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COMPARATIVE EMPLOYMENT  
EXPENDITURES AND REVENUES  
FOR 21 U.S. CITIES

Merton P. Stoltz

August 1962

COMPARATIVE EMPLOYMENT  
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FOR 21 U.S. CITIES

Merton P. Stoltz

IN CITY COUNCIL  
DEC 6 1962

READ:

WHEREUPON IT IS ORDERED THAT  
THE SAME BE RECEIVED.

*N. Everett Whelan*  
CLERK

# BROWN UNIVERSITY

PROVIDENCE 12, RHODE ISLAND

August 29, 1962

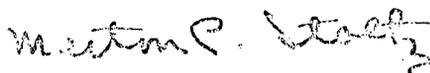
The Honorable Walter H. Reynolds  
Mayor  
City of Providence  
Providence, Rhode Island

Dear Mayor Reynolds:

I take pleasure in transmitting a Report on Comparative Employment Expenditures and Revenues for 21 United States Cities.

It will be noted that in some of the final sections tables have been designated as temporary. As soon as complete data are available permanent tables will be furnished.

Respectfully submitted,

  
Merton P. Stoltz

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## 1.1 Introduction

In this report comparisons are made between Providence, R. I. and 20 other cities in 14 states with respect to local government employment, expenditures and revenues. In general, these cities were chosen from the 175,000 to 225,000 population size-class (1960 census). Three New England cities with smaller populations - Bridgeport, Conn. (156,700), Hartford, Conn. (162,200) and New Haven, Conn. (152,000) - were included in the comparison because of their location and their similarity to Providence. Two cities - Gary, Indiana and Richmond, Virginia - which belong to the population size-group were excluded from the comparisons for technical reasons.<sup>1</sup>

Meaningful inter-city comparisons are exceedingly difficult to make. There are three major categories of factors which contribute to the problem:

- (1) the organization of state and local government.
- (2) the complex of physical, social and economic factors which condition the cost of government services but which are largely beyond the control of local governmental units.
- (3) the quantity of local governmental services demanded or provided in a community and the efficiency with which they are administered.

These categories will be discussed in turn.

## 2.1 Governmental Organization

In the United States there exists a wide range of variation in the distribution of responsibilities among state and local governmental units for the provision of services in a city area. Some important services normally associated with urban areas may

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1. If the factors which make doubtful a comparison with other cities are ignored, it is indicated that with respect to employment per 1000 of population, revenue per capita and expenditure per capita that Gary would be moderately lower and Richmond substantially higher than Providence.

or may not be provided by the municipal corporation. The actual distribution of responsibilities for services will depend on state legislation or, in some cases, on local option.

The Census Bureau - the main source of reliable data on governmental units - distinguishes five major kinds of local government - counties, municipalities, townships, school districts, and special districts. Any or all of these units may provide local services within a city area. Actual practices vary widely from state to state and sometimes within a state.

County governments exist in all states except Rhode Island where counties are merely geographical subdivisions for judicial administration. In other New England states, counties have limited responsibilities. Essentially, counties act as agents for the administration of functions normally assigned to states. In some states, counties play an important role in the administration of functions such as public welfare, health and hospitals which in other states are assigned to municipalities and townships.

Municipal corporations exist in all states. They include the legal corporations (created by the state) variously known as cities, boroughs, villages and towns, except that in the New England states, New York and Wisconsin the term "town" refers to the Census definition of township. In Rhode Island only the cities are counted as municipalities. They are located outside the area of any town and provide some services which, in other states, are assigned to county governments.

In 29 states, school districts have the fiscal responsibility for all local public schools. In 15 other states, school districts provide public school services in some areas, while in other areas the state or some local unit (city, town or county) operate so-called dependent school districts. In 4 states, including Rhode Island, all school systems are dependent. The 39 school districts

in Rhode Island are administered by elected boards, but fiscal responsibility rests in the municipal or town government. In Providence, the school districts are geographical divisions for the purpose of electing the members of the School Committee.

Special districts exist in all states, but the method of organization and financing varies widely. These districts may provide a wide range of special services. In some cases, special districts may be organized to provide services normally provided by the municipality.

The diversity of practice among the cities and states involved in the present comparative study is illustrated by the data in the next three tables. In Table 1 the distribution of function between the state and local governments is shown in terms of the percentage distribution of employment and expenditures for the fiscal year 1957.

