

THE EFFECT OF DIFFERENCES IN PROPERTY
TAX RATES AMONG COMMUNITIES

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Property Taxes: Part Four

Chapter Five

Revised

DIFFERENCES IN RATES AMONG COMMUNITIES

Most of the interesting practical complications of the local property tax arise from the variations in effective rates among different communities and regions. The universal tendency toward differential rates, a notorious feature of the American property tax, results from differences in community wealth, variations in the prices of public services, and variations in preferences for public goods. But though arising from different causes, it leads everywhere to the same effect, namely inequity in the short run and malallocation of resources in the long run. This chapter details these statements.

I. Causes of Differences in Rates

The facts about inter-community rate differentials are obvious to the naked eye. Table 5.1 presents a representative sample of the data for Los Angeles County where, since assessment procedures are reasonably uniform, the variations in rates -- with almost a 100 per cent range between the high tax and the low tax towns -- suggest corresponding differences in the real burden of property taxes for the same types of urban real estate. Table 5.2 presents true tax rates for a number of American cities.

Variations in public expenditures and taxes depend upon the same factors as variations in family budget behavior, that is to say, income or wealth, prices or costs, and tastes or preferences.

Table 5.1

Property Tax Rates in Selected
 Cities of Los Angeles County
 Per \$100 of Assessed Valuation

1963-64

City (1)	Rate (2)
Beverly Hills	5.8100
Santa Monica	6.7619
Burbank	7.1355
Glendale	7.6408
Lakewood	7.8911
Downey	7.9185
San Marino	8.0902
Huntington Park	8.1371
San Fernando	8.2091
Inglewood	8.4465
Alhambra	8.4577
Avalon	8.4631
San Gabriel	8.5626
Monrovia	8.6363
Los Angeles	8.7253
Sierra Madre	8.9901
West Covina	9.2551
Azusa	9.3598
Whittier	9.5221
San Dimas	9.5609
Covina	9.8051
Pomona	9.9507
Glendora	10.0183
Claremont	10.2207
LaVerne	10.5114

Source: Includes city, county, school, and special district tax rates for the majority of parcels within the community. Assessed value in L.A. County generally believed to be about one-fourth of market price. Data supplied by courtesy of Homer Livingston, L.A. County Assessor's Office.

Table 5.2

True Property Tax Rates in the Twenty Five
Largest American Cities

Name (1)	Cities Ranked by 1960 Population Rank (2)	Tax Rates on Basis of 100 Percent Assessed Value	
		1953 (3)	1963 (4)
New York	1	-	3.296
Chicago	2	-	-
Los Angeles	3	1.639	-
Philadelphia	4	1.724	-
Detroit	5	-	-
Baltimore	6	2.160	2.242
Houston	7	1.375	1.855
Cleveland	8	1.570	-
Washington, D.C.	9	1.592	1.925
St. Louis, Mo.	10	1.842	1.421
Milwaukee	11	2.470	3.531
San Francisco	12	3.135	2.207
Boston	13	6.504	6.336
Dallas	14	1.284	1.650
New Orleans	15	1.283	1.514
Pittsburgh	16	2.350	4.529
San Antonio	17	1.739	1.890
San Diego	18	1.737	2.643
Seattle	19	1.383	1.813
Buffalo	20	3.070	2.958
Cincinnati	21	1.736	-
Memphis	22	1.140	1.886
Denver	23	2.188	1.727
Atlanta	24	-	1.881
Minneapolis	25	-	-

Source: These figures are estimates based, in most cases, on informed guesses rather than market surveys. The 1953 figures belong to the series published from 1922 to 1955 by the Citizens Research Council of Michigan (formerly the Detroit Bureau of Governmental Research), while the 1963 data constitute the second installment of a survey initiated in 1959 and 1960 by the Research Department of the Tulsa Chamber of Commerce. For 1953; "Tax Rates of American Cities," National Municipal Review, XL III (January, 1954), 16-33. For 1963; "Comparative Tax Rates of 125 American Cities," Industrial Development (December, 1963).

A. Income and Wealth

The dispersion of natural resources, the location of economic activity, the pattern of residential selection, and the different rates of economic progress among regions confer a more generous endowment of per capita wealth and fiscal capacity upon some communities than upon others. Historical accidents of district boundaries ("factory, factory; who's got the factory") create further erratic variations in fiscal capacity. National and state grants such as federal aid for highways or state aid for schools decrease these differences when awarded on an equalization basis* and increase them when awarded on a matching basis.

The resulting pattern of differences in fiscal capacity interacts with local preferences for public goods to generate a patchwork quilt of property tax rates

*In state aid to local schools, for example, the equalization program establishes a floor or "foundation" and brings every district in the state up to that level by paying the difference between it and the yield of a specified property tax -- such as 5, 8, or 10 mills -- which every district must levy to qualify for the program. For details see Paul Mort and Walter C. Reusser, Public School Finance (2d ed.; New York: McGraw-Hill, 1951), chaps. 20, 21.

The flat grant, or basic aid as it is called in some states, pays a set amount for every child or classroom unit regardless of the school's wealth and represents the political price of an equalization program, but it also redistributes income from wealthy to poor districts since the former pay more taxes than the latter for every dollar they receive. A large flat grant is an equalization program.

both within and among metropolitan regions. If two areas want the same absolute level of public service per capita, the wealthy locality can obtain it with a very much lower property tax rate -- other sources of revenue apart -- than the poor area. If the wealthy area demands a bit better service than the poor one, but not so much better than its proportional advantage in wealth, it can enjoy both more public goods and lower tax rates than its poorer neighbors. Only under very special circumstances do differences in community wealth fail to create differences in property tax rates. These are (1) that the income elasticity of demand for public services in general equals unity in all communities; (2) that all other sources of revenue vary between communities in the same way as taxable wealth; (3) that the price per "unit" of services (see below) is the same in all communities or, if not, that the price elasticity of demand equals unity. In these admittedly special circumstances, community A with twice the wealth and other resources per capita as B buys twice as many units of services per person and levies the same rate of property taxation.

