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Patterns of Property Tax Exploitation Produced By Infrequent Assessments

By JEROME F. HEAVEY*

ABSTRACT.   Out of date *assessments* of *real property* for *ad valorem taxation* may give rise to systematic *inequities* in the distribution of the *tax burden*. One such inequity is the exploitation of a taxing jurisdiction's *core area* by its *periphery*. We provide an explanation of how such exploitation may arise. This explanation is tested empirically by observing the *patterns of assessment* in a sample of *Pennsylvania school districts*. We find a consistent pattern of over-payments, supporting an hypothesis that core areas are exploited by peripheral areas. The overpayments to school districts could be claimed by city govern-ments.

I

WHAT TAXES DO is not always what they are intended to do. Although a tax may be intended to be applied in an even-handed fashion, we find, often enough, that it has been turned to the advantage of one group at the expense of another. Every tax consists of a rate structure and a base, and although the former offers little opportunity for concealing special advantages, the latter offers very great opportunity for concealment. It matters very little, after all, that tax *rates* are applied in a uniform fashion to all taxpayers. For if tax *base* definitions are not uniform amongst taxpayers then some will be privileged and some will be exploited.

This article reports an investigation of a pattern of exploitation which may be observed in the operation of the property tax. We begin with the con-struction of a hypothesis concerning that pattern and then describe an em-pirical test of that hypothesis.

II

THE PROPERTY TAX depends upon an assessment process to establish the value of the tax base. In principle all properties in a jurisdiction are to be assessed at the same percentage of market value. (One explicit departure from this general principle is in those jurisdictions which specify different assessment ratios for different broad classes of property. For example, residential property might by law be assessed at 40 percent of market value and commercial and industrial property at 50 percent of market value.)

It would be unreasonable not to expect a certain degree of error in assessments. Good assessment practice is usually thought to be indicated by a low coefficient of dispersion. We might expect that errors would be randomly distributed throughout a taxing jurisdiction and would not, on balance, favor one part of the jurisdiction over another. However, in jurisdictions where assessments are not kept current, assessment errors may not be randomly distributed.

Figure 1
Illustration of Geographical Arrangement
of General Purpose Government Boundaries
and School District Boundaries
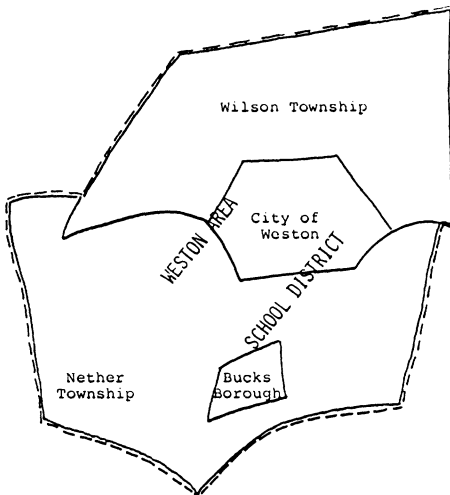
Legend: _____ general purpose government boundary

           -------- school district boundary

Note: Weston Area School District covers an area identical to the
         total area of the city, the borough, and the two townships.
         Every property subject to taxation by one of the general
         purpose governments is also subject to taxation by the school
         district.

By way of illustration, imagine two residential properties located in different neighborhoods within the same tax jurisdiction. Assume that in 1970 each property had a market value of $25,000 and that each was assessed at 100 percent of market value. Suppose that the nominal property tax rate in this jurisdiction was 50 mills per dollar of assessed value, (or $50 per 1,000 of assessed value) so that each property's tax liability would have been $1,250, which is an effective rate of 5 percent of market value.

Now if, by 1982, the jurisdiction has not reassessed any properties, it will still be carrying on its records the assessed values which were listed in 1970. The market values of the two properties are likely to have increased, but, because they are in different neighborhoods, the rates of increase may well be different. Especially, if one property is located in a declining neighborhood, the market values may have diverged considerably. Market values in 1982 of say, $40,000 and $60,000 respectively, would imply that the value of the first property had been increasing at an annual rate of about 4 percent, while that of the second had been increasing at an annual rate of about 8 percent.