Table 1

Percentage Distribution of Total State and Local  
Employment and Expenditure, Selected States, 1957

State	Percentage Distribution					
	Employment		All Expenditures			
	(Full-time Equivalent)		As Source of Funds		As Spending Unit	
	State	Local	State	Local	State	Local
Alabama	24.2	75.6	66.9	33.1	46.1	53.9
Arizona	24.2	75.8	52.5	47.5	37.6	62.4
California	21.2	78.9	50.4	49.6	28.6	71.4
Connecticut	32.0	68.0	56.3	43.7	51.5	48.5
Florida	24.4	75.6	48.1	51.9	35.9	64.1
Iowa	25.5	74.5	54.2	45.8	39.9	60.1
Massachusetts	22.1	77.9	49.0	51.0	33.5	66.5
Michigan	24.2	75.8	60.1	39.9	40.4	59.6
New Mexico	34.8	65.2	72.8	27.2	50.2	49.8
New York	19.0	81.0	39.3	60.7	23.4	76.6
No. Carolina	74.7	25.3	61.8	38.2	51.4	48.6
Rhode Island	34.9	65.1	58.6	41.4	51.1	48.9
Texas	18.8	81.2	45.1	54.9	32.3	67.7
Utah	29.7	70.3	55.5	44.5	43.3	56.7
Washington	26.0	74.0	57.5	42.5	42.4	57.6

Source: 1957 Census of Governments, Bureau of the Census  
Vol. 6, Parts 1-49.

The high percentage of state employment in the case of North Carolina is explained by the fact that all local school employees are paid out of state grants and are thus counted as state employees. Among the other 14 states, the Rhode Island percentage of employment by the state is larger than typical and is accounted for in part by the absence of any county governments.

An examination of the percentages of expenditures made by state and local governments both as sources of funds and as the ultimate spending units indicates clearly that (1) in those states where the local units employ a large percentage of all employees there are very substantial transfer payments from the state to local governments and (2) Rhode Island local governments receive less financial assistance from the state than is true of any of the other states represented in Table 1 with the exception of Connecticut.

Table 2 exhibits the percentage distribution of total state and local direct expenditure by type of governmental unit. The varying responsibilities of the local governmental units as well as the difference in the structure of local government in the 15 states are clearly shown. Further comment appears unnecessary.

Table 2

Percentage Distribution of Total State and Local Direct Expenditure<sup>1</sup> by Type of Governmental Unit, Selected States, 1957

State	Type of Governmental Unit					
	State	Counties	Municipalities	Townships	School Dist.	Special Dist.
Alabama	46.1	9.5	18.4	--	21.7	4.4
Arizona	37.6	10.7	12.2	--	27.8	11.7
California	28.6	19.8	19.6	--	26.9	5.1
Connecticut	51.5	0.6	22.2	21.8	0.6	3.3
Florida	35.9	10.9	27.7	--	22.4	3.0
Iowa	39.9	15.5	16.8	--	27.5	0.3
Massachusetts	33.5	1.8	36.4	22.6	0.1	5.5
Michigan	40.4	8.9	23.1	1.5	25.5	0.5
New Mexico	50.2	5.9	15.8	--	27.1	1.0
New York	23.4	7.1	49.5	3.2	13.8	3.0
No. Carolina	51.4	24.7	22.9	--	--	0.9
Rhode Island	51.1	--	33.8	13.5	--	1.6
Texas	32.3	9.3	24.6	--	29.8	4.1
Utah	43.3	8.0	14.6	--	29.5	4.5
Washington	42.4	7.7	17.8	--	20.9	11.2

Source: 1957 Census of Governments, Bureau of the Census Vol. 6, Parts 1-49.

1. Interlocal government transfers are recorded on a net basis.

It should be emphasized that the distributions of employment and expenditures between the state on the one hand and local units on the other carry no necessary implication with respect to the level of employment and expenditure in a specific municipality. If all state-local organizations were identical, a larger percentage of employment by the state would imply a lower level of employment by the municipality in comparison with municipalities in other states.

The data of Tables 1 and 2 show the distribution of responsibilities for the provision of services between the state and the various local governmental units. These data do not show, however, the distribution of responsibilities for the provision of local services to the residents of the 21 cities in the present comparison. Table 3 is designed for this purpose. It shows the percentage distribution of total and general<sup>1</sup> expenditures made by the various local units<sup>2</sup> providing services within the city limits.

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1. In the Census Bureau classification general expenditure is the expenditure on governmental functions other than utilities, insurance trusts (pension plans), and liquor stores.

