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THE CITY REAL ESTATE TAX
IN PITTSBURGH

PITTSBURGH, PENNSYLVANIA
1934

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by

J. P. WATSON



PUBLISHED BY
BUREAU OF BUSINESS RESEARCH
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DIRECTOR'S PREFACE

The government of a large city represents a complex set of social machinery. The operations of that machinery, although expensive, are an essential part of an orderly society; and the financing of such operations is a major economic problem. An adequate appraisal of the economic welfare of the Pittsburgh district must comprehend an analysis of the financial basis of public functions. This observation applies with particular force to an analysis of the real estate tax in Pittsburgh because the city tax, under the graded tax system, differs from that in the other major American cities and because the importance of the real estate tax in local governmental revenues is considerably greater in Pittsburgh than in the other large American cities.

The owners of real estate in Pittsburgh have in the past three or four years become increasingly aware that the City's budget is dependent primarily on the real estate tax. No ready solution to this problem is available, nor is one in prospect. Those who are directly burdened with real estate taxes usually advance one or both of the following proposals: first, that the cost of government be reduced; second, that a large share of the tax burden be shifted from real estate to other forms of wealth or sources of income. Such proposals, of course, should be given full consideration. Reduction of public financial requirements, however, cannot be accomplished by a simple bold stroke. Intelligent public retrenchment involves a judicious weighing of the necessity or the relative desirability of the various activities for which public money is spent and due regard for the requirements to meet the public debt. On the other hand, it is by no means easy for a local government to lighten the local burden on real estate by tapping other sources of income, for the revenue systems of the legally superior governmental units—the Federal

Government and the state government—limit very much the fruitful choices open to local governments. Essentially, then, the local governments, after doing what they may to reduce revenue requirements, are left with the necessity of doing the best they can with the real estate tax.

The City of Pittsburgh, in common with most other cities in 1934, is having difficulties with its budget. One step always essential in such contingency is to take stock of the local revenue system. The major analysis required in such stock-taking is the analysis of the real estate tax. This monograph is intended as a contribution on the character and the functioning of the real estate tax in Pittsburgh.

Publication of this monograph is part of a program in regional economic research under an eight-year grant from The Buhl Foundation, supplemented by the University of Pittsburgh. The purpose of this program is to lay a basis for constructive action in the solution of economic problems confronting the Pittsburgh district through objective analysis of these problems.

RALPH J. WATKINS
Director

June 1934

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Introduction

Agitation for retrenchment in expenditures for local government is prevalent in good times; in depression, it is intense. Usually the dominant note in such agitation is a demand for reduction of taxes on real estate. The reason for the outstanding emphasis on this demand is that property taxes provide the larger part of the revenues of local governmental units throughout the country—and, in terms of yield, the property tax is mainly a real estate tax.

Fiscal Setting of the Real Estate Tax in the United States

The Federal government does not levy a direct tax on property; for some years the major Federal revenues have been derived from income taxes (corporation and individual), tariffs on imports, and various internal excises (the more important being the tobacco taxes).¹ Most of the state governments derive substantial revenues from the property tax, but only a few derive as much as half their revenue from this source. Less than one-fourth of all state tax revenue in 1929 was derived from the general property tax. The states have developed a number of other sources, the chief ones being capital stock taxes, taxes on gross receipts of public utilities, gasoline taxes, motor licenses, inheritance taxes, low-rate personal property taxes, and, in a considerable number of states, income taxes.² Thus, the Federal government and the state governments are to a very large extent dependent for their revenues on levies on the flow of economic activity, on the income derived therefrom, or on transfers of wealth, whereas local governmental financing is based mainly on taxes on holdings of a particular form of wealth—real estate.

¹ For an excellent summary of Federal revenues in recent years, see W. F. Willoughby, *Financial Conditions and Operations of the National Government, 1920-1930* (Washington: The Brookings Institution, 1931), pp. 81-99. See also National Industrial Conference Board, *Federal Finance, 1913-1932* (New York, 1933).

² United States Bureau of the Census, *Financial Statistics of States*, annual.

Local governmental units in many states receive considerable amounts in the form of grants from general state funds or in the form of specific allocation of state-collected taxes. This partial financing of local governments through state appropriations or through the state tax collection machinery is more important in the fields of education and highways than in other fields. In Pennsylvania, educational grants are familiar, and state aid for highway purposes has had some development. These are the more significant forms of state participation in local finance in Pennsylvania, but neither looms very large in comparison with the total local tax.

City governments, in the financing of public improvements, make wide use of special assessments on property assumed to be especially benefitted. Cities generally derive some revenue from dozens of small sources, such as licenses, permits, highway privileges, rentals and concessions, interest on balances, and miscellaneous sales or service charges.³ Large gross receipts accrue to many municipalities from the operation of public service enterprises, but this revenue is usually thought of as distinct from the revenue available for general governmental purposes.

In spite of the dozens of small sources of city revenue, taxes on property are the predominant revenue for general governmental purposes of most American cities. This is true also for other local governmental units.⁴ Part of the yield of the property tax for local purposes is from taxes on personal property, but generally the larger portion is from taxes on real estate. This close relationship between total local public revenues and the real estate tax is recognized by the taxpayers, and there is nearly everywhere a tendency on the part of protesting taxpayers to speak as if cutting the local budget and cutting real estate taxes were the same thing.⁵

Both the budget and the real estate tax have been reduced in Pittsburgh since the beginning of the depression, as they have been in scores of other municipalities (not by any means in all

³ United States Bureau of the Census, *Financial Statistics of Cities*, annual.

⁴ National Industrial Conference Board, *Cost of Government in the United States, 1929-1930*, (New York, 1932), pp. 95-97 and 114-117.

⁵ An illuminating discussion of the fiscal importance of the property tax is found in Jens P. Jensen, *Property Taxation in the United States* (Chicago: The University of Chicago Press, 1931), Chapter I.

of them).⁶ But whatever the emergency reductions, it is a safe prophesy that rather high real estate taxes will remain, here and in other large cities. Two hard facts lead to this expectation: First, no way has been found anywhere to avoid a complex and costly government in a big city. Second, in spite of the considerable importance of other local revenues, no way has been found, in American experience, to finance the complex and costly governments of cities without primary dependence on the real estate tax.

Plan of This Study

As we shall see presently (Chapter 3), the real estate tax is of greater importance in local governmental financing in Pittsburgh than it is in other major cities. Moreover, the city real estate tax in Pittsburgh—the graded tax—differs from the tax on real estate in other American cities except Scranton. Most of this study, therefore, will be focused on a descriptive analysis of the city real estate tax in Pittsburgh. The budgetary importance of the minor city revenues will be considered, however, and one appendix will be given to a brief discussion of the minor revenues.

In an analysis of the city tax it is essential to keep in mind that two other governmental units, the school district and the county, levy taxes on real estate in Pittsburgh. At numerous points the taxes of the other two units will be brought into the picture. To do so is essential for several reasons: First, the city tax in recent years has been, roughly, only half the local tax. Second, the city tax is levied under the graded tax plan, which prevails nowhere else in this country except at Scranton, whereas the school levy and the county levy are at the old familiar uniform rates on all types of taxable real estate. Third, there are two sets of assessed values in the city, one for city and school taxes and another for county taxes. Fourth, there are three collection offices for taxes levied in the city, one being for current and delinquent city and school taxes, one for current county taxes, and one for delinquent county taxes.

⁶ C. B. Rightor, "Tax Burden Lightens," *National Municipal Review*, December, 1932, p. 689; F. L. Bird, "American Cities Face 1933," *National Municipal Review*, February, 1933, p. 51; and C. B. Rightor, "Comparative Tax Rates for 284 Cities, 1933," *National Municipal Review*, December, 1933, p. 596.

The analysis of the city real estate tax in Pittsburgh will be presented in the following divisions:

Tax rates: city rate differences under the graded tax law; growth and current levels of city rates and of other local rates; variation in taxes under the graded tax law, according to degree of improvement on land; necessity of interpreting tax rates in terms of assessed valuation.

Assessed valuation: comparative growth of total building valuation and total land valuation; probable effect on valuation of the change to the graded tax.

Yield and budgetary importance of the real estate tax: amount of city real estate tax yield and of the yield of other local taxes; importance of the real estate tax in the city budget and in other local budgets; importance of the real estate tax in total local revenue in Pittsburgh and in other large cities.

Growth of taxes: growth of the city real estate tax and of other local taxes; major factors affecting growth of taxes.

Delinquency of real estate taxes: amount and growth of city delinquent taxes and of delinquent taxes of other local units; budgetary significance of tax delinquency.

Two appendices are included to show information that clarifies the data in the body of the text. In Appendix A the amounts of reported city receipts are classified as revenue and non-revenue receipts, and the major items of non-revenue receipts are shown and explained. In Appendix B the yield of the minor revenues is discussed briefly.

CHAPTER 1

City Real Estate Tax Rates in Pittsburgh

Tax rates alone reveal little about tax burden. The tax bill is a product of rate and assessed value. Assessed value commonly differs somewhat—frequently very much—from market value. Even if the assessed values are reasonably consistent with immediate market values, they may be economically unsound, for this country has witnessed many periods of market insanity with respect to real estate.

Nothing less than a comprehensive survey of real estate values would make it possible to pass sound judgment on the values assessed for taxation. Such a survey would involve an exhaustive study of sales, rentals, uses of real estate, supply of land and of buildings suited for various uses, building costs, and depreciation and obsolescence of buildings. Moreover, it would involve a study of community and neighborhood changes, so that trends in public and private use of property could be taken into account.

Changes in the totals of assessed valuations will be considered in Chapter 2; but, in the absence of the comprehensive data required to test assessed valuations, no attempt will be made in this study to weigh either the accuracy of assessed valuations or the magnitude of real estate tax burdens in Pittsburgh. Furthermore, no attempt will be made to compare rates in Pittsburgh with rates in other major cities. Such comparison would be a waste of time unless the assessed values in Pittsburgh could be compared with those in other cities.

There is something to be gained, however, from an examination of tax rates in Pittsburgh. In the first place, the operation of the graded tax law in this city is widely misunderstood, and an examination of city rates and a consideration of their changes under this system are steps toward an understanding of the graded tax system. In the second place, although there are substantial differences between valuations assessed by the city (for city

and school levies) and valuations assessed by the county (for the county levy), the comparative growth of local rates has some rough meaning with respect to the growth of total local taxes.

City Rates under the Graded Tax Law

The City of Pittsburgh levies its rates under the graded tax law, the rate on buildings being half the rate on land. In contrast, the Pittsburgh school district and the county levy uniform rates on land and buildings. The contrast between city taxes and other taxes levied in the city may well be emphasized, for there is a prevalent misconception that the building rate in Pittsburgh is half the land rate. This ratio holds only with respect to the rates levied for city purposes. Inasmuch as the school rate and the county rate are uniform on land and buildings, the total local rate on buildings is decidedly more than half that on land.

The rate difference under the graded tax law was established by stages in the period 1914-1925 (Table 1). The building rate was 90 per cent of the land rate in 1914 and 1915, 80 per cent in the three years 1916-1918, 70 per cent in the three years 1919-1921, 60 per cent in the three years 1922-1924, and 50 per cent in 1925 and thereafter. In the years 1914, 1919, 1922, and 1925, the process of lowering the ratio of the building rate to the land rate resulted in an actual reduction of the building rate. Throughout the period 1914-1930, the general effect was to prevent a rise in the building rate as great as the rise in the land rate. Conversely, of course, since total levies were increasing, the graded tax law resulted in pushing the land tax rate upward much faster than it would have risen under a system of uniform rates.

The highest point of the building rate was reached in 1921; the highest point of the land rate was not reached until 1930. In 1925, the first year of the full differential of the graded tax, the land rate was 119 per cent more than the last flat rate (levied in 1913); the building rate in 1925, however, exceeded the last flat rate by less than 10 per cent. In 1930 the land rate, at its highest point, exceeded the 1913 rate by 192 per cent; at the same time the rate on buildings was only 46 per cent above the 1913 rate.

In the years 1931-1933 the graded tax law had an effect probably not expected by those whose support led to the adoption of the law. Depression brought about reduction of city tax rates. Because the city building rate is uniformly half the city land rate, the reduction (in mills) in city rates was only half

TABLE 1
City Real Estate Tax Rates in Pittsburgh, 1913-1934*
 (Rates in Mills per Dollar of Assessed Valuation)

Year	City Rate on Land	City Rate on Buildings	Percentage Ratio: Building Rate to Land Rate
1913†	8.9	8.9	100%
1914†	9.4	8.46	90
1915†	10.2	9.18	90
1916	12.6	10.08	80
1917	11.5	9.2	80
1918	14.5	11.6	80
1919	15.7	10.99	70
1920	19.0	13.3	70
1921	20.0	14.0	70
1922	20.0	12.0	60
1923	20.0	12.0	60
1924	20.0	12.0	60
1925	19.5	9.75	50
1926	22.4	11.2	50
1927	22.4	11.2	50
1928	25.0	12.5	50
1929	25.0	12.5	50
1930	26.0	13.0	50
1931	25.5	12.75	50
1932	23.0	11.5	50
1933	20.6	10.3	50
1934	20.6	10.3	50

*Rates 1913-1933 from *Annual Report of the City Controller, Pittsburgh, 1932*, pp. 64-67; 1934 rates from City Controller's office. It is essential to note that these are only city rates. The school rate and the county rate are shown in Table 2.

†Prior to 1916 there were separate levies for old debt in annexed areas. The rates for the years 1913-1915, therefore, are the rates in the old city, not in the annexed areas still having old debt levies. In 1916 and thereafter the rates were uniform for the whole city.

as great on buildings as on land. In that period the city tax rate on land was reduced 5.4 mills; in the same period the rate on buildings was reduced only 2.7 mills. In other words, when tax rates are being reduced the graded tax law favors vacant or less improved land.

Weighted Average of City Rates

No such thing as an average rate is levied, but the weighted average of city rates is of use as a means of judging the general growth of city taxes and as a means of seeing more clearly the unequal growth of land rate and building rate.

In the computation of the weighted average of city rates, the land rate is weighted according to the ratio of land valuation to total assessed value, and the building rate is weighted according to the ratio of building valuation to total assessed value. The city rates are shown in Table 1 for each of the years 1913-1934, i. e., for the last year of the flat rate and the whole period of the graded tax. In Table 5 the assessed value of land and the assessed value of buildings are expressed as percentages of total valuation for each of the years 1914-1934. These percentages in Table 5 constitute the weights used in the computation of the weighted average of city rates. The method of computing the weighted average is illustrated by the following computation for 1933: The 1933 land rate was 20.6 mills, and the 1933 land valuation was 48.4 per cent of total valuation; the 1933 building rate was 10.3 mills, and the building valuation was 51.6 per cent of total valuation. The weighted average of 1933 rates, therefore, is

$$\frac{(20.6 \times 48.4) + (10.3 \times 51.6)}{100} = 15.285 \text{ mills}$$

The average so computed for each of the years 1914-1934 is shown in Table 2.

CHART 1
City Real Estate Tax Rates in Pittsburgh and the Weighted
Average of City Rates, 1913-1934
(Data in Tables 1 and 2)

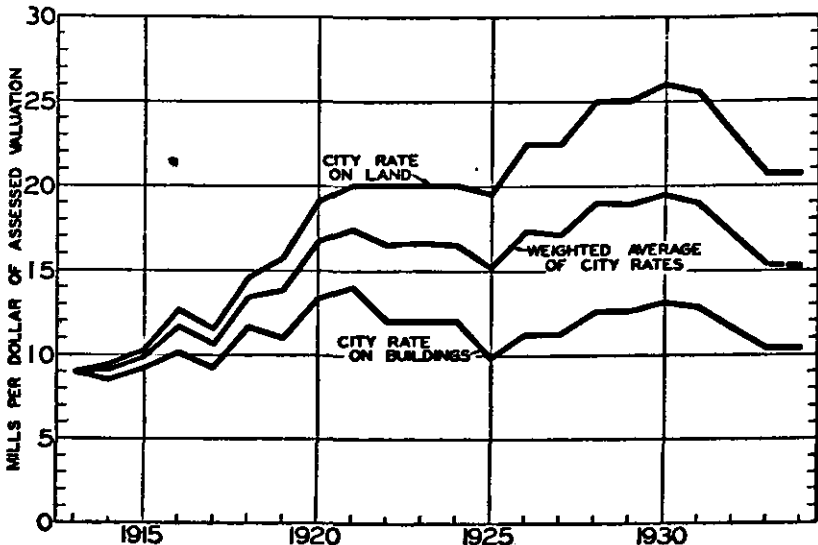


TABLE 2
Weighted Average of City Tax Rates in Pittsburgh in Comparison
with the City School Rate and the County Rate
1913-1934

(Rates in Mills per Dollar of Assessed Valuation)

Year	Weighted Average of City Rates*	School Rate†	County Rate‡
1913	8.9	6.0	2.75
1914	9.052	6.0	2.75
1915	9.815	6.0	2.25
1916	11.637	6.0	3.25
1917	10.598	6.0	3.5
1918	13.342	6.5	4.0
1919	13.797	6.5	4.0
1920	16.657	7.5	5.25
1921	17.474	8.5	5.25
1922	16.496	11.5	5.25
1923	16.584	11.5	4.75
1924	16.464	11.5	4.875
1925	15.151	11.5	6.375
1926	17.259	11.5	7.375
1927	17.058	11.5	7.375
1928	18.962	11.5	7.375
1929	18.823	11.5	7.375
1930	19.435	11.75	8.375
1931	18.984	11.75	8.375
1932	17.089	11.75	8.375
1933	15.285	11.75	8.25
1934	15.244	11.25	8.125

*The two city rates are shown in Table 1. For each year, the land rate is weighted by the ratio of assessed land valuation to total assessed valuation, and the building rate is weighted by the ratio of assessed building valuation to total assessed valuation. Weighted average for 1934 is tentative; assessment incomplete.

†School rate 1913-1933 from *Annual Report of the City Controller*, Pittsburgh, 1932, pp. 64-67; school rate, 1934, from Pittsburgh Board of Public Education. County rate from Allegheny County Board for the Assessment and Revision of Taxes; poor district rate not included. The county rate is only roughly comparable with the other rates. The county makes a different assessment, and there are differences in property taxed. Because of this lack of comparability, a consolidation of the three rates would give an erroneous total local rate.

For any one year the weighted average of the city rates is equal to a flat rate that would produce the same total levy as that produced by the two rates actually levied. The change in this average since 1913, however, cannot safely be assumed to be the same as the change in a uniform rate would have been, because the shift to the graded tax appears to have influenced the total assessed valuation. (This point is considered in Chapter 2.) Moreover, this city average rate is not comparable with the flat rate levied in any other city unless due allowance can be made for differences in the extent to which assessed value

represents the fair value.⁷ Its comparability with the Pittsburgh school rate and with the Allegheny County rate will be considered presently.

In Chart 1 the weighted average of the city rates is plotted for comparison with the city land rate and the city building rate. At the highest point—that in 1930—the average rate exceeded the 1913 flat rate by about 118 per cent. The land rate at that time exceeded the 1913 rate by 192 per cent, but the building rate exceeded the 1913 rate by only 46 per cent.

It will be noted in Chart 1 that for the earlier years of the period the curve representing the average rate rises sharply, much in conformity with the curve of the land rate. As the ratio of the building rate to the land rate was reduced, the influence of the building rate was materially increased, owing to the fact that assessed value of buildings grew much faster than assessed value of land (Table 4). In 1925 the rate ratio was fixed, but the relatively greater growth of the assessed value of buildings continued after 1925. Therefore, the curve representing the average rate has tended to be more and more like the curve representing the building rate.

Average City Rate in Comparison with the School Rate and the County Rate

The school rate, being levied on city valuation, is directly comparable with the city average rate. This is true both regarding comparative levels and regarding growth.

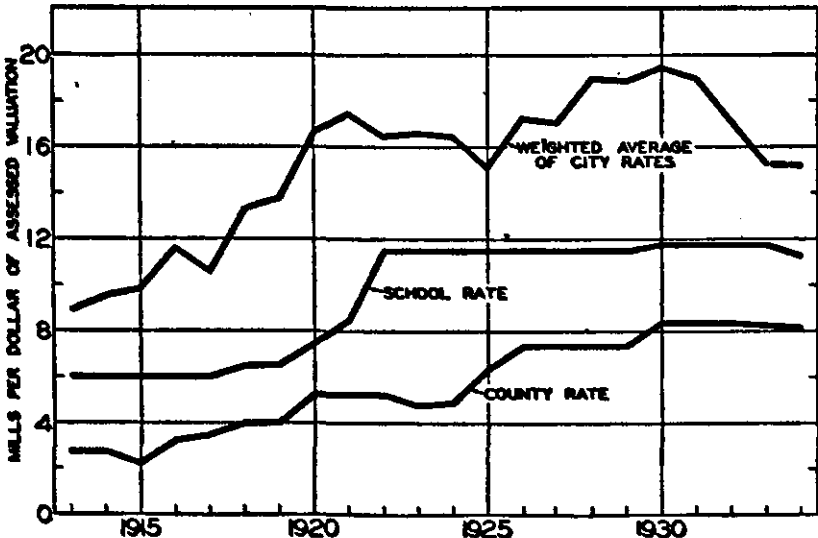
The county rate is not strictly comparable with the city rate and the school rate. The county assessment and the city assessment are made independently of each other. Some property taxable by the county is not taxable by the city, and some

⁷ The most widely circulated use of the weighted average city rate for Pittsburgh is that in the annual comparison of tax rates of cities in the United States and Canada, prepared by the Detroit Bureau of Municipal Research, and published, with discussion by C. E. Rightor, in the *National Municipal Review*. Mr. Rightor's discussion of city tax rates in 1933 appeared in the December, 1933 issue of the *National Municipal Review* under the title "Comparative Tax Rates for 284 Cities, 1933." In these rate comparisons there is full recognition of the wide differences among cities with respect to the ratio of assessed value to true value. The Detroit Bureau of Municipal Research obtains an estimate of this ratio for each city; but, as Mr. Rightor readily recognizes, these estimates range all the way from mere hunches to reasonably sound judgment, based on study of sales, rentals, building costs, and other factors relevant to valuation. His purpose appears to be the laudable one of making the best comparisons possible and at the same time of encouraging the improvement of data so that it may become possible to make better comparisons of cities in terms of real estate taxes.

property taxable by the city is not taxable by the county. The valuations, therefore, are not directly comparable. The net change in the county assessment of property within the city since 1913, however, is roughly comparable with the net change in the city assessment. From 1913 to 1930 the county valuation of property in Pittsburgh rose 50 per cent; in that period city valuation rose 53.7 per cent. Within that period annual changes in values assessed by the county differed materially from changes in city assessments. Therefore, annual changes in rates should be considered only roughly comparable. The net changes in rates during the long period since the flat city rate was abandoned, however, are more nearly comparable.

The school rate, the county rate, and the weighted average city rate reached their highest levels in 1930. The average city rate in 1930 exceeded the 1913 rate by 10.535 mills. From 1913 to 1930 the school rate increased by 5.75 mills; the county rate in the city, by 5.625 mills. From 1930 to 1933 the city average rate fell 4.15 mills; the school rate was not changed; the county rate within the city was reduced one-eighth of a mill. For 1934

CHART 2
Weighted Average of City Tax Rates in Pittsburgh in Comparison
with the School Rate and the County Rate, 1913-1934
 (Data in Table 2)



the city rates are the same as in 1933, but a change in the relation of building valuation and land valuation (Table 5) caused a slight lowering of the weighted average. The school rate for 1934 is one-half of a mill lower than the 1933 rate; the county rate is one-eighth of a mill lower.

The average city rate, the school rate, and the county rate, shown in Table 2, are plotted in Chart 2. The three rates increased very much in the period of war-time and post-war inflation, 1917-1920. The reduction in the city average in 1922 was due to the reduction of the building rate that year—the gradual establishment of the graded tax law being still in process. In 1925 most of the reduction was due to the same factor, although there was a reduction of one-half of a mill in the land rate that year (Table 1). Between 1925 and 1930 the city average moved upward considerably. The school rate rose considerably in the period 1918-1922, remained at the 1922 level through 1929, was increased slightly in 1930, and was unchanged in the years 1931-1933. Thus, in the eleven years 1923-1933 there was only a minor change in the school rate; but there was a small reduction in 1934. The county rate rose in the period 1915-1920, remained unchanged in 1921 and 1922, declined in 1923, and then rose for three years. It stood at the 1926 level through 1929 but was increased in 1930. It was reduced slightly in 1933 and 1934.

It is clear from Chart 2 that decidedly the major part of the growth of local taxes took place during the war period and in the first two or three years after the war. Tax growth in that period will be more fully discussed in Chapter 4.

Differences in Tax as Related to Differences in Degree of Improvement

Real estate parcels range in terms of improvement from vacant land to the most highly improved land. The city building rate being only half the city land rate, the amount of tax per dollar of assessed value is less as the degree of improvement increases. For each parcel, the ratio of total tax to assessed valuation may be called the "parcel rate." The more important assessed building valuation is in total valuation, the lower is the

parcel rate. This variation in parcel rate may be expressed in the form of a simple equation. As defined above,

$$\text{parcel rate} = \frac{\text{total tax}}{\text{total assessed valuation}}$$

That is, in terms of the graded tax,

$$\text{parcel rate} = \frac{\text{land valuation} \times \text{land rate}}{\text{total valuation}} + \frac{\text{building valuation} \times \text{building rate}}{\text{total valuation}}$$

Therefore,

$$\frac{\text{parcel rate}}{\text{land rate}} = \frac{\text{land valuation}}{\text{total valuation}} + \frac{\text{building valuation}}{\text{total valuation}} \times \frac{\text{building rate}}{\text{land rate}}$$

For a simpler algebraic form of the equation, assume that

- x = ratio of building valuation to total valuation (percentage)
- 100% - x = ratio of land valuation to total valuation
- k = ratio of building rate to land rate (a constant for one year)
- y = ratio of parcel rate to land rate (percentage)

Substitution of these symbols in the last equation shown above gives

$$\frac{y}{100\%} = \frac{100\% - x}{100\%} + \frac{kx}{100\%}$$

Two examples will illustrate how the taxes vary as the importance of building valuation in the total assessment varies. The combined local tax rate on buildings for 1934 is 29.675 mills per dollar of assessed valuation, and the combined rate on land is 39.975 mills. (For purposes of the illustration, the disparity between city valuation and county valuation is ignored.) In terms of total tax rates, the 1934 value of "k" is about .74. With reference to a piece of real estate on which the buildings are assessed at 30 per cent of the total valuation of land and buildings,

$$y = 100\% - 30\% (1 - .74) = 92.6\% \text{ (approximately)}$$

That is, the parcel rate is 92.6 per cent of the land rate, and the tax is 92.6 per cent of the tax on a piece of vacant land assessed at the same figure. With reference to a piece of real estate on which the buildings are assessed at 70% of the total valuation of land and buildings,

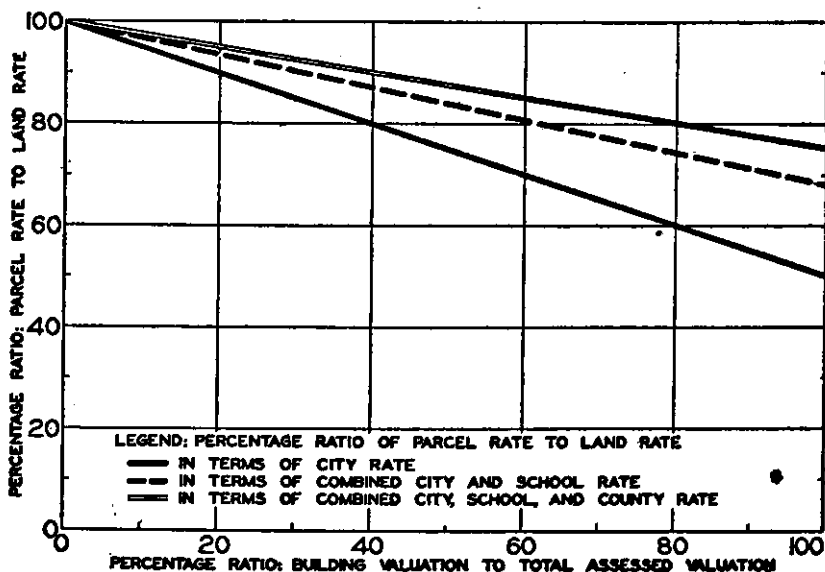
$$y = 100\% - 70\% (1 - .74) = 81.8\% \text{ (approximately)}$$

That is, the parcel rate is 81.8 per cent of the land rate, and the tax is 81.8 per cent of the tax on a piece of vacant land assessed at the same total valuation.