With no reassessment each property will still be assessed at $25,000. This is an assessment ratio of .625 for the first property and of .412 for the second. Although most states require that assessment ratios be uniform within each taxing jurisdiction, at least for properties in the same class, assessment lags may give rise to the kinds of disparities described in this hypothetical illustration.

Another way to look at this disparity is to observe the effective tax rates on market value. The millage, *i.e.,* the nominal rate set by political decision as part of the budget process eacy year, will be the same for both properties. If the millage has not changed, then each property will have a 1982 tax liability of $1,250. This is a tax rate on market value of 3.13 percent on the first property and of 2.08 percent on the second. The higher-valued property enjoys an effective tax rate roughly one-third lower than that of the lower-valued property.

If rates of increase in the market value of real estate tend to be lower in the core of an urban area than in the surrounding non-core area, then we should expect to find higher effective tax rates in the core area of a taxing jurisdiction, and lower rates in the non-core areas. Thus the core area will subsidize the rest of the jurisdiction by an overpayment of the property tax.

III

WE CAN TEST the hypothesis developed in the preceding section by observing the pattern of assessments in tax jurisdictions which contain core and non-core municipalities in order to determine whether, in fact, the core municipalities are experiencing this type of exploitation. As the sample for our test we selected all of those Pennsylvania school districts which encompass a third-class city and one or more other local government units. Our sample consists of thirty-five such districts.

Before describing the empirical testing of our hypothesis it is worthwhile

Table I

Assessment Ratios in City and Non-City
Portions of School Districts, 1979

City	Assessment Ratio in City	Assessment Ratio in Balance of District	City Ratio/ Ratio in Balance
Altoona	.331	.281	1.18
Beaver Falls	.281	.230	1.22
Bethlehem	.441	.420	1.05
Bradford	.392	.367	1.07
Butler	.297	.216	1.38
Carbondale	.290	.271	1.07
Chester	.230	.131	1.76
Coatesville	.257	.224	1.15
Connellsville	.331	.227	1.46
Corry	.326	.260	1.25
Dubois	.263	.210	1.25
Easton	.448	.396	1.13
Farrell	.312	.349	0.89
Franklin	.208	.166	1.25
Greensburg	.173	.152	1.14
Hazleton	.270	.246	1.10
Johnstown	.320	.281	1.14
Lancaster	.199	.172	1.16
Lebanon	.407	.296	1.38
Lock Haven	.281	.327	0.86
Lower Burrell	.170	.161	1.06
McKeesport	.459	.415	1.11
Meadville	.230	.193	1.19
Monongahela	.243	.201	1.21
Nanticoke	.237	.227	1.04
New Castle	.262	.222	1.18
Oil City	.248	.177	1.40
Pittston	.243	.215	1.13
Pottsville	.289	.222	1.30
Shamokin	.244	.222	1.10
Sunbury	.240	.209	1.15
Titusville	.226	.190	1.19
Uniontown	.326	.219	1.49
Washington	.245	.190	1.29
Williamsport	.299	.270	1.11

Source: Pennsylvania State Tax Equalization Board,

to spend a little time describing the structure of local government in Pennsylvania. Below the county level there are three types of general purpose governments, cities, boroughs, and townships. School districts are special purpose governments, enjoying the same measure of sovereignty as do the general purpose governments. The boundaries of each school district are usually coincident with the boundaries of one or more general purpose governments, though occasionally areas of a general purpose government may lie partially in one school district and partially in another. Figure 1 shows a typical geographical arrangement of school districts and general purpose governments.

Now the state of Pennsylvania designates cities as belonging to one of four classes. There is one first-class city, Philadelphia, one second-class city, Pittsburgh, one second-class-A city, Scranton, and 49 third class cities. Philadelphia and Scranton are in school disctricts which encompass no other general purpose governments, and Pittsburgh lies almost entirely within the Pittsburgh School District, which contains no other general purpose governments.

Of the 49 third-class cities, 14 lie within the boundaries of school districts which encompass no other general purpose governments. The remaining 35 are situated within school districts which include one or more other general purpose governments. Thus our sample consists of 35 school districts, each of which contains a third-class city and one or more other general purpose governments. Two school districts, Bethlehem Area and Saucon Valley, have been combined in this study, since each encompasses a portion of the City of Bethlehem. Our sample school districts are similar in makeup to the illustrative district shown in Figure 1.