If public expenditures rebound in any way to the advantage of property, however, identical rates cannot exert the same effect on communities of differing wealth because the higher services of the richer areas provide -- in a measure obviously impossible to determine in practice -- a greater offset to the tax burden.

1. The evidence

How do differences in community income affect the demand for local government services? The answer is mixed and vexed because the behavior of various communities at any one period of time differs from the behavior of all communities at various periods of time.

a. Cross section data

The cross section data, the tabulation of various communities with different amounts of wealth at some given period, show an income elasticity of demand greater than zero but considerably smaller than unity, indicating that the wealthier cities,

counties, and school districts exhibit both lower total tax rates and higher per capita expenditures than the poorer ones. For a large sample of cities, with population, density, growth, employment and subsidies held constant, the proportional variation of per capita expenditures with median family income ranged from a low of 0.303 for fire protection to a high of 0.557 for police protection.*

*Harvey E. Brazier, City Expenditures in the United States, Occasional Paper 66 (New York: National Bureau of Economic Research, 1959), p. 27. Covering 462 cities in 1952, these results agree with a number of other studies dealing with counties, school districts, and special districts.

Summarizing a similar body of evidence for the states some years ago, Hansen and Perloff concluded that "... the poorest states, in general, put forth greater effort -- in terms of economic capacity -- to raise funds for public services than do the richer states." Alvin H. Hansen and Harvey S. Perloff, State and Local Finance in the National Economy, (New York: W. W. Norton, 1944), p. 29.

See also John P. Shelton, "How to Keep Local Expenditures Under Control," California Local Finance, ed. John Vieg (Stanford: Stanford University Press, 1960), appendix, pp. 131-34.

Table 5.3

Government Purchases of Goods and Services
Compared with Gross National Product
for the U.S. 1929-1963

(Billions of dollars)

Calendar Year	Gross National Product	Government Purchases of Goods and Services			
		Total		State and Local	
		Amount	Percentage of GNP	Amount	Percentage of GNP
(1)	(2)	(3)	(4)	(5)	(6)
1929	104.4	8.5	8.1	7.2	6.9
1930	91.1	9.2	10.1	7.8	8.6
1931	76.3	9.2	12.1	7.7	10.1
1932	58.5	8.1	13.8	6.6	11.3
1933	56.0	8.0	14.3	6.0	10.7
1934	65.0	9.8	15.1	6.8	10.5
1935	72.5	10.0	13.8	7.1	9.8
1936	82.7	11.8	14.3	7.0	8.5
1937	90.8	11.7	12.9	7.2	6.9
1938	85.2	12.8	15.0	7.5	8.8
		13.3			
1939	91.1	13.3	14.6	8.2	9.0
1940	100.6	14.1	14.0	7.9	7.9
1941	125.8	24.8	19.7	7.8	6.2
1942	159.1	59.7	37.5	7.7	4.8
1943	192.5	88.6	46.0	7.4	3.8
1944	211.4	96.5	45.6	7.5	3.5
1945	213.6	82.9	38.8	8.1	3.8
1946	210.7	30.5	14.5	9.9	4.7
1947	234.3	28.4	12.1	12.7	5.4
1948	259.4	34.5	13.3	15.2	5.9
1949	258.1	40.2	15.6	17.9	6.9
1950	284.6	39.0	13.7	19.7	6.9
1951	329.0	60.5	18.4	21.7	6.6
1952	347.0	76.0	21.9	23.2	6.7
1953	365.4	82.8	22.7	24.9	6.8
1954	363.1	75.3	20.7	27.7	7.6
1955	397.5	75.6	19.0	30.3	7.6
1956	419.2	79.0	18.8	33.2	7.9
1957	442.8	86.5	19.5	36.8	8.3
1958	444.5	93.5	21.0	40.8	9.2
1959	482.7	97.2	20.1	43.6	9.0
1960	502.6	99.6	19.8	46.5	9.3
1961	513.2	106.9	20.8	50.6	9.8
1962	554.9	117.0	21.1	54.6	9.8
1963	585.0	125.1	21.4	58.8	10.1

Source: Council of Economic Advisers, Economic Report of the President: 1964 (Washington: Government Printing Office, 1964), p. 207, Table C-1, citing Dept. of Commerce figures.

Percentages computed from table.

b. Time series data

The time series data reveal a somewhat different story. For the entire three and a half decades from 1929 to the present, as shown in Table 5.3, government in toto appears a very superior good indeed, having risen from a little under a tenth to a little over a fifth of Gross National Product. (Tabulating "government purchases of goods and services," cols. 3 and 4 show the absolute and proportional amounts of resources devoted to government services. If we include trust fund transactions and other transfer expenditures, the trend becomes even more impressive, having risen from about 10 to about 30 per cent over this same period.*)

The long term level of state and local expenditures hovers between 8-10 per cent for the entire period, although the combination of cyclically inflexible public revenues and flexible private incomes drove it up during the depression and (together with competition from military expenditures) held it down during the War. In the post-war era, state and local outlays rose from about 5 to about 10 per cent of GNP, representing either the reassertion of a long term relation or the inauguration of a new secular trend. The data for the entire period as well as for the

*Government expenditures in 1929 equalled \$10.2 billion and in 1963 (preliminary estimate) 170.5 billion, the latter figure including \$45.3 in transfer payments to persons, foreign governments and bondholders plus net gains or losses of government enterprises. Council of Economic Advisers, Economic Report of the President: 1964 (Washington: Government Printing Office, 1964), p. 216, Table C-7. As aficionados of government statistics know, there are at least a dozen different ways to tabulate "expenditures." For a slightly different summary of the same set of figures and percentages see Tax Foundation, Facts and Figures on Government Finance: 1962-63 (Englewood Cliffs, N.J.: Prentice-Hall, 1963), p. 27, Table 12.

post-war years -- interpreted either way -- appears clearly consistent with the hypothesis that the income elasticity of demand for state-local services equals or exceeds unity.