Three sets of values for this equation are plotted in Chart 3. The lower of the three sloping lines represents the values in terms of the city rates alone, the city parcel rate ranging from

100% of the land rate to 50% of the land rate. These values hold in any year of the present graded tax. When the school rate and the county rate are considered, the values must be stated for each year, for there is no fixed relation between the consolidated building rate and the consolidated land rate. The

CHART 3
Differences Among Parcel Rates* Under the Graded Real Estate Tax in Pittsburgh



*The term "parcel rate" means, with respect to a specific parcel, the ratio of total tax to total valuation. The line of variation in terms of city rates holds for any year of the present graded tax (city building rate half the land rate). The other two lines of variation hold only for tax rates of 1933. The generalized equation, $y = 100\% - x(1 - k)$, is explained in the accompanying text.

broken line in Chart 3 represents the variation of parcel rates in terms of the combination of city rates and the school rate in 1933. The 1933 parcel rate, in terms of city and school taxes combined, varied from 100% of the land rate to about 68% of the land rate. The double line represents the variation in terms of the combination of city, school, and county rates in 1933. In terms of the combination of all local rates, the 1933 parcel rate varied from 100% of the land rate to about 75% of the land rate.

The marked difference between the upper sloping line and the lower one in Chart 3 shows clearly that the differential in favor of improved property is relatively much less in terms of the

combined rates than it is in terms of the city rates. And since the school rate and the county rate are not in any fixed relation to the city rates, the relative significance of the city graded tax differential in the total of local rates is likely to vary from year to year. In other words, application of the principle of the graded tax to a variable portion of the local tax cannot provide a consistent percentage of tax differential in favor of improved property.

Caution Necessary in the Interpretation of Tax Rates

Attention has been called to the fact that tax rates mean nothing unless they are construed with reference to assessed valuation. Since neither market value nor assessed valuation of real estate is subject to sudden violent changes, the relationship between the two ordinarily does not change greatly in a short time. From one year to the next, therefore, the change in rate usually represents approximately the change in the ratio of taxes to fair value. The significance of tax rates is so completely dependent on assessment, however, that the relationship should be reviewed briefly.

(a) Interpretation of Tax Rate Levels

It is a very common assumption that different tax rates in different communities mean different tax burdens. Likewise, it is a common assumption that uniformity of tax rate in a particular community means uniformity of tax burden. Neither assumption will hold water. Mere tax rate levels do not show levels of tax burden.

If assessed valuations in one taxing unit average 50 per cent of fair value and those in another taxing unit average 75 per cent of fair value, then 30 mills in the first community is no more burdensome, on the average, than 20 mills in the second. If both levy the same rate, the burden in the latter is 50 per cent greater than that in the former. The rate alone, however, does not express tax burden in either community. The average ratio of the total tax to fair value is expressed by half the rate in the former and by three-fourths the rate in the latter. In brief, if assessed valuation is lower than fair value, tax rates overstate tax burden; if assessed valuation is higher than fair value, tax rates understate tax burden. Therefore, however important

intercommunity tax comparisons may be in an economic society marked by intense regional competition, such comparisons cannot be made merely on the basis of tax rates.

Within one taxing unit, equity would prevail (in so far as equity can prevail under a blanket *ad valorem* tax) if all properties were assessed at the same proportion of fair value—regardless of what that proportion might be. But the greatest evils of a property tax (or of any other tax) lie in the inequality of assessments. Assume two parcels of real estate of equal fair value, one being assessed 20 per cent lower than the average (regardless of what the average assessment ratio is), and the other 20 per cent above the average. Then the tax burden on the former is 20 per cent less than the average burden, and that on the latter is 20 per cent in excess of the average; and the burden on the latter is 50 per cent greater than that on the former.

Inequalities of assessment are far from being rare. They are so uniformly revealed in serious investigations of assessments that they must be called common.⁸ Uniformity of tax rate, therefore, does not mean equality of tax burden.

Under the Pittsburgh graded tax system, a sound interpretation of tax rates cannot be based merely on the ratio of total assessed valuation to fair value. It is necessary to consider both the relationship of assessed land valuation to fair land value and the ratio of assessed building valuation to fair building value. For illustration, assume two parcels of identical description, the fair land value in each case being \$4,000 and the fair building value \$6,000. On a full assessment of fair land value and fair building value, the city tax at 1934 rates would be \$144.20 on each parcel. If the assessment had been \$5,000 for land and \$5,000 for the building on one parcel and \$3,000 for land and \$7,000 for the building on the other parcel, the city tax in 1934 would be \$154.50 on the former and \$133.90 on the latter. Although the total valuation of each parcel, \$10,000, would have been fair total value, the city tax on one would have exceeded that on the other by more than 15 per cent.

⁸ Good illustrations will be found in the following references: Jens P. Jensen, *Property Taxation in the United States* (Chicago: The University of Chicago Press, 1931), Chapter XII; Roy G. Blakey and associates, *Taxation in Minnesota* (Minneapolis: The University of Minnesota Press, 1932), Chapter 7; Herbert D. Simpson, *Tax Racket and Tax Reform in Chicago* (Chicago: The Institute for Economic Research, Northwestern University, 1930), especially Chapters IV-VII; Richard W. Nelson and George W. Mitchell, *Assessment of Real Estate in Iowa and Other Mid-Western States* (Iowa City: State University of Iowa, Bureau of Business Research, 1931).

(b) *Interpretation of Changes in Tax Rates*

In considering changes in rates, it is necessary likewise to consider change in the adequacy of assessment. If assessments were kept at the same ratio to fair value, a change in rate would reflect accurately the change in tax burden. But changes in tax burden may occur without changes in rates; and, on the other hand, changes in rates may occur without any change in tax burden. There is, therefore, no fixed relation between change in rate and change in tax burden.

If for a period of several years rates were to remain unchanged, a rise in the ratio of assessed valuation to fair value would cause an increase in tax burden. This ratio would rise with assessed valuations unchanged if fair value fell; it would rise when valuations were lowered if fair value fell faster; it would rise if assessed valuations were increased faster than fair value increased. On the other hand, with rates unchanged, a fall in the ratio of taxable valuation to fair value would reduce tax burden. The ratio would fall with valuations unchanged if fair value rose; it would fall with increasing valuations if fair value rose faster; it would fall with decreasing valuations if fair value fell less.

In recent years, of course, tax rates generally increased until a halt was called because of the depression. If assessed valuations did not rise with fair value, the increase in tax burden was not in proportion to the increase in rates. If assessed valuations moved with fair value, the increase of rates reflected accurately the increase of burden. If assessed valuations were raised to a higher ratio of fair value, the burden increased faster than the rates.

On improved property in Pittsburgh the amount of tax might change materially without any change in either tax rates or total assessed valuation. A change in the relation between land valuation and building valuation would produce such change in the amount of tax. For example: Assume a parcel assessed at \$20,000, half the total being land valuation and half being building valuation. The city tax on such parcel in 1933 would have been \$309. If the land valuation had been lowered to \$7,000 and the building valuation raised to \$13,000, there would have been a reduction in tax from \$309 to \$278.10—a ten per

cent reduction. On the other hand, if the land valuation had been raised to \$13,000 and the building valuation lowered to \$7,000, the tax would have been raised from \$309 to \$339.90—a ten per cent increase.

In brief, tax rates alone do not show tax levels, either among communities or among properties in the same community. Since fair value usually changes slowly, change in rates gives an approximate measure of change in tax levels from one year to the next; but long-time changes in tax rates do not necessarily give an accurate indication of change in levels of tax burden. Interpretation of either tax levels or tax changes must be based on both rates and assessed valuations. In Pittsburgh neither levels nor changes may be interpreted without separate consideration of land valuation and building valuation.

CHAPTER 2

Assessed City Valuation of Taxable Real Estate in Pittsburgh

There are two sets of assessed values in Pittsburgh. One is fixed by the city for city taxes and city school district taxes. The other is fixed by the county for county taxes. In this study, the primary interest is in the valuation assessed by the city.

The land valuation, the building valuation, and the total valuation assessed by the city are shown in Table 3 for the years 1914-1934. In Table 5, land valuation and building valuation are expressed as percentages of total for each of those years. Table 4 shows the per cent net increase in valuations from 1914 to each of the years 1915-1934. Valuations are plotted in the upper part of Chart 4; in the lower part of the chart, assessed value of land and assessed value of buildings are represented as percentages of total assessed value.

Land values fell in 1915, were raised somewhat at the triennial reappraisal for 1916, declined in each of the years 1917-1920, rose a little in 1921, but stood lower in 1921 than in 1914. Building valuations increased in every one of the years 1915-1921 and in the latter year totaled about 24 per cent more than in 1914. In 1925, the year in which the building rate was finally established as half the land rate, and a year in which assessed valuations represented a triennial reappraisal, the land valuation exceeded that of 1914 by 13.9 per cent; the building valuation in 1925 was 56.5 per cent above the building total for 1914. In 1931, the total of assessed land valuation, at the peak, exceeded that of 1914 by approximately \$110 million, or 22.9 per cent; the total of assessed building valuation exceeded that of 1914 by \$335 million, or 118.8 per cent. Thus in seventeen years the amount added to building valuation was more than three times the amount added to land valuation.

In every year since 1914, except 1923, the assessed value of land has declined as a percentage of total assessed value, and the assessed value of buildings has increased as a percentage of total. In 1914 land valuation was 63 per cent of the total and building valuation 37 per cent. In 1933 land valuation was 48.4 per cent of the total and building valuation 51.6 per cent; 1934 revisions (incomplete) have reduced land more than buildings.

TABLE 3
Assessed City Valuation of Taxable Real Estate in Pittsburgh
1910-1934*

Year	Assessed Land Valuation	Assessed Building Valuation	Total Assessed Valuation
1910	-----	-----	\$ 751,236,965
1911	-----	-----	755,818,383
1912	-----	-----	749,619,410
1913	-----	-----	758,366,910
1914	\$480,858,940	\$282,069,870	762,928,810
1915	480,191,010	290,833,300	771,024,310
1916	483,316,070	299,247,850	782,563,920
1917	482,149,040	310,793,800	792,942,840
1918	482,132,590	320,438,820	802,571,410
1919	480,131,130	325,889,600	806,020,730
1920	479,850,740	334,658,810	814,509,550
1921	480,461,700	349,386,420	829,848,120
1922	487,939,620	380,238,310	868,177,930
1923	532,688,420	396,176,380	928,864,800
1924	530,675,130	420,482,780	951,157,910
1925	547,475,280	441,354,840	988,830,120
1926	548,219,170	465,897,650	1,014,116,820
1927	554,616,950	505,396,600	1,060,013,550
1928	573,738,300	535,104,140	1,108,842,440
1929	574,589,080	562,017,070	1,136,606,150
1930	576,882,690	587,781,070	1,164,663,760
1931	590,968,170	617,201,910	1,208,170,080
1932	586,692,810	621,573,310	1,208,266,120
1933	586,380,100	625,257,730	1,211,637,830
1934	566,584,170†	614,224,490†	1,180,808,660†

*Data 1910-1933 from *Annual Report of the City Controller, Pittsburgh, 1932*, pp. 65-67
Land valuation and building valuation, 1910-1913, not separately reported. City valuation
distinct from county valuation within the city.

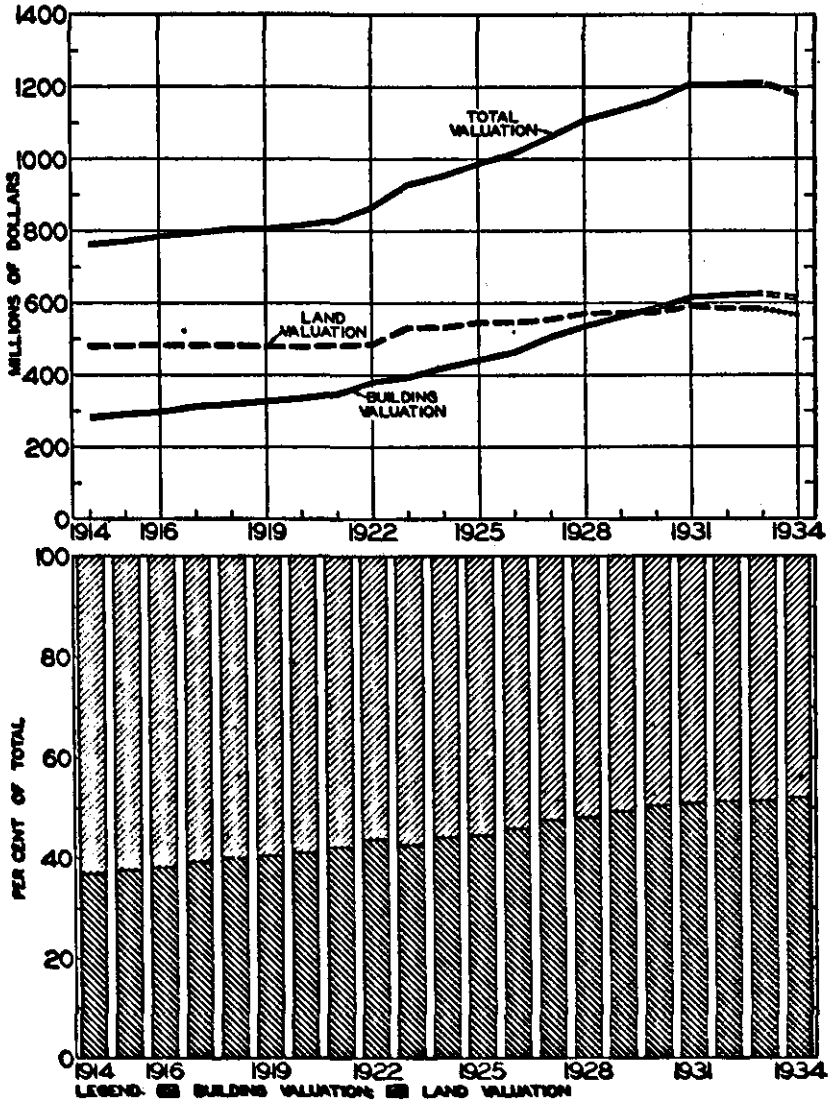
†Preliminary figures from City Board of Assessors. Revisions were still being made when these
figures were furnished.

Valuation and the Graded Tax

The fact that building valuation has risen so much faster than land valuation leads to an important question bearing upon the interpretation of the graded tax. It is a common assumption of the market that tax differentials (e. g., on bonds) are eventually smoothed by differentials of capitalization, with the result that the absolute tax difference does not represent a differential of net burden on the basis of the new capitalization. The question

raised, therefore, is whether the graded tax differential in Pittsburgh has at least in part been capitalized and therefore at least in part wiped out as a current difference in burden. No final

CHART 4
Assessed City Valuation of Taxable Real Estate in Pittsburgh
1914-1934
 (Data in Tables 3 and 5)



answer to this question is possible with available data—probably not under any circumstances. Consideration of the probabilities, however, is an essential step in an attempt to deal with the Pittsburgh real estate tax. This consideration hinges about the following factors: new building, transportation, rent and cost of building, and the change to the graded tax—none of which can be given more than tentative analysis here.

(a) *New Building*

The estimated cost of new buildings, as stated in the record of building permits, is the only direct clue to the value of new building construction. The aggregate permit value of new building (including alteration and extension of old buildings) in the period 1914-1932 was \$464 million; at the level of building costs in 1932 (when 1933 valuations were fixed) the aggregate was \$429 million (Table 6).

TABLE 4

Per Cent Net Increase in the Assessed City Valuation of Taxable Real Estate in Pittsburgh from 1914 to Each of the Years 1915-1934

(Based on Data in Table 3)

Year	Per Cent Increase from 1914		
	In Land Valuation	In Building Valuation	In Total Valuation
1915	0.1*%	3.1%	1.1%
1916	0.5	6.1	2.6
1917	0.3	10.2	3.9
1918	0.3	13.6	5.2
1919	0.2*	15.5	5.6
1920	0.2*	18.6	6.8
1921	0.1*	23.9	8.8
1922	1.5	34.8	13.8
1923	10.8	40.5	21.7
1924	10.4	49.1	24.7
1925	13.9	56.5	29.6
1926	14.0	65.2	32.9
1927	15.3	79.2	38.9
1928	19.3	89.7	45.3
1929	19.5	99.2	49.0
1930	20.0	108.4	52.7
1931	22.9	118.8	58.4
1932	22.0 †	120.4	58.4
1933	21.9	121.7	58.8
1934	17.8 †	117.8 †	54.8 †

*Decrease.

†Preliminary. See last footnote to Table 3.

TABLE 5
Ratio of Land Valuation and of Building Valuation to Total Assessed City Valuation in Pittsburgh, 1914-1934

(Based on Data in Table 3)

Year	Per Cent of Total Valuation		
	Land Valuation	Building Valuation	Total Valuation
1914	63.0%	37.0%	100.0%
1915	62.3	37.7	100.0
1916	61.8	38.2	100.0
1917	60.8	39.2	100.0
1918	60.1	39.9	100.0
1919	59.6	40.4	100.0
1920	58.9	41.1	100.0
1921	57.9	42.1	100.0
1922	56.2	43.8	100.0
1923	57.3	42.7	100.0
1924	55.8	44.2	100.0
1925	55.4	44.6	100.0
1926	54.1	45.9	100.0
1927	52.3	47.7	100.0
1928	51.7	48.3	100.0
1929	50.6	49.4	100.0
1930	49.5	50.5	100.0
1931	48.9	51.1	100.0
1932	48.6	51.4	100.0
1933	48.4	51.6	100.0
1934	48.0†	52.0†	100.0

†Preliminary. See last footnote to Table 3.

This total value of building permits includes non-taxable as well as taxable buildings. The amount relating to non-taxable buildings erected in the period cannot be segregated in the available data; but it may be noted that the listed value of tax-exempt buildings in recent years has averaged somewhat more than 20 per cent of the total listed value of taxable and exempt buildings.⁹ If this proportion may be taken as a fair indication of the proportion of exempt buildings in the permit total since 1914, the aggregate permit value (adjusted) of new taxable buildings represented by these permits was about \$343 million. Stated in round numbers, this amount is the same as the amount by which the building valuation was increased from 1914 to 1933. The exact comparison is sheer coincidence; the approximate equality, however, is surprising, for in the figures mentioned no allowance has been made for depreciation.

⁹Annual Report of the City Controller, Pittsburgh, 1932, pp. 62-63A; 1931, pp. 59-62; 1930, pp. 59-62; 1929, pp. 59-62; 1928, pp. 57-60; and 1927, pp. 55-53.

What rate of deduction should be considered for depreciation, obsolescence, and other losses is problematical. Depreciation at an average of 1 per cent annually on the value of building permits (adjusted for change in building cost) is shown in Table 6. If about 80 per cent of the permit value be assumed taxable, depreciation on taxable new building at 1 per cent would have been \$30 million; at 1½ per cent, \$45 million; at 2 per cent, \$60 million.¹⁰

TABLE 6
Value of Building Permits Issued in Pittsburgh, 1914-1932,
and Depreciation at One Per Cent on New Building Value
to the End of 1932
(Amounts in Millions)

Year	Value of Permits Issued*	Adjusted Value of Permits†	Depreciation at 1 Per Cent to End of 1932‡
1914	\$ 18.2	\$ 29.8	\$ 5.4
1915	14.3	23.1	3.9
1916	13.5	18.8	3.0
1917	11.3	13.0	2.0
1918	7.9	8.4	1.1
1919	14.7	13.0	1.7
1920	16.1	11.0	1.3
1921	23.4	21.1	2.3
1922	35.2	32.0	3.2
1923	33.1	27.2	2.4
1924	34.3	28.3	2.2
1925	41.5	34.3	2.4
1926	43.8	35.9	2.2
1927	37.1	31.5	1.6
1928	40.2	33.5	1.4
1929	36.7	29.8	0.9
1930	20.8	17.6	0.4
1931	13.1	11.8	0.1
1932	9.0	9.0	0.0
Total	\$464.2	\$429.1	\$37.5

*From the Bureau of Building Inspection, City of Pittsburgh. Both taxable and non-taxable included. Alterations and additions included.

†Adjusted to 1932 level of cost of building by application of the index of the cost of building in the United States computed by the Federal Reserve Bank of New York.

‡Flat rate of depreciation on original base (adjusted value) from the beginning of the year following that in which permits were issued to the end of 1932.

Buildings standing at the beginning of 1914 were assessed at \$282 million. No certainty is possible regarding the extent to which these buildings had been marked down from new taxable value. If on a vacant plot of land a group of new buildings were constructed and thereafter other buildings were erected at a

¹⁰ Status of the building, not degree to which investment has been amortized, is the concern of the assessor.

value exactly equal to the deductions in value in the first group, in due course of time buildings would range from zero value to 100 per cent of new value, and the average depreciation would approximate 50 per cent. Pittsburgh was growing at a moderate rate during the life of the buildings taxed in 1914, and new buildings had no doubt exceeded replacement. Moreover, assessors commonly refuse to recognize complete disappearance of building value as long as the building is in use or is fit for further use.

Probably no great violence to fact would be done by the assumption that buildings assessed in 1914 were, on the average, approximately one-third depreciated. On this assumed basis, straight-line depreciation would be computed on \$423 million.

Depreciation from this estimated base for the period 1914-1932 would amount, at 1 per cent, to about \$76 million; at 1½ per cent, to \$114 million; at 2 per cent, to \$152 million. Price appreciation, of course, was in some degree a counter to physical depreciation. The cost of building index (Table 7) was 66 per cent higher in 1932 than in 1914. But among the buildings standing in 1914 many long ago ceased to be merchantable in a strict sense of responding to market prices on sound buildings. Probably after ample allowance for price appreciation there would remain (applying the rate of 1, 1½, or 2 per cent) \$50 million, \$75 million, or \$100 million of depreciation on the old buildings standing in 1914.

With respect to old and new buildings, on the basis of the broad assumptions already stated, it looks as if depreciation at least within the range \$80 million to \$160 million would have occurred since the beginning of 1914. Of the \$343 million of new buildings assumed to be taxable, this would leave from \$183 million to \$263 million of net addition to value by new buildings constructed, with allowance for price change; but the increase in assessed valuation of buildings was \$343 million. If it is true, as it appears, that, for one reason or another, depreciation has been offset, then in effect building valuation has been marked up more than it would have been merely on account of new buildings and changes in cost of building.

It is recognized that permits frequently show less than finished cost. In 1926 Joseph M. Gillman estimated, on the

TABLE 7

Indexes of Selected Factors Affecting Value of Taxable Property in Pittsburgh, 1914-1932*

Year	General Business Pittsburgh District†	Rent, Pittsburgh‡		Cost of Building, United States**	Consolidated Tax Rate in Pittsburgh††		
		June	December		Land Rate	Building Rate	Average
1914	77.8	-----	-----	70	86.4	92.0	88.6
1915	87.3	-----	-----	72	87.9	93.2	89.9
1916	102.6	-----	-----	83	104.0	103.4	103.9
1917	100.0	-----	100.0	100	100.0	100.0	100.0
1918	102.3	-----	107.6	110	119.0	118.2	118.6
1919	94.9	113.3	115.5	131	124.8	114.9	120.9
1920	103.8	134.9	135.0	169	151.2	139.3	146.3
1921	75.6	155.5	155.3	128	160.7	148.4	155.4
1922	89.8	156.7	156.7	127	175.0	153.7	165.4
1923	113.4	160.4	160.7	141	172.6	151.1	163.4
1924	99.4	171.8	172.1	139	173.2	151.7	163.4
1925	106.4	175.2	175.2	139	178.0	147.7	164.3
1926	112.4	175.4	175.0	141	196.5	160.8	179.8
1927	105.9	174.7	174.4	137	196.5	160.8	178.8
1928	112.6	172.8	171.6	138	208.9	167.8	188.3
1929	124.9	168.3	167.1	142	208.9	167.8	187.6
1930	105.9	164.9	163.7	137	219.6	177.1	196.8
1931	77.5	156.8	152.3	128	217.3	175.8	194.6
1932	54.0	135.9	129.4	116	205.4	169.1	185.2

*For business index, 1917 average equals 100; for rent index, December, 1917 equals 100; for cost of building index, 1917 average equals 100; for each of the three rate consolidations, the 1917 combination equals 100.

†Not adjusted for trend. The long-term business index of the Bureau of Business Research is based on component series which were adjusted for trend, but trend for the composite index has been computed only for the period since 1919. Wilbert G. Fritz, *The Trend of Business in the Pittsburgh District*, PITTSBURGH BUSINESS REVIEW, December, 1932; and *Fifty Years of Business Activity in the Pittsburgh District*, PITTSBURGH BUSINESS REVIEW, October, 1933. Trend figures 1914-1918 were estimated from the series 1919-1931 by straight-line extrapolation and applied to the adjusted averages for those years.

‡United States Bureau of Labor Statistics. Rent component of the index of the cost of living in Pittsburgh.

**Federal Reserve Bank of New York. The index is currently computed on the base 1926 equals 100. The original index being in round numbers, the converted index is stated likewise.

††Based on consolidation of (a) school rate, county rate, and city land rate, (b) school rate-county rate, and city building rate, and (c) school rate, county rate, and weighted average of city rates. See Tables 1 and 2. For consideration of growth, consolidation is assumed to be permissible, although for any year the consolidated rate would be erroneous.

basis of interviews with building contractors, that residential building permits in Pittsburgh represented about 70 per cent of finished cost.¹¹ But it is true also that an appreciable part of finished cost represents waste attributable to whim or poor judgment of the proprietor or to inefficiency or sharp bargaining of the contractor. At least to such extent, finished cost exceeds fair market value. Although net additions to new buildings might,

¹¹ *Residential Construction and Other Factors Which Have Determined Rent Levels in Pittsburgh, Pennsylvania* (Pittsburgh: University of Pittsburgh, Bureau of Business Research, 1926), p. 21.

because of the understatement in permits, be raised somewhat beyond the range indicated in the preceding paragraph, it appears quite doubtful that the amount should be raised much, if any.

It seems clear, therefore, that after reasonable allowance for depreciation and other deductions and liberal allowance for change in the cost of building, there was a wide difference between net additions by construction and actual increase in building valuation.

Part of the difference is attributable to annexation. Most of the annexations since 1914 were on the South Side. The Board of Assessors reported in 1931 that the assessed value brought into the city by South Side annexations from 1910 to 1932 amounted to \$62 million.¹² The land valuation and the building valuation in this total were not separated, but in view of the considerable amount of vacant land remaining in that area, it is certain that building valuation in annexed territory could account for only the smaller part of the difference between total increase of building valuation and net additions to building valuation by construction. There remains a very considerable difference to be accounted for.