2. For comparability, employment in the public school system serving Charlotte, North Carolina, was defined as local even though it is formally assigned to the state.

Table 3

Percentage Distribution of Total and General Local Expenditure  
by Governmental Unit, Selected Cities, 1957

City	Total Expenditure				General Expenditure			
	Munic. Gov't.	County	School Distr.	Special Distr.	Munic. Gov't.	County	School Distr.	Special Distr.
Albuquerque, N.M.	46.6	7.5	43.6	2.3	40.7	8.3	48.4	2.5
Austin, Tex.	59.0	6.0	32.1	2.9	49.4	8.0	42.6	-
Charlotte, N.C.	73.8	24.1	-	2.1	69.3	28.3	-	2.4
Des Moines, Ia.	37.0	15.7	47.2	-	31.9	17.0	51.0	-
Flint, Mich.	60.1	12.6	27.3	-	57.2	13.4	29.4	-
Gr. Rapids, Mich.	50.0	16.3	33.7	-	43.6	18.3	38.1	-
Jacksonville, Fla.	70.8	9.8	18.5	0.9	49.4	16.8	32.2	1.6
Mobile, Ala.	63.2	8.4	20.2	8.2	58.8	9.4	22.6	9.2
Sacramento, Cal.	31.9	18.8	23.6	25.7	36.6	26.1	33.2	4.0
St. Petersburg, Fla.	68.6	10.5	20.2	0.7	63.1	11.1	24.9	0.9
Salt Lake, Utah	35.6	12.9	41.8	9.7	30.9	14.4	46.9	7.7
San Jose, Cal.	34.0	31.7	33.6	0.7	33.6	31.8	33.8	0.7
Spokane, Wash.	47.1	14.6	38.3	-	43.3	15.5	41.2	-
Syracuse, N. Y.	70.8	29.2	-	-	70.2	29.8	-	-
Tucson, Ariz.	29.8	18.6	50.9	0.6	27.1	19.4	52.8	0.7
Bridgeport, Conn.	85.8	1.0	-	13.2	85.4	1.0	-	13.5
Hartford, Conn.	80.0	0.9	-	19.1	85.5	1.0	-	13.4
New Haven, Conn.	92.9	0.8	-	6.2	92.7	0.9	-	6.4
Springfield, Mass.	95.0	2.2	-	2.8	94.8	2.2	-	3.0
Worcester, Mass.	91.8	3.2	-	5.0	91.6	3.1	-	5.4
Providence, R. I.	96.0	-	-	4.0	95.7	-	-	4.3

Source: 1957 Census of Governments, Bureau of the Census;  
Vol. 6, parts 1-49.

The inter-city comparisons are striking. The municipal government of Providence accounts for 96 per cent of total (and general) expenditure on local services. Other New England cities have comparatively large percentages of expenditure made by the municipal government. This is accounted for by the fact that in these cities the school systems are dependent and county governments are either non-existent (Rhode Island) or relatively unimportant (Connecticut and Massachusetts). Providence, and to a lesser extent the other New England cities, stand in strong contrast to other cities shown in Table 3. The percentages of general expenditure on local services made by the non-New England municipal governments ranges from 27.1 in Tucson, Arizona to 70.2 in Syracuse, N. Y. Nearly one-half of the 21 cities had less than 50 per cent of general expenditures made by the municipal government.

The fact to be stressed is that the operating data for city governments collected and reported by the Bureau of the Census and contained in the annual financial statements of cities refers only to the municipal governments. Other local government units which provide local services within the city limits are independent and report separately. It is therefore manifestly improper to make direct comparisons among municipalities on the basis of published reports relating to these units.

The structure of local government and the independent reporting of operating data obviously pose serious problems for any comparative study. The difficulties can be mostly overcome by the consolidation of employment, revenues and expenditures for all local governmental units providing services to the residents of a city area. Ideally, an allocation of state employment, revenues and expenditures to city residents should be made to achieve full comparability. There appears to be, however, no rational method for making meaningful allocations to the residents of one section of a state and, consequently, no effort will be made to do so in this report.

Data which would permit the consolidation of operating results for all local units exist in a usable form but only for those years in which a Census of Governments has been taken. The most recent Census of Governments was taken for the fiscal year 1957. Partial data for state governments and for municipal governments are compiled annually by the Bureau of the Census, but since these reports do not include county, school district and special district data it is not possible to reconstruct complete local government services in a city area.