(See Table 5.4)

The level of local expenditures rests at about 6 per cent of GNP for the entire three and a half decades since the late 1920's, with cyclical gyrations as noted above for the depression and World War II. In the post-war period, local expenditures rose from about 4 to about 6 per cent of gross output as shown in Table 5.4 where "expenditures" (on a fiscal instead of a calendar year basis) include a small amount of transfer payments but exclude a rather large amount of outlays financed by state aid to schools and other local functions.* **These data**

*In effect, therefore, "local expenditures" equal current revenue from own sources plus borrowing and, for some years doubtless, reduction in cash balances. Table 5.4 shows \$31.4 billion expended in 1961 while other Department of Commerce data reveal \$29.3 in revenue from own sources that year, yielded by taxes (67%), charges (17.6%), utility fees (12.9%), liquor store returns (0.5%), and insurance trust receipts (2%). To this add \$10 billion in state aid plus \$0.6 in Federal subsidies for a grand total of \$39.9 in local revenue. Local expenditures from all sources amounted to \$42 billion in 1961 with the resulting \$2.1 deficit (42-39.9) presumably covered by borrowing. Since local debt that same year went up by \$4 billion (31.4 to 55.4), they must have tucked the excess in the cash box. For the sources of the above figures see Ibid., pp. 227, 239.

Table 5.4

Local Expenditures and Property Taxes
Compared with Gross National Product
for the U.S. 1922-1962
(Billions of dollars)

Fiscal Year (1)	Gross National Product (2)	Local Expenditures		Property Taxes	
		Amount (3)	Percentage of GNP (4)	Amount (5)	Percentage of GNP (6)
1922	69.1	4.3	6.2	3.0	4.3
1927	91.6	5.8	6.3	4.7	5.1
1932	67.4	5.6	8.3	4.5	6.7
1934	60.5	4.3	7.1	4.1	6.8
1936	77.6	4.4	5.7	4.1	5.3
1938	88.0	5.3	6.0	4.4	5.0
1940	95.8	5.8	6.1	4.4	4.6
1942	142.5	5.6	3.9	4.5	3.2
1944	202.0	5.4	2.7	4.6	2.3
1946	212.2	7.0	3.3	5.0	2.4
1948	246.9	10.0	4.1	6.1	2.5
1950	271.4	12.8	4.7	7.3	2.7
1952	338.0	14.9	4.4	8.7	2.6
1953	356.2	16.0	4.5	9.4	2.6
1954	364.3	17.8	4.9	10.0	2.7
1955	380.3	19.9	5.2	10.7	2.8
1956	403.4	21.4	5.2	11.7	2.9
1957	431.0	23.3	5.4	12.9	3.0
1958	443.7	25.5	5.7	14.0	3.2
1959	463.6	27.1	5.8	15.0	3.2
1960	492.7	29.1	5.9	16.4	3.3
1961	510.4	31.4	6.2	18.0	3.5
1962	536.6	33.0	6.2	19.1	3.6

Sources: Col (2) Fiscal year GNP computed by averaging calendar year figures. GNP for 1921-22 and 1926-27 from National Industrial Conference Board, The Economic Almanac for 1950 (New York: National Industrial Conference Board, 1950), p. 120, citing unrevised Dept. of Commerce Data. GNP for 1931-52, Department of Commerce figures as shown in Table 5.3 above.

Col (3) Tax Foundation, Facts and Figures: 1962-63, p. 20, Table 5, citing Bureau of Census figures which include trust fund expenditures but exclude grants-in-aid.

Col (5) 1922, Ibid., p. 239; 1927-62, Council, Economic Report: 1964, p. 280, Table C-62.

are also consistent with the hypothesis that the income elasticity of demand for local services, financed by local sources, equals or exceeds unity.

The property tax, as shown in the last two columns of Table 5.4, had a greater relative importance in the 1920s and 1930s, when it collected between 4 and 7 per cent of GNP, than it does in the early 1960's, when it recedes to about $3\frac{1}{2}$ per cent. These data do not, therefore, support the hypothesis that services financed by property taxes have an income elasticity equal to or greater than unity; in still other words, we cannot be certain that the proportion of GNP allocated to local government, from its own sources, would have remained at its long term ^{per cent} 6 /level if property taxes had to provide those services in the 1960s to the same degree as they did in the 1920s. The story looks a bit different, however, for the post-war era inasmuch as the property tax percentage moves from 2.5 to 3.5 while its absolute yield almost quadruples between 1945 and 1963. As indicated in chapter One, its present yield of nearly \$20 billion represents approximately a 2 per cent levy on about \$1 trillion in taxable property.

c. Summary

To summarize the evidence, local and state governments which differ in per capita income and fiscal capacity at any moment of time show an income elasticity of demand for public services considerably smaller than unity, while localities and states which increase in income with the passage of time show an average income elasticity equal to, or greater than, unity -- based on U.S. data for 1929-63. The time series income elasticity for local services provided through property taxes also exceeds unity for the last two decades of this period.

2. The theories

Three alternative hypotheses can rationalize the apparent contradiction between the low income elasticity of demand shown by the cross section data and the unity or higher elasticity shown by the time series data. I have borrowed these explanations from the field of consumer behavior where, as is well known, we

encounter a similar paradox in trying to reconcile a cross section consumption function that hits the y axis with a time series function that passes through the origin.*

a. The permanent income hypothesis

Explanation number one says that community expenditures and tax rates depend on long run wealth and income as represented by expected fiscal capacity for, say, an entire decade. Income in a particular locality, however, varies significantly from year to year because of the general conditions of business or the specific prospects of that locality. Then the communities whose annual income falls below their long run expectations spend somewhat more than they would have spent if they belonged permanently to that annual class while communities whose annual income lies above their long run level spend somewhat less.