(b) *Transportation*

Within the period of the graded tax, the great change in transportation has been the development of the large-scale use of the automobile and the truck and the related development of highways. Undoubtedly the automobile has made a much larger area easy of access, and, as a result, has shifted and scattered land values—especially residential. But the area incorporated in the city (and therefore covered by city valuation) has expanded since 1914 from 42 square miles to 54 square miles.¹³ Thus a very substantial portion of the extension of land value into areas formerly less accessible has been covered by annexation. In addition, the automobile, the bus, and the truck undoubtedly brought a larger trading area into the orbit of Pittsburgh; and this enlargement of the trading area would be supposed to have had a sustaining effect on land values in the commercial areas of the city, if not actually to have increased those values. For

¹² Annual Report of the City Controller, Pittsburgh, 1931, p. 61.

¹³ Annual Report of the City Controller, Pittsburgh, 1932, pp. 6-7.

these reasons it looks doubtful that highways and motor cars could have served materially, if at all, to retard the growth of the total land valuation in the city, however much they may have reshuffled neighborhood land values. Easier transportation may have contributed somewhat to the spread between land values and building values by encouraging building in areas formerly not built up. But new and desirable residential developments detract from both land value and building value in run-down sections while increasing building value and land value in the new areas.¹⁴ Thus the new development would not necessarily cause material change in the relationship between city-wide land valuation and city-wide building valuation.

(c) *Rent and Cost of Building*

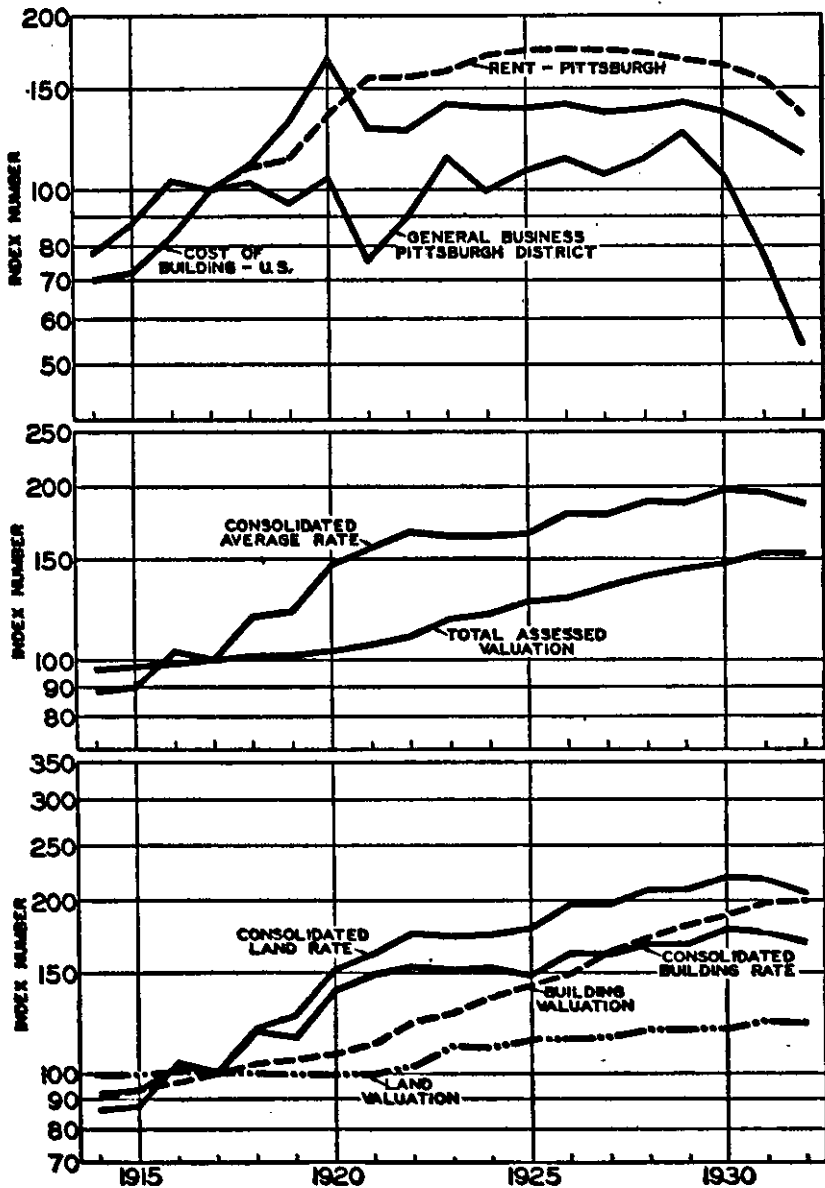
The index of average rent in Pittsburgh computed by the United States Bureau of Labor Statistics is based mainly on rent for wage-earners' homes. But this city is so predominantly an industrial city that the index of average rents of wage-earners' homes is probably a reasonably good indicator of the change in the general level of rents over a long period.

This index (Table 7) rose very fast after December, 1917 (the beginning of the period for which it has been computed). The rise was sustained until June, 1926, when the index stood 75.4 per cent higher than in December, 1917. It seems probable that there was at least some advance in rent before the end of 1917; for Pittsburgh and other steel centers received early stimulus from the demands of warring powers in Europe, and our own national demand for war materials was pouring out in the latter part of 1917.¹⁵ After 1926 there was moderate decline in the rent level, but in June, 1931 the index was still nearly 57 per cent higher than in December, 1917; at the end of the disastrous year 1932 it remained 29 per cent above the December, 1917 level; the average of the June and December index numbers in 1932 was close to the average in 1920. It must be recognized that rather large concessions from nominal rental rates

¹⁴ The reference, of course, is to developments extensive enough to offer competition for purchasers or renters who might otherwise take space in the older quarters.

¹⁵ On the swift rise in pig iron production in this district in 1915 and the all-time record production in this district in 1916, see Willbert G. Frits, *Monthly Production of Pig Iron in the Pittsburgh District, 1884-1933*, PITTSBURGH BUSINESS REVIEW, November, 1933, p. 17; and E. N. Montague, *The Pig Iron Industry in the Western Pennsylvania and Shenango Valley Districts*, PITTSBURGH BUSINESS REVIEW, April, 1932, p. 14.

CHART 5
Indexes of Assessed Valuation in Pittsburgh and of Selected
Factors Relating to Assessed Valuation*
 (Valuation Indexes Based on Table 3; Other Indexes in Table 7)



*Compare the slopes of the curves. The vertical scale is logarithmic. On a chart of this sort, difference in steepness of slope represents difference in rate (per cent) of growth or of decline ("rate" to be considered as in compound interest).

were being made in 1932, and that the difficulties of collecting rent were grave. Actual rent realization no doubt fell further than this index fell. On the other hand, in the period after the war to 1926, rent realization probably rose faster than did the index because of a higher ratio of occupancy and less difficulty of collection. Moreover, the index probably falls short of registering the full rise of rental rates because it shows nothing prior to December, 1917. Therefore, while it is likely that the crash of income from investment properties was greater than the fall of the index indicates, it is probably true also that the level from which the decline began was appreciably higher than the peak of the index indicates.

The cost of building in the United States rose very rapidly from 1914 to 1920, and throughout the twenties it remained far higher than in 1914 (Table 7). The course of building costs in Pittsburgh was probably much the same. The volume (adjusted value, Table 6) of building in Pittsburgh declined from 1914 to 1918 and did not again exceed the 1914 volume until 1922. That is, competitive building for higher rents was slack for several years. Brisk building, once begun, continued through 1928, and the volume of building was still relatively high in 1929. Moreover, the volume of mortgage money made available was still relatively high in 1929.¹⁶ In short, it appears that income on rental property remained adequate as an incentive to building—and as an incentive to the financial institutions to provide money for building—practically until the time of the crash in 1929.

It is true that taxes rose a great deal during the period of rising rents, and the building cost index suggests that building maintenance costs were considerably higher during the twenties than before the war. The importance of these factors, however, as deterrents to the rise of net rental, is often overstated. It is common to assume normally a gross rent of at least 10 to 12 per cent as the rate necessary to cover taxes, depreciation, management costs, and fair net return. If half of the gross rental were required at a given time to pay taxes and other costs, a rise in gross rental would produce a rise in net rental unless taxes and other costs rose twice as fast relatively as gross rental rose. On this basis, a 50 per cent rise in gross rental would sustain a

¹⁶Theodore A. Veenstra, *Real Estate Finance in Allegheny County—The Statistical Position*, PITTSBURGH BUSINESS REVIEW, October, 1932.

100 per cent rise in taxes and other costs without impairment of net return. It is reasonably clear from Table 7 and Chart 5 that the rise in the charges on gross rent were not such as to prevent a substantial rise in net rent.

The higher level of rent and of building costs, relative to pre-war levels, would be supposed to have led to active recapitalization of real estate. Both the vigorous building activity of most of the twenties and the sustained volume of transfers and financing indicate that such recapitalization did occur. This writeup of values in the market should help materially to explain the great increase in total assessed valuation, but it does not throw light on the enormous spread between the increase of land valuation and the increase of building valuation.

(d) *The Change to the Graded Tax System*

In considering the shift of tax burden under the graded tax law, one should keep in mind that this law was enacted only a short time after another major change had been made in the Pittsburgh real estate tax system. The year 1911 marked the repeal of the old classified real estate tax law, under which there were three tax rates. Under this older law, "built-up" property was taxable at the highest rate; "rural" property (which included vacant portions of great estates in the residential sections as well as outlying undeveloped land) was taxable at two-thirds of the highest rate; and "agricultural" land in the city was taxable at half of the highest rate.

This favorable differential on land was abolished in 1911, and uniform taxation of all real estate was required, effective in 1912. Then in 1913 the present graded tax law was enacted, establishing a tax differential in favor of buildings, i.e., against land, to become effective gradually in the period 1914-1925. The graded tax system, therefore, was an utter reversal of the system that was effective through 1911—and vacant lands, previously taxed half or two-thirds as heavily as improved property, came to be taxed more heavily than improved property.¹⁷

It must be supposed that such a shift in the placement of taxes considerably affected land values in the market. The effect of the change in 1911 on land appraisals for taxes is not clear.

¹⁷ The importance of the change in 1911 has been pointed out and emphasized by Edward F. Daume in "A Critical Analysis of the Operation of the Pittsburgh Graded Tax Law." *The Annals of the American Academy of Political and Social Science*, Vol. CXLVIII (Philadelphia, March, 1930), p. 147.

Land and buildings were not taxed separately in 1912 and 1913, and valuations are not separated for those years. It may well be observed, however, that the total appraised value of taxable property was less in 1912 than in 1911 (Table 3). Part of the appraised value, it will be remembered, was taxable at a low rate in 1911; when it was all made taxable at the full rate, the total appraisal fell somewhat.

It has been shown that the conditions after 1914 were such as to lead to much higher total market value of rental property. On the other hand, the placing of an increasing share of the tax on land (up to 1925) would be expected at least to retard the growth in the value of vacant land, if not to depress it; and, because of the relatively slow turn-over of real estate, such effect in all probability would have extended to transfers and recapitalizations for some time after 1925. Since vacant land and improved land are bought and sold in the same market, the market value placed on vacant land would affect the market value placed on improved land. In a period of equalization of local real estate investment values, a penalty on vacant land would mean a premium on improved property. But the penalty on vacant land was also against land on which there were buildings. Hence it appears that market conditions for a considerable time would have been such as to indicate a premium on buildings.

In short, it appears that conditions in the transitional period were such as to result in (a) a sharply rising total value of rental property, (b) retardation of the rise in land value, and, therefore, (c) a premium valuation of buildings. If this conclusion appears to fly in the face of the orthodox maxim that residual value of real estate eventually rests in land, it must be observed, first, that the change in the Pittsburgh tax system was unusual, and, second, that it is generally assumed to be orthodox to buy and sell subject to foreseen tax differentials.

If it is true, as it appears to be, that part of the rise in building valuation, absolutely and in relation to land value, was directly an effect of the change in the tax system, then much of the real estate has been recapitalized. To whatever extent recapitalization has occurred, the graded tax has ceased to be a net differential on present owners.

Probable Fallacy in the Graded Tax

The purpose of the graded tax, presumably, was to place on land a larger share of the local tax. The justification for disproportionate taxation of this sort was related to income on the land, i. e., to land rent.¹⁸ The method of taxing on the value basis, however, is such that probably it more or less defeats the purpose.

Property taxes in one form or another are very old. In the long history of legislation and litigation dealing with taxes on property, as applied among free peoples with developed systems of private property, value has again and again been defined as price actually paid, or price that most probably would be paid, in an open competitive market by a willing buyer to a willing seller. In the modern commercial world, fair value of improved land has come to be thought of as intimately related to net return of the specific property considered or to net return of like property. The value of vacant land is judged in terms of net return on land already improved and in terms of prospective demand for additional land for improvement.

If the taxes on land are increased more than land income (or expectation of income), that is, if the tax actually absorbs more of the rent, the investment value of the land will be reduced, and, presumably, the assessed valuation will be reduced. But absorption of a larger part of the rent by taxes will not of itself reduce the gross annual rent, and reduction of assessed valuation, other things remaining the same, will increase the net return. There will be adjustments, upward and downward, of investment value and of assessed value until there is reached a capitalization in which allowance is made for the tax differential. Subsequent change in the relationship of taxes and rent will lead to another capitalization. There will be no consistency of relation between assessed valuation and rent. In other words, the graded tax, really meant to be a classified property income tax, affects the valuation and, therefore, tends more or less to defeat itself.

¹⁸ No distinction was made in the Pittsburgh plan, however, between that part of value representing "unearned increment" and that part which, in the hands of owners then holding the property, represented ordinary value of actual investment.

CHAPTER 3

Yield and Budgetary Importance of the City Real Estate Tax in Pittsburgh

During the calendar year 1933 the city collected \$15,261,000 of real estate tax (Table 8). The largest amount received in one year—that in 1930—was over \$21,686,000. The pronounced decline in yield between 1930 and 1933 was due to the combined effect of reduction of rates and increase of delinquency (Tables 1 and 22).

Current and Delinquent Tax Collections

The amount of real estate taxes collected is in part the yield of current levies and in part the delayed yield of taxes levied in previous years. Tax delinquency will be considered in Chapter 5, but the distinction between yield of current taxes and yield of delinquent taxes should be noted here. In 1930, when the largest amount of real estate tax revenue was collected, the amount of current taxes was \$20,246,623 and that of delinquent taxes from prior years¹⁹ was \$1,439,814 (Table 8). The latter amount was 6.6 per cent of the total in 1930; in 1933 the delinquent taxes from prior years were 10.4 per cent of the total (Table 21). The percentage of total collections consisting of delinquent taxes from prior years varies more or less, the highest proportion in the period 1915-1932 being 9.1 per cent (in 1916), and the lowest being 4.5 percent (in 1922). Current taxes in that period ranged between 90.9 per cent and 95.5 per cent of total real estate taxes received for city purposes. In school tax collections, the percentage derived from delinquent taxes of prior years is not very different from the city percentage (Table 21). The county percentage is usually larger, but it should be noted that the county penalty dates are different. (See Chapter 5.)

¹⁹ This does not represent total collection of delinquent taxes. Taxes which become delinquent during the year but are paid before the end of the year are included in the collection of current taxes during the year. See Table 25.

TABLE 8
City Real Estate Tax Collections, Pittsburgh, 1915-1933*

Year	From Current Levy	From Levies of Prior Years	Total Collections
1915	\$ 7,017,246	\$ 686,990	\$ 7,704,236
1916	8,240,246	829,541	9,069,787
1917	7,605,573	729,450	8,335,023
1918	9,712,705	591,003	10,303,708
1919	10,220,622	758,278	10,978,900
1920	12,587,655	733,041	13,320,696
1921	13,486,303	667,240	14,153,543
1922	13,169,688	615,352	13,785,040
1923	14,286,025	845,286	15,131,311
1924	14,488,484	832,142	15,320,626
1925	13,890,755	880,800	14,771,555
1926	16,048,347	825,602	16,873,949
1927	16,596,945	921,653	17,518,598
1928	19,143,005	930,979	20,073,984
1929	19,295,350	1,214,779	20,510,129
1930	20,246,623	1,439,814	21,686,437
1931	19,520,707	1,295,687	20,816,394
1932	16,232,073	1,535,965	17,768,038
1933	13,672,798	1,588,300	15,261,098

*Amounts 1915-1932 from *Annual Report of the City Controller, Pittsburgh*; 1933 data from the City Controller's office.

Yield of the City Tax on Land and of That on Buildings

Under a system of uniform rates, the yield of the tax on land and the yield of the tax on buildings would be in the same proportion as land valuation and building valuation (except that delinquency might introduce some difference). Under the graded tax plan, there were periodic changes in the ratio of the building rate to the land rate in Pittsburgh during the period 1914-1925, and in 1925 and thereafter the city building rate was half the city land rate. Consequently, yield cannot be assumed to have been proportional to valuation.

Collections from the current tax on land and from that on buildings are shown separately in the published city reports only for the years 1918-1930. During the period 1918-1925, the graded tax differential was still in process of being established, by stages. In 1918 the building rate was 80 per cent of the land rate; in 1919 the ratio was changed to 70 per cent; in 1922, to 60 per cent; in 1925, to 50 per cent (Table 1). Land valuation and building valuation, however, were advancing at unequal pace (Table 4 and Chart 4); and the change in the comparative yield of the two taxes was affected by changes in both rates and valuations. With annual variations the yield of the land tax grew

faster than the building tax total from 1918 to 1925. In 1918 the land tax was 65.4 per cent of the total received from levies of that year; in 1925, it was 71.6 per cent (Table 9). From 1925 to 1930 the building tax rate was fixed at half the land rate, but the total of building valuations advanced considerably faster than the total of land valuations. In that period the aggregate building tax increased faster than the aggregate land tax, advancing from 28.4 per cent of the total to 33.0 per cent.

For the whole period 1918-1930, the smaller increase in the building rate was almost wholly offset by the larger increase in total building valuations. The proportions of the land tax and the building tax in the 1930 total were almost the same as in the 1920 total. That the gain in the building tax total in those years was relatively about the same as the gain in the land tax total does not mean, of course, that in 1930 the burden on buildings was as great in proportion to the burden on land as it was in 1920. The city rate on buildings in 1920 was 70 per cent of the city land rate; in 1930, it was 50 per cent.

TABLE 9
Collections of Current City Levies on Land and on Buildings
in Pittsburgh, 1918-1930*

Year	From Current Tax on Land		From Current Tax on Buildings		Total from Current Tax
	Amount	Per Cent of Total	Amount	Per Cent of Total	
1918	\$ 6,351,070	65.4%	\$3,361,634	34.6%	\$ 9,712,704
1919	6,926,318	67.8	3,294,304	32.2	10,220,622
1920	8,450,408	67.1	4,137,247	32.9	12,587,655
1921	8,943,562	66.3	4,542,741	33.7	13,486,303
1922	9,024,139	68.5	4,145,549	31.5	13,169,688
1923	9,893,593	69.3	4,392,432	30.7	14,286,025
1924	9,874,031	68.2	4,614,454	31.8	14,488,484
1925	9,942,322	71.6	3,948,433	28.4	13,890,755
1926	11,336,074	70.6	4,712,274	29.4	16,048,347
1927	11,470,998	69.1	5,125,947	30.9	16,596,945
1928	13,259,748	69.3	5,883,258	30.7	19,143,005
1929	13,094,116	67.9	6,201,233	30.1	19,295,350
1930	13,570,509	67.0	6,676,114	33.0	20,246,623

*From *Annual Report of the City Controller, Pittsburgh*, for years shown. Data not published for other years. Delinquent tax collections not so divided in published reports.

***City Real Estate Taxes in Relation to Total Local
Real Estate Taxes in the City***

In addition to the city tax, the tax for the school district and that for the county are levied on real estate in Pittsburgh. In 1930 the city received \$21,686,000 (Table 8) and the school district received \$12,862,000 (Table 10). County collections within the city are not separately reported but may be approximated by allocation in proportion to assessed value of taxable real estate. In 1930 the county received \$14,400,000, not including the poor district tax, which is levied only outside Pittsburgh (Table 11). The county valuation of real estate within the city that year was

TABLE 10
**Real Estate Tax Collections of the Pittsburgh School District
1915-1933***

Year	From Current Levy	From Levies of Prior Years	Total Collections
1915	\$ 4,059,726	\$ 414,644	\$ 4,474,368
1916	4,245,957	503,584	4,749,541
1917	4,311,024	387,270	4,698,294
1918	4,760,532	326,029	5,086,561
1919	4,857,041	358,983	5,216,024
1920	3,711,489	317,266	6,028,755
1921	6,544,619	269,483	6,814,102
1922	9,219,355	282,689	9,502,044
1923	9,928,362	470,050	10,398,412
1924	10,176,446	515,045	10,691,491
1925	10,589,622	543,100	11,132,722
1926	10,746,581	568,669	11,315,250
1927	11,029,213	617,426	11,646,639
1928	11,613,372	685,864	12,299,436
1929	11,809,074	754,419	12,563,493
1930	12,004,520	857,779	12,862,299
1931	11,989,030	1,047,498	13,036,528
1932	11,062,350	997,669	12,060,019
1933	10,378,165	1,103,312	11,481,477

*Amounts 1915-1932 from published reports of the Board of Public Education, Pittsburgh; 1933 data directly from the office of the Board.

61.4 per cent of total county valuation, and county collections of the real estate tax within the city in 1930 may be estimated at about \$8,840,000. The amount of the city real estate tax in 1930 was a little less than the sum of the city school district tax and the city share of the county real estate tax, or, in other words, about half the total in the city area. Since 1930 the city rate has been cut from 26 mills to 20.6 mills on land and from 13 mills to 10.3 mills on buildings (Table 1). The school rate for 1934

is only one-half of a mill less than that for 1930; the county rate is one-fourth of a mill less (Table 2). The city levy for 1934, therefore, is much less than half the total levy in the city area.

TABLE 11
Real Estate Tax Collections of Allegheny County, 1915-1933*

Year	From Current Levy	From Levies of Prior Years†	Total Collections
1915	\$ 2,147,392	\$ 422,866	\$ 2,570,258
1916	3,196,822	311,612	3,508,434
1917	3,543,404	529,347	4,072,751
1918	4,136,370	488,748	4,625,118
1919	4,410,077	624,766	5,034,843
1920	5,846,479	560,889	6,407,368
1921	6,032,782	714,041	6,746,823
1922	6,188,129	683,538	6,871,667
1923	5,823,537	787,670	6,611,207
1924	6,107,214	572,270	6,679,484
1925	8,846,902	821,617	9,668,519
1926	10,364,204	997,366	11,361,570
1927	10,759,041	1,032,677	11,791,718
1928	10,905,600	1,372,984	12,278,584
1929	11,244,424	1,468,319	12,712,743
1930	12,861,773	1,500,502	14,362,275
*1931	12,570,173	1,384,963	13,955,136
1932	11,100,245	910,368	12,010,613
1933	10,476,678	1,229,669	11,706,347

*Amounts 1915-1932 from published reports of the Controller of Allegheny County; 1933 data from the Controller's office.

†Collections reported from the "lien docket" are included. See second footnote to Table 24.

Budgetary Importance of the City Real Estate Tax in Pittsburgh

In order to see the budgetary importance of the real estate tax, it is necessary to compare the yield of that tax with the yield of other revenues. The financial reports of the city, however, do not show a classification of items known as "revenues"; they show "receipts." In Appendix A, the method of classifying receipts into revenues and non-revenue receipts is discussed. We are concerned here only with revenues (Table 12).

In 1932 the real estate tax produced 75.6 per cent of city revenues from all sources, water service included (Table 13). In 1915 the corresponding percentage was 61.9; by 1923 it had risen to 75.7. The percentage was a little lower in the period 1924-1927, but in the period 1928-1932 more than 75 per cent of the revenue total was from this source.

TABLE 12
City Real Estate Tax Collections, Other General Budget Revenue,
and Water Service Revenue, Pittsburgh, 1915-1932*

Year	General Budget Revenue			Water Revenue†	Grand Total City Revenue
	Real Estate Tax‡	Other General Budget Revenue‡	Total General Budget Revenue		
1915	\$ 7,704,236	\$2,025,661	\$ 9,729,897	\$2,709,957	\$12,439,854
1916	9,069,788	1,989,010	11,058,798	2,359,967	13,418,765
1917	8,335,022	2,193,415	10,528,437	2,362,850	12,891,287
1918	10,303,707	2,210,792	12,514,499	2,501,956	15,016,455
1919	10,978,900	1,757,304	12,736,204	2,687,638	15,423,842
1920	13,320,696	2,449,044	15,769,740	2,869,516	18,639,256
1921	14,153,543	2,531,924	16,685,467	2,682,028	19,367,495
1922	13,785,040	2,517,159	16,302,199	2,752,064	19,054,263
1923	15,131,311	2,176,607	17,307,918	2,687,170	19,995,088
1924	15,320,626	2,638,095	17,958,721	2,770,371	20,729,092
1925	14,771,555	2,878,881	17,650,436	2,733,195	20,383,631
1926	16,873,949	2,880,462	19,754,411	2,882,252	22,639,663
1927	17,518,398	3,588,179	21,106,577	2,840,459	23,947,036
1928	20,073,984	3,526,313	23,600,297	2,860,724	26,461,021
1929	20,510,129	3,338,357	23,848,486	2,979,442	26,827,928
1930	21,686,437	3,491,076	25,177,513	3,280,433	28,457,946
1931	20,816,394	2,636,731	23,453,125	3,261,186	26,714,311
1932	17,768,038	2,788,275	20,556,313	2,938,176	23,494,489

*Compiled from *Annual Report of the City Controller*, Pittsburgh, for years covered. The basis for classification of reported "receipts" into "revenues" and "non-revenue receipts" is explained in Appendix A.

†Includes delinquent taxes but not penalty and interest on delinquent taxes.

‡See footnote below regarding the incompleteness of segregation. "General Budget Revenue" includes all revenue except water service receipts. Minor general revenues comprising the item "Other General Budget Revenue" are discussed in Appendix B.

The revenue total on which these percentages are based includes receipts from the water service. The water system, however, is usually thought of as a business enterprise, outside the category of ordinary governmental functions. Municipalities generally do not use the real estate tax for the support of the water service (nor for the support of other major public service enterprises). A more instructive view of the budgetary importance of the real estate tax, therefore, may be obtained from a consideration of revenues exclusive of the water service receipts. The total, exclusive of water revenues, will, for convenience, be called "general budget revenue."²⁰

²⁰In the published financial reports of the City Controller, markets, scales, and wharves and landings are classified as "public service enterprises." This classification is consistent with that used by the Bureau of the Census. In the Pittsburgh data, however, these items seem not to be so nearly segregated from the ordinary governmental budget as is the water system. Since the financial reports of the city show no distinct water fund, it is not possible to effect a complete segregation of revenues attributable to the water service, there being, for example, no allocation of interest earned. But the present purpose is to view the approximate importance of the real estate tax in the total of general budget revenues. For this purpose, it is more accurate to eliminate identifiable water revenues. The remaining error will not cause serious distortion in the statement of general budget revenues.

