tax that existed on land at the time when he purchased it as owner and occupant. There is nothing he can do to force someone else to pay. He must shoulder an increase in burden while he is the only user.

If a residential or business occupant is a renter, the rental contract may require him to pay an increase in tax (or promise him a pass-through if the tax is reduced). Otherwise, the owner must shoulder the increase. But as his net income goes down, he has reason to try to get occupants to bear it. But will they be both willing and able to do so? How can owners force users to pay more rent just because of an increase in tax? Let us sketch the economic principles which apply to the shifting of tax on man-made capital.<sup>6</sup>

The tax on business buildings and machinery is a cost. So is the tax on residential structures for rental. Taxes on factories and machinery, electric and telephone facilities, store and office buildings, apartments, trucks and computers, inventories and raw materials, and so on, are part of the expense of supplying goods and services. Companies can try to recover this expense (1) by charging higher prices to customers or (2) getting the suppliers of goods, materials, services, or capital items — or employees or landowners — to accept lower payments. But what, really, are the possibilities of pushing the tax on to others? Can businesses really induce customers or suppliers to bear the tax, assuming that they are not getting better government services? If yes, then how? Must a tax increase remain on the owners of the company,

5. If the \$100 is spent in ways that add to the attractions of the area, then adjustment must be made. If gross income becomes \$1,350, e.g., better schools, then there would be only half as much change in price of the property.

6. Income tax considerations can sometimes overshadow property tax. But the former cannot be taken into account here.

not only at once but indefinitely, by reducing net earnings?

To shift the tax *forward* to the consumer, or *backward* to suppliers of factors of production, a business firm must somehow utilize the *forces of demand and supply* in the market. Part of this process will often be slow.<sup>7</sup>

Nothing about an increase in property tax is likely to boost demand. The demand for the company's product is not likely to rise nor is the spending of greater revenue by the local government likely to improve appreciably the market for the products of businesses paying higher taxes or generally to reduce operating costs.<sup>8</sup>

So the company's adjustment must more often be in the supply. For the time being, however, the amount of productive capacity in existence is more or less fixed. Cutting the amount of output supplied to raise price will probably not be practicable to help cover an increase in property tax; the latter is a fixed expense rather than one which rises or falls with changes in output. A higher price means a decline in sales which will have undesirable aspects. Profit margins will narrow as tax is absorbed. Competitors, especially companies in areas where the tax has not gone up, will not all raise their prices.

As the months and years pass, however, businesses can adjust to the tax. They can change their use of man-made capital of the type subject to tax.

A company will not buy or rent an existing building, or pay to build a new

one — or to add machinery — unless it expects to get a high enough price from customers to cover *all* costs. These costs include the property tax. Assume that consumers will not pay higher prices for this company's products (because of competition) and that labor and other costs will not go down. Then some building projects and machinery additions which would have been profitable will not be attractive because of the higher property tax. For the same general reason, new expenditures on construction of housing for rental will be less.<sup>9</sup>

Some plans for business expansion and modernization in the area will be scaled down, some put aside permanently or delayed. As a result, in high-tax localities (and over the country) the supplies of business output and of housing will be somewhat smaller than otherwise. Such restraints on the growth of supply will mean that gradually prices will be higher than otherwise. In an expanding economy where total demand moves upward, this result will come sooner — and especially in industries and areas with rising demand. The basic forces of market demand and supply operate, largely unseen. The tax-shifting process rests to a large extent on the effects of the flow of new capital investment on the supply of productive facilities.

Assuming that other things are the same, the higher the property tax, the less a business or a family can afford to pay for a building or productive equipment. The supply of new con-

7. One may hear that businesses can raise prices more or less as they wish. Casual impressions may lead us to believe that businesses set prices. But the customer plays a part in the eventual results. When tax costs go up, market conditions are not likely to permit companies to boost prices and to benefit. Can the company in fact make the higher price stick without leading to a drop in quantity sold that more than offsets the benefits of higher price? Ordinarily, competitive forces restrict what a company can do.

8. Better streets, sewers, policing, fire protection or education may in some cases save operating expenses and thus offset some of the adverse effects of taxes as regards businesses.

9. A family buying a house for its own use will pay on the basis of the amount by which the expected benefits will exceed the probable costs, including annual property taxes.

struction will reflect the level of taxes on buildings.<sup>10</sup> The higher the local tax, the smaller the amount of new capital funds going into construction and into taxed production equipment in the area.

One or two or three percentage points a year in the net after-tax return on capital investment can depend on differences in property tax — perhaps 6 as against 8 percent.

### ***Some Property Tax Will Not Be Shiftable and So Remains on the Suppliers of Capital***<sup>11</sup>

Not all of the property tax on man-made capital can be shifted to the consumer. Admittedly, our knowledge of what really happens is incomplete. But economic principle indicates that some tax remains upon suppliers of capital by keeping their *net, after-tax return* lower than if property taxes (on man-made capital) were less. The persons affected may not see what is happening because the market forces do not label themselves.