The procedure used in this report may be described briefly. For each of the 21 cities in the population class 150,000-220,000 (1957 estimates), employment, revenue (by source), and expenditure (by function) for local services provided by the municipality, school districts and special districts were compiled from the reports of the 1957 Census of Governments. For county governments, the proportionate (per capita) share of the employment and expenditures by county units for services provided to residents of the appropriate city were computed and aggregated with the data for other local units. The revenue estimates were made on a per capita basis and assigned to the city on the assumption that the burden of county services would be borne proportionately by all residents of the county.

All employment, revenue and expenditure data for the consolidated local units were put on a per capita, or per 1,000 population basis in the case of employment, for comparability.

Estimates enter into the consolidated local employment, revenue and expenditure only with respect to county governments. Reference to Table 3 will indicate that county governments play important roles in a number of cases. An examination of the detailed expenditures by county units reveals that in most of the cases where counties are relatively important spending units they have the primary responsibility for one or more of the services of public

welfare, health and hospitals. A few examples will suffice. In Charlotte, where 23.1 per cent of local general expenditures have been assigned to the county, 40.6 per cent of county general expenditures were on welfare, health and hospitals. In Sacramento, with 26.1 per cent assigned to the county, 63.2 per cent of county general expenditures were on these categories. For San Jose, the corresponding percentages were 31.8 and 67.3. In Syracuse, the percentages were 29.8 and 39.8. In general, if the percentage of general expenditure assigned to the county exceeded 10 per cent, the proportion of county general expenditures on public welfare, health and hospitals exceeded 30 per cent. The exceptions are Jacksonville, St. Petersburg, Spokane and Tucson. In the latter cities the county spent approximately 15-20 per cent of general expenditures on the three categories.

Where counties are relatively unimportant spending units, the municipalities have the main responsibility for the functions of public welfare, health and hospitals. Given the nature of welfare and health problems in rural vis-a-vis urban areas, the assignment of a proportionate (population basis) share of county expenditures to the residents of the city is likely to result in an understatement of the volume of local services provided by the county to urban areas. Therefore, if a relative bias is introduced into the consolidated accounts by the procedure adopted it will operate in favor of those cities in which the county is an important supplier of public welfare, health and hospital service.

It is further likely that the assignment of revenue on a proportionate basis to the residents of the city will understate the tax burden borne by these residents. Tax revenues are, to a large extent, ultimately based on income and wealth (including property) and since the average income and the average holding of wealth is greater in urban areas a large proportion of the total burden will be borne by urban residents on a per capita basis. This bias also

operates in favor of those cities in which the county is a relatively important service unit.

One further qualification on the use of the consolidated data should be considered. Close comparability of the operating data for the various cities is restricted by two factors: (1) the fiscal years of the various local governments, although generally uniform within a given state, vary among states by as much as 6 months; (2) the 1957 population figures are based on interpolations of the 1950 and 1960 Census data and hence may deviate from the actual pattern of population growth in a city. The loss of accuracy in the comparisons introduced by these factors is minor and primarily should suggest that inter-city differences which are very small are probably not significant.

The major difficulty with the consolidated operating data is that the limitations on the availability of the data prevent comprehensive comparisons for a year more recent than 1957. Some municipal data are available for 1960 and 1961 and these will be used (1) for partial comparisons and (2) to provide indications of the trends of developments between 1957 and 1961. Further, reasonably comparable recent data can be developed for the New England cities and detailed comparisons will be made among these cities for 1960 and 1961.

## 2.2 Physical, social and economic characteristics of cities.

Even though statistical comparability is achieved by the consolidation of operating data for all local units within city areas, the great diversity of local conditions causes a wide variation in the scope, quantity and cost of specific public services required. Inter-city comparisons, therefore, will not provide fully meaningful standards of judgment with respect to the expenditure pattern of an individual city. It is essential to have some understanding of the particular physical, social and economic characteristics of a city, if valid comparisons are to be made.

The examination of the relevant characteristics affecting the municipal operations of the 21 cities under comparison would be an unduly lengthy task. However, a brief review of the major characteristics and some indication of how they affect municipal services will perhaps serve as a background against which the inter-city comparisons may be interpreted.

#### 2.2.1 Physical Characteristics

The physical and geographical features of a city affect some governmental functions in obvious ways and indirectly influence others. An urban area which is congested and highly industrialized in contrast to an open, lightly industrialized area will experience, for the same level of services, higher per capita costs for such functions as fire and police protection, public highways, traffic control, etc. Less direct effects may be felt in such functions as public welfare, health, parks and recreation and education.