Since a majority of the local units below the national average in a given year belong permanently in a higher class while a majority of those above belong permanently in a lower class -- regression toward the mean at both ends -- the annual cross section elasticity lies below the permanent relation between local fiscal capacity and public expenditures.**

*For a summary of the literature see Robert Ferber, "Research on Household Behavior," American Economic Review, LII (March, 1962), 19-63.

**For the "permanent income hypothesis" in its natural habitat, the field of family expenditures, see Milton Friedman, A Theory of the Consumption Function (Princeton: National Bureau of Economic Research, 1957).

As a minor variation on this theme, random or cyclical fluctuations in community incomes combined with cyclical inflexibility in property tax yields would generate a flat cross section profile even though people wanted to adjust public services to annual income and really preferred a little less (or more) local government when income temporarily fell (or rose).

b. The relative income hypothesis

Explanation number two suggests that all communities share some common standard of public services at any one period, some minimum level of police protection, highway services, educational achievement, and local administration they believe they ought to have. Then the poorer communities reach up and tax themselves more heavily to come within sight of this ideal while the richer ones can easily reach and surpass it by a tax of moderate proportions. Over time as absolute incomes rise, communities below the national average continue to spend a constant but permanently higher fraction of their income on local services while those above spend a constant but permanently lower fraction, so that absolute expenditures all rise in the same proportion, the average proportion itself remains constant and the time series income elasticity equals unity.*

c. The politics and preferences hypothesis

Abandoning the attempt to explain public expenditures by prices or incomes and relying on changes in tastes and preferences, the third hypothesis says that the cross section profile does reflect the basic relation between income and local expenditures during any period of time but that political pressure for increased

*This argument parallels the "demonstration effect" of Duesenberry's relative income hypothesis. James Duesenberry, Income, Saving, and the Theory of Consumer Behavior (Cambridge: Harvard University Press, 1949).

services pushes up the profile as time passes.*

B. Prices of Public Services

Since communities do not have the same geography, the same economy, or the same political environment, they also differ in the "unit" price of local public services. The same amount of inputs yields different quantities of outputs in various communities. Measured by an output index such as insurance costs per thousand dollars of property, fire protection carries a higher price tag for a community with frame houses than for a town where, like the third little pig of the legend, all the people live behind bricks and stones. Measured, again, by an output index such as crime rates per 100,000 inhabitants, police protection is apt to come a bit higher in a town with a gambling casino, while water supply presents a more expensive problem for Los Angeles than for Chicago.

Many other statistical predictors of local expenditures such as city size, population density, and growth rates resolve themselves into determinants of unit price (or of income, which has already been considered). If economies of scale influence the provision of public services, a medium sized unit offers lower prices for the same service than a smaller one while if diseconomies of large scale operation eventually overwhelm the economies, a very large city encounters rising supply prices for some of its public functions. Density may increase the costs of traffic control and police protection (though greater density in residential areas

*This argument bears a formal resemblance to the Galbraith hypothesis about the cumulative effect of advertising on the consumption function for private goods, except that political pressure replaces sales effort and public goods replace private consumption. J. K. Galbraith, The Affluent Society (Boston: Houghton-Mifflin Co., 1958).

also associates with lower per capita incomes). Rapid growth has obvious consequences for unit price; ripping out houses and building freeways -- I speak as a resident of the Los Angeles Metropolitan area -- involves condemnation and disruption costs which a more leisurely rate of expansion could (perhaps) have avoided; constructing a large number of schools, courts, and city halls in a hurry certainly raises short run costs in the construction industry and probably increases interest charges for public borrowers.

If the price elasticity of demand for public services is precisely unity, higher or lower costs lead to a proportional fall or rise in units produced and no change in local budgets and taxes. But if, as seems likely, this elasticity lies below unity, localities with higher costs have both higher expenditures and larger tax rates than those with lower prices. When taxable property varies with the total fiscal base, higher (or lower) taxes in general mean higher (or lower) property tax rates in particular.

C. Preferences

The choice between private goods and public services is the continental divide for citizens of a democracy because some people prefer relatively more food, clothing, and private recreation while others with the same income want comparatively more public education, police protection, and highway facilities. Those goods which government may appropriately provide include indivisible services which cannot be rationed by prices (e.g., national defense or public health) and externality activities which create marginal social benefits (e.g., education). Only these services use up resources; all other public activities designed to promote welfare, regulate the market, or redistribute income transfer purchasing power from one pocket to another.* People differ both in their desire

*Procter Thomson, "Government and the Market," The American Economy, ed. Jesse Markham (New York: George Braziller, 1963), pp. 43-71. Reprinted from Federal Expenditure Policy for Economic Growth and Stability, Papers Submitted by Panelists appearing Before the Subcommittee on Fiscal Policy of the Joint Economic Committee, 85th Congress, 1st Session (Washington: Government Printing Office, 1957), pp. 130-52.

to have these things themselves -- at some given cost in terms of taxes -- and in their eagerness to provide them for others. As with all such choices, public goods compete with private goods in the budget of the rational voter-consumer, although some government services appear complementary to some private commodities -- e.g., highways with cars, police protection with art collections, and hospitals with cigarettes.

Measured by the use of resources for nondefense purposes, state and local governments, whose purchase of goods and services equalled \$59 billion in 1963, appear far more important than the national government, whose civilian purchases amount to a paltry \$10 billion that year.*

Individuals implement their choices between private and public goods by either political or economic activity. Political action means influencing the tax-expenditure pattern of their community. Economic action means moving to an area that reflects their preferences for the benefits of expenditures and the burdens of taxes, an important and meaningful alternative in a federal system with significant variations among cities, counties, districts, or states** A peripatetic

*Federal purchases of goods and services amounted to \$66.4 billion in calendar 1963, while defense outlays were 56.8. But the national government gave about 10 billion to states and localities that year. Presuming that the recipients spent this largesse entirely on goods or services and crediting these outlays to the government of origin, we raise federal civilian resources to around \$20 billion and shrink state-local purchases to about \$50 billion, yielding a 5 to 2 instead of a 6 to 1 ratio.