In 1932 real estate tax collections were 86.4 per cent of general budget revenues; the aggregate of special assessments, licenses, permits, franchises, rents, interest, fines and other penalties, grants and donations, and all other minor general budget revenues amounted to 13.6 per cent of the revenues applicable to the general city budget (Table 13). In 1915 the real estate

TABLE 13

Per Cent of City Revenue from the Real Estate Tax and from Other Sources, Pittsburgh, 1915-1932

(Based on Table 12)

Year	Per Cent of General Budget Revenue			Per Cent of Grand Total City Revenue			
	Real Estate Tax	Other General Budget Revenue	Total General Budget Revenue	Real Estate Tax	Other General Budget Revenue	Water Service Revenue	Grand Total City Revenue
1915	79.2%	20.8%	100.0%	61.9%	16.3%	21.8%	100.0%
1916	82.0	18.0	100.0	67.6	14.8	17.6	100.0
1917	79.2	20.8	100.0	64.7	17.0	18.3	100.0
1918	82.3	17.7	100.0	68.6	14.7	16.7	100.0
1919	86.2	13.8	100.0	71.2	11.4	17.4	100.0
1920	84.5	15.5	100.0	71.5	13.1	15.4	100.0
1921	84.8	15.2	100.0	73.1	13.1	13.8	100.0
1922	84.6	15.4	100.0	72.4	13.2	14.4	100.0
1923	87.4	12.6	100.0	75.7	10.9	13.4	100.0
1924	85.3	14.7	100.0	73.9	12.7	13.4	100.0
1925	83.7	16.3	100.0	72.5	14.1	13.4	100.0
1926	85.4	14.6	100.0	74.5	12.7	12.8	100.0
1927	83.0	17.0	100.0	73.1	15.0	11.9	100.0
1928	85.1	14.9	100.0	75.9	13.3	10.8	100.0
1929	86.0	14.0	100.0	76.5	12.4	11.1	100.0
1930	86.1	13.9	100.0	76.2	12.3	11.5	100.0
1931	88.8	11.2	100.0	77.9	9.9	12.2	100.0
1932	86.4	13.6	100.0	75.6	11.9	12.5	100.0

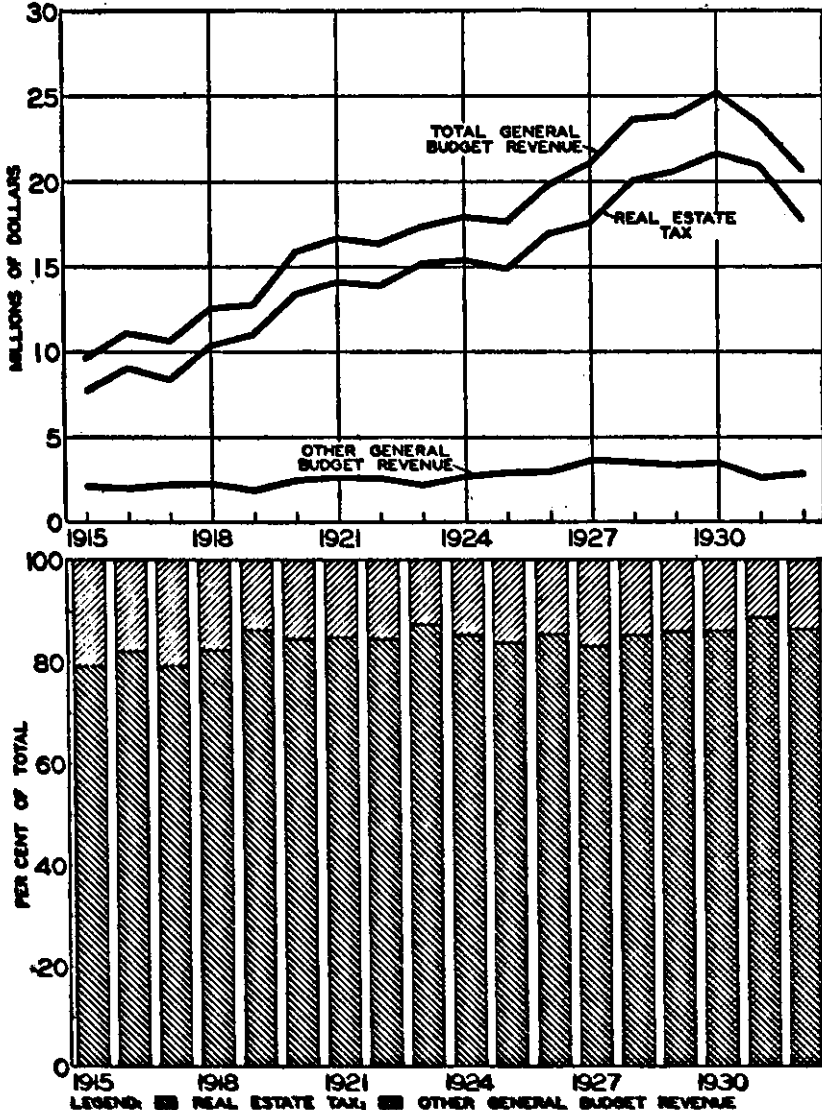
tax produced 79.2 per cent of the total; it was within the range 83.0 per cent to 88.8 per cent during the period 1919-1932. These percentages for the period 1915-1932 are plotted in Chart 6. The close relationship between the real estate tax and the budget is obvious. The relative smallness of every other class of revenues may be seen by reference to Appendix B.

Importance of the General Property Tax in Combined Local Revenues in Pittsburgh and in Other Leading Cities

The tax on real estate has about the same outstanding importance in the revenues of the Pittsburgh school district as it has in the general budget revenues of the city. Of the county reve-

nues, the real estate tax provides roughly two-thirds. The importance of this tax in the total of all local revenues may be seen by reference to data compiled by the Federal government.

CHART 6
Real Estate Tax Revenue and Other General Budget Revenue
of the City of Pittsburgh, 1915-1932
 (Data in Tables 12 and 13)



In its financial reports of cities the United States Bureau of the Census presents consolidated local data for all cities having a population of 300,000 or more. Various degrees of governmental consolidation are found among these cities, and it is necessary to consolidate local data to attain comparability.²¹

In Table 14 the percentage ratio of general property tax revenues to total revenues in 1919 and in 1930 is shown for Pittsburgh and for all other cities in the United States having a population of more than 300,000. Of the consolidated total revenue of the city corporation of Pittsburgh (including public service enterprises), the Pittsburgh school district, and the city portion of the county revenues, 76.4 per cent was derived from the general property tax in 1919 and 80.8 per cent in 1930. Of the total exclusive of public service enterprises, 84.9 per cent was general property tax in 1919 and 86.0 per cent in 1930.

What is called "general property tax" in the consolidated Pittsburgh total is mainly real estate tax, but it includes an allocated city portion of the personal property tax collected by the county. The amount of the county personal property tax allocated in proportion to the real estate valuation in 1930 was about 3 per cent of the consolidated total,²² exclusive of public

²¹ Approximate only, for division of activities and responsibilities between state and local government is not uniform among the states. The several classes of taxing districts in the major cities are shown in *Financial Statistics of Cities, 1930*, pp. 171-174. In five of the twenty-five cities having a population of 300,000 or more, the city corporation is the only local taxing district; these five cities are New York, Baltimore, Boston, San Francisco, and Washington, D. C. In New Orleans only the levee district is separate from the city. Philadelphia has a separate school district and a poor district, the remnant of the old county organization being carried on the consolidated city-county tax budget. In St. Louis there is no distinct county government, but the school district is distinct from the city corporation. In each of the following cities the county government remains, but the only other local unit is the city corporation, which includes the school system: Detroit, Milwaukee, Buffalo, Minneapolis, Newark, Rochester, Jersey City, and Louisville. County, city, and schools are separate in Chicago, Los Angeles, Cleveland, Pittsburgh, Cincinnati, Kansas City (Mo.), Seattle, Indianapolis, and Portland. In addition to these three units, however, Chicago has three other districts—park district, sanitary district, and forest preserve; Cleveland, a park district; Seattle, a port district; Portland, a port district. The census classification of districts is on the basis of power to levy taxes. The administrative organization and the maze of joint arrangements in these metropolitan areas is often baffling. See *The Government of Metropolitan Areas*, by the Committee on Metropolitan Government of the National Municipal League (New York: National Municipal League, 1930).

²² The consolidated Pittsburgh revenue total, except public service earnings, was \$54,117,556 in 1930. United States Bureau of the Census, *Financial Statistics of Cities, 1930*, p. 172. County personal property tax totaled \$2,677,466; and assessed valuation of taxable real estate in the city was \$1,693 millions of the county total of \$1,781 millions. *Controller's 70th Annual Report, Allegheny County, 1930*, pages 157 and 226. Thus the assessed value of real estate in the city was 61.4 per cent of the county total; 61.4 per cent of the county personal property tax collections amounted to somewhat more than \$1.6 millions, or roughly 3 per cent of the amount set up by the Bureau of the Census as the consolidated revenue total for Pittsburgh.

TABLE 14

Per Cent of Combined Local Revenue from the General Property Tax,
Major American Cities, 1919 and 1930*

City	Per Cent of Grand Total Local Revenue		Per Cent of Total Except Public Service Enterprises	
	1919	1930	1919	1930
New York, N. Y.....	73.4%	66.2%	78.1%	70.2%
Chicago, Ill.....	56.0	50.9	61.6	55.1
Philadelphia, Pa.....	67.2	71.7	73.5	76.4
Detroit, Mich.....	73.0	57.3	78.9	72.4†
Los Angeles, Cal.....	63.7	53.6	72.9	64.8
Cleveland, Ohio.....	64.8	67.2	74.9	76.2
St. Louis, Mo.....	64.1	64.3	66.6	70.3
Baltimore, Md.....	62.2	64.6	68.6	73.1
Boston, Mass.....	68.1	67.9	65.7	72.2
Pittsburgh, Pa.....	76.4	80.8	84.9	86.0
San Francisco, Cal.....	69.6	66.2	79.	78.1
Milwaukee, Wis.....	63.5	63.9	65.4	68.0
Buffalo, N. Y.....	69.4	70.0	74.2	73.9
Washington, D. C.....	40.3	56.2	42.2	58.1
Minneapolis, Minn.....	70.8	73.2	74.4	77.1
New Orleans, La.....	40.5	66.0†	58.0	74.7
Cincinnati, Ohio.....	63.8†	60.5	70.4	65.6
Newark, N. J.....	60.9	69.7	66.5	74.9
Kansas City, Mo.....	59.0	63.6	66.1	70.5
Seattle, Wash.....	51.9	46.0	70.9†	69.5
Indianapolis, Ind.....	75.4	81.1	75.9	81.3
Rochester, N. Y.....	—	64.4	—	68.1
Jersey City, N. J.....	—	70.7	—	76.3
Louisville, Ky.....	—	69.5	—	77.4
Portland, Ore.....	—	56.9	—	62.2

*These percentages are for cities having a population of more than 300,000. For each city, 100 per cent is a total comprised of (a) city revenue; (b) school revenue; (c) a part of county revenue, allocated to the city on the basis of the ratio of assessed valuation of real estate in the city to the total assessed valuation of real estate in the county; and (d) the city portion of special district revenue, wherever there are special districts. Based on data gathered and consolidated by the United States Bureau of the Census, in *Financial Statistics of Cities*, 1919 and 1930.

†Median of all cities over 300,000.

service receipts. The real estate tax provided about 83 per cent (approximately five-sixths) of the combined general budget revenues of the three local governmental units in Pittsburgh.

How the importance of the real estate tax in the consolidated local revenue in Pittsburgh compares with its importance in other major cities cannot be stated accurately on the basis of the census data, because of the inclusion of undefined amounts of personal property taxes in various consolidated city totals. The approximate comparison, however, may be seen in the importance of the general property tax, for neither here nor in any other city

TABLE 15
Per Cent of Combined Local Revenue in Pittsburgh from the General Property Tax and Median Per Cent of Major American Cities 1915-1930*

Year	Pittsburgh	Median of Cities of 300,000 or More	Range Among Cities of 300,000 or More	
			Low	High
1915	79.0%	66.8%	41.8%	79.0%
1916	80.3	66.6	42.7	80.3
1917	81.9	68.0	42.4	81.9
1918	81.8	68.3	44.8	81.8
1919	84.9	70.9	42.2	84.9
1920†	---	---	---	---
1921	85.9	73.2	43.5	85.9
1922	84.6	74.0	44.0	84.6
1923	86.0	73.0	47.4	86.0
1924	85.8	72.6	46.0	85.8
1925	84.8	73.4	46.2	84.8
1926	84.9	73.4	52.6	84.9
1927	83.2	73.0	55.6	83.4
1928	85.2	73.0	57.0	85.2
1929	85.6	73.1	33.0	85.6
1930	86.0	72.4	55.1	86.0

*Based on data published by the United States Bureau of the Census in *Financial Statistics of Cities* (annual). Total defined in first footnote to Table 14, exclusive of receipts of public service enterprises.

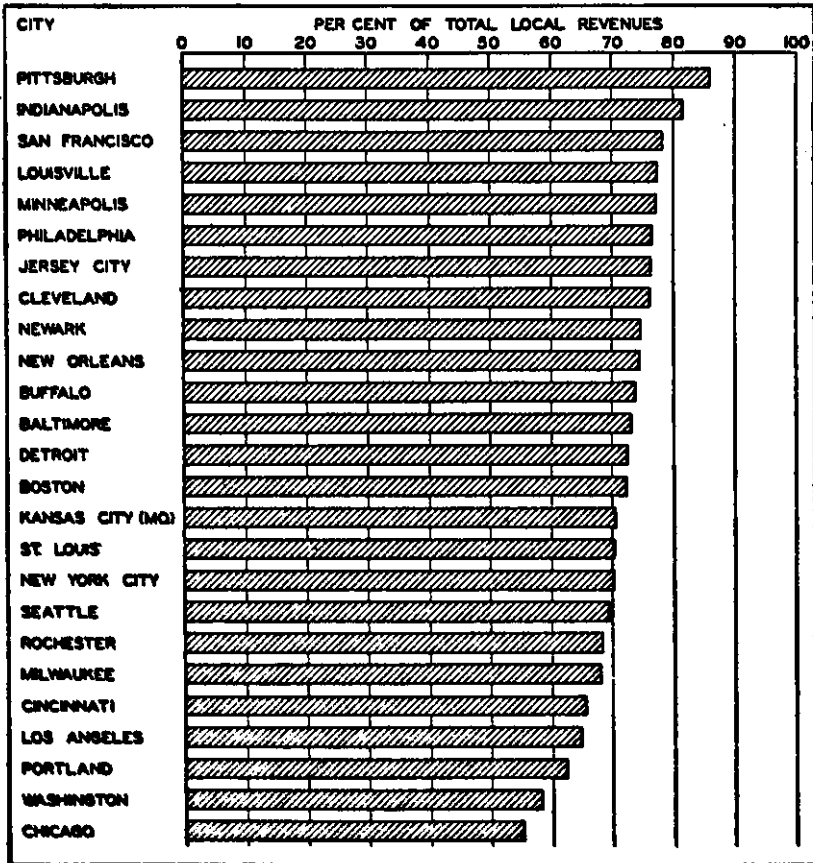
†Data for 1920 not published.

does the personal property tax yield more than a small part of local revenues.²³

First, let us note the comparison in terms of totals which include revenues from public service enterprises. Among the twenty-one cities having a population (estimated) of more than 300,000 in 1919, the Pittsburgh percentage, 76.4, was the highest; four other cities had percentages above 70; eleven, between 60 and 70; three, between 50 and 60; and two, between 40 and 50. Among the twenty-five cities having a population of more than 300,000 in 1930, the Pittsburgh percentage, 80.8, was exceeded only by that of Indianapolis; in four of the other major cities, 70 per cent or more of the consolidated local revenues came from the general property tax; in thirteen, between 60 and 70; in five, between 50 and 60; in one, less than 50. The median on this basis for cities of over 300,000 people was 63.8 per cent in 1919 and 66.0 per cent in 1930.

²³ This is a corollary to three established and well-known facts: First, personal property is hardly anywhere more than a small fraction of the tax list. Second, where large amounts of personal property are listed under systems of classified property taxes, the rates are much lower than real estate tax rates. Third, the efficiency of collecting personal property taxes is, as a general rule, lower than the efficiency of collecting real estate taxes.

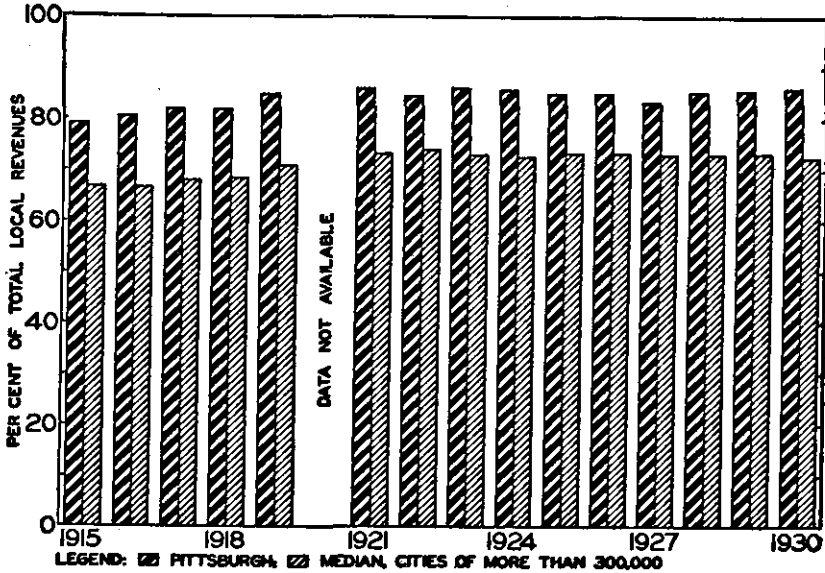
CHART 7
Ratio in 1930 of General Property Tax Revenue to Total Local
Governmental Revenue in Cities Having a Population of
More than 500,000
 (Data in Table 14)



In terms of revenue exclusive of those derived from the operation of public service enterprises, the Pittsburgh percentage was 84.9 in 1919 and 86.0 in 1930—in each year the highest in the group. No other city of this group exceeded 80 per cent in 1919, and only Indianapolis exceeded 80 per cent in 1930. The median for cities of more than 300,000 population was 70.9 per cent in 1919 and 72.4 in 1930.

These comparisons make it strikingly clear that the local dependence on the general property tax in Pittsburgh far exceeds the average of major American cities. Moreover, we

CHART 8
Pittsburgh Ratio of General Property Tax Revenue to Total Local Governmental Revenue and Median Ratio for Cities Having a Population of More than 300,000, 1915-1930
 (Data in Table 15)



have noted that the personal property tax allocated by the census method accounted for only about 3 per cent of the Pittsburgh total in 1930 and that the real estate tax accounted for 83 per cent. The real estate tax alone in 1930 was a larger percentage of the consolidated total for Pittsburgh than was the general property tax in the totals of these other large cities. It must be observed also that more than average dependence on the real estate tax in Pittsburgh is not merely characteristic of 1919 and 1930; it was true in other post-war years; it was true likewise before this country entered the World War (Table 15). In Chart 7 the ratios of property tax revenues to total general city revenues for cities having a population of more than 500,000 in 1930 are plotted for comparison. The Pittsburgh ratio was greater than any other—far greater than most of them. In Chart 8 the Pittsburgh percentages since 1915 are plotted for comparison with the median percentages for cities having a population of more than 300,000.

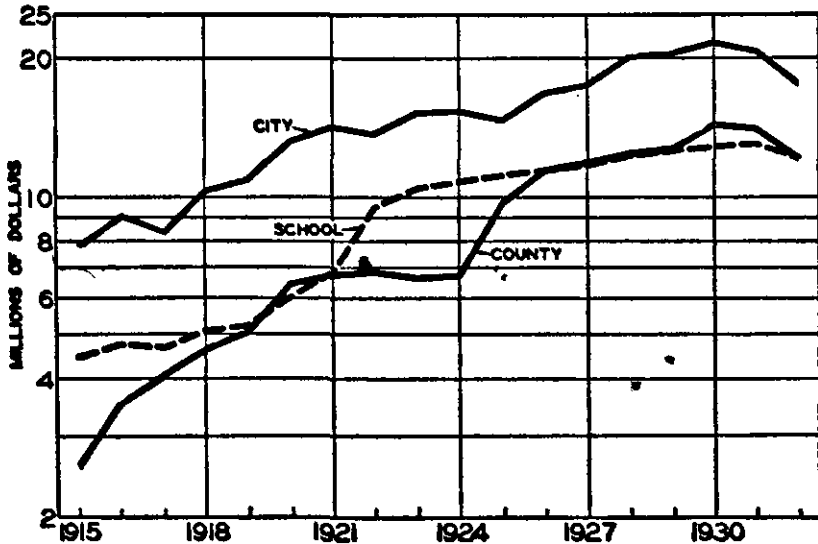
CHAPTER 4

Growth of City Real Estate Tax Collections in Pittsburgh

The earliest year for which city tax collection data are reasonably comparable with the data for recent years is 1915. The first year of the separate school district tax was 1912; but city accounts and school accounts were still somewhat confused in 1913, some points of the segregation not having been agreed upon. The fiscal year was changed in 1914, and city data reported for that year are for only eleven months. Data for 1915, however, will serve well as a starting point, for at that time the

CHART 9
Real Estate Tax Collections of the City of Pittsburgh, of the Pittsburgh School District, and of Allegheny County
1915-1933*

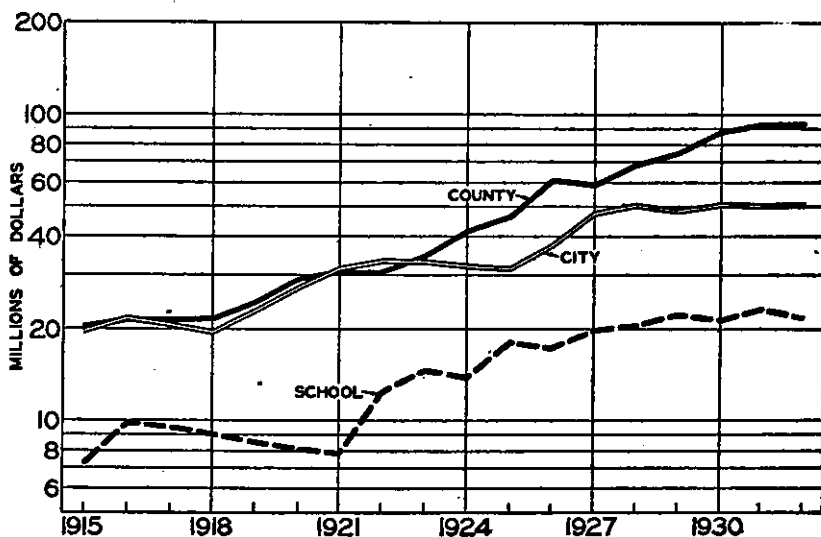
(Data in Tables 8, 10, and 11)



*Compare the slopes of the curves. The vertical scale is logarithmic. On a chart of this sort, difference in steepness of slope represents difference in rate (per cent) of growth or of decline ("rate" to be considered as in compound interest).

CHART 10

Net Bonded Debt of the City of Pittsburgh, of the Pittsburgh School District, and of Allegheny County,* 1915-1933†



*Based on data from official sources. Gross bonded debt less sinking fund assets, as of the end of the year.

†Compare the slopes of the curves. The vertical scale is logarithmic. On a chart of this sort, difference in steepness of slope represents difference in rate (per cent) of growth or of decline ("rate" to be considered as in compound interest).

country had not been much affected by the war-time inflation of prices. According to the United States Bureau of Labor Statistics, prices were tending upward by the end of 1915, but the average of wholesale prices in 1915 was little higher than in 1914.

In 1915 the amount of city real estate tax collections, including delinquent taxes,²⁴ was \$7,704,236; from 1915 to 1930, the trend was definitely upward, although in some years there were halts in the upward swing (Table 8). The largest annual total was that in 1930, the amount being \$21,686,437. There was a moderate decline in 1931 and a sharp decline in 1932 and 1933. The high point of school tax receipts in the city was reached in 1931—a year later than the peak of city taxes (Table 10). Both these totals, of course, were somewhat affected by annexation. The high point of county tax collections was that in 1930 (Table 11).

²⁴ Delinquent taxes are discussed in Chapter 5.

In Chart 9, total collections of the city, of the school district, and of the county for the years 1915-1932 are plotted on a logarithmic scale. Differences among the curves with respect to slope reflect differences in rate of increase. The rate of increase was considerably greater in the county total than in the total for the city and that for the schools, although both the latter were somewhat enlarged by annexation.

That tax totals during the twenties were far above the pre-war totals is clear. The rise in tax rates has been shown in Chapter 1. The rise in taxes, however, does not show in full the growth of local public expenditures, for the net bonded debt of each of the three local units grew very much in the period 1915-1932 (Chart 10). Each of the units has paid out since 1915 much more than its revenue system produced.

Consideration of changes in major factors affecting the growth of the budget will facilitate an understanding of the growth of taxes in Pittsburgh.

Major Factors Contributing to the Growth of Taxes

Public expenditures should be viewed as purchases—purchases of labor, of supplies, and of contractual services. Expenditures of a governmental unit are affected by changes in the price of labor, in the wholesale price of commodities, and in the price of construction projects just as truly as are the expenditures of a private business. In fact, the governmental unit may be less able than a private firm to escape the effect of rising prices and less able to run to cover in a period of economic depression. When costs become burdensome to business, business can curtail or suspend temporarily the high-cost operations. Government can curtail somewhat—and has done so in this depression; but government cannot close up, nor can major public services be even temporarily suspended when costs rise. Government must protect life, guard rights in property, enforce contracts, and maintain indispensable community services, such as highways, sanitation, and fire protection. On the other hand, when a crash of prices leads to business curtailment and to the discharge of large numbers of employees, government is faced not only with the necessity of maintaining the usual services but also with the necessity of feeding industrial labor until industrial

activity is resumed. Indeed, the hope of prompt resumption of business when the economic skies clear is based not merely on the confidence that government will protect property and enforce contracts, but also on the assumption that government will prevent the grave physical deterioration of the labor force and the destruction of labor morale.

Our concern for the moment, however, is with the fact that purchases made by governments have cost more in recent years than they cost before the war. This fact becomes clear in the following consideration of changes in compensation to labor, in wholesale prices, and in costs of construction in this country. None of the price changes can be construed as representing exactly what happened in Pittsburgh, but all of them give indications of what must have been the general course of prices paid by the city. Since the post-war peak of commodity prices was in 1920, it will simplify the treatment in each case to show the change from 1915 to 1920 and, where possible, to indicate the 1921 level and the range in the years after the 1921 depression.

(a) *Changes in the Compensation of Labor*

Indexes of city tax collections, city payrolls, and cost of living in Pittsburgh are shown in Table 16. In Table 17, several indexes of wage rates and average earnings are shown, each being stated as a percentage of the corresponding figure in 1915.

Four of the indexes in Table 17 were computed by the United States Bureau of Labor Statistics. These show the following changes in average rates of pay for specified classifications of labor: The average hourly wage rate for all types of industrial labor in the United States (agricultural labor not included) rose 127 per cent from 1915 to 1920; in 1921 the average was 112 per cent above the 1915 level; in the period 1922-1929 the annual average ranged from 102 to 126 per cent higher than in 1915. The average union wage rate in this country, stated as rate per full-time week, was 84 per cent higher in May, 1920 than in May, 1915; in May 1921 it was 89 per cent above the May, 1915 average; in the years 1922-1930 the May average ranged from 79 per cent to 138 per cent higher than the corresponding figure for May, 1915. The average rate per full-time week for all types of labor in the iron and steel industry in the

TABLE 16
Indexes of City Tax Collections, City Payrolls, and Cost of Living,
Pittsburgh, 1915-1932

Year	City Tax Collections*	City Payroll†	Cost of Living in Pittsburgh‡	
			June	December
1915	100.0	100.0	100.0	101.1
1916	117.8	99.9	-----	113.8
1917	108.2	108.8	-----	136.9
1918	133.8	121.9	-----	164.0
1919	142.6	142.1	166.7	186.4
1920	173.0	166.8	204.1	190.8
1921	183.8	177.6	174.8	168.2
1922	179.0	150.3	161.2	164.4
1923	196.3	170.9	166.1	168.3
1924	199.0	180.9	167.6	171.1
1925	191.8	175.6	172.5	176.0
1926	219.1	187.9	172.8	174.1
1927	227.5	196.7	171.7	170.9
1928	260.7	203.3	167.5	170.3
1929	226.4	208.3	168.7	168.7
1930	281.6	236.8	164.1	157.7
1931	270.3	244.7	148.5	143.1
1932	230.8	192.3	132.3	128.9

*Based on total current and delinquent. Table 8; 1915 total equals 100.