The old urban centers of the United States, and particularly in the northeastern states, have a land-use pattern which had been fixed in the context of an early industrialization. Typically, a highly constrained land area involved a city structure with a commercial and financial center, a ring of industrial areas, and an extensive border of relatively high-density residential areas which housed the labor force within relatively short distances from places of employment. Changes in technology (including transport), the growth in personal incomes, the shifting mode of urban living in the United States, and the increased emphasis on home ownership, among other factors, impose the need for an altered land use pattern and greatly increased space requirements. The redevelopment of an urban area to adjust to these changes imposes substantial expenditures on the residents of the central cities in older metropolitan areas which the residents of newer cities do not yet have to bear.

In terms of population density (population per square mile of land area), Providence is the most congested of the 21 cities compared in this report. Based on the 1960 population, Providence had a density

of 11,592 persons per square mile. Hartford was next with a density of 9,321. Other high density cities in this group were Bridgeport, 8,757; Syracuse, 8,642; and New Haven, 8,494. In sharp contrast, Mobile had a density of only 1,326 persons per square mile.

The population density of Providence is basically atypical of cities in the size-class 175,000-225,000. (See Table 4). In fact, the Providence density of 11,592 is high for cities in the 250,000-500,000 class. In 1960, only 2 cities - Jersey City and Newark, New Jersey - out of 29 in this size-class had higher densities. After these two cities the population density dropped to 8,753 for Rochester, New York.

Population densities of the magnitude shown by Providence are more common among the large cities of the United States. Eight of the 16 cities in the population class 500,000-1,000,000 had densities equivalent to or in excess of that for Providence, while only Los Angeles in the population size-class 1,000,000 and over had a lower density than Providence. It is of interest to note that without exception cities with a population over 150,000 and a population density exceeding 11,000 experienced a decline in population between 1950 and 1960.<sup>1</sup>

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1. If the size limit is reduced to 100,000, only Paterson, New Jersey, registered a population increase (3.1 per cent).

Table 4

Population Per Square Mile of City Area, Selected Cities, 1960

City	Area in Square Miles	Population Per Square Mile
Albuquerque	56.2	3,580
Austin	49.4	3,776
Bridgeport	17.9	8,757
Charlotte	64.8	3,111
Des Moines	64.5	3,240
Flint	29.9	6,587
Grand Rapids	24.4	7,267
Hartford	17.4	9,321
Jacksonville	30.2	6,656
Mobile	152.9	1,326
New Haven	17.9	8,494
Providence	17.9	11,592
Sacramento	45.1	4,250
St. Petersburg	54.0	3,357
Salt Lake City	56.1	3,377
San Jose	54.5	3,747
Spokane	43.0	4,223
Springfield	33.1	5,271
Syracuse	25.0	8,642
Tucson	70.9	3,003
Worcester	37.0	5,043

Source: U. S. Bureau of the Census, U. S. Census of Population: 1960, PC(1)-1A.

There exists a well-defined association between size of city and per capita expenditures on services; there is a progressive rise in the per capita cost of services with increasing city size. It has just been shown that city size and population density are similarly associated. The general failure of municipal units to realize economies from the scale of operations may be explained by the population density which tends to increase as the size of the city increases. In this context population density is to be regarded as a portmanteau variable representing all of the problems arising from congestion and high intensity land use. It may be inferred, therefore, that population density is an important factor to be taken into account when making inter-city comparisons.

#### 2.2.2 Social and Economic Characteristics

The social and economic characteristics of an urban area are important determinants of the service requirements and demands of the residents as well as the capacity to pay. The specific distribution of governmental services will vary from city to city depending on the social and economic structure. The effect of such economic factors as the level, distribution and rate of growth of personal income, the occupational structure and the rate of economic growth of the region on total government finance is self-evident. Similarly, the complex of social factors, e.g., age distribution, educational levels, etc., may be directly linked with the pattern of public services.

Although an inventory of the social and economic characteristics of each of the 21 cities under comparison is not feasible in this report, certain aspects of the problem require discussion. Many of the social and economic characteristics relevant to the expenditure and revenue patterns of a city are reflected in population changes. Shifts in population are both the partial consequence of the social and economic characteristics of a city and the partial

cause of changes in the economic and social structure.