Source of above data cited in note to Table 5.3.

**Charles Tiebout, "A Pure Theory of Local Expenditures," Journal of Political Economy, LXIV (October, 1956), 416-24.

culture, a flexible economy, and a no-down-payment construction industry contribute so much to the viability of this alternative that a fifth of the population changes houses and over a twentieth changes counties every year.* As a result, even if all communities had the same per capita income and the same unit costs of government, differences in preferences exercised through both group action and individual mobility would guarantee variations in tax-expenditure patterns and property taxes.

Rigorously speaking the "preference" analysis of public expenditures includes the mechanism by which individual choices are translated into the social consensus, in which respect it differs (perhaps fundamentally) from the simple indifference-curve analysis of private purchases. Discussion of the social forces and political institutions which either translate individual choices or create an independent preference function for government decision-makers lies far beyond the modest scope of this little paper.

II. Resource Allocation and the Location of Economic Activity: Horizontal Shifting

Differences in property taxes among various communities and regions create artificial inducements to alter the location of economic activity, a "tilt effect" between investment in different places which resembles the tilt between investment of different classes discussed in Chapter Four. Other things the same a high tax community has a lower level of investment and a low tax town a higher rate of investment than would otherwise be the case. Since investors are as fond of maximum returns as other agents of the market, no manufacturer goes to a town with high taxes when he can easily find a place where they are low. But the high tax

*Statistical Abstract: 1963, p. 37. Mobility rates for March 1960 to March 1961.

town is not completely robbed of commercial development nor the low tax town overrun by it; instead each has its appropriate share, the share, that is, which equalizes returns at the margin for the various employments of capital.

For net returns to be equalized, the earnings of capital before taxes are subtracted must be higher in the high tax town and lower in the low tax town, while the amount of capital must be smaller in the first place and larger in the second, than would otherwise be the case. To investment in owner-occupied homes the same considerations apply but their edge is blunted and the tax-elasticity of demand is appreciably lower because community amenities and family loyalties seem more important than differences in costs when people choose a home. The amenity value of the metropolitan region as a residence for the owner also influences the location of small shops and other family businesses.

As a summary statement of its influence on the relative scarcity or abundance of capital, differences in property taxes place many factories and commercial facilities as well as a few shops and homes in different locations than they would have occupied in the original state of the market.

In the short run, admittedly, these allocative effects are negligible but in the long run they are irresistible. When taxes suddenly rise or fall, buildings cannot easily migrate and take many years to decay; while in the long run after these differentials congeal and after investment, depreciation, and reinvestment occur, the structure of taxes profoundly affects the location of commerce. Note, a tax which represents a very small fraction of total value takes a rather large slice of annual income since a rate of 1 per cent combined with gross receipts of 6 per cent takes a sixth of the asset's yield and equals one-fifth of the owners net return, while a rate of 2 per cent takes a third of the yield and equals half the net. We are certainly entitled to entertain the hypothesis that tax

differentials do make a difference, and to hope that more careful empirical work than any done to date will make it a permanent member of the family.

A. An Illustration

Illustrating the effect of these differentials, the following example supposes an economy of three similar communities Erewhon, Xanadu, and Cucamonga, where -- prior to the imposition of the tax -- some other levy supports the government and capital enjoys a return of 6 per cent. After Erewhon, Xanadu, and Cucamonga repeal their other excises and levy property taxes of $\frac{1}{2}$, 1, and $1\frac{1}{2}$ per cent, respectively, investment declines in the high tax town and advances in the low tax town until investors in all three places receive the same net return on their capital. Assuming for simplicity an infinitely elastic supply schedule for future income streams, we can predict a net return of 5 per cent on capital investment and a true tax rate -- the difference between what they would have received and what they do receive after taxes are imposed and collected -- of 1 per cent.

How do investors in Erewhon, where rates equal $\frac{1}{2}$ per cent, pay more than they are charged, while investors in Cucamonga, where rates equal $1\frac{1}{2}$ per cent, succeed in escaping a portion of their taxes? They do so because property in the former town becomes more abundant and yields a lower gross return while property in the latter becomes scarcer and yields a higher gross return than would otherwise be the case. Gross yields of $5\frac{1}{2}$, 6, and $6\frac{1}{2}$ per cents combined with tax rates of $\frac{1}{2}$, 1, and $1\frac{1}{2}$ per cents spell a net return of 5 per cent and a real burden of 1 per cent for the "economy" as a whole. A summary of these results appears in Table 5.5 below.

The average real rate of tax borne by investors in one place reflects the rates levied in adjacent communities; Cucamonga exports part of its burden to Erewhon and Xanadu. The tax also changes the structure of earnings and prices in these towns, a subject to which we turn, after a short digression on another topic, in section III.

B. Cost and Expenditure Effects

The doctrine that tax differentials spell distortion in the allocation of resources requires qualification in two respects.

First, the tax differentials may reflect variations in the real cost of government services rather than variations in community income or variations in preferences for public services. Tax differentials that correctly reflect these variations in real costs improve rather than worsen the efficiency of resource allocation.