†Based on total of all identifiable items of salaries and wages in the classified statement of "Disbursements for General Expenses" in *Annual Report of the City Controller*, Pittsburgh, for each year; 1915 total equals 100.

‡The cost of living index for Pittsburgh, as computed by the United States Bureau of Labor Statistics, extends only from December, 1917. Since that time the changes in the Pittsburgh index have not differed greatly from the changes in the national cost of living index computed by the same agency. The index numbers for Pittsburgh for 1915 and 1916 were estimated on the basis of the assumption that the percentage change in the Pittsburgh index in 1915 and 1916 was the same as the percentage change in the national index. The estimated index number for June, 1915 was taken as 100.

United States was 145 per cent more in 1920 than in 1915. This index is available only for part of the years since 1920. In 1922 the corresponding index number was 70 per cent higher than that in 1915; in 1924, 89 per cent; in 1926, 85 per cent; in 1929, 96 per cent; in 1931, 86 per cent. The index of average hourly rates paid to common labor in the iron and steel industry in the Pittsburgh district was 179 per cent higher in 1920 than in 1915. This index, likewise, is available for only part of the years since 1920. In 1922, it was 90 per cent above the 1915 average; in 1924, 137 per cent; in 1926 and 1929, 138 per cent; in 1931, 142 per cent.

One of the indexes shown in Table 17 is based on the average hourly earnings (computed by the Bureau of Railway Economics) for all grades of employees on Class I railroads except officers. From 1915 to 1920 this average rose 156 per

cent. In 1921 it was 155 per cent higher than in 1915. In the years 1922-1930 it ranged from 136 per cent to 157 per cent above the 1915 average.

The indexes mentioned are sufficient to show the very great increase in wage rates from 1915 to 1920 and the considerable excess of such rates during the twenties over the 1915 rates. To the extent that the city was then employing labor of a class ordinarily paid at wage rates, it was forced to raise the rates paid on city work. There could be little reasonable doubt that wages to labor such as that engaged in street and sewer cleaning, street and sewer repair, building maintenance and repair, and janitorial work, had to be advanced. To a very considerable degree, of course, the rise in labor costs entered the city financial picture indirectly, through the rising cost of construction done under contract. Cost of public works will be considered later.

A large part of the city payroll is paid to workers of clerical, technical, or professional rating. Such classes of employees are commonly on a salary basis. Compensation paid to salaried workers ordinarily is slow to move upward with price adjustments, but it does move up; and salary rates are likely to continue rising after the peak of wage rates has been reached. Selected indexes are shown in Table 17 to indicate the change in average earnings of salaried employees. It is true that "average earnings" do not mean the same thing as "average rates of pay." Salary rates, however, are stated for long periods, and salaried employment is comparatively stable. Therefore, changes in average earnings of salaried employees indicate roughly the changes in salary rates.

Average earnings of office workers of representative manufacturing concerns in New York state increased 64 per cent from 1915 to 1920, according to the New York State Department of Labor. In 1921 the index of average earnings of this group was 65 per cent higher than in 1915; and in the years 1922-1930 the index ranged from 65 per cent to 98 per cent above the 1915 average. For illustration of the greater stability of salaries, in comparison with the movement of a wage index, this index may be compared with that of average weekly earnings of all types of factory employees (including office workers) in

TABLE 17
Selected Indexes of Wages and Earnings in the United States
 (All Indexes Converted to Base 1915 Equals 100)

Year	Wage Rates*				Average Earnings						
	Average Hourly Rate, All Types Industrial Employees U.S.	Average Union Rate per Full-Time Week U.S.	Average Rate Iron & Steel Industry		Hourly, Steam Railways U. S.†	Weekly, Office, Mfg. N.Y. State‡	Weekly, All Employees, Mfg. N.Y. State‡	Annual, Salaried Mfg. U.S.**	Annual, Clerical, Railroads U.S.**	Annual, Federal Employees District of Columbia**	Annual, Postal Employees U.S.**
			Full-Time Week, All Types Employees U.S.	Hourly, Common Labor Pgh. Dist.							
1915	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1916	107.8	103.8	—	—	105.7	103.5	112.3	107.5	107.6	105.1	101.1
1917	124.3	109.9	—	158.4	119.9	111.4	127.4	117.0	111.0	112.4	103.8
1918	157.3	126.7	—	—	177.4	127.5	158.4	133.0	146.5	119.8	115.2
1919	178.6	144.3	—	252.6	213.4	143.5	182.9	150.6	162.3	132.0	139.2
1920	227.2	184.3	244.9	278.9	255.6	164.3	219.1	169.0	200.1	143.1	158.7
1921	211.7	189.0	—	—	254.8	165.4	200.2	168.5	192.0	138.3	160.9
1922	201.9	178.9	169.9	189.5	236.8	165.0	194.9	163.1	183.3	141.1	158.7
1923	210.7	194.1	—	—	235.6	172.2	212.0	167.5	184.2	143.9	160.9
1924	216.5	209.5	188.9	237.4	240.6	177.6	215.4	173.2	187.6	148.3	166.4
1925	219.4	217.3	—	—	244.1	182.4	219.9	176.9	188.9	154.2	176.5
1926	222.3	228.2	184.6	237.9	245.6	187.1	225.8	181.4	191.0	158.2	183.1
1927	224.3	235.4	—	—	250.6	189.7	228.0	187.0	195.6	160.6	183.2
1928	225.2	235.2	—	—	248.7	192.3	229.1	192.5	201.1	168.4	183.9
1929	226.2	235.3	195.6	238.4	249.4	195.3	233.4	—	—	—	—
1930	222.3	238.3	—	—	253.3	198.2	223.3	—	—	—	—
1931	210.7	237.4	185.5	241.6	256.7	187.7	205.6	—	—	—	—
1932	180.6	207.4	—	—	235.6	168.5	176.9	—	—	—	—

*United States Bureau of Labor Statistics. *Monthly Labor Review*, September, 1933, p. 632, and November, 1933, p. 1188. *Wages and Hours of Labor in the Iron and Steel Industry*, 1931, pp. 3, 16. Union rate as of May each year; steel industry rates as of one sample payroll period (two weeks) in each year shown.

**Douglas, Paul H., *Real Wages in the United States, 1890-1926* (Boston and New York: Houghton Mifflin Co., 1930), and Douglas, Paul H. and Jenkinson, Florence Tye, *Movement of Money and Real Earnings in the United States, 1926-1928* (Chicago: University of Chicago Press, 1930).

†Class I roads; all employees except officers. Based on cents per hour computed by Bureau of Railway Economics.

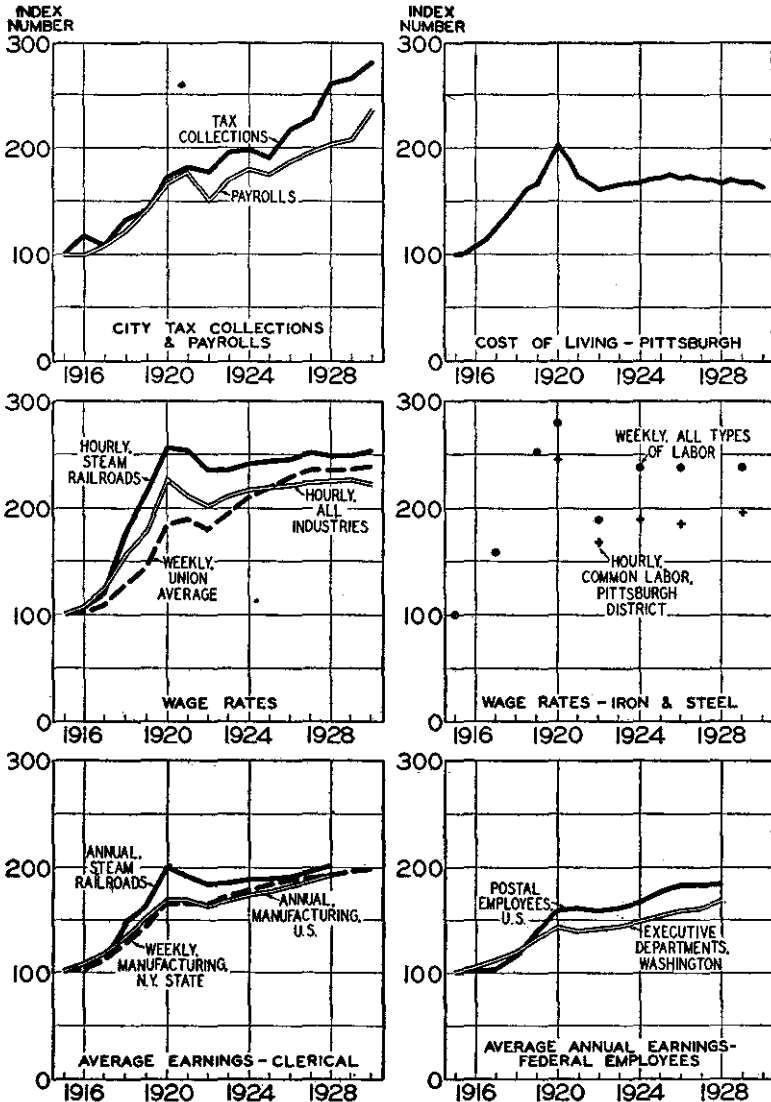
‡New York State Department of Labor. Average for office employees for December in the years 1915-1917 and for October thereafter.

New York state. This index rose 119 per cent from 1915 to 1920; the average in 1921 was double the 1915 average. In the years 1922-1930 the annual index of earnings of all factory employees stood in the range 95 per cent to 133 per cent above the 1915 level. The index of average annual earnings of salaried employees of manufacturing firms throughout the country, as computed by Paul Douglas, showed somewhat more gain in the years 1916-1921 than the New York index of average weekly earnings of office employees in manufacturing. On the other hand, the index of average annual earnings of clerical employees of steam railway companies, also computed by Douglas, rose more from 1915 to 1920 than either the New York index or his index of salaried employees of manufacturing firms.

Two of the indexes shown in Table 17 are based on average annual earnings (including bonuses in certain years) of employees of the Federal government from 1915 to 1928. One is an index of the average annual earnings of employees working in the District of Columbia in the Executive departments of the Federal government. This index rose 43 per cent from 1915 to 1920. In 1921 the excess over 1915 was 38 per cent. In the years 1922-1928 the range was from 41 per cent to 68 per cent above the 1915 average. The other index of earnings of Federal workers is that of postal employees in the United States. This index rose 59 per cent from 1915 to 1920 and stood in 1921 at a level 61 per cent higher than that in 1915. In the years 1922-1928 the range of this index was from 59 per cent to 84 per cent above the 1915 level.

In Chart 11 an index of total city tax collections and an index of total city payrolls in Pittsburgh are plotted for comparison with selected wage and earnings indexes. It has been pointed out that there is a considerable group of the wage class on the city payrolls but that city employees are more generally of the salary class. It has been shown (Table 7) that business activity in the Pittsburgh district rose briskly from 1915 to 1920 and was at considerably higher levels throughout most of the twenties than in 1915. Perhaps it may well be noted also that while governmental employees on a salary basis usually enjoy greater assurance of continuity of employment than is enjoyed

CHART 11
Indexes of City Tax Collections, Payrolls, and Cost of Living in
Pittsburgh and Indexes Reflecting Changes in the Cost of Labor*
 (Data in Tables 16 and 17)



Caution: Note that the tax index and the payrolls index represent changing volume, whereas the other indexes represent change in rates or averages. The wage and earnings indexes not designated otherwise are averages for the United States. The index "Hourly, Steam Railroads" (left center) is not based directly on wage rates; it is based on average hourly earnings—salaries and wages—of all employees except officers.

by salaried employees in industry, the civil service in local governmental offices does not appear to provide the assurance that is found in the Federal civil service. The City of Pittsburgh, therefore, must have felt keenly the industrial competition for labor very early in the war period. Moreover, activity in industry and in building after the war must have sustained that competition for some years.

From 1915 to 1920 the growth in total city payrolls was very marked, the rise amounting to 67 per cent. Perhaps there was some increase in numbers employed, especially in 1919 and 1920, when public works projects were being resumed. But, in view of the major factors affecting rates of pay, there is room to believe that much, if not most, of this increase in payrolls up to 1920 was due to increases in average rates of pay. After recovery from the 1921 depression—the jolt of which was reflected in the city budget for 1922, the payroll total no doubt was affected both by changes in rates of pay and by changes in numbers employed. There was an increase in each of the years 1923-1930, except 1925. In 1923 the total was 71 per cent larger than the 1915 total; in 1930 it was 137 per cent larger than the aggregate in 1915.

It should be understood thoroughly that the increases that occurred in compensation to labor represented dollar increases. One of the curves in Chart 11 (upper right) represents changes in the cost of living in Pittsburgh (estimated for 1915 and 1916 on the basis of the United States index). The great increase of Pittsburgh rents after 1917 has been shown in Table 7 and Chart 5. Because of the extreme rise in the cost of living, it is probable that for a number of years after 1915—possibly to the mid-twenties—city employees received less real income than before the war.

It is clear from Chart 11, first, that the growth of city payrolls was very much related to the increase in prevailing rates of wages and salaries, and, second, that the growth in taxes was very much related to the rate of growth of payrolls. The fact that taxes grew faster than payrolls will be better understood after consideration of commodity prices and construction costs.

(b) *Changes in Wholesale Prices*

About a year after the war began, in 1914, a long-sustained upward movement of prices started in this country. There was a moderate decline in average prices during the first year of the war, but recovery in the latter part of 1915 brought the average of prices in that year to about the same level as that prevailing when the war began.

In March, 1917, just before this country entered the war, the monthly wholesale price index of the United States Bureau of Labor Statistics was nearly 55 per cent higher than the 1915 average. This index rose fast until May, 1920; in that month it was more than 140 per cent higher than the 1915 average. In

TABLE 18
Index of Commodity Purchases, City of Pittsburgh,
and Indexes of Wholesale Prices in the United States, 1915-1932
(1915 Equals 100)

Year	Index of City Purchases of Commodities*	Indexes of Wholesale Prices†					
		Raw Materials	Semi-Manufactures	Finished Products	Non-Agricultural Products	Other Than Farm Products	All Commodities
1915	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1916	102.1	122.9	145.7	119.4	124.5	129.9	123.0
1917	125.1	182.4	185.2	158.5	165.1	167.9	169.1
1918	155.1	202.1	189.4	181.0	182.6	183.2	188.9
1919	176.1	217.1	194.5	189.6	192.1	189.4	199.4
1920	179.3	225.9	244.1	217.4	226.0	237.2	222.2
1921	185.5	151.4	118.3	149.9	146.1	154.3	140.4
1922	156.3	142.9	121.8	140.1	142.0	150.6	139.1
1923	164.7	146.6	146.1	144.0	147.3	153.4	144.7
1924	179.1	145.2	133.9	139.8	141.8	146.6	141.2
1925	170.9	158.8	129.7	146.0	148.0	150.9	148.9
1926	188.6	148.8	123.2	145.1	146.0	147.1	143.9
1927	192.3	143.6	116.1	137.9	138.1	138.2	137.3
1928	207.6	147.5	116.4	139.2	138.4	136.6	139.1
1929	201.7	145.1	115.6	137.2	136.2	134.7	137.1
1930	231.8	125.4	100.7	127.7	125.4	125.3	124.3
1931	229.8	97.6	85.0	111.8	108.9	110.3	105.0
1932	142.8	82.0	73.0	102.0	99.7	103.2	93.2

*Based on data compiled from the *Annual Report of the City Controller, Pittsburgh*, for the respective years. All expenditure items identifiable as being for materials, supplies, or equipment were totaled for each year. Since bond fund expenditures are not so classified in the published reports, these index numbers represent commodity purchases from revenue funds only.

†Indexes computed by the United States Bureau of Labor Statistics on the base 1926 equals 100. The reader is cautioned that the price indexes represent average change in unit cost, whereas the index of purchases represents change in dollar cost of a varying volume of goods.

spite of the sharp break in prices shortly after this peak had been reached, the 1920 average exceeded the 1915 average by more than 122 per cent.

The low point of this wholesale price index in the decline that followed the 1920 peak was reached in January, 1922; but in that month the prices were 31.5 per cent higher than the average in 1915. In the years 1921-1929 the annual average index ranged from 37 per cent to 49 per cent above the 1915 level. The monthly average was higher than the 1915 average through November, 1931. In the devastating year 1932 this index averaged only 6.6 per cent less than in 1915.

Among different commodities, price changes differ a great deal. The extraordinary changes during and after the war, however, were so general as to cause marked advance in the average of any comprehensive commodity list. Attention is directed to Table 18, in which, in addition to the comprehensive wholesale price index already discussed, several of the more restricted commodity group indexes computed by the United States Bureau of Labor Statistics are shown. The increases differed, but all were sharp; and the several group indexes stood throughout the twenties decidedly above the corresponding 1915 levels.

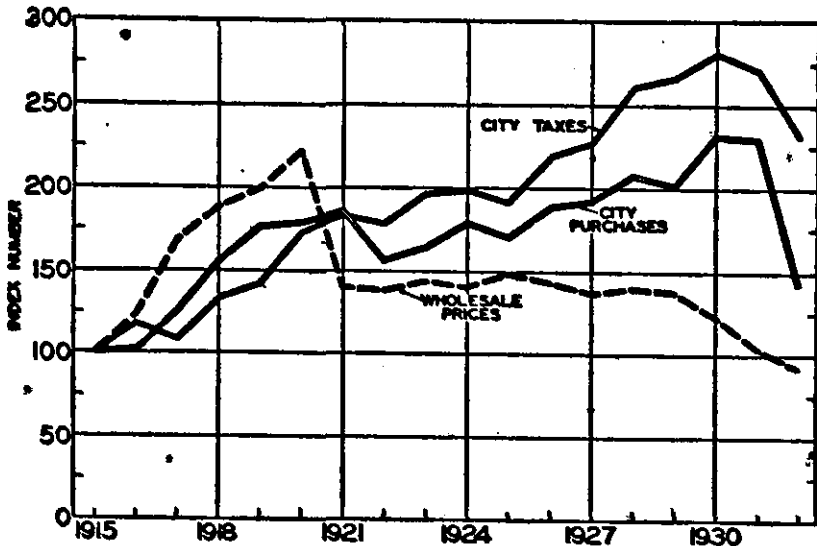
Purchases by the city cover an extensive array of commodities. The wide diversity in the activities of the city government necessitates the purchase of office equipment and supplies, fuel, building materials, cleaning equipment and supplies, food, clothing, household equipment and supplies, medical equipment and supplies, equipment and supplies for fire fighting, police equipment and supplies, automobiles, trucks—in short, an extensive array of commodities of many classifications. Consequently, although no one of the indexes shown in Table 18 is offered as an exact index of the average price of commodities bought by the city, there is no doubt that the indexes shown give a rough indication of changes in the average cost to the city of commodities purchased. (The higher cost of building materials would be reflected indirectly in higher contract rates on public works, which will be considered presently).

The monthly index of wholesale prices (the all-commodity index) was above the 1915 average until nearly the end of 1931.

A physical volume of city purchases equal to that of 1915 probably would have cost more in every year thereafter through 1931—much more in most of the years. Moreover, the city was growing and its services were being expanded throughout the twenties. The physical volume of purchases also must have grown; and expanded volume at higher price levels inevitably required much larger dollar amounts for commodities.

In Chart 12 the general index of wholesale prices, an index of the amount spent by the city for commodities, and an index of total city tax collections are plotted for comparison. It will be seen at once that the amount spent for commodities jumped to a much higher level in the period of the great rise of prices, 1916-1920. The increase in the amount paid out for commodities in that period was relatively greater than the increase in the amount of taxes. In other words, a larger part of the tax total was required for commodities. On the other hand, it will

CHART 12
Indexes of City Real Estate Tax Collections and Total Commodity
Purchases in Pittsburgh and Wholesale Prices in the
United States, 1915-1932*
 (Data in Tables 16 and 18)



*Caution: The index of taxes and that of purchases represent changing volume, whereas the price index represents an average change in unit cost.

be observed that the amount spent for commodities did not increase so much as average prices. If the available price indexes may be taken to show roughly the change in the average price of commodities bought, the city bought less in 1920 than in 1915. Thus it appears that the city probably was running short of supplies and permitting equipment to deteriorate in that period. If so, replenishment of supplies and rehabilitation or renewal of equipment would help to explain why the amount spent for supplies did not fall immediately with the fall in prices after 1920. Hence it seems that during the twenties, when prices were decidedly above the 1915 level, the city had to make up deficiencies of prior years and at the same time to meet current requirements that had been enlarged by the growth of the city and of its services.

(c) *Changes in the Cost of Public Works*

City public works, other than those paid for out of earnings of public service enterprises, have to be paid for ultimately out of taxes and special assessments. The immediate financing of such public works projects in Pittsburgh, however, is provided mainly from the proceeds of bond funds.²⁵ Therefore, instead of causing great immediate change in city taxes, the cost of most city public works is covered in later years by appropriations for the amortization of bonds; and the cost of this method of financing is covered in later years by appropriations for the payment of interest on outstanding bonds. The rise in the amount required for amortization of debt is not timed with the outlays for public works, for borrowing and the use of the proceeds of bond issues are not closely related in time. (The extreme variation in balances of borrowed money is referred to in Appendix B under the section title "Interest on City Deposits.") Because of the indirectness in the relation between expenditures for public works and final payment for them out of revenues, the effect of changing cost of public works on city taxes is gradual and long-sustained rather than sudden but currently liquidated.

²⁵ Of a total of approximately \$62 million paid for city public works of a permanent type in the period 1919-1931 (water system included), bond fund payments totaled about \$46 million. Wilbert F. Alster, *Some Phases of Public Works Planning for the Stabilization of Employment in Pittsburgh* (Unpublished M.A. thesis, University of Pittsburgh, 1933), p. 36.

The cost of public works is not merely the cost of construction; it includes the cost of land on which structures are located, and it may include damages paid to owners of abutting property.²⁶ In the available data the only clue to the changing cost of land for public works is in the changing assessed valuation of taxable land (Tables 3 and 5). The total of land valuation changed very little from 1915 to 1921. In 1922 there was a moderate increase; in 1923, a marked increase. Thereafter, the assessed valuation of land rose gradually until 1931. Since 1931 it has been reduced somewhat. In the years 1923-1932 the assessed valuation of land ranged from 10.4 per cent to 22.9 per cent above the 1915 total. It is conceded that assessed valuations are poor guides with reference to what a governmental unit must pay for land; and it is recognized that total valuation is affected somewhat by annexations. But the rise of assessed valuations at least affords evidence of the rising cost of land for public works.

In Table 19 the following items of city data are shown for the years 1915-1932: tax collections; collections of special assessments; the amount required from general budget revenues for amortization of long-term debt; and the amount required from general budget revenues for interest on city debt, including floating debt. In Table 20 each of these amounts is expressed as a percentage of the corresponding amount in 1915. An index of construction costs and an index of building costs in the United States are included in Table 20 for comparison.

The cost of construction in the United States, as measured by the *Engineering News-Record* index, was, at its peak in June, 1920, only a little short of triple the average for 1915. In spite of the swift break after the peak was reached, the average for the year 1920 was 2.7 times the 1915 average. The low point of the decline that began in 1920 was reached in March, 1922, when the index was nearly 75 per cent above the 1915 level. There was substantial recovery in this index after March, 1922, and the average for that year was 88 per cent higher than

²⁶ Alster's study just cited shows (p. 37) that in the period 1919-1931 payments for land and damages constituted 28.5 per cent of city expenditures on public works (water system included). Since water pipes are commonly laid along city streets and alleys, segregation of land cost attributable to the water works would be arbitrary.

TABLE 19

**City Collections of Taxes and of Special Assessments and
Amounts Required from General Budget Funds for Amortization
of Long-Term Debt and for Interest, Pittsburgh, 1915-1932**

Year	Collections of Taxes and of Special Assessments*			Requirements from General Budget Funds for Debt and Interest		
	Taxes	Special Assessments	Total Taxes and Special Assessments	Amortization†	Net Interest Requirements‡	Total Amortization and Interest
1915	\$ 7,704,236	\$ 200,874	\$ 7,905,110	\$1,003,855	\$1,343,567	\$2,347,422
1916	9,069,788	237,105	9,306,893	**	1,260,265	**
1917	8,335,022	391,819	8,726,841	1,063,985	1,086,637	2,150,622
1918	10,303,707	504,772	10,808,479	1,112,923	1,025,120	2,138,043
1919	10,978,900	516,334	11,495,234	1,041,957	963,258	2,005,215
1920	13,320,696	418,489	13,739,185	1,223,845	1,146,897	2,370,742
1921	14,153,543	653,942	14,807,485	1,441,298	1,561,370	3,002,668
1922	13,785,040	714,722	14,499,762	1,587,467	1,821,632	3,409,099
1923	15,131,311	436,642	15,567,953	1,716,559	1,783,404	3,499,963
1924	15,320,626	544,881	15,865,507	1,750,560	1,748,164	3,498,724
1925	14,771,555	750,736	15,522,291	1,817,845	1,683,199	3,501,044
1926	16,873,949	742,967	17,616,916	1,681,560	1,797,054	3,478,614
1927	17,518,598	980,469	18,499,067	2,129,945	2,036,501	4,166,446
1928	20,073,984	1,042,249	21,116,233	2,266,602	2,415,003	4,681,605
1929	20,510,129	802,073	21,312,202	2,531,428	2,499,496	5,030,924
1930	21,686,437	983,958	22,670,395	2,486,560	2,473,110	4,959,670
1931	20,816,394	590,115	21,406,509	2,494,981	2,424,998	4,919,979
1932	17,768,038	328,705	18,096,743	2,482,800	2,443,469	4,926,269

*Delinquent collections included. See Table 8 and Table B-1.

†Amortization requirement on long-term debt exclusive of water debt. Retirement of short-term "current expense" bonds excluded in the following amounts: 1915, \$1,055,000; 1918, \$700,000; 1926, \$300,000.

‡Interest on both funded debt and floating debt except funded water debt. Most of the city's floating debt relates to damages and contracts on public works.

**Excess sinking fund reserves made it possible in 1916 to cancel a number of city bond issues held as sinking fund investments, and the reduction of water debt alone exceeded considerably the total appropriation from current funds for amortization.

the 1915 average. In each of the years 1923-1930 the annual index was decidedly more than double the 1915 index, the range in those years being from 119 per cent to 133 per cent above the 1915 average. In 1931 the average was still 96 per cent higher than in 1915. In 1932, when construction was nearly at a standstill throughout the country, this index averaged 70 per cent higher than the 1915 level.

The index of the cost of building computed by the Federal Reserve Bank of New York rose 135 per cent from 1915 to 1920. In 1921 it averaged 78 per cent higher than in 1915. In the years 1923-1930 the range of the annual index was from 90 per cent to 98 per cent above the 1915 level. The average in 1931 was the same as that in 1921. In 1932 this index averaged 61 per cent higher than in 1915.