The most notable demographic development in the United States has been the rapid urbanization of the population with a concurrent decentralization within the metropolitan areas. Between 1950 and 1960 the population of all Standard Metropolitan Statistical Areas<sup>1</sup> (SMSA's) of the United States increased by 26.4 per cent. The population in the central cities of the SMSA's increased by 10.7 per cent, while the suburban ring increased by 48.6 per cent. In marked contrast, the population outside of SMSA's in the United States increased by only 7.1 per cent. These aggregate percentages, however, exaggerate the rate of change in the population of central cities since annexations of territory from the suburban rings had a considerable effect in many SMSA's.

The pattern of metropolitan population change varies among the regions of the United States and also among SMSA's of different size. The effect of annexation also differs markedly by region and size of the SMSA's. The essential data are summarized in Table 5.

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1. Except in New England, an SMSA is a county or group of contiguous counties which contains at least one city (or twin cities) of 50,000 people. Additional contiguous counties may be added if they are essentially metropolitan in character and are socially and economically integrated with the central city. In New England, SMSA's are composed of towns and cities, rather than counties.

Table 5

Percentage Change in Population of Standard Metropolitan Statistical Areas,  
by Region and Size of Area, United States, 1950-1960

Region and Size-Class	Per cent Change, 1950 to 1960		
	Based on 1960 limits of Central City	Based on 1950 limits of Central City	From Annexations
United States			
In SMSA's	26.4	26.4	-
Central Cities	10.7	1.5	9.3
Outside Central Cities	48.6	61.7	-13.1
Northeast			
In SMSA's	13.0	13.0	-
Central Cities	- 3.2	- 3.3	0.1
Outside Central Cities	34.8	35.0	- 0.2
North Central			
In SMSA's	23.5	23.5	-
Central Cities	4.3	- 1.6	5.9
Outside Central Cities	56.4	66.5	-10.1
South			
In SMSA's	36.2	36.2	-
Central Cities	28.5	5.3	23.3
Outside Central Cities	47.9	83.3	-35.4
West			
In SMSA's	48.5	48.5	-
Central Cities	31.4	14.5	16.9
Outside Central Cities	66.4	84.1	-17.7
Size-Class:			
3,000,000 or more			
In SMSA's	23.2	23.2	-
Central Cities	1.0	0.6	0.4
Outside Central Cities	71.3	72.2	- 0.9
1,000,000 - 3,000,000			
In SMSA's	25.0	25.0	-
Central Cities	5.6	- 2.2	7.8
Outside Central Cities	44.8	52.7	- 8.0
500,000 - 1,000,000			
In SMSA's	36.0	36.0	-
Central Cities	21.4	4.8	16.7
Outside Central Cities	57.1	81.1	-24.0
250,000 - 500,000			
In SMSA's	25.6	25.6	-
Central Cities	16.2	2.2	14.0
Outside Central Cities	36.2	51.9	-15.7
100,000 - 250,000			
In SMSA's	25.8	25.8	-
Central Cities	24.2	4.6	19.6
Outside Central Cities	28.0	54.5	-26.5
Under 100,000			
In SMSA's	26.4	24.4	-
Central Cities	29.2	8.6	20.6
Outside Central Cities	10.9	69.9	-59.1

Source: U. S. Bureau of the Census, U. S. Census of Population: 1960,  
PC (1) - 1A.

The change in regional patterns of metropolitan population between 1950 and 1960 showed both diversity and system. The rate of growth in SMSA's was least in the Northeast (13.0 per cent) and increased progressively with movement to the West and South. The same regional pattern of population increase holds for the central cities and the suburban rings. Population in central cities declined by 3.2 per cent in the Northeast, increased by 4.3 per cent in the North Central region, and by 36.2 and 48.3 per cent in the South and West, respectively. The growth rates for the suburban rings deviated from this pattern only for the North Central region. However, if annexation is ignored and the rates of growth are based on the 1950 limits of the central cities, the patterns are consistent for both central cities and the suburban rings.

Annexation of territory by central cities had a substantial effect on rates of population growth. In the Northeast, annexation had a negligible role; the population of central cities was increased by only 0.1 per cent from this cause. In the North Central region, the population within the 1950 limits of central cities decreased by 1.6 per cent, but annexations made possible a 4.3 per cent increase for the central cities (defined by the 1960 limits). In the South and West, annexations accounted for the greatest numerical and proportionate increases in the population of the central cities. In the South, of the increase of 28.5 per cent in central cities, 23.3 per cent came from annexations and only 5.3 per cent from the increase of population within the 1950 central city limits. In the West, 16.9 per cent of the 31.4 per cent increase in central cities came from annexations and 14.5 per cent from the increase within the 1950 central city limits.