Why, even in the long run, may not the suppliers of capital funds fully succeed in raising prices enough to make the consumer (and the renter) bear the full burden of the property tax? The answer: Conditions of demand and supply do not ordinarily permit prices to go up enough to recover all of the tax. As a result, the saver who provides capital funds will get less net income after property tax than if the tax were lower.

Why may long-run market forces not permit shifting of all of the tax to

consumers? Several factors are involved. We do not know for certain how one among the many operates. But the reasoning relies heavily on an apparent conclusion from the study of statistics on personal and business saving.

Over the economy as a whole the amount of net new saving depends to only a moderate extent upon differences in after-tax yield within ranges of differences resulting from property taxation averaged over the country.<sup>12</sup> Lower prices for shoes or eggs will reduce the supply. But within limits, lower rewards for saving do not apparently cut the annual supply of net new saving by more than a slight percentage. For example, assume that property taxes go up — perhaps from 2½ to 3 percent — on full value, reducing the immediate after-tax net return to suppliers of capital by half of one percentage point. This decline in yield may not greatly reduce the country's total supply flow of new savings. The drop, it seems, will be too small to permit a rise in pre-tax yields that will be great enough to compensate for more than a modest fraction of the tax increase.

All of family and business savings that are made, we assume, will seek investment in productive form. But since the supply of annual funds seeking investment is nearly as large as if tax had not been increased, savers must be satisfied with less after-tax yield — initially, in the illustration approximately ½ a percentage point. Savers and the financial intermediaries that serve them, however, may try to direct

10. The quantity of land in existence, to repeat, does not depend upon the amount of tax. Differences in the demand for land will affect the price. When a high property tax on buildings reduces the flow of new capital into a locality, land values will be somewhat lower as a result.

11. Deduction of property tax in computing taxable income is not at issue here. For simplicity, we can assume that someone else qualifies for the deduction of property tax.

12. The evidence and the analysis present more difficulties than can be discussed here. Lower yields reduce both (1) the rewards for saving and (2) the income from which new savings can be made.

new savings to places where the tax has not gone up.

Over the economy as a whole there are not many opportunities for real productive investment (forms of man-made capital) which are free from property tax. Most productive facilities (including housing) are taxed. Except for governmental debt, and in some cases inventory and machinery, there are almost no places in this country for the flow of new savings to go where there is no property tax (direct or indirect) on the facilities which are added to the economy's productive wealth. Savers do not, therefore, have effective ability to withhold new investment funds to permit the full shifting of tax.

Supply capacities will not be reduced by amounts which are large compared with the tax change. Without the effects on the supply of output assumed earlier, the shifting of all of the tax seems economically impossible.<sup>13</sup>

What, today, would be the yields to suppliers of capital if property tax were materially different? How much more productive facilities would exist if there were only half as much tax on man-made capital? We have no way of knowing, in part because other conditions of taxation and government spending would be different. But it is hard to believe that over the country as a whole yields would be lower by 1½ percentage points. This is a level which is almost the bottom of true effective rates. New savings have almost no place to go where property tax is below about 1½

percent. After-tax yields, therefore, must generally be lower than otherwise.

Some localities, however, have tax rates which are much above the general level. In these areas, shifting will follow the lines sketched earlier. For example, the 1972 Census of Governments found that in 1971 effective tax rates in 13 out of 122 cities were 3 percent or higher and 2 percent to 3 percent in 40 more. Market forces will operate to pass some of the burden on man-made capital along to the user. Assume that the effective tax rate on new buildings and machinery in City A is 4½ percent of full value, while over the country the rate is generally at least 2 percent (and nowhere below 1½ percent). Capital for new housing and for business property will not come to City A except when investors believe that the after-tax return will be as good as is obtainable in lower tax areas. The gross, pre-tax return must be at least 2½ percentage points above the 2 percent rate assumed as a general minimum to leave the investor with as much after tax as in some places. Businesses expanding their productive capacity must have confidence in their ability to shift this 2½ percentage points of tax to the consumer (including the buyer or renter of a house) or backward to owners of land.<sup>14</sup>

The economic processes of this shifting are hidden, not observable. But market forces of supply and demand for new capital do operate. Some funds for new productive facilities and housing will tend to stay away from the high tax areas until conditions there do per-

13. As noted earlier, securities are not generally subject to property tax, but the buildings and machines which underlie their worth are taxed. Americans with savings can, of course, seek investment abroad; in most of the world taxes corresponding to ours on property are much lower. Actual property tax differentials will tend to add to the forces which lead to the export of capital and discourage capital import; even at their largest, however, such changes may be small.

14. Regulatory commissions may subject the railroad, electric, telephone, or other industries to delays in getting authorization to try to pass a tax increase to customers. "Regulatory lag" can in fact force shareholders to bear tax burden which the law presumably means to fall on customers.

mit shifting a portion of the tax to consumers. And demand for land is thereby reduced in high tax areas, land prices will be lower so that some of the burden is in fact shifted backward to land owners.

As regards the typical homeowner, the doubts about whether property tax on man-made capital falls on persons as consumers or as suppliers of capital make no great difference. The same people use the housing and provide most or all of the capital.