Second, the benefits of expenditures, as well as the burdens of taxes, affect the location of economic activity so that the higher (or lower) level of public services which these higher (or lower) levels of taxes enable the various communities to provide must be reckoned into the account. But the differences in benefits do not precisely, or even approximately, offset the differences in burdens. (1) Since communities differ greatly in income and wealth, a high tax rate in an impoverished locality suffices to provide only the barest minimum of services while a low rate in a wealthy area secures a generous dividend of public conveniences. As shown above, the cross section data suggest a negative rather than a positive correlation between the level of expenditures (and, presumably, the quality of services) per person and the rates of property taxation for a selected sample of cities, counties, and school districts. (2) Even if all communities enjoyed the same wealth or income per capita, the same unit costs of government, and differed only in their preferences for public services so that high (or low) rates of taxation invariably meant high (or low) levels of government activity, the benefits of these expenditures -- unlike the burdens of taxes -- do not affect property returns in exact proportion to their value. Instead, the distribution of benefits depends on the nature of the expenditure and the character of the property. For example, a community which doubles its taxes to spend the entire proceeds on schools

diffuses the gains and losses very differently among the different classes of property. Small homes with large families secure gains while expensive residences suffer losses; an electronics plant attempting to recruit skilled and professional labor benefits from the proximity of schools while a local mortuary loses more in taxes than it gains in business. In sum, where communities differ in income the expenditure effect tends to reinforce the tax effect and where communities differ in preferences for public services the expenditure effect offsets the tax effect but in a random and haphazard manner.

III. Price and Earnings Effects: Forward and Backward Shifting

Investors in all communities bear some common rate of tax while differences between the average rate for the economy and the particular rate for the community pass forward to the prices of commodities and backward to the earnings of factors. Forward shifting means that tenants pay slightly higher (or lower) rents while customers pay higher (or lower) prices in towns whose taxes are greater (or smaller) than average. Backward shifting means lower (or higher) earnings of resources in various localities.

If all resources are completely mobile among regions or all consumers entirely immobile among the commodity outputs of each region, the entire burden of the differential shifts forward to commodity prices while if resources are immobile or consumers mobile, the differential burden shifts backward. For the production and consumption parameters of the real world, the situation lies between these extremes. The high tax town is apt to have both slightly higher commodity prices and somewhat lower factor returns while the reverse holds true for the low tax community.

Table 5.5 summarizes the investment effects, discussed above, and the commodity-factor market effects, discussed in greater detail below.

Table 5.5

Effects of Differences in Property Tax Rates
Among Communities

Communities in the Economy	Returns to Capital: Interest Rate	Situation After Taxes Levied						
		Tax Rates: Percentage of Value	Returns to Capital		Real Tax Burden (2)-(5)	Increase or Decrease in Economic Variables		
			Gross	Net (4)-(3)		Invest- ment	Commodity Prices	Factor Returns
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Erewhon (low taxes)	6	$\frac{1}{2}$	$5\frac{1}{2}$	5	1	+	-	+
Xanadu	6	1	6	5	1	0	0	0
Cucamonga (high taxes)	6	$1\frac{1}{2}$	$6\frac{1}{2}$	5	1	-	+	-

A. The Regional Economies

To tabulate some important similarities between regional economic relations and foreign trade, any arbitrarily selected piece of territory that we call a region or a community produces some combinations of domestic goods and export goods. The former are sold where they are made to a market that depends mainly on the income of the region while the latter are sold in many places to a market that depends on the income of the system. For our illustration above, a grocery store in Cucamonga provides domestic services whereas a vineyard creates export goods.

Relative prices influence this mixture. If the grapes become too costly Cucamonga will have to drink its own wine while if grocery store prices rise much above (or fall below) those of other places some of the residents buy elsewhere (or some people from other towns shop here).

Each town has some general purpose resources which can go very nearly anywhere, and some specialized resources which have peculiar advantages in the local industries. Specialized resources tend to concentrate in the export industries and indeed, as Ohlin* has argued, the spacial distribution of these special factors sets the stage for the interregional division of labor. No one community representing a small part of a vast system is likely to enjoy exclusive possession of its export production since that same combination of special advantages occurs in many other places.

Finally some domestic and export goods are capital intensive while others are labor intensive.

To tabulate the principal differences between interregional and international

*Bertil Ohlin, Interregional and International Trade (Cambridge: Harvard University Press, 1935).

trade, the regions have a common currency and all resources, labor as well as capital, can take out citizenship in all regions.

B. The Resources Market

On the factor market that portion of the property tax higher (or lower) than the average for the economy increases (or decreases) the supply price for the services of capital equipment to firms and industries. Given the derived demand in the area for those services the rise (or fall) in supply price reduces (or increases) the quantity demanded. The resulting change in the amount of capital resources lowers (or raises) community income, whenever its owners reside where their resources work, and therefore cuts back (or pushes forward) the demand schedule for domestic goods. In turn the derived demand for capital equipment used in domestic industries moves to the left (or the right). Since the shift in domestic resources merely shuffles income from one community to another, total demand for the town's export commodities and resources -- apart from the effect of changes in transport costs -- remains unaltered.