In terms of the size of SMSA's, population increased most rapidly for the 500,000 to 1,000,000 class (36.0 per cent). Otherwise, the rates of growth in SMSA's were contained within a narrow

range (23.2 - 25.8). In general, the rates of growth of central cities were negatively associated with size class; as size declined, the rates of growth of central cities increased in relation to that of the suburban ring.

The annexation of territory by the central city had a substantial effect on rates of growth of the components of the SMSA's in the various size groups. In SMSA's of 3,000,000 and over, approximately half of the 1.0 per cent increase in central city population came from annexation. In the class 1,000,000 to 3,000,000, the population within 1950 central city limits declined by 2.2 per cent, but annexations increased population by 7.8 per cent for a net increase of 5.6 per cent. For all other size classes, the proportion of the total increase which resulted from annexation varied from 70 per cent to 86 per cent.

The pattern of regional growth in the population of SMSA's may be explained in terms of two major factors. First, the rate of growth by region is conditioned by differentials in birth rates and in the migration associated with different rates of regional economic growth and regional income differentials. Second, the urbanization of the United States population involving a flow from rural areas into employment in industry and commerce. The flow due to the rural-urban shift is also influenced by differential economic opportunities among the regions. Also, this process is related to the proportion of the population in the labor force which, at a given time, is employed in agriculture.

The second, and equally striking, aspect of recent population developments is the strong tendency towards decentralization within metropolitan areas. If the effect of annexation on the population growth of central cities is ignored, the rapid growth of the suburban ring relative to the central cities is indeed dramatic. The basic reasons for decentralization are well known and require no

more than a listing for present purposes: (1) the post-war growth in personal incomes which has stimulated the demand for space and for home ownership; (2) the improved educational and occupational levels of the employed; (3) the mode of urban living based in part on a change in tastes and in part on a change in technology; and (4) a change in industrial technology which places emphasis on space and improved transportation.

The impact of these metropolitan developments on the fiscal operations of local governments is of considerable importance. Local governments in fast growing and slow growing (or declining) areas will face substantially different problems and the pattern of employment and expenditure will exhibit corresponding differences.

Consider first the rapidly growing metropolitan areas. Large expenditures must be made to provide the schools, streets, parks and other social capital required by the expanding population. Per capita operating expenditures will tend to lag per capita capital expenditures since maintenance and modernization costs (usually current charges) will be low for new facilities. Similarly, relative to the actual salary structure, expenditures for school salaries will tend to be low because of the heavy weighting of teachers with a small number of years of service and hence a position at the lower end of the salary scale. Other examples can be cited: modern construction present fewer fire hazards; land use can be determined and streets constructed to minimize traffic congestion; an expanding economy provides less incentive (lower structural unemployment rates) for crimes against property, etc.

Some of these tendencies may be altered in the case of a central city growing by the annexation of territory formerly a part of the suburban ring. The central city may inherit part of the required social capital facilities and its expenditures on this account may be

substantially reduced (relative to the expenditures required by an equivalent population growth within the old boundaries). On the other hand, as is frequently the case, the central city may also inherit an obligation to extend a service provided at a higher level to the annexed territory and costs may rise correspondingly.

If a central city is acquiring large increments of territory and population by annexation, as was true of some of the 21 cities compared in this report, there may be a lag in services to the annexed parts and hence a lag in the realization of full cost to the expanded central city. To the extent that this is true, cities growing by annexation can expect a higher rate of growth in expenditures.

In contrast, slow growing or declining central cities face problems of a quite different order. Large capital expenditures may be required for the alteration of the land-use pattern through urban redevelopment and the burden of this type of activity (were it to fall entirely on the residents of the cities) may be substantially greater than the provision of new social capital in a growing area.

The migration from the central city, even though it does not result in a declining population, is more than a simple transfer of people. The social and economic characteristics of the migrants differ from those of the residual population. Migrants to the suburban ring have a higher average income, a higher average number of years of school completed, a higher than average occupational status, and the heads of families have a lower than average age. This differential migration leaves a resident population in the central city with a significantly different age and income distribution and both of these have serious implications for the central city government.