To a considerable degree the city evaded the sharp rise in construction costs in the earlier years by the expedient of curtailing construction. But when construction and borrowing were resumed on a considerable scale, in 1919 and 1920, costs were very high; and, in spite of the jolt of the 1921 depression, they continued high throughout the rest of the period. Borrowing was heavy in 1921, when construction costs were severely shaken but were nevertheless far above the pre-war levels. It was heavy in 1922, and construction costs were rising after the spring of 1922. Bond issues were much curtailed in 1923 and in 1924, rose substantially in 1925, and were very large in 1926, 1927, and 1928. It should be understood that these are gross bond issues; but it has been shown in Chart 10 that the net

TABLE 20

Indexes of City Collections of Taxes and Special Assessments and of Requirements from General Budget Funds for Amortization of Long-Term Debt and for Interest, Pittsburgh, and of Cost of Construction and Building in the United States, 1915-1932*
(1915 Equals 100)

Year	Tax Collections	Special Assessments Collected	Total Taxes and Special Assessments	Amortization and Interest from General Revenue Funds		Cost of Construction U. S.†	Cost of Building U. S.‡
				Amortization	Interest		
1915	100.0	100.0	100.0	100.0	100.0	100	100
1916	117.8	118.0	117.7		93.8	140	116
1917	108.2	195.1	110.4	106.0	80.9	196	139
1918	133.8	251.3	136.7	110.9	76.3	204	153
1919	142.6	257.0	145.4	103.8	71.7	214	182
1920	173.0	208.3	173.8	121.9	85.4	271	235
1921	183.8	325.5	187.3	143.6	116.2	218	178
1922	179.0	355.8	183.4	158.1	135.6	188	176
1923	196.5	217.4	196.9	171.0	132.7	231	196
1924	199.0	271.3	200.7	174.4	130.1	233	194
1925	191.8	373.7	196.4	181.1	125.3	223	194
1926	219.1	369.9	222.9	167.5	133.8	225	196
1927	227.5	488.1	234.0	212.2	151.6	223	190
1928	260.7	518.9	267.1	225.8	179.7	223	192
1929	226.4	399.3	269.6	252.2	186.0	224	198
1930	281.6	489.8	286.8	247.7	184.1	219	190
1931	270.3	393.8	270.8	248.5	180.5	196	178
1932	230.8	163.6	228.9	247.3	181.9	170	161

*All indexes except the last two columns based on data shown and described in Table 19.

†Index of the Engineering News-Record, converted to 1915 base.

‡Index of the Federal Reserve Bank of New York, converted to 1915 base.

bonded debt increased very fast in the period 1919-1922, subsided somewhat for three years, and then leaped upward higher than ever in the late twenties. Public works bond issues far exceeded bond retirement and signally increased the amount required for amortization. The full effect of the high cost of construction, of course, is not shown in the tax totals in the twenties. On the other hand, even if the cost of construction should now settle to very low levels, the high costs of public works in the twenties would remain a part of the tax bill until the final maturities of the thirty-year bonds issued in the years 1920-1930 are retired in the years 1950-1960.

If high costs of construction are to be counted the main explanation of the increase in city debt and in the amount required for the retirement of bonds, the same factor must be blamed for the very considerable increase in the amount of interest paid on city debt. True, interest on bonds is payment for the use of credit, that is, cost of a given method of financing, not cost of construction. But that method has long been used in this city, and when additional borrowing was required because of higher construction costs, payment of more interest was the inevitable result. The amount of interest paid was increased also by the fact that city bonds issued in the years 1917-1921 bore a higher rate of interest than the city had been paying before 1917. Interest on floating debt relates mainly to public works and is included in Table 19. Interest on so-called "current expense" bonds, also included, probably is at least in part related to public works, for rising costs of public works and of public works financing undoubtedly helped to create the revenue deficiencies temporarily met by such issues.

(d) *Other Influences Affecting the Growth in the Amount of Real Estate Taxes*

Increases in the rates of pay for labor, in commodity prices, and in cost of public works have not been the only factors causing a growth in the amount of real estate tax required. Even if the kinds of service rendered had not changed, there was nevertheless a considerable increase in population in the city (1910 population, 533,905; 1920 population, 588,343; 1930 population,

669,817). Moreover, part of this increase was due to annexation of contiguous boroughs and townships. These annexations brought into the city budget a number of areas formerly covered in the budgets of adjoining boroughs and townships. According to the City Controller's reports, the area of the city in 1915 was about 42 square miles; at the end of 1930, the area was more than 53 square miles. In other words, the city had to provide services to many more people scattered over a much larger area. Taxes from the annexed areas, of course, were used in meeting the cost of increased services and are part of the total city tax collection. In part, therefore, the growth in total city taxes represents merely a combination of totals formerly separate.

In addition to the increases in quantity of service due to increased population and increased area, there were without doubt increases in the extent and in the complexity of some of the city services. Since 1915 several skyscrapers and some very large apartment houses have been built; and the number of buildings of the general type previously existent has been vastly increased. Probably the scatter of garages, automobile service stations, and parking places added to the fire hazard. Heavy motorized fire-fighting equipment was required and was bought. The city has provided more complete facilities for the protection of health and for the care of the poor than it had before the war. Its parks and playgrounds have been expanded. This city, like every other American city, has been deluged with automobiles and trucks since 1915. Many of the streets and bridges have been made over, and modern boulevards and bridges have been built. Traffic of today could not possibly move on the city highway system of 1915. Moreover, larger concentration of movable wealth, traffic congestion, high accident rates, and auto thefts—quite aside from any other factors—have required expansion in the city police force, the traffic problem alone requiring a large number. Undoubtedly both the qualitative improvement and the quantitative extension of city services help to explain the growth in taxes.

Some there are who claim that much of the tax growth is due to graft and waste. No doubt both graft and waste affect public business; but there is no way of estimating to what extent, if to any extent, the increase in the amount of taxes has been

due to these factors. There would be cause to marvel if a government conducted by human beings were not at least somewhat lacking in efficiency and integrity. Probably it cannot be demonstrated, however, that public business is less efficient than private business; and there is room to doubt whether it can be demonstrated that it is less honest, since most evidences of lack of integrity in government show at the same time lack of integrity in private business. Direct theft of public property is generally the only way an official can extract city resources without the cooperation of people with whom city dealings are conducted. But the major graft in American cities is not in outright embezzlement; it is in payroll padding and in irregularities on contracts for materials, supplies, equipment, and construction. Therefore, something approximating a millennial housecleaning, not only in public offices, but also in private offices, would be the only possible means of eliminating the graft on public treasuries. Meanwhile, part of the public money will continue to trickle through questionable channels; but graft rarely explains a very large part of the tax bill. Waste and incompetence no doubt are significant factors in the tax bill, but choice of public administrators on the basis of ability to round up the vote will not cure the evil.

Even though there is some measure of graft and inefficiency, it would be necessary to show a large increase in theft and waste since 1915 before it would be possible to consider these factors of much importance in the increase of city taxes. And when prices, population, area of the city, vastly improved streets and bridges, necessary expansion of fire and police force and equipment, and extended care of the ill and the poor are taken into account, there is reason to doubt that waste and such brigandage as may have been perpetrated by city officials and cooperative citizens would explain any very large part of the increase in real estate tax totals. Government of honesty and efficiency should be sought, of course. There can be no doubt that officials of integrity and competence, given moderate community protection against political hamstringing, can provide better service for less than poor service usually costs. But, at best, the governmental job of the city is big, costs a great deal of money, is growing, and will cost more money.

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CHAPTER 5

Delinquency of City Real Estate Taxes in Pittsburgh

Real estate tax delinquency occurs under any system of tax collection, just as slow pay and bad debts are found in the records of any business not operating on a strictly cash basis. Since the real estate tax is the major local revenue in the United States, local budgets and local tax rates throughout the country are affected by delinquency of this tax. Tax delinquency in Pittsburgh, therefore, is not here offered as a horrible example; it is presented merely as the local angle of a nation-wide phenomenon.

TABLE 21

Per Cent of Real Estate Tax Collections from Current Levy and
Per Cent from Levies of Prior Years—City of Pittsburgh,
Pittsburgh School District, and Allegheny County, 1915-1933
(Based on Tables 8, 10, and 11)

Year	City of Pittsburgh		City School District		Allegheny County	
	From Current Levy	From Levies of Prior Years	From Current Levy	From Levies of Prior Years	From Current Levy	From Levies of Prior Years
1915	91.1%	8.9%	90.7%	9.3%	83.5%	16.5%
1916	90.9	9.1	89.4	10.6	91.1	8.9
1917	91.2	8.8	91.8	8.2	87.0	13.0
1918	94.3	5.7	93.6	6.4	89.4	10.6
1919	93.1	6.9	93.1	6.9	87.6	12.4
1920	94.5	5.5	94.7	5.3	91.2	8.8
1921	95.3	4.7	96.0	4.0	89.4	10.6
1922	95.5	4.5	97.0	3.0	90.1	9.9
1923	94.4	5.6	95.5	4.5	88.1	11.9
1924	94.6	5.4	95.2	4.8	91.4	8.6
1925	94.0	6.0	93.1	6.9	91.5	8.5
1926	95.1	4.9	95.0	5.0	91.2	8.8
1927	94.7	5.3	94.7	5.3	91.2	8.8
1928	95.4	4.6	94.4	5.6	88.8	11.2
1929	94.1	5.9	94.0	6.0	88.5	11.5
1930	93.4	6.6	93.3	6.7	89.6	10.4
1931	93.8	.2	92.8	7.2	90.1	9.9
1932	91.4	8.6	91.7	8.3	92.4	7.6
1933	89.6	10.4	90.4	9.6	89.5	10.5

Annual Collections from Levies of Prior Years

In the period 1918-1931 city real estate taxes received from levies of prior years ranged from 4.5 per cent to 6.9 per cent of annual tax collections (Table 21). In 1932 and 1933 the percentage was considerably larger, as it was in the years 1915-1917. The importance to the city budget of the collection of delinquent taxes is thus too clear to ignore. Recognition of its importance and the initiation of more aggressive efforts to collect are said to help explain the large volume of delinquent taxes garnered in 1932 and 1933. The decided reduction of rates after 1930 may be assumed to have facilitated payment of old levies outstanding.

Collection Agencies

The Treasurer of the City of Pittsburgh is collector of city taxes, both current and delinquent. He is also the collector of taxes for the Pittsburgh school district. County taxes, before delinquency, are payable to the County Treasurer; after delinquency, they are payable to delinquent tax collectors.

TABLE 22
Delinquent City Taxes Outstanding in Pittsburgh
1915-1933*
 (Each Amount as of the End of the Year)

Year	Levies of Prior Years Unpaid	Current Year Levies Unpaid	Total Outstanding
1915	\$1,015,925	\$ 815,166	\$1,831,091
1916	922,306	723,260	1,715,566
1917	1,613,955	653,258	2,267,213
1918	1,002,917	815,628	1,818,545
1919	1,053,164	718,063	1,771,227
1920	1,033,595	767,265	1,800,860
1921	1,121,362	776,634	1,897,996
1922	1,260,934	882,483	2,143,417
1923	1,273,300	855,858	2,129,158
1924	1,117,944	949,061	2,067,005
1925	1,349,581	923,340	2,272,921
1926	1,426,023	1,195,389	2,621,412
1927	1,670,422	1,229,939	2,900,361
1928	1,966,838	1,640,370	3,607,208
1929	2,386,452	1,825,802	4,212,254
1930	2,696,804	2,082,720	4,779,524
1931	3,395,711	3,093,010	6,488,721
1932	4,937,682	4,193,886	9,131,568
1933	7,521,870	4,676,308	12,198,178

*Levies of prior years unpaid, 1915-1932, from *Annual Report of the City Controller*, respective years; current levies unpaid, 1915-1932, from Controller's report, 1932, p. 68 (amounts for 1930 and 1931 differ very slightly from amounts shown in the reports of those years); 1933 data from City Controller's office.

Dates of Delinquency and Penalties for Delinquency

City taxes on real estate in Pittsburgh may be paid wholly or in part at two per cent discount in January of the year for which they are levied. Taxes not paid in January are due on or before March 31 at face (no discount, no penalty) unless the taxpayer chooses the installment method of payment. Prior to 1933 the plan of quarterly payment was optional. Under emergency legislation in 1933, the method of payment in monthly installments was provided as an additional option.

TABLE 23
Delinquent School Taxes Outstanding
in Pittsburgh, 1915-1933*
 (Each Amount as of the End of the Year)

Year	Levies of Prior Years Unpaid	Current Year Levies Unpaid	Total Outstanding
1915	\$ 481,024	\$ 490,195	\$ 971,219
1916	463,250	375,737	838,987
1917	442,556	363,351	805,907
1918	476,250	368,093	844,343
1919	493,653	285,686	779,339
1920	475,401	285,858	761,259
1921	494,371	343,892	838,263
1922	568,979	539,096	1,108,075
1923	659,924	521,986	1,181,910
1924	719,376	563,732	1,283,108
1925	779,628	620,046	1,399,674
1926	869,128	695,670	1,564,798
1927	1,076,073	819,187	1,895,260
1928	1,255,610	948,625	2,204,235
1929	1,310,117	1,046,426	2,356,543
1930	1,649,878	1,499,306	3,149,184
1931	2,077,887	2,001,456	4,079,343
1932	3,065,703	2,993,604	6,059,307
1933	4,938,342	3,732,435	8,670,777

*1915-1932 from the annual reports of the Board of Public Education, Pittsburgh; 1933 data from the office of the Board.

City taxes unpaid on April 1 become delinquent unless the taxpayer has started payment on an installment basis. On the quarterly basis the successive installments of the tax unpaid become delinquent on April 1, May 1, August 1, and November 1. Under the monthly plan each monthly installment unpaid becomes delinquent on the first day of the month immediately succeeding that in which it is due. There is a flat penalty of two per cent and an interest charge of one-half of one per cent a month on delinquent city taxes.

TABLE 24

**Delinquent Real Estate Taxes of Allegheny County Outstanding
1915-1933***

(Each Amount as of the End of the Year)

Year	Levies of Prior Years Unpaid†	Current Year Levies Unpaid	Total Outstanding‡
1915	\$ 468,081	\$ 508,479	\$ 976,560
1916	511,559	701,551	1,213,110
1917	542,850	727,915	1,270,765
1918	647,954	837,575	1,485,529
1919	690,765	775,967	1,466,732
1920	667,013	1,100,254	1,767,267
1921	835,239	1,187,476	2,022,715
1922	1,115,916	1,268,143	2,384,059
1923	1,261,773	1,086,053	2,347,826
1924	1,313,257	1,170,156	2,483,413
1925	1,179,011	1,566,154	2,745,165
1926	1,342,043	1,997,348	3,339,391
1927	1,892,528	1,916,969	3,809,497
1928	1,964,019	2,334,855	4,298,874
1929	1,902,830	2,194,072	4,096,902
1930	1,936,478	2,531,696	4,468,174
1931	2,428,568	2,486,827	4,915,395
1932	3,156,502	3,585,551	6,742,053
1933	4,092,138	5,039,744	9,131,882

*1915-1932 from the annual reports of the Controller of Allegheny County (Pa.); 1933 data from the County Controller's office.

†Incomplete. No record could be found of the total unpaid balance of delinquent taxes for which liens exist. Therefore each prior year total includes only the delinquent taxes of three prior years. For further explanation, refer to the second paragraph under the sub-title "Amount and Growth of Delinquent Taxes," below.

Provisions regarding payment of school taxes in Pittsburgh are the same as those regarding city taxes. Provisions with reference to county taxes, however, are considerably different. Through the year 1932, county taxes were payable at five per cent discount in May, June, or July; at face in August; and with a penalty of ten per cent on or after September 1. Under legislation passed in 1933 the penalty was reduced to five per cent, but delinquent county taxes were made subject to an interest charge of one-half of one per cent per month.

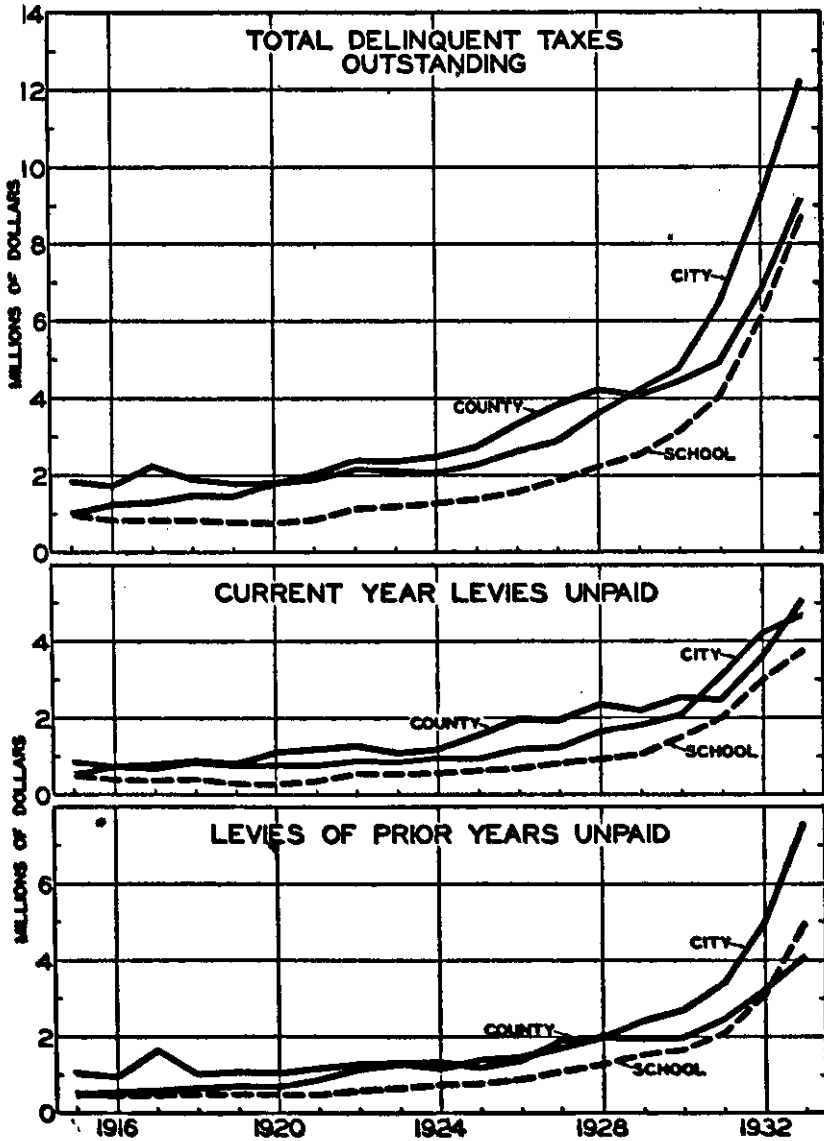
Amount and Growth of Delinquent City Taxes

The aggregate of delinquent city taxes outstanding was \$1,831,000 at the end of 1915 (Table 22). There was a moderate decrease in 1916; but in 1917 there was a marked increase, the aggregate at the end of that year being \$2,267,000. By the end of 1919 the total was down to \$1,771,000. Delinquent taxes increased again in the years 1920-1922 but declined somewhat in 1923 and 1924.

CHART 13

Delinquent Taxes Outstanding—City of Pittsburgh, Pittsburgh School District, and Allegheny County, 1915-1933*

(Data in Tables 22, 23, and 24)



Caution: County data incomplete. Refer to second footnote under Table 24.

In the period 1925-1933 the aggregate of outstanding delinquent taxes increased every year. This increase was definitely related to the slump in the real estate market. In each of those years, the number of deeds registered in Pittsburgh declined, and the number of real estate mortgage foreclosures increased. The number of residential building permits declined in each of those years except 1927, and the estimated value of the residential construction represented by these permits declined every year after 1925. Thus, the rise in tax delinquency reflected the

TABLE 25

**Total New Delinquency of City Real Estate Taxes in Pittsburgh
1927-1932***

Year	Total City Levy	New Delinquent Taxes					
		Total		Paid Before End of Year		Unpaid at End of Year	
		Amount	Per Cent of Levy	Amount	Per Cent of New Delinq.	Amount	Per Cent of New Delinq.
1927	\$18,093,561	\$2,108,208	11.7	\$ 878,269	41.7	\$1,229,939	58.3
1928	21,096,811	2,534,417	12.0	894,047	35.3	1,640,370	64.7
1929	21,431,432	2,711,091	12.7	885,289	32.7	1,825,802	67.4
1930	22,648,582	3,312,960	14.6	1,230,101	37.1	2,082,769	62.9
1931	22,954,596	4,172,865	18.2	1,079,847	25.9	3,093,018	74.1
1932	20,651,587	5,298,943	25.7	1,105,057	20.9	4,193,886	79.1
Six-Yr. Average	\$21,146,095	\$3,356,414	15.9	\$1,012,117	30.2	\$2,344,297	69.8

*Amount of levy and amount unpaid at end of year from *Annual Report of the City Controller, Pittsburgh, 1932*, p. 68. Delinquent taxes paid before end of year from unpublished data furnished by the Pennsylvania Department of Internal Affairs, Division of Assessment and Taxes.

increasing tightness of the real estate market after the mid-twenties and was, of course, increased tremendously by the industrial crash after 1929. The amount of delinquent school taxes, 1915-1933, is shown in Table 23. The total amount of delinquent county real estate taxes could not be determined from available data. Taxes on the "lien docket," i. e., more than three years delinquent, are not shown in the central finance records of the county. New delinquent county taxes and the total unpaid from levies of three prior years are shown in Table 24 for each of the years 1915-1933. Delinquent taxes of the city, those of the school district, and the incomplete data for the county are plotted

in Chart 13. The enormous increase since 1929 is seen at once. But it is equally apparent that there was a large volume of delinquent taxes before the depression came on.

Part of the city taxes that become delinquent are paid before the end of the year. This amount is not shown in the published reports of the City Controller. It is shown for the years 1927-1932 in data furnished by the Pennsylvania Department of Internal Affairs. In Table 25 the amount becoming delinquent but paid before the end of the year is combined with the amount of current levy remaining delinquent at the end of the year, the two items constituting the total that became delinquent. The amount that became delinquent in 1927 was 11.7 per cent of the levy for that year. The percentage was 25.7 in 1932, having increased in each of the years 1928-1932. In the six years 1927-1932 the amount of taxes that became delinquent averaged 15.9 per cent of the levy. In the same period the amount of delinquent taxes paid within the year in which they were levied averaged 30.2 per cent of the total amount becoming delinquent.

TABLE 26
City Tax Levy, Discounts, and Exonerations,
Pittsburgh, 1915-1933*

Year	Total Levy	Discounts		Exonerations	Total Discounts and Exonerations	
		Amount	Per Cent of Levy		Amount	Per Cent of Levy
1915	\$ 7,960,231	\$126,374	1.59%	\$ 1,446	\$127,820	1.61%
1916	9,100,025	125,715	1.38	10,804	136,519	1.50
1917	8,386,275	122,211	1.46	3,244	127,455	1.52
1918	10,695,156	161,540	1.51	5,284	166,824	1.56
1919	11,120,452	167,777	1.51	13,990	181,767	1.63
1920	13,572,804	198,148	1.46	19,737	217,885	1.61
1921	14,514,872	206,857	1.43	45,078	251,935	1.74
1922	14,342,481	194,790	1.36	95,520	290,310	2.02
1923	15,420,822	208,775	1.35	70,164	278,939	1.81
1924	15,668,796	206,566	1.32	24,684	231,250	1.48
1925	13,033,990	202,480	1.35	17,415	219,895	1.66
1926	17,510,953	233,242	1.33	33,974	267,216	1.53
1927	18,093,561	232,759	1.29	33,918	266,677	1.47
1928	21,096,811	261,432	1.24	52,004	313,436	1.49
1929	21,431,432	263,044	1.23	47,237	310,281	1.45
1930	22,648,582	263,586	1.16	55,653	319,239	1.41
1931	22,954,596	251,877	1.10	89,001	340,878	1.49
1932	20,651,587	202,041	0.98	23,587	225,628	1.09
1933	18,525,924	162,193	0.88	14,626	176,819	0.95

*Data from *Annual Report of the City Controller, Pittsburgh, 1932*, p. 68; 1933 data from City Controller's office.

TABLE 27

Per Cent of Net Levy Collected and Per Cent Unpaid in the Year of Levy—City of Pittsburgh, Pittsburgh School District, and Allegheny County, 1915-1933*

Year	City of Pittsburgh		Pittsburgh School District		Allegheny County†	
	Per Cent Collected	Per Cent Unpaid	Per Cent Collected	Per Cent Unpaid	Per Cent Collected	Per Cent Unpaid
1915	89.6%	10.4%	89.2%	10.8%	80.9%	19.1%
1916	91.9	8.1	91.9	8.1	82.0	18.0
1917	92.1	7.9	92.2	7.8	83.0	17.0
1918	92.3	7.7	92.8	7.2	83.2	16.8
1919	93.4	6.6	94.4	5.6	85.0	15.0
1920	94.3	5.7	95.2	4.8	84.2	15.8
1921	94.6	5.4	95.0	5.0	83.5	16.5
1922	93.7	6.3	94.5	5.5	83.0	17.0
1923	94.3	5.7	95.0	5.0	84.3	15.7
1924	93.9	6.1	94.8	5.2	82.5	17.5
1925	93.8	6.2	94.5	5.5	85.0	15.0
1926	93.1	6.9	93.9	6.1	83.8	16.2
1927	93.1	6.9	93.1	6.9	84.9	15.1
1928	92.1	7.9	92.4	7.6	82.4	17.6
1929	91.4	8.6	91.9	8.1	83.7	16.3
1930	90.7	9.3	88.9	11.1	83.6	16.4
1931	86.3	13.7	85.7	14.3	83.5	16.5
1932	79.5	20.5	78.7	21.3	75.6	24.4
1933	74.5	25.5	73.5	26.5	67.5	32.5

*Net levy is total levy less adjustments by discount and exoneration in the year of levy. Net levy for the city derived from data in Table 26; for the school district it is the sum of collections from current levy (Table 10) and current levy unpaid at the end of the year (Table 24); for the county it is the sum of collections from current levy (Table 11) and current levy unpaid at the end of the year (Table 24).

†Caution: The magnitude of the county percentages should not be compared with the magnitude of the percentages of the city or of those of the school district. The collection year, as marked by penalty dates, is different.

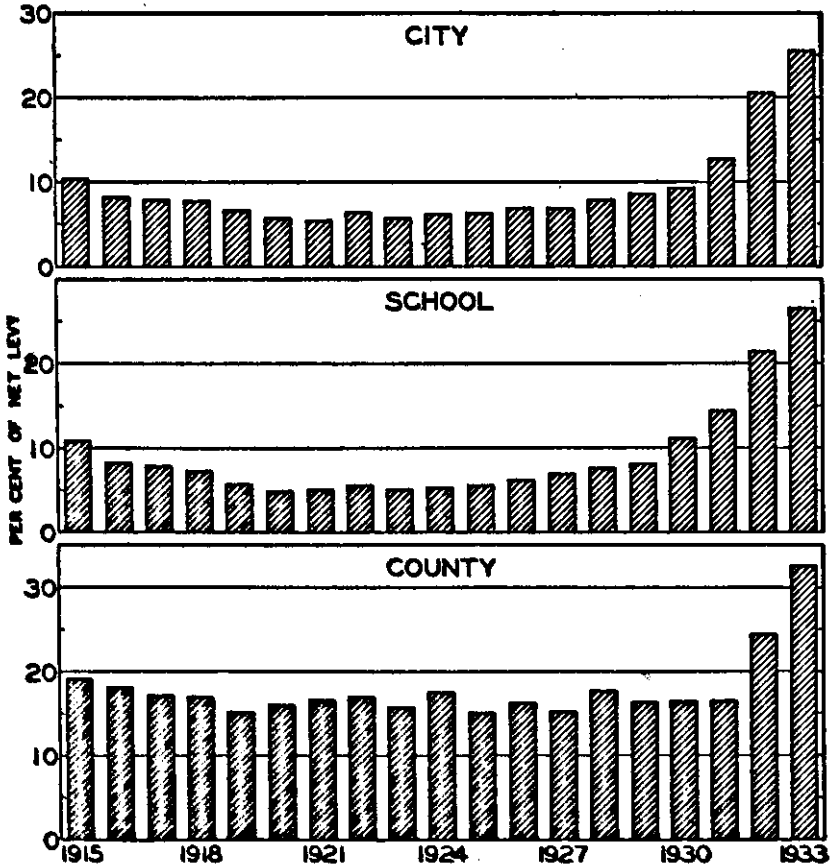
It will be observed, however, that whereas 41.7 per cent of new delinquent taxes in 1927 were paid before the end of that year, only 20.9 per cent of the 1932 delinquent taxes were paid before the end of 1932. Tax delinquency was increasing, and delay of payment was becoming longer. The same thing was true of school taxes and of county taxes.