In Pennsylvania the assessment of real estate for tax purposes is performed by a county assessor, who reports assessed and market value figures to each county, city, borough, township, and school district. Each of these governmental units selects its nominal tax rate within limits set by the state. While county government chooses the ratio of assessed value to market value, state law requires that the ratio be uniform within each county. If this law is carried out, then the tax rate will be uniform within each school district.

But are uniform assessment ratios achieved? Evidence is provided by the Pennsylvania State Tax Equilization Board (STEB) that they are not. Market value per pupil is a measure of taxable capacity which the state of Pennsylvania uses in calculating its annual aid to each school district. For this reason the STEB is assigned the task of determining the market value of taxable property in each school district. It does this by reviewing sales of properties in each district and comparing sale prices to the assessed value figures provided to it

Table II

Annual Tax Overpayment as a Percentage
of Total Taxes Collected

City	Overpayment 1979	Total Taxes 1978	Tax Overpayment as Per-cent of Taxes Collected
Altoona	$190,114	$ 5,206,360	3.7%
Beaver Falls	154,379	920,988	16.7
Bethlehem	226,850	10,024,444	2.3
Bradford	58,629	954,541	6.1
Butler	472,248	1,667,519	28.3
Carbondale	15,814	637,395	2.5
Chester	532,402	6,533,717	8.1
Coatesville	154,677	1,089,891	14.2
Connelsville	196,423	650,485	30.2
Corry	98,310	816,833	12.0
Dubois	167,895	650,084	25.8
Easton	250,449	2,328,308	10.8
Farrell	- 22,151	1,202,905	- 1.8
Franklin	118,647	1,132,647	10.5
Greensburg	151,419	1,768,432	8.6
Hazleton	182,510	2,011,649	9.1
Johnstown	112,089	3,439,885	3.3
Lancaster	238,131	5,033,122	4.7
Lebanon	71,838	1,868,225	3.8
Lock Haven	- 54,726	444,961	- 12.3
Lower Burrell	19,063	817.542	2.3
McKeesport	109,604	4,040,831	2.7
Meadville	202,593	1,594,532	12.7
Monongahela	106,606	441,572	24.1
Nanticoke	15,135	623,953	2.4
New Castle	32,675	3,791,134	0.9
Oil City	164,848	1,159,511	14.2
Pittston	61,697	427,707	14.4
Pottsville	80,317	1,002,693	0.8
Shamokin	22,044	512,264	4.3
Sunbury	58,528	533,731	11.0
Titusville	46,534	718,415	6.5
Uniontown	261,227	1,108,946	23.6
Washington	104,622	1,743,117	6.0
Williamsport	114,371	3,353,546	3.4

Source: Local Government Financial Statistics 1978.
Commonwealth of Pennsylvania, 1980, page 11.

by each county assessor. The STEB annually publishes estimates of the market value of taxable property in each general purpose government and each school district, along with the assessed value in each as reported by the county assessors.[1] The STEB reports are the source of the assessment ratios shown in Table I.

Perfectly accurate assessments are an unattainable ideal. We must expect a certain degree of error, and we might reasonably expect that this error would be randomly distributed. However, the error is not randomly distributed. Assessment ratios appear to be systematically biased against the cities.

IV

BECAUSE CITIES ARE ASSESSED at relatively too high a rate, they pay too large a share of property taxes, while the non-city portion of the school district, being assessed at relatively too low a rate, pays too small a share of property taxes. The result is a flow of funds from the cities to their surrounding suburbs. We can estimate the size of this flow by comparing the present tax burden on city properties to what the tax burden on those properties would be if the assessment ratio were uniform within each district. The estimation process is shown below.

We define the "proper" school tax burden on city properties in any year as the actual amount of property taxes raised by the school district, multiplied by the ratio of market value of taxable property in the city to that in the entire district, or

$$
\frac{\text{Proper tax burden}}{\text{on city properties}} = \frac{\text{School district}}{\text{property tax revenues}} \times \frac{\text{Market value of city properties}}{\text{Market value of entire district}} \quad [1]
$$

In other words, the city property owners should pay the same share of school district property tax revenues as they have of the school district property tax base.