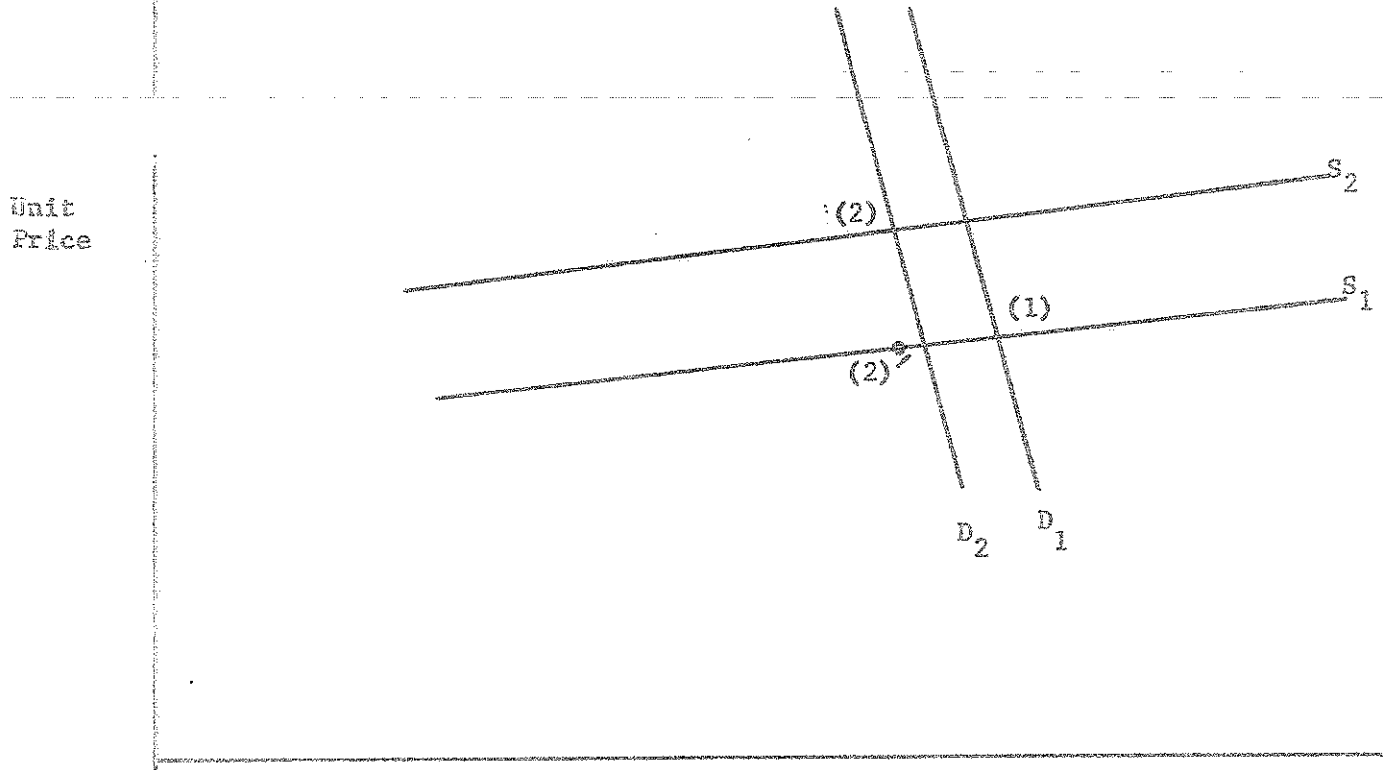
For the regional factor market, shifts in the supply schedule induce movements of the demand schedule in the same direction. But since the differential burden of property taxes influences the cost of both export and domestic industries while the shift in community income influences domestic goods alone, the supply schedule of all capital goods moves by more than the derived demand

schedule.* Figure 5.1 shows the resulting factor market equilibrium.

*In partial equilibrium analysis we hold the demand schedule firmly in place as we jiggle the supply schedule back and forth inasmuch as the people who make the stuff are a very small fraction of those who buy it. While perfectly legitimate for pins and needles, this procedure seems a trifle inaccurate for autos or steel.

At the other extreme when we deal with general equilibrium under conditions of full employment, any change in the supply of resources -- such as an alteration in labor force participation rates -- creates an immediate and proportionate alteration in income and demand.

For intermediate cases when we deal with the economy of a region producing some goods sold locally and some sold abroad, so that producers and consumers overlap but do not coincide, changes in the area's supply of factors alter its demand schedule for commodities and productive agents but by less than the extent of the shift in resources.



Flows of services from capital goods

Figure 5.1 -- Factor market adjustments .

Initial supply and demand for the services of capital goods in Cucamonga, the high tax town, follow curves S_1 and D_1 -- the latter based on the community's initial income level -- producing an equilibrium at (1). The excess tax in the town raises the cost of capital equipment to S_2 but the fall in amount demanded reduces the initial income level, decreases the demand for domestic goods, shifts the derived demand for all resources to D_2 , moves the equilibrium to (2), and lowers the net rent of capital goods to (2)'. For Erewhon, the low tax town, reverse the roles of curves 1 and 2 .

Resulting from these adjustments, variations in rents and resource prices among communities are inversely proportional to factor mobility. Prices of general purpose resources whose local supply is quite elastic, e.g., building materials and machinery, equalize rather quickly whereas the rents of specialized or immobile resources permanently reflect the taxes in the places to which they are tied.

As the most immobile and specialized resource of all, urban land is permanently tied to the demand for building sites which is derived, in turn, from the general demand for investment activity. Anything that raises or lowers the level of investment in the community affects the long run value of land, so that a large part of the difference in taxes that shifts backward comes to rest on its rents.

With workers as with other resources, specialization and mobility governs the variation among their earnings. Professors or vintners must live within commuting distance of colleges or wineries while writers or grocery clerks can live and work very nearly anywhere. As a result variations in real wages due to differences in taxes rapidly disappear for some lines of work but persist indefinitely for others.

C. Commodity Markets and Final Adjustments

Meanwhile back at the commodity market, the rise (or fall) in resource prices raises (or lowers) the supply schedule for locally produced goods, while changes in community income pull back (or push forward) the demand schedule for domestic commodities. If we consider all the commodities the town produced, the supply schedule moves further than the demand schedule, so that -- with appropriate changes in notation -- Figure 5.1 can be pressed into service to illustrate the adjustment.

Since they embody much the same productive process in each community, domestic goods depend mainly on unspecialized resources and have relatively elastic supply schedules. Since they depend partly on specialized resources, tied to a particular region though available in a number of other regions, export goods have a somewhat less elastic supply schedule in each town. On the other side of the market, the demand schedule for the town's exports, which must compete in the general arena with similar products from other places, appears much more elastic than the demand for its domestic goods, which enjoy the advantage of local proximity; few people go long distances for cheap groceries or bargain basement doctors (if one could be found) though they might do so for cars or refrigerators.

These elasticities set the stage for a summary statement of how property tax differentials affect the various classes of goods and factors. To take Cucamonga the high tax town as our example, the prices of domestic goods produced by unspecialized resources with elastic supply schedules rise by a relatively large amount while the price of its exports change by very little. On the other hand the factor rents of domestic goods resources fall very slightly while those of specialized export resources fall somewhat more. Both the

commodity and factor price effects are more pronounced for capital intensive than for labor intensive lines of production. In sum, the portion of the property tax burden not borne by the rate of interest passes forward to buyers of domestic goods and backward to resources in the export industries.* As an example, grocery store shoppers and vineyard owners in Cucamonga bear some of its excess burdens. The obverse of all these statements applies to Erewhon the low tax town.