New city taxes paid in January are discounted 2 per cent, and the payments in January ordinarily are large. Consequently, the city never expects to collect the face amount of all tax bills. If there were no delinquency and no reduction of levy except by discount for early payment, the amount of current tax collected would be less than that levied by 2 per cent of the face amount of all tax bills paid in January. Discount, however, is a substantial amount, and there is always some reduction by exoneration. In Table 26, the amount of discounts and that of

exonerations are shown for the years 1915-1933. Discounts and the total of the two adjustment items are expressed as percentages of the gross levy. It will be noted that roughly one per cent or two per cent of the original levy is at the outset not destined for collection. For this reason the "net levy," that is, total levy less discounts and exonerations, is more accurate so far as its budgetary meaning is concerned.

CHART 14

Per Cent of Net Tax Levy Unpaid at the End of the Year—City of Pittsburgh, Pittsburgh School District, and Allegheny County 1915-1933*
(Data in Table 27)



*Caution: The magnitude of the county percentages should not be compared with the magnitude of the percentages of the city or of those of the school district. The collection year, as marked by penalty dates, is different.

It may be observed in Table 26 that discounts were a smaller part of total levy in the later years. This means that a smaller part of the levy was paid in January. In Table 27, collections of current levy and current levy remaining unpaid at the end of the year are expressed as per cent of net levy. In the period 1915-1921 the percentage of net levy remaining unpaid at the end of the year declined, that is, the percentage collected increased consistently. Collections faltered somewhat in 1922 but recovered a bit in 1923. After 1923, with only slight interruption in 1927, there was a consistent increase in the percentage of net levy unpaid in the year in which the levy was made. Since 1929 the increase has been very sharp. Corresponding data for the school district and for the county are shown in Table 27. Delinquent taxes of those districts showed practically the same general tendency as did delinquent taxes of the city, as may be seen in Chart 14.

Budgetary Significance of Delinquency in City Real Estate Taxes

The budgetary significance of delinquency in real estate taxes will be more easily understood after a glance at the steps in the preparation of the budget.

City department heads are called upon in the latter part of each year to estimate their needs for the succeeding year. The departmental estimates are submitted to the Mayor. These estimates, after being modified to suit the Mayor's judgment (or the judgment of those permitted to act for the Mayor), are submitted to the City Council as the proposed expenditure budget. The City Council makes whatever changes it considers necessary and, having decided upon the amounts to be authorized for expenditure, enacts appropriation ordinances to provide for the expenditures approved. At the same time it is the duty of Council to provide revenue to cover the authorized expenditures, except to the extent that payment is temporarily postponed by borrowing. Part of the revenue, of course, is expected to be available under continuing ordinances. But, as we have seen in Chapter 3, the real estate tax is the predominant general budget revenue.

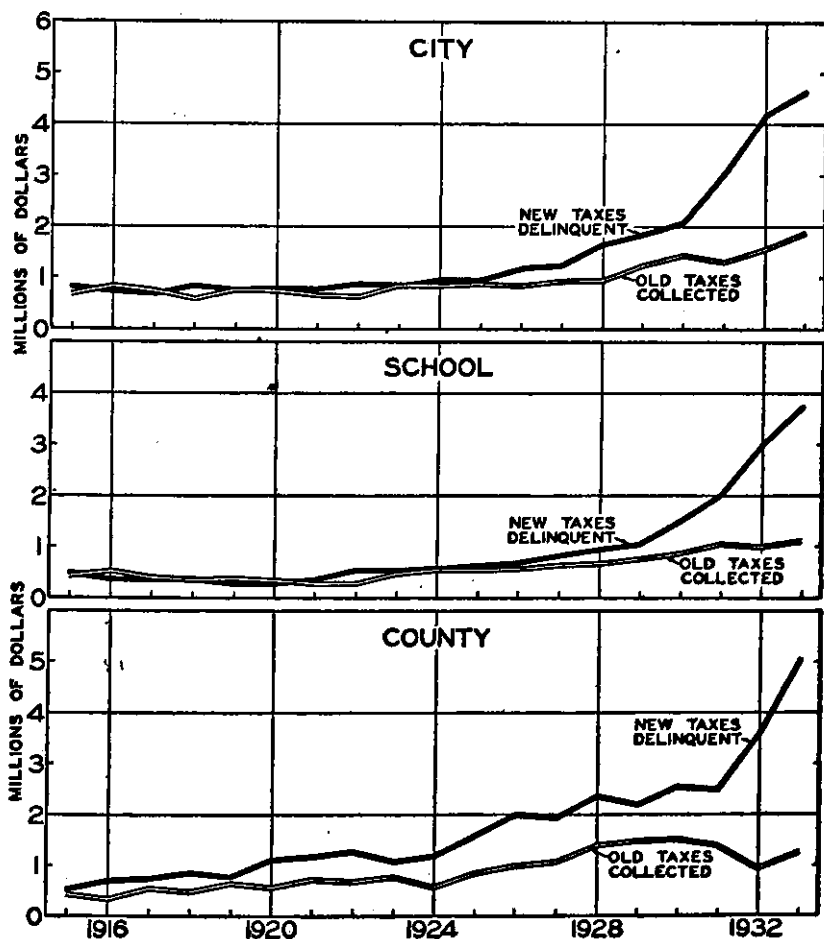
Once the total revenue requirement for the budget is fixed, the amount required from the real estate tax is simply the difference between the total revenue required and the amount estimated to be derived from minor sources. The estimated amount of real estate tax revenue required is thus increased by any expected failure of other revenue. Moreover, the amount levied must be larger than the amount required. Allowance must be made for the two per cent discount on tax bills paid in January, for at least some reduction of original levy by exoneration, and for any probable net increase in delinquent taxes.

We have seen (Table 21) that an amount usually near 5 per cent or 6 per cent of real estate tax collections is from levies made in years preceding that in which they are collected. If the amount of collections from old delinquent taxes equalled the amount of new taxes becoming delinquent, the tax rate would differ little from the rate that would be required if there were neither old taxes outstanding nor new taxes becoming delinquent. (There would presumably be a slight difference because of the additional administrative cost arising from delinquency.) In a growing community, however, except in depression periods, the amount of new levy each year is likely to exceed the amount in preceding years. Therefore, if there were no change in the ratio of new delinquent taxes to new levy and no acceleration in the collection of delinquent taxes, the amount of new unpaid taxes would be likely to exceed collection of old delinquent taxes. Very commonly, therefore, the tax rate is set high enough to allow for a net increase of delinquent taxes. New delinquent taxes and collections of old delinquent taxes are plotted for comparison in Chart 15. In recent years, there has been a decided increase in the excess of new delinquent taxes over the collection of old delinquent taxes, the city, the school district, and the county showing the same general tendency.

It has been shown in Table 27 that an increasing portion of the levy remained unpaid at the end of the year. In other words, delinquent taxes increased faster in recent years than did the (net) levy. Meanwhile, the same economic conditions that made it difficult to collect current levies also made it difficult to collect old delinquent taxes. As a consequence there was a net increase in delinquent taxes.

CHART 15

New Delinquent Taxes and Collections of Old Delinquent Taxes—
City of Pittsburgh, Pittsburgh School District,
and Allegheny County, 1915-1933*



*"New Taxes Delinquent" same as "Current Year Levies Unpaid" in Tables 22, 23, and 24.
"Old Taxes Collected" same as "From Levies of Prior Years" in Tables 8, 10, and 11.

Even a small net rise in delinquency, if not carefully regarded as a budget factor, will sooner or later wipe out a surplus and lead to a deficit; a large increase is a budget shock of extreme violence. If it is foreseen and provided for in advance, the shock occurs in the period of budget-making. If it is not

foreseen and provided for in advance, the enacted budget is undetermined, and the resultant shock may come either in the process of hasty, often ill-advised, retrenchment during the year or in the realization of a deficit at the end of the year.

When the budget is being prepared, allowance for increased delinquency may be made either by cutting expenditures or by loading the tax rate sufficiently to produce the necessary revenue in spite of delinquency. Both cuts in proposed expenditures and loading of the tax rate may be employed. At any rate, a wider spread must be introduced between gross tax levy and expected tax revenue.

Let us suppose that in considering the budget for 1932 the City Council could have foreseen that new delinquent taxes in 1932 would exceed the collections from old delinquent taxes by \$2,658,000. To simplify the problem, let us assume that treasury balances available for new appropriations were expected to be the same on January 1, 1932 as on January 1, 1931; that minor revenues were expected to yield the same in 1932 as in 1931; and that there was to be no change in the assessed value of taxable real estate.

Under these conditions, if the City Council had wished to provide the same amount of cash from the real estate tax in 1932 that had been received in 1931, it would have had to levy about \$3,000,000 more for 1932 than it levied for 1931 (the additional levy also being subject to discounts, exonerations, and delinquency). With no change in assessed values, an increase of more than 13 per cent in rates would have been required under this method of balancing the budget. The Council, however, appears to have assumed that the community was in no mood to accept an increase in tax rates, and this plan was not followed. Rates were reduced (and, in spite of budget trimming, a substantial deficit was incurred).

The other method was to cut the expenditure budget. Let us suppose that the Mayor had recommended to Council an appropriation total, from revenue funds, equal to the aggregate of city general budget revenue in 1931—about \$23,453,000

(Table 12). Faced with a reduction of \$2,658,000 in budget resources, because of increasing delinquency, the City Council would have had to cut the proposed expenditure total by more than 11 per cent. Not all budget items, however, were subject to a cut. Allowing for debt service (both amortization and interest), pension funds, and special purpose trust funds (on the basis of actual payments for these items in 1932), the cutting would have had to be done in less than \$16,000,000 of the proposed budget. The total of reducible items would have had to be lowered by about one-sixth, not to permit a reduction in tax rates but to prevent the necessity of increasing tax rates or incurring a deficit.

It will be seen at once that to raise tax rates to offset delinquency is to compel those who do pay to make up the deficiency for those who cannot or will not pay. To offset an increase of delinquent taxes by cutting the budget may mean to some extent increased efficiency; but mainly it means curtailment of protection and services. It means less new public works; less maintenance of existing public properties; fewer police to protect public and private property and to guard against accident and violence; fewer firemen and possibly badly maintained fire equipment to guard against conflagration; less of the inspectional services aimed at safety and health; less medical and nursing force and more limited medical supplies and facilities to shield the community against sickness. And the significant point here is that city protection and services are curtailed for those who do pay as well as for those who do not pay.

To summarize the budgetary significance of tax delinquency: In the growing community with rising levies, the new taxes becoming delinquent are likely to exceed collection from old levies, even if there be no increase in the ratio of new delinquency to new levy; therefore, rates must commonly be high enough to allow for a net increase of delinquency. In times of depression, delinquency increases very fast, but rate adjustments to allow for this increase are difficult or impossible. In depression, therefore, delinquency may prevent or severely limit reduction in rates, and may, even with no reduction in rates, necessitate severe cuts in the budget, with consequent curtailment of services for those who pay promptly as well as for those who do not.

The Public Treasury as Junior Claimant During Depressions

Tax delinquency is always prevalent, but it grows to major proportions in depression periods. It seems highly probable that when times are hard the governmental treasury is placed in the position of a creditor with junior claim. The bank, the grocery, the department store, the automobile finance company, and other private creditors are—and, in business terms, must be—on the alert to enforce their claims. Meanwhile, tax collectors encounter a stout resistance. The tax may be postponed for a long period, if necessary—with penalty, to be sure, but without a loss of the property. It seems altogether likely, therefore, that in depression periods private claims are settled in preference to public claims. This may be socially good, but at least it should be recognized that lax tax collection policy in hard times is a means of supporting private credit at the expense of the public treasury, or, to phrase it differently, a means of supporting the credit of some people at the expense of others.

Tax Delinquency and Tax Collection Policy

No one in his social senses would advocate a harsh tax policy that would result in summarily dispossessing people of their homes or of real estate necessary for essential businesses. But at least it should be understood that real estate held without tax payment is in a very true sense held at public expense. The man in arrears for taxes does not hesitate to call the fire department if his home is burning; and the fire department must be maintained to protect his property, regardless of whether his taxes are paid or not. Likewise, he calls the police if marauders invade his premises or do him violence, and the police do not—cannot—stop to ask whether the petitioner has paid his taxes. He still drives over the very costly city streets and bridges; he does not hesitate to call the health department to remedy unsanitary conditions or to quarantine neighbors having dangerous communicable diseases; his garbage and other refuse are carted away, no question being asked about his tax receipt. The grocery and the department store may find it necessary to close his accounts, but the city cannot possibly cut off, in any such way, the services of a

citizen whose taxes are unpaid. Indeed, when his income and his private credit are both exhausted, the city may have to feed, clothe, and house him.

The very preservation of life, property, and social order hang upon the maintenance of essential governmental functions. Somebody must pay the bill. The tax rate of those who pay taxes promptly is loaded and city services to them are curtailed, because of the failure of others to pay. Thus, he who does not pay promptly is drawing on the purses of others. If he is too poor to pay, he is for the time a burden on others. If he can pay but will not, he is needlessly a public charge and is, therefore, essentially a "sponger." Consequently, general laxity in tax collection is uneconomic and inequitable.

CHAPTER 6

Summary

Reduction of the tax on real estate is usually the point of emphasis in agitation for retrenchment in expenditures of local government, because far the larger part of local governmental revenue in this country is derived from the real estate tax. In Pittsburgh, as well as in other large cities, this close relationship between expenditures and the real estate tax seems likely to continue. No way has been found to avoid a complex and costly government in a big city; and, in American experience, no way has been found to finance city governments without primary dependence on the real estate tax.

City Real Estate Tax Rates in Pittsburgh

Three local governmental units—the city, the school district, and the county—levy taxes on real estate in Pittsburgh. The tax for city purposes is levied under the graded tax system, the rate on buildings being half the rate on land. This rate differentiation was established by stages in the period 1914-1925. The school rate and the county rate are uniform on land and buildings.

In 1913, the last year of the uniform rate for city purposes, the city levied 8.9 mills per dollar on the assessed valuation of land and buildings. The highest building rate reached was the 14-mill levy in 1921. The highest land rate was that in 1930, when a 26-mill rate was levied (Table 1). In 1925, the first year in which the full differential in rates was applied, the land rate was 119 per cent above the 1913 rate, and the building rate was less than 10 per cent above the 1913 rate. In 1930, when the land rate, at its highest point, exceeded the last flat rate by 192 per cent, the building rate was only 46 per cent above the 1913 rate. Thus, under the graded tax system, the land rate was increased much more than the building rate. On the other hand, the rate reduction since 1930, in mills, has been twice as great on land as on buildings. In other words, in terms of actual mills

of difference under the Pittsburgh graded tax, improved land was favored in the period of rising tax rates, but vacant land is favored in a period of falling tax rates.

For rough comparison of the growth of city taxes with the growth of school taxes and county taxes, a weighted average of city rates may be used. In the computation of such average, the city land rate is weighted according to land valuation; the building rate, according to building valuation (Table 2). Such average, however, must be used with caution and only as a city average. Among specific parcels, the actual average varies widely because of varying degrees of improvement (Chart 3).

The weighted average of city rates and the rates levied by the county and the school district reached their highest level in 1930. In that year, the weighted average city rate exceeded the last flat rate (that of 1913) by 10.535 mills. The school rate in 1930 exceeded the 1913 school rate by 5.75 mills. The county rate (not strictly comparable with the other local rates, because of differences in assessed valuation) rose 5.625 mills in that period. The greatest absolute growth thus occurred in the average city rate. The county rate, however, showed the greatest relative growth.

From 1930 to 1933, the city land rate was reduced 5.4 mills; the building rate, 2.7 mills. The weighted average city rate fell 4.15 mills. The city rates in 1934 remain the same as those in 1933. The school rate remained unchanged in 1930-1933 but was reduced one-half of a mill in 1934. The county rate was the same in 1931 and 1932 as in 1930; it was lowered one-eighth of a mill in 1933 and a like fraction in 1934.

Tax rates, however, mean little unless they are interpreted in the light of the relationship of assessed valuation to fair value. If assessed valuation is below fair value, the tax rate overstates tax burden. If assessed valuation exceeds fair value, the tax rate understates tax burden. It follows, of course, that changes in tax rates mean little except when changes in the relationship of assessed valuation to fair value are taken into account. If assessments are kept in the same proportion to fair value, a change in rate measures the change in burden. A change in tax burden, however, may occur without any change in rate. It will be increased by a rise of the ratio of assessed valuation to fair

value; it will be lowered by a fall in the ratio of assessed valuation to fair value; and a rise or a fall in this ratio may occur with or without change in assessed valuation.

In Pittsburgh the land tax and the building tax are at different rates. The meaning of the rates, therefore, depends upon both the ratio of assessed land valuation to fair land value and the ratio of assessed building valuation to fair building value. Consequently, changes in the two rates could be properly interpreted only in the light of the assessment ratio for land and the assessment ratio for building.

Assessed Valuation of Taxable Real Estate

City land valuation in 1933 exceeded that in 1914 by approximately 22 per cent (Table 4). The total city building valuation in 1933 exceeded the 1914 building valuation by nearly 122 per cent. In 1931, at the highest point ever reached, city land valuation exceeded that of 1914 by \$110 million; in 1931 building valuation exceeded the 1914 building valuation by \$335 million (Table 3). Land valuation was reduced a shade in 1932 and in 1933 and was reduced more in 1934; building valuation was increased somewhat in 1932 and 1933 but was reduced in 1934.

In 1914 land valuation constituted 63 per cent of total valuation, and building valuation constituted 37 per cent. In 1933 land valuation constituted 48.4 per cent of the total and building 51.6 per cent. The importance of building valuation in the total rose almost consistently from 1914 to 1933 (Table 5).

There seems to be strong probability that at least in part the graded tax differential in Pittsburgh has been capitalized and that the resulting higher building valuation has at least in part offset the favorable rate differential on buildings.

The increase in total building valuation, 1914-1932, was about equal to the value of taxable new buildings (estimated from the record of building permits and adjusted for price change). After allowance for depreciation, obsolescence, and actual destruction or razing of old buildings standing at the beginning of 1914 and of new buildings erected during the period, it seems impossible to account for the increase in building valuation except in terms of a writeup of building valuation in excess of the writeup that might be attributable to change in the level of the cost of building.

This increase does not mean necessarily that buildings were raised to a higher percentage of fair market value. Business, rents, building costs, and real estate activity were such as to indicate the likelihood of an upward market revaluation of real estate for at least a number of years after the war, if not earlier. At the very time that conditions indicated higher market valuation of improved real estate, establishment of the graded tax, with a differential against land, must be assumed to have retarded the growth in the investment value of land, if not actually to have depressed it. Thus it appears that the market conditions were such as to lead to a rather decided upward revision of building values in the market, and it must be assumed that assessors have appreciable regard for the market.

The data on assessed valuations indicate that building valuations actually were raised more than new building and change in the cost of building would have raised them. It appears likely, therefore, that at least in part the tax differential has been capitalized in tax valuations. To whatever extent this has occurred, the rate differential has ceased to constitute a current differential in tax burden. Indeed, it seems to be a fallacy in the graded tax to aim at a differential income tax on the basis of property value.

Yield and Budgetary Importance of the Real Estate Tax in Pittsburgh

The largest yield of the city real estate tax, including delinquent taxes, was \$21,686,000, in 1930. In 1933 the total was \$15,261,000. City taxes in 1930 were about one-half of the total real estate taxes collected in Pittsburgh; they were considerably less than half in 1933.

Of the total city taxes received, 6.6 per cent in 1930 and 8.6 per cent in 1932 consisted of delinquent taxes from prior years. In the period 1915-1932 annual collections from delinquent taxes of prior years ranged between 4.5 per cent and 9.1 per cent of the total received. In 1933, the percentage was 10.4.

Of the annual collections from the current levy in 1930, 67 per cent was from the tax on land and 33 per cent from the tax on buildings. During the period in which the graded tax was being established, the faster rise of the land rate caused an increase in the ratio of land tax collections to total collections. Since 1925, the rates being in fixed relation to each other, the

larger increase in building valuation has increased the percentage attributable to the building tax.

In 1932 the real estate tax produced 75.6 per cent of all city revenues, inclusive of water service revenue; of the total except water service receipts, the real estate tax produced 86.4 per cent. In the school budget, the real estate tax has approximately the same predominant position that it has in the city budget. About two-thirds of county revenues are from this tax.

For each city having a population of 300,000 or more, the Bureau of the Census publishes a consolidated local revenue total. The total is comprised of city revenue, school district revenue, revenues of other taxing districts within the city (where there are such other districts), and a part of the revenues of the county and of any special district lying only partly within the city, allocated in proportion to real estate valuation. Of such consolidated total for Pittsburgh, exclusive of revenues from public service enterprises, what is called the "general property tax" produced 84.9 per cent in 1919 and 86.0 per cent in 1930 (Table 14). In both these years the Pittsburgh percentage was the highest among cities for which consolidated data were published. In 1930 the allocated portion of the county personal property tax was about 3 per cent of the total. Therefore, the real estate tax alone that year was 83 per cent of the total. This per cent from the real estate tax alone was higher than the general property tax percentages of the other large cities, although the latter, in most instances, cover more or less personal property tax also. In the whole period 1915-1930, the importance of the general property tax (mainly real estate tax) was consistently higher in the consolidated total for Pittsburgh than was its average (median) importance in the local totals for the other large cities.

Growth of the City Real Estate Tax in Pittsburgh

In 1915, city real estate tax receipts totaled \$7,704,236; in 1930 the largest annual total, \$21,686,437 was collected. In the whole period 1915-1930, with occasional interruptions, the tendency was definitely upward. The school tax total increased to 1931, though the dollar increase was much less than that of the city tax. City tax receipts declined moderately in 1931 and sharply in 1932 and 1933. The school tax declined in 1932 and

1933. From 1915 to 1932, the percentage increase in city tax and that in the school tax were about the same. Both units, of course, were expanded by annexation. The rate of increase in the county tax was much greater than in that of the city or in that of the school district (Chart 9).

A great deal of the rise in the tax total was due to changes in the cost of what the governmental units had to buy—labor, commodities, and contractual services.

Available indexes show that dollar rates of compensation to labor rose very sharply from 1915 to 1920 and that wage and salary rates throughout the twenties were decidedly above the corresponding rates in 1915. Since the cost of living rose very much, increasing rates of dollar pay did not by any means constitute like increases in real earning (Tables 16 and 17 and Chart 11). But they did constitute very great increases in dollar costs to the city, and the rise of wage rates and salary rates aids substantially in explaining the growth of taxes.

Prices for commodities skyrocketed during the war years and in the years immediately following the war, and the general level of prices remained throughout the twenties considerably higher than the 1915 level (Table 18). In view of the large quantity and the wide variety of commodities purchased by the city, these marked changes in price levels had much to do with the growth of taxes.

Costs of construction rose to dizzy heights from 1915 to 1920 and stood throughout the twenties far above the 1915 level (Table 20). Building was severely curtailed during the war but was resumed on a considerable scale soon after the war—when costs were still soaring. A large volume of public works was constructed during the twenties. The method of financing city public works—mainly by borrowing—prevents the full effects of high-cost public works from entering the tax budget immediately. But the increase of bonded debt leads to enlargement of debt service requirements, which are carried in the tax budget. The changed levels of construction costs, therefore, must be assumed to have had material influence in bringing about the growth of taxes.

Because of the higher unit price of what the city had to buy, more taxes would have been required in recent years than

before the war to maintain the same services that were maintained before the war. But city population increased about 19 per cent between 1915 and 1930. The area of the city increased more than 25 per cent. In other words, the city had to provide service for many more people over a much larger area. Through the incorporation of suburban areas, tax totals formerly separate were brought into the Pittsburgh totals, a part of the increase being due to this factor.

In addition to higher cost per unit of old services and a larger volume of city service required merely on account of larger population and larger area, there is no doubt that the services became more complex. For example, with the development of taller office buildings, larger apartment houses, and greater fire hazards from automobiles and gasoline, a more adequate fire-fighting department was necessary. The city moved from simpler horse-drawn equipment to heavier and more powerful motorized equipment. Like all other American cities, Pittsburgh has been faced with an enormous growth in the number and the use of automobiles and trucks. It was not enough, therefore, to keep up the old streets and old bridges and to extend simple road structures into the newer city area. It was necessary to build modern roads and bridges to carry modern traffic. Meanwhile, larger concentration of movable wealth, traffic congestion, automobile accident rates, and automobile thefts—aside from any other factors—would be assumed to have required an increase in police force greater than the mere increase of the population. Furthermore, the city has provided more adequate and more extensive facilities and staff for the care of the sick and the poor and for the control of communicable diseases.

It is commonly alleged that graft and inefficiency loom large in the increase of taxes. No doubt graft and inefficiency affect public offices, but probably it cannot be demonstrated that public business is less efficient than private business or that governments have been increasingly lacking in efficiency. Probably it cannot be demonstrated that governmental business is less honestly conducted than private business. In fact, most known governmental graft shows at the same time lack of integrity in private business and in citizenship, in that the outstanding graft in government has to do with payroll padding and irregularities

on contracts for supplies, equipment, and construction. At any rate, it would be necessary to show a tremendous increase in graft and inefficiency since 1915 before it would be possible to consider these factors of much importance in the increase of taxes.

Delinquency of City Real Estate Taxes in Pittsburgh

The total amount of delinquent city taxes outstanding has increased every year since 1924. At the end of 1924, the aggregate was \$2,067,000; at the end of 1929, it was \$4,212,000; at the end of 1933, the total was \$12,198,000 (Table 22). Both the increasing delinquency of current levies and the increasing difficulty of collecting old delinquent taxes have resulted in recent years in a marked growth in the net increase of delinquent taxes, i.e., the excess of new delinquent taxes over collections of old delinquent taxes.

Under any system of tax collection, there is some delinquency. Indeed, there seems to be a tendency of taxpayers to treat the local governmental treasury as a junior creditor, claims such as those of the bank, the merchant, and the automobile finance company being placed first. Tax rates, therefore, are loaded for failure to collect. In a period of substantial net increase in delinquency, an increasing part of the tax rate must be considered as allowance for delinquent taxes. Otherwise, a revenue deficiency is likely to result.

Although the local government ordinarily appears to be treated as junior creditor, being thus placed in especial stress in hard times, local governments must maintain essential governmental functions—police protection, fire protection, protection against at least the major threats of contagion, maintenance of highways and sewers, etc. Moreover, when industry and commerce slow down a great deal and employment declines, the governmental unit may have to feed, clothe, and house labor until business resumes. The bill for public services has to be paid, and those who do not pay are drawing on the purses of others.