The actual school tax burden on the cities is determined by their share of total assessed value, or

$$
\frac{\text{Actual tax burden}}{\text{on city properties}} = \frac{\text{School district}}{\text{property tax revenues}}
$$
$$
\times \frac{\text{Assessed value within the city}}{\text{Assessed value within entire district}} \quad [2]
$$

Since assessment ratios tend to be higher in the city portion of the school district than in the non-city portion, cities are usually overtaxed. The amount of this overpayment is

$$\begin{array}{l} Annual\ overpayment \\ by\ city\ taxpayers \end{array} = (Actual\ Share) - (Proper\ Share) \qquad [3]$$

Using Equations [1], [2], and [3], we calculated the annual overpayment for each of the cities in our sample. In Equations [1] and [2] we used each school district's actual property tax revenues for the 1979–80 school year,[2] and the market and assessed value reported by the State Tax Equalization Board.[3] The overpayments are shown in Table II.

The overpayments represent flows of resources out of the cities. To provide some basis for evaluating the magnitude of these overpayments we have included in Table II a comparison of the overpayment and the total amount of taxes collected by each city for its own use in 1978. In many cases the overpayment is a substantial portion of the city's taxes.

That we have found such a consistent pattern of overpayments provides support for our hypothesis that core areas are exploited by the peripheral areas in the same taxing jurisdiction. If these overpayments were to be eliminated then taxpayers in the cities would enjoy lower tax payments.

But the existence of these overpayments can be viewed, also, as an opportunity for the city to increase its revenues "painlessly." This could be done in the following way. If the property assessments were brought up-to-date, the school tax levied on in-city properties could be reduced. However, the *total* tax on in-city properties could be kept at the same dollar level, with the money not paid to the school district remaining with the city government. Properties located within the city would not experience any increase in total taxes, but a larger proportion of this tax would go to the city government.

It is worth emphasizing that this is not a "one-shot" amount of money. The city would receive each year the amount of money which otherwise would have flowed out of the city as an overpayment of school district taxes. Of course, the disparity represented by the overpayment will very likely creep back into the tax system if assessments are not kept current.

<div align="center">V</div>

THE PURPOSE OF THIS REPORT was to investigate whether infrequent assessments might produce a property tax structure which was systematically biased against one group of property owners. In the empirical part of the investigation we have used a sample of small cities which are part of a larger taxing jurisdiction. The evidence presented here indicated that assessment ratios are systematically biased against the cities in these jurisdictions. Correction of this bias through up-to-date assessment would provide an opportunity for the

cities to increase their property tax revenues without increasing the total tax burden on properties located within the cities.

Although the empirical part of this analysis is limited to school districts containing third-class cities, we must expect that the cities are experiencing the same overpayment of taxes to the government of the counties in which they are situated. We might expect also to find similar patterns of exploitation in other types of taxing jurisdictions. For example, in a large city the property tax may operate in such a way that blighted neighborhoods are relatively overtaxed and other neighborhoods are relatively undertaxed. The measurement technique used here certainly might be applied to further data sets.

One last qualification should be made. If the peripheral areas of a taxing jurisdiction are lagging and the core area is leading, then the process described here will result in the exploitation of the periphery by the core. In short, it is not the core or the periphery, *per se,* which is exploited; that area is exploited which is lagging behing the rest of the jurisdiction.

Notes

1. Pennsylvania State Tax Equalization Board, *32d Annual Certification, 1979 Market Values by School District by Municipalities.* (1980).

2. Department of Education, *Our Schools Today, Public School Financial Statistics Report,* Volume 19, No. 7 (1980).

3. *Op. cit.*

Bishop Grundtvig Honored

THE 200TH ANNIVERSARY of the birth of Bishop N. F. S. Grundtvig was celebrated in Denmark and the United Kingdom. Bishop Grundtvig, it will be recalled, was the founder of the Danish folk high schools and the free-school movement, forerunners of today's adult education movement which is in operation throughout the world.

One celebration was an international conference in September, 1983, held at Christiansborg Palace in Copenhagen, organized by the Danish Institute for Information About Denmark and Cultural Cooperation With Other Nations. Grundtvig's works were analyzed in lectures, discussions and working groups. The secretary of the conference (and of the institute, called in Danish Det Danske Selskab) was Mr. Folmer Wisti, Kultorvet 2, Copenhagen K 1175, Denmark.

Another institution to mark the anniversary was the International People's