In contrast, the occupant of rental housing does not supply the capital of the building he occupies. Therefore, some importance does attach to the economic forces which determine how the tax will be shared between the occupant and the owner.<sup>15</sup> The owner will not be able to shift all of the basic tax, the 1½ to 2 percent or so assumed above.<sup>16</sup>

### ***Estimates of Distribution of Burden***

Various estimates of the property tax burden by income levels are available. At best, they cannot be fully satisfactory. In fact it is not necessarily true that income is the best base for comparison. Benefits received from government spending, or total consumption, or wealth, might in some respects be a better base than income for relating tax. Permanent (or lifetime) income might be a better reference than the figure of any one year.

Of necessity, estimates rest on assumptions about shifting which do not take account of all the elements just

discussed. Differences from one community to another are rarely measured. Within each income group the relative burdens can vary significantly. Data sources are incomplete. Conclusions, therefore, must be used with caution. Tables 8 and 9 present findings based on two alternative assumptions. Obviously, the assumptions used make a great difference at the extremes of income — under \$3,000 and over, say, \$50,000.

The dollar amounts are “low” at the bottom of the income scale and “high” farther up. The typical family at the \$15,000 income level pays much more than the one with \$5,000 or less. But if income is the base of reference, using either of the two sets of assumptions the tax is relatively heavier under \$5,000 (1966 incomes) than from \$5,000 to \$20,000.

Assumption A comes closer than B to the economic analysis described above and increasingly endorsed by economists, that at least a considerable part of the tax falls on the supplier of capital. It shows in Table 8 that above \$10,000 the tax is progressive. Above \$25,000, burdens as a percentage of income are much higher on this assumption than at the bottom of the income scale.

Most estimates show that a very large fraction of the total revenue comes from taxpayers in the income range — say \$5,000 to \$20,000 (1966 incomes) in which the burden, even if somewhat regressive, is roughly proportional with income. Table 9, using deciles, gives much the same general impression as

15. Where taxes are above average, so will be local government spending. Residents presumably benefit from the high government outlays. Demand for places to live in the community, therefore, may be higher than otherwise. For businesses, however, considerations are different. Will the benefits of the higher governmental spending lower production costs, or raise product demand, enough to offset the higher tax on the company?

16. To consider possibilities of lenders as suppliers of capital bearing some of the burden would require repetition and elaboration of points made earlier.

**Table 8**

**Property Tax as a Percentage of Family Income by Income Class: Estimates Based on Alternative Assumptions, 1966**

Adjusted family income (thousands)	Assumption A	Assumption B
\$ 0-3	2.5	6.5
3-5	2.7	4.8
5-10	2.0	3.6
10-15	1.7	3.2
15-20	2.0	3.2
20-25	2.6	3.1
25-30	3.7	3.1
30-50	4.5	3.0
50-100	6.2	2.8
100-500	8.2	2.4
500-1,000	9.6	1.7
1,000 and over	10.1	0.8
All classes <sup>a</sup>	3.0	3.4

Assumption A. All of the tax falls on owners of property, i.e., is a burden on property income. Assumption B. Tax on land falls on landowners. Tax on improvements falls on housing and other consumption.

a. Includes negative incomes not shown separately.

Source: J. A. Pechman and B. J. Okner, *Who Bears the Tax Burden* (Washington, D.C.: The Brookings Institution, 1974), p. 59.

Table 8, using family income, except that the top tenth is not spread over a series of income sizes (roughly all over \$20,000) which include relatively few families each but show marked differences.

Tables 10 and 11 present estimates of burden on homeowners.<sup>17</sup> Homeowners bear the burden largely in connection with their housing, plus utility services. The payments go for education and other services provided by local governments.

Table 10 shows that per \$1,000 of value, taxes differ from one region to

another. Taxes are higher per dollar of value on lowest value houses.

On the assumption that all of the tax remains on homeowners, the tax in income groups from \$10,000 to \$15,000, which include one-fourth of all homeowners, ranged from 2.0 percent of income in the South to 5.3 percent in the Northeast. For the next largest income group (16 percent of all homeowners), burdens as a percentage of income were somewhat higher.

**Equity of Tax**

A regressive element exists under \$5,000. And regressivity is generally believed to be undesirable. By some concepts of "equity" which are widely accepted, such a distribution of burden is inequitable. It conflicts with a goal of "vertical equity" in the sense that

**Table 9**

**Property Tax as a Percentage of Family Income by Population Decile: Estimates Based on Alternative Assumptions, 1966**

Population decile	Assumption A	Assumption B
First <sup>a</sup>	2.1	6.4
Second	2.6	5.1
Third	2.6	4.6
Fourth	2.1	3.8
Fifth	1.8	3.3
Sixth	1.6	3.2
Seventh	1.7	3.2
Eighth	1.8	3.2
Ninth	2.2	3.2
Tenth	5.1	2.9
All deciles <sup>b</sup>	3.0	3.4

a. Includes only the top half of the decile, units in the sixth to tenth percentiles.

b. Includes negative incomes not shown separately.

Source: Same as Table 8.

17. Tables 10 and 11 apply to 1971 and do not, therefore, take account of much of the new types of relief (circuit breakers) for older persons with low incomes.