APPENDICES

APPENDIX A

Non-Revenue Receipts

City revenue data used in this study were compiled from the annual reports of the City Controller. Those at all familiar with the Controller's reports will realize at once that reported "receipts" amount to much more than the amounts called "revenue" in Chapter 3. This difference requires explanation.

The explanation will be facilitated by immediate reference to a definition of "revenue." The Bureau of the Census defines municipal revenue as "amounts of money or other wealth received by or placed to the credit of the local governments for

TABLE A-1

City Revenues and Non-Revenue Receipts, Pittsburgh, 1915-1932*

Year	Total Reported Receipts	Total Revenues†	Total Non-Revenue Receipts†
1915	\$23,002,730	\$12,439,854	\$10,562,876
1916	19,301,566	13,418,765	5,882,801
1917	15,610,381	12,891,287	2,719,094
1918	19,761,588	15,016,455	4,745,133
1919	23,619,022	15,423,842	8,195,180
1920	26,913,432	18,639,256	8,274,176
1921	28,245,717	19,367,495	8,878,242
1922	26,393,955	19,054,263	7,339,692
1923	24,630,242	19,995,088	4,635,154
1924	25,948,633	20,729,092	5,219,541
1925	25,816,468	20,323,631	5,432,837
1926	35,240,811	22,639,663	12,601,148
1927	42,547,995	23,947,236	18,600,759
1928	36,881,759	26,461,021	10,420,738
1929	31,220,281	26,827,928	4,392,353
1930	38,403,277	28,457,946	9,945,331
1931	34,721,426	26,714,311	8,007,115
1932	31,736,230	23,494,489	8,241,741

*Compiled from the respective issues of the *Annual Report of the City Controller*, Pittsburgh. The grand totals compiled are consistent with the grand totals shown in the Controller's reports except as follows: the 1915 total shown here exceeds the published total by \$11,259; the 1918 total exceeds the published total by \$7,901; the 1919 total, by \$89. The data are not adjusted for the item ordinarily reported as "payments for the correction of erroneous receipts," the published data not being so classified as to make possible a consistent adjustment in the classified totals. The amounts of such payments, shown in Table A-2, are not large enough to make material difference with respect to the purposes of this study.

†Classification explained in accompanying text.

TABLE A-2

Reported Payments by the City of Pittsburgh for Correction of Erroneous Receipts, 1915-1932*

Year	Erroneous Tax Receipts	Erroneous Water Service Receipts†	Total Erroneous Taxes and Water Receipts	Total Correction of Erroneous Receipts‡
1915	\$3,452.59	\$12,733.90	\$16,186.49	\$16,186.49
1916	3,372.56	28,785.56	32,158.12	32,158.12
1917	936.54	13,168.61	14,105.15	14,985.38†
1918	900.64	11,325.85	12,226.49	12,381.99†
1919	1,543.49	17,624.71	19,168.20	19,168.20
1920	984.89	13,449.12	14,434.01	15,116.01†
1921	902.89	9,488.33	10,391.22	10,391.22
1922	3,383.30	9,815.83	13,199.13	13,199.13
1923	_____	_____	14,149.67	14,149.67
1924	_____	_____	4,998.89	4,998.89
1925	_____	_____	11,243.86	11,243.86
1926	_____	_____	20,597.87	21,416.89†
1927	_____	_____	11,720.32	11,720.32
1928	_____	_____	9,421.94	43,178.17†
1929	_____	_____	9,884.15	19,805.15†
1930	_____	_____	12,364.89	12,364.89
1931	_____	_____	15,112.74	15,112.74
1932	_____	_____	12,864.47	12,864.47

*From *Annual Report of the City Controller, Pittsburgh*, for the respective years.

†This item appears to arise largely as a bookkeeping adjustment due to exoneration of charitable institutions from water assessments. In the published reports, erroneous tax receipts and erroneous water service receipts have not been shown separately since 1922.

‡In addition to erroneous taxes and water rents, the totals include unclassified refunds of erroneous receipts as follows: 1917, \$880.23; 1918, \$155.50; 1920, \$682.00; 1926, \$819.02; 1928, \$33,756.23; 1929, \$9,921.00.

governmental purposes, under such conditions that they increase the assets without increasing the debt liabilities or decrease the debt liabilities without decreasing the assets."¹ The criterion given in this definition has been applied as nearly as it was possible to apply it. It is fully recognized that there is likely to be a measure of inaccuracy in the classification. In the first place, the data are mainly from published reports, and the lumping of odds and ends necessary for purposes of condensed publication results in occasional difficulties of classification. In the second place, over the long period studied there were occasional changes in the classification of receipts for purposes of publication. Every effort has been made to make the data consistent throughout the period studied, and it is believed that the remaining inaccuracies are not serious enough to distort the analysis of budget revenues.

In Table A-1, the grand total of "receipts" is divided into revenues and non-revenue receipts. A summary of the more important classes of non-revenue receipts is shown in Table A-3.

¹ *Financial Statistics of Cities*, 1930, p. 13.

TABLE A-3

Non-Revenue Receipts of the City of Pittsburgh, by Major Classes, 1915-1932*

Year	Realization from Borrowing	Reimbursements from Other Local Units	Transfers	Investment Transactions	Sales of Real Estate	Refunds and Miscellaneous	Total Non-Revenue Receipts
1915	\$ 4,710,621	\$ 42,000	\$2,545,423	\$3,020,100	\$192,825	\$ 51,907	\$10,562,876
1916	1,194,478	39,250	2,483,525	1,852,600	241,583	71,366	5,882,802
1917	266,400	39,250	1,917,771	204,900	28,050	262,722	2,719,093
1918	911,035	39,250	2,511,667	1,165,600	69,884	46,697	4,745,133
1919	5,824,357	29,438	1,913,320	317,000	71,735	29,330	8,195,180
1920	5,799,075	49,062	2,195,664	161,600	57,464	11,313	8,274,178
1921	5,887,705	70,216	2,392,766	406,300	112,526	8,731	8,878,244
1922	4,374,573	54,589	2,701,612	304,400	89,789	14,727	7,539,690
1923	1,248,166	85,842	2,756,731	349,800	187,169	7,445	4,635,153
1924	1,070,750	70,216	2,686,970	1,045,400	344,983	1,220	5,219,539
1925	1,974,131	86,341	2,788,679	533,200	40,218	10,268	5,432,837
1926	9,296,247	89,266	2,922,212	253,300	36,049	4,074	12,601,148
1927	14,589,369	70,216	3,159,649	753,800	22,710	5,018	18,600,762
1928	6,628,804	83,000	3,497,228	184,400	22,759	4,550	10,420,741
1929	22,000	470,000	3,548,325	314,900	20,294	10,834	4,392,353
1930	5,971,902	83,000	3,596,856	267,500	2,676	23,397	9,945,331
1931	2,885,269	83,000	4,335,298	216,400	38,378	448,771	8,007,116
1932	3,234,461	83,000	4,463,782	297,742	3,362	159,393	8,241,740

*From Annual Report of the City Controller, Pittsburgh, for the respective years. Classifications explained in accompanying text.

NON-REVENUE RECEIPTS

The predominant part consists of two classes—borrowings and transfers. A brief discussion of the several classes of non-revenue receipts is given in the following sections.

Realization from Borrowing

In most of the years since 1915, borrowing has been of considerable amount. The par amount received and premium and accrued interest are included under "Realization from Borrowing" in Table A-3. The city's bonded debt is increased exactly by the par amount of bonds issued. Interest to be paid by the city is immediately increased by the amount of accrued interest received when the bonds are sold. The relationship of premium to the obligations created is not so immediate; it arises from the fact that the rate of interest stipulated in the bonds is higher than the rate demanded by the successful bidder or bidders. Presumably, then, it may be considered as the present value (at the time of sale of the bond) of an annuity equal to the amount of excess interest for the life of the bonds. At any rate, premium on bonds sold is derived from borrowing operations, not from revenue operations.

Reimbursements from Other Local Units

The city school district makes annual payments to the city in compensation for collection of school taxes by the city treasurer, who is officially school treasurer also, and for medical inspection in schools by the city department of health. In three of the years studied, payments were made by the county to the city under a plan of cost-sharing on public works projects. The amounts reported as received from the county were as follows: in 1925, \$16,125; in 1926, \$19,050; in 1929, \$387,000. With these exceptions, the amounts in this classification in Table A-3 are payments by the school district. Since the amounts covering these reimbursements enter the local governmental picture as receipts of the school district or of the county, they were ruled out as city receipts. (Correspondingly, they would be counted as reductions of city expenditures, since they are finally charges on the school budget or the county budget.)

Transfers

Another large part of the non-revenue receipts is made up of transfers (Table A-3): The largest transfer each year is that from the general fund to the sinking funds for amortization of debt. Amounts reported as interest received on sinking fund investments are classified in this study as transfers from general fund to sinking fund, since the sinking fund investments are city bonds. In some of the years, amounts are reported as transfers from sinking fund surplus to general sinking fund, i.e., surpluses in specific sinking funds made available to meet amortization requirements in other sinking funds. Transfers from bond funds (balances of borrowed money) to sinking funds occur with respect to amounts remaining in the bond funds after the projects for which the bonds were issued have been completed. Special assessment receipts in street and sewer funds, after final payments to contractors have been covered by funding bond issues, are transferred to the general fund. Receipts reported under the heading "Stores for Distribution" are usually mere appropriation transfers by means of which the revolving fund used for centralized purchases is replenished as supplies are issued to the several departments; they may be new appropriation transfers for the enlargement of the purchasing fund.

Transfers to or from the guarantee of deposit fund require a little fuller explanation. By an ordinance enacted in 1912, it was provided that \$100,000 per year should be set aside from interest received on city deposits (except sinking fund deposits) until a fund of \$500,000 had been accumulated. Thereafter, interest received on deposits of general funds (not sinking funds) was to be used, when necessary, to replenish this fund. If a depository should fail to meet its deposit obligation to the city, transfers were to be made from this fund to offset the immediate reduction in available cash, and subsequent recoveries from the bank were to be placed in the guaranty fund. When transfers of general fund interest receipts plus recoveries from failed depositories raised the fund above \$500,000, the excess was to be returned to the general fund. This guaranty fund was merely a part of the treasury machinery for handling the tie-up or the loss of city funds through bank failure; it was in no sense an instrumentality for producing revenue. (This plan was

abolished in 1931, another method of deposit guaranty being established.)

Investment Transactions

Receipts arising from investment transactions (Table A-3) are made up of two reported items. One is from redemption of matured investments. The investments are city bonds. Payment of city bonds at maturity brings cash into the sinking funds in place of the matured bonds. The other item of investment transactions is that frequently referred to as "sales inter se," cash of one sinking fund being traded for bonds in another. (The published reports do not deal with sinking fund profit or loss on investment transactions. It is assumed for purposes of this study that such profit or loss would not be of material consequence.)

Sales of Real Estate

Realization from the sale of property makes city resources available in liquid form, thus introducing into the current flow of cash something that was not there before. In the absence of profit and loss data, however, these amounts must be counted as mere changes in form of city assets, not additions to assets. (It may be argued that receipts from minor sales of property other than real estate should likewise be counted as non-revenue. But minor departmental sales are so mixed with services that they cannot be accurately separated from earnings of departments.)

Refunds and Miscellaneous Non-Revenue Receipts

Receipts called refunds are ordinarily understood to be returns of amounts or parts of amounts once paid out. Disbursing officers, being human, sometimes make mistakes. An erroneous payment returned to the treasury is a refund. Sometimes it is found that a payment has been made on an erroneous invoice or on a claim that was in part or wholly fraudulent—not necessarily because of any avoidable mistake of the finance officer. Recovery of such payment would usually be treated as a refund. In the published reports, there is occasional lumping of miscellaneous minor entries, so that refunds cannot be uniformly segre-

gated from minor revenues or non-revenues. Sometimes the description of what appears to be comparable items in other years serves as a guide in classification.

Along with refunds in the total designated "Refunds and Miscellaneous" (Table A-3), there are several odds and ends. One of the more important items consists of recoveries from failed depositories. It has been pointed out in the discussion of transfers that recoveries from depositories failing while the guarantee of deposit fund was in operation were carried to this fund. Apparently, in some of the years after 1915 there were recoveries from banks that failed before the guaranty fund was established. The guaranty fund was abolished in 1931, a different system of deposit insurance being established. In 1932, recoveries from failed banks are in this miscellaneous total. Another group of small items consists of amounts temporarily in trust, such as fines collected for the state or taxes and water rents over-paid. Any other item not otherwise classified but apparently not city revenue was placed in the classification "Refunds and Miscellaneous."

APPENDIX B

Minor General Budget Revenues of the City of Pittsburgh

Real estate tax collections are readily recognized as revenues. Among other reported "receipts," however, there are large amounts that must be classed as non-revenue (discussed in Appendix A). Among the revenues, those received from the water service have been excluded as not properly a part of the general budget picture (Table 12, in Chapter 3). Appendix B is intended mainly to show the yield of the several classes of minor general budget revenues in comparison with the yield of the real estate tax and to indicate the kinds of items that make up each class of minor revenues. It is thus merely a summary of minor revenues, supplementary to the real estate tax study. It is in no sense offered as a thoroughgoing analysis of minor revenues of the city.

As an introduction to the discussion of minor revenues, a precaution should be observed. Administrations change, and there is no certainty that data published by one administration are exactly comparable with data released by other administrations. Indeed, within a single report issued by one administration, the data are not always consistent. The attempt has been made, however, with a great deal of courteous assistance from the City Controller's office, to present data comparable over the period studied.

In 1915 the minor revenues produced about one-fifth of the total general budget revenues. Since the war the range has been from about one-sixth to about one-ninth (Table 13, in Chapter 3). By reference to Table 12, Chapter 3, it will be noted that the total of general budget revenues tended generally upward from \$9,700,000 in 1915 to \$25,200,000 in 1930. The total from the minor revenues was somewhat over \$2,000,000 in 1915. Although more irregular than the tax total, the minor revenues

TABLE B-1

Minor General Budget Revenues* of the City of Pittsburgh, by Classes,† 1915-1932

Year	Total	Special Assessments	Licenses and Permits	Rents and Concessions	Interest on Deposits	Fines and Penalties	Grants and Donations	Pittsburgh Railways	Miscellaneous
1915	\$2,025,661	\$ 200,874	\$860,429	\$136,450	\$190,509	\$192,513	\$ 117,651	\$144,404	\$182,741
1916	1,989,010	237,105	823,866	136,263	141,397	238,447	141,432	136,053	134,447
1917	2,193,415	391,819	814,802	135,934	114,626	237,011	116,641	132,382	250,200
1918	2,210,792	504,772	771,453	142,880	195,777	277,660	124,111	66,012	128,127
1919	1,757,304	316,334	283,767	145,667	174,017	278,609	228,037	—	130,873
1920	2,449,044	418,489	879,699	166,705	360,381	335,235	137,089	—	151,446
1921	2,531,924	653,942	500,109	211,672	455,787	286,678	285,622	—	138,114
1922	2,517,139	714,722	345,126	220,050	426,232	403,127	250,786	—	157,116
1923	2,176,607	436,642	266,972	243,517	417,747	425,621	154,632	—	231,476
1924	2,638,095	544,881	230,540	255,350	364,478	504,958	238,210	273,225	226,453
1925	2,878,881	750,736	245,126	247,731	311,958	476,173	299,424	352,609	195,124
1926	2,880,462	742,967	237,876	247,153	287,591	467,284	217,993	452,609	226,989
1927	3,588,179	980,469	264,987	261,596	575,255	414,774	374,255	467,195	249,648
1928	3,526,313	1,042,249	246,522	248,567	679,586	392,868	323,822	382,054	210,645
1929	3,338,357	802,073	243,890	255,890	629,029	362,142	394,306	384,811	266,216
1930	3,491,076	983,958	237,424	242,612	515,894	423,697	466,056	384,810	236,625
1931	2,636,731	590,115	225,203	250,755	459,050	368,463	465,211	58,207	219,727
1932	2,788,278	328,705	178,145	225,035	236,388	362,569	1,207,016	84,061	166,356

*All revenues other than real estate tax and water revenue. See Table 12 in Chapter 3, item "Other General Budget Revenue."

†Refer to explanation of the respective classifications in the accompanying text.

MINOR REVENUES

also moved generally upward until 1927, when the aggregate was close to \$3,600,000. By 1932 the total had fallen below \$2,800,000.

In Table B-1 the amounts received annually from the various classes of minor revenues are shown for the years 1915-1932. In Table B-2 the percentage of general budget revenue from each classification is shown. These tables will be clarified by a brief explanatory statement concerning each of the classifications.

TABLE B-2
Per Cent of City General Budget Revenue, Pittsburgh,
from Each Class of Minor Revenues, 1915-1932*

Year	Total	Special Assessments	Licenses and Permits	Rents and Concessions	Interest on Deposits	Fines and Penalties	Grants and Donations	Pittsburgh Railways	Miscellaneous
	%	%	%	%	%	%	%	%	%
1915	20.82	2.06	8.84	1.40	1.96	1.98	1.21	1.49	1.88
1916	17.99	2.14	7.45	1.23	1.28	2.16	1.28	1.23	1.22
1917	20.83	3.72	7.74	1.29	1.09	2.25	1.11	1.26	2.37
1918	17.67	4.03	6.16	1.14	1.56	2.22	0.99	0.53	1.04
1919	13.80	4.05	2.23	1.14	1.37	2.19	1.79	---	1.03
1920	15.53	2.65	5.58	1.06	2.29	2.13	0.87	-----	0.95
1921	15.17	3.92	3.00	1.27	2.73	1.72	1.71	-----	0.82
1922	15.44	4.38	2.12	1.35	2.61	2.47	1.54	-----	0.94
1923	12.58	2.52	1.54	1.41	2.41	2.46	0.89	-----	1.35
1924	14.69	3.03	1.28	1.42	2.03	2.81	1.33	1.52	1.27
1925	16.31	4.25	1.39	1.40	1.77	2.70	1.70	2.00	1.10
1926	14.58	3.76	1.20	1.25	1.46	2.37	1.10	2.29	1.15
1927	17.00	4.65	1.26	1.24	2.73	1.97	1.77	2.21	1.17
1928	14.94	4.42	1.04	1.05	2.88	1.66	1.37	1.62	0.90
1929	14.00	3.36	1.02	1.07	2.64	1.52	1.65	1.61	1.13
1930	13.87	3.91	0.94	0.96	2.05	1.68	1.85	1.53	0.95
1931	11.24	2.52	0.96	1.07	1.96	1.57	1.98	0.25	0.93
1932	13.56	1.60	0.87	1.09	1.15	1.76	5.87	0.41	0.81

*Amounts shown in Table B-1 for each year expressed as percentages of the corresponding annual amounts shown in Table 12 as "Total General Budget Revenue."

Special Assessments

Special assessments, in the most common usage of the term, are charges of some part of the cost of a public improvement against properties abutting on, or located near, the improvements. In other words, within the assessment area on a given project, they are charges on real estate, additional to the general levy. The assumption on the basis of which such special charges are justified is that the improvements are of special benefit to the owners of neighboring properties. In Pittsburgh, special assessments are made to cover part of the cost of street and sewer construction.

Licenses and Permits

Licenses and permits, in the generally accepted sense of the words, are alike in that they are special charges imposed in connection with governmental regulation of private possession or conduct. Grants of authority for a fixed period of time—month, season, or year—usually are called licenses, and the fees collected in connection with such grants of authority are called "license fees" or simply "licenses." An authorization relating to a single performance of a specific action, such as erecting a building, is ordinarily called a permit. The distinction between these two classes of revenues is not always clear in the city records. Moreover, items under other names, such as "registration of electricians," are of the same general character. Whatever the name under which the item is recorded, all items recognizable in the published reports of the city as being of the character of licenses or of permits have been so classified.

In the years 1915-1918 and again in 1920, this class of revenue was the largest of the minor groups (Table B-1). The reason was liquor licenses—well in excess of \$600,000 in the earlier years.

Aside from this major item in earlier years, this classification includes a rather large number of other licenses, most of which may be grouped roughly into three classifications. First, licenses are required for a wide range of amusement and recreational businesses—theaters, operatic performances, circuses and other transient exhibitions, carnivals and street fairs, dance halls, baseball parks, shooting galleries, pool or billiard parlors, skating rinks, penny arcades, merry-go-rounds, and roof gardens. Second, licenses are required for a number of businesses other than those in the amusement and recreational bracket—milk dealers, beauty parlors, junk dealers, second-hand dealers, pawn brokers, fumigators, street venders, and vending machines. A license is required of anyone selling or storing explosives. Sale of fireworks is permitted only under license and only for one month preceding July 4. Third, a few licenses relate to occupations (not necessarily in connection with a specific place of business). Licenses, under one name or another, are required of auctioneers (each auction), beauty parlor operators (personal license in addition to license for place of business), electricians, engineers,

plumbers, and picture machine operators. In addition to these three main groups, city licenses are required for the operation of horse-drawn vehicles or bicycles and for the possession of dogs.

Most of the amounts received by the city for permits are for the several types of permits related to building, i.e., for the main structure, for wiring, for heating equipment, and for plumbing. A number of related inspectional fees have been included with permits in Table B-1.

Rents and Concessions

Aside from the amounts received for rental of miscellaneous properties scattered here and there throughout the city, three classes of city rental income should be mentioned—that from the markets owned by the city, that from the wharves and landings, and rents and concessions from the parks. Fees for parking automobiles on the wharves are included in the total of rents and concessions; golf permits and golf locker rentals also are included.

Interest on City Deposits

The interest item shown in Table B-1 includes interest received on deposits of general and special revenue funds, of bond funds, and of sinking funds. It does not include interest on sinking fund investments. (See "Transfers" in Appendix A.) Accrued interest on bonds sold is not included. (See "Realization from Borrowing" in Appendix A.)

Although direct water service receipts are not counted general budget revenues, interest that might be attributable to water funds is included in Table B-1. Allocation of interest receipts would have to be arbitrary and has not been made. For present rough purposes, it need not be made, since the general expenditure budget (including all expenditures other than directly identifiable water service expenditures) carries important items part of which are costs of the water service (for example, the City Treasurer's office).

A great deal of the interest received is attributable to bond fund balances (borrowed money in hand); and much of the variation in amount of interest receipts is due to changes in bond fund balances. For example, at the end of 1925 the balance of

bond fund cash (not adjusted for warrants outstanding) was \$2,779,610; at the end of 1927 the total was \$14,716,095. The first amount was the lowest end-of-year bond fund balance in the period 1919-1932; the second amount was the highest. Such wide variation, of course, is extreme; but considerable changes are common and have much to do with variations in interest received.

To whatever extent the rate paid on bonds exceeds the rate received on balances of borrowed cash, the carrying of large balances in bond funds is costly. Consequently, interest receipts from large balances of borrowed funds are deceptive and are classifiable as "revenues" (see definition in Appendix A) only in a doubtful sense.

Fines and Penalties

In the usual meaning of the words, "fines" are imposed by the courts and "penalties" are imposed by administrative offices. The exceptions are not of material importance in this summary. Fines received by the city are mainly from the police courts, a small amount being from the aldermen's courts. The penalties included in this classification are mainly penalties and interest on delinquent taxes and on water rents. (No allocation of penalties and interest attributable to delinquent water rents was attempted. The reason is the same as that for not allocating interest, explained above under the caption "Interest on City Deposits.") The large volume of penalties for delinquent taxes and water rents in 1931 and 1932 is the reason why the total of fines and penalties was as large in those years as in 1929. Police court fines fell in each of the years 1926-1932.

Grants and Donations

Most of the revenue of this class is received from the state. One item, the city share of the fire insurance tax, is a legally fixed share of the gross premiums tax collected by the state from foreign fire insurance companies (i.e., companies chartered outside Pennsylvania). Another item in this classification is state aid to the city for charities. The sharp increase in the amount of grants and donations in 1932 was due almost entirely to emergency unemployment relief, under the Talbot Act.

Beginning in 1930, there were limited grants from the state on improvement projects on main roads in the city.

Donations from private sources are received by the city now and then, either for outright expenditure or to be held as income-producing trusts. The largest private donation is for the maintenance of Frick Park, received annually from the income of a trust created from the Frick estate. Other donations rarely have much effect on the total in this class of receipts.

Pittsburgh Railways

For the years 1915-1919, the amounts shown include items reported as charges for street cleaning and as taxes on gross receipts and on cars. The amounts shown for the later years are made up of three items explainable only in terms of the agreement signed in 1921 between the Pittsburgh Railways Company and the City. Under that agreement, all past-due claims for street cleaning, paving, and special taxes were pooled in one sum thereafter referred to in the city reports as "old claims." A stipulated sum (subject to change if mileage of street railways was changed) was set to take the place of special taxes and other charges except paving and repaving in the car tracks. This payment is later reported as "franchise." Another stipulated amount (also subject to change if mileage changed) was set to take the place of all special assessments of paving costs. This was later reported as "paving and repaving." The amounts shown in Table B-1 for the years 1924-1930 include payments separately reported in the published data as "old claims," "franchises," and "paving and repaving." For 1931 and 1932, the amounts reported in the published data were called "franchises."

Miscellaneous Minor Revenues

In addition to the classes of revenues already explained, there are numerous odds and ends of city revenues, some being of distinct classes but too small for separate classification in a summary, and some being of mixed character, straddling various classifications.

Among the receipts classified as miscellaneous in Table B-1, the more important items are what would commonly be called departmental earnings. Considerable amounts appear as charges

made by the Bureau of Highways and Sewers for making excavations in streets (for water connections or gas connections, usually), for constructing sidewalks, and for other services specifically chargeable against individuals or firms. Special charges for bridge repairs are reported by the Bureau of Engineering. At least in part, these seem to be related to the street railways paving charge, mentioned above. The Department of Health collects pay or part-pay from some of the patients at the municipal hospital; other receipts of this department are derived from the sale of milk and the sale of vaccine anti-toxin. The Department of Welfare receives a few thousand dollars a year as pay or part-pay for the care of persons at Mayview Home. Various fees and costs incident to legal actions are collected by the Department of Law. Several thousand dollars a year are collected for the printing of private ordinances. The Bureau of Police reports an item "special police," consisting of payment for extra police detailed on private property.

In addition to such items of departmental earnings, each year shows several amounts, scattered here and there among the departmental reports, representing a variety of sales and charges. In some of the years of the period studied, sale of horses was reported by several departments, most of these sales occurring, of course, in the process of motorizing city departments. Several departments report sales of material or of scrap. Recoveries for damages to city equipment or property appear occasionally, as well as receipts in liquidation of judgments. Numerous small items of unclassified charges appear. An attempt has been made to eliminate refunds to appropriations; but probably some minor items of this sort remain in the total set up as miscellaneous in Table B-1. On the other hand, it is probable that some minor amounts of actual revenue are erroneously included in non-revenue (Appendix A). The totals of the items, however, are so small that no considerable error could arise from a mistake in the classification of them.

Unclassified amounts received from the treasury assets of annexed areas are included here as miscellaneous. Inasmuch as the city assumes the debts of annexed units, receipts incident to annexation are not consistent with the definition of revenue given

in Appendix A; but it is not possible, from published data, to work out the book gain or loss to the city from annexation. The volume of receipts thus doubtfully classified as revenue is not large enough to make substantial difference in the total.

A group of collections from public utility companies has been placed in the miscellaneous total. The more important are gross receipts taxes from two utility companies; charges against steam railway companies for rights-of-way over or across streets or alleys; and charges for the suspension of pipes, cables, and conduits on bridges. (Note, however, that the major collections from utilities are segregated under the heading "Pittsburgh Railways," explained above.)

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