IV. Equity and Efficiency

For the taxation of property, as for most other economic phenomena, we must mark off the short run effects from the long run effects and distinguish the temporary consequences of changes in rates, which will create inequity, from the permanent consequences of differences in rates, which promote inefficiency.

A. Gains and Losses

If a particular municipality decides to alter the long established rate of property taxation, who suffers and who benefits from this shift in economic parameters? Immediately after the event, the owners of existing property reap a windfall loss if rates go up and a windfall gain if they are lowered. Consumer demand for property being unaffected by the change in taxes and the supply being fixed in the short run, any attempt to pass on the cost of increased taxes creates a margin of vacant property while reducing rents when taxes fall invites a shortage. In the first instance competition among owners drives rents down again and, in the second, competition among renters drives them up. Because the rents of property rest on the underlying forces of fixed supply and variable demand, the owners must lose when taxes are raised

* For a similar illustration of the latter point, the Bolivians placed an excise tax on tin some years ago because, they said, foreign buyers would bear its burdens. Since Bolivia produces only about a fifth of the world's tin, the tax -- it can safely be predicted -- reduced rents in Bolivian mines and wages in its industries.

and gain when they are lowered.

(As an interesting exception for very short periods of time, the high cost of moving in a hurry creates a demand for continued possession that renders the resulting equilibrium uncertain. Since tenants prefer to stay put, their short run rents after taxes were increased might exceed what they would pay if everyone lined up at the edge of town and dickered -- a'la Edgeworth -- for the space they wanted at the price they could afford.

Some leases, moreover, require tenants to pay the taxes. But the longer run demand for living space and commercial facilities becomes much more elastic as people shuffle about in search of cheaper quarters, double up, or leave town. The margin of vacancies rising therefore, the increase in taxes momentarily fobbed off onto tenants becomes smaller and smaller as the level of rents approaches its former equilibrium.)

Since these short run losses and gains enter into the prices of property whenever real estate changes hands, a new purchaser of old property receives the prevailing rate of interest on his money, bears none of the losses, and reaps none of the gains which devolved upon the former owner. These short run losses and gains, finally, provide both signal and incentive for the process of long run adjustment. When taxes go up and income goes down, old properties are no longer replaced so readily when they fall apart, while new ones are not built so rapidly. Contrarywise, lowering taxes and raising incomes attracts a rash of new buildings to take advantage of the windfall. In this fashion, the old equilibrium changes, giving way to the new.

B. Inefficiency versus Inequity

Differences in real tax rates that arise from differences in announced rates, variations in assessment ratios among communities, or differential treatment of various assets do not create inequity provided they have persisted for a long enough period of time. Their effects are capitalized out in the short run and invested away in the long run. Because the search for equal advantages at the

margin eventually provides a market remedy for tax inequality, "an old tax is a good tax."

(This principle finds extensive applications in taxes that fall on income or wealth. Does a progressive levy hit people with fluctuating incomes more heavily than those with stable returns of the same lifetime value? Then fewer people enter the former line of work and more the latter, till returns after taxes equalize. Do oil prospectors receive a subsidy via generous allowances for depletion? Then the subsidy invites more resources into the industry till its returns descend to normal.)*

In working its way around the differentials, the market, in this as in many other instances, translates inequity into malallocation of resources. Inequities while painful are transitory and fall upon those who own the property at the time the rate changed. The permanent legacy which the patchwork system of local rates bequeaths to the economy is distortion in the pattern of economic activity.

Changes in taxation, it then follows, which reduce the range of rates prevailing in various communities increase the allocative efficiency of the tax system. Similar statement apply to the removal of differences in tax treatment for particular groups of assets within each community, exemplified by the present

*The market provides no remedy for differential taxes on consumption. If excises bear more heavily on drinkers than on teetotalers, people may bend the elbow a bit less often but this method of tax avoidance is neither entirely successful nor completely costless. Differential excises amount to a bill of attainder on people with particular kinds of preferences.

policy of carrying vacant land on the tax roles at far below the assessment it would bear if buildings were erected upon it. Efficiency means a tax system that preserves "neutrality" among different places and investment classes.

Unfortunately for the simple life however, any change in property tax rates which produces long run efficiency also creates short run inequity because it awards windfall losses and gains to the owners of existing assets. Even if ultimately right and proper to divest vested interests for larger goals, the change is "unfair" in the narrow sense that it treats equals (who invest the same sum of money in different places) unequally. For the wide screen version of the same point: if the market has adjusted to any pattern of differential incentives such as tariffs, subsidies, biased regulations, or aberrant taxes, the attempt to remove them in the interest of either efficiency or justice creates inequity.

To summarize: in the long run the market translates inequities into inefficiencies. After this happens the attempt to achieve efficiency by restoring neutrality creates further inequity. These principles, which obviously apply far beyond the narrow domain of property taxation, indicate a basic problem in fiscal policy for a democratic society, namely the choice between efficiency and equity.

Lincoln School of Public Finance
Claremont Men's College
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12 June 1964

Dear Sir:

The enclosed document summarizes some material on property taxes presented at the June 1961 Tax Conference held on the campus of Claremont Men's College and sponsored by the Lincoln Foundation. The material I presented dealt with the effect of differences in tax rates on the location of business and industrial activity. A number of the participants were kind enough to ask for copies of my remarks; I have -- after innumerable drafts -- finally turned out something I consider suitable.

As indicated on the cover sheet, this is part of a larger manuscript on the history, administration, and incidence of property taxes which will see the light of day some time in the next year or so. We will send you a notice about the book when it issues from the press.

Yours truly,



Procter Thomson
John C. Lincoln Professor
of Economics and Administration