First, the redistribution of population by age implies a different distribution of demands for government services. Because of the existence of a fixed plant designed for a given level of services, e.g., schools, it may require a long time to adjust the cost of services to the new requirements. Second, because of differential migration the aged and the low income groups become relatively more important and, therefore, welfare (including health and hospitals) costs will not change in proportion to the change in population. The per capita costs for welfare services will increase.

The effect of population shifts on the age distribution is clearly revealed in Table 6 which contains the age distributions for Providence and its urban fringe. The evolution of the Providence age distribution between 1940 and 1960 reflect the recovery of the regional (and national) birth rate following the decade of the 1930's and the effects of the differential migration which became accelerated in the post-war period. A comparison of the 1960 distributions for Providence and its urban fringe emphasizes a typical result of decentralization: the urban fringe has a larger proportion of its population below 15 years of age; a smaller proportion in the age group 15-25 - the age-class of entrants to the labor force; a larger proportion in the age-classes between 25 and 50 years which cover the experienced and more skilled part of the labor force; and a smaller proportion in the age groups over 50 years.

Table 6

Percentage Distribution by Age, the Urban Fringe,  
1960, and Providence, 1960, 1950 and 1940

Age Class	Urban Fringe 1960	Providence City		
		1960	1950	1940
Under 5	10.66	9.43	8.88	6.17
5-	10.10	7.94	7.08	6.72
10-	9.34	7.60	5.96	8.23
15-	6.65	7.41	6.76	9.40
20-	4.52	6.70	8.61	9.07
25-	5.21	5.59	8.68	8.60
30-	7.01	6.09	7.68	7.66
35-	8.02	6.46	7.29	6.98
40-	7.38	6.28	6.69	6.96
45-	6.64	6.38	6.04	6.85
50-	5.76	6.10	5.97	6.22
55-	4.98	5.62	5.70	5.16
60-	4.26	5.22	4.88	4.20
65-	3.54	4.97	4.03	3.36
70-	2.68	3.86	2.74	2.30
75-	1.71	2.41	2.55	2.12
80-	0.94	1.25		
85 and over	0.56	0.68	0.45	

Source: U. S. Bureau of the Census, U. S. Census of Population:  
1960, 1950, PC (1) - 1A.

Newer and faster growing areas will have age distributions relative to older central cities corresponding to the age distribution of the Providence urban fringe.

If the central city is also located in a region of low or declining rates of economic activity further problems arise. Higher than average unemployment rates, intermittent employment and, perhaps, a downgrading of the labor force due to a change in industrial composition may result in a per capita (or per family) income which is either lower or growing more slowly than in other cities. This not only reduces the relative ability of residents to pay governmental costs but may actually increase certain costs, e.g., because of increased welfare payments, increased crime, and retraining costs. Other examples easily come to mind.

The tendencies observed above are clearly reflected in the patterns of employment, expenditure and revenue among cities of different sizes, locations, growth rates and other characteristics. Although individual cities deviate significantly from the average because of local circumstances, the aggregates for various classifications of United States cities clearly conform to the patterns described.<sup>1</sup>

#### 2.2.2.1 Population Changes in 21 Cities, 1950-1960

Each of the 21 cities compared in this report is a central city in a SMSA. The relation between the central city and the SMSA will be examined in Section 2.2.3. In this section, some of the population data necessary for meaningful comparisons of governmental

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1. Evidence may be found, among other places, in the following reports of the U. S. Bureau of the Census: Local Government Finances and Employment in Relation to Population: 1957, No. 45; City Employment in 1961, G-GE 61 - No. 2; Compendium of City Government Finances, various years; Census of Governments, 1957, Vol. 6.

operations are presented. Table 7 shows the 1960 population in the 1950 central city limits and in the area annexed between 1950 and 1960, if any. The rate of change in population between 1950 and 1960 is shown for the central city in terms of (1) the 1950 limits and (2) the 1960 limits. The percentage change is also given for the suburban ring and the SMSA.

Thirteen of the 21 cities acquired population by annexation of territory (primarily from the suburban ring). In Tucson, Arizona and Sacramento, California, virtually all of the population increase between 1950 and 1960 came from annexation. In Austin, Charlotte, Mobile and San Jose an overwhelming proportion of the recorded increase was from annexation. Stated in another way, only 3 of the 21 cities had population growth within the 1950 central city limits which exceeded the average population growth in the United States (Albuquerque, Flint and St. Petersburg). In all other cases, the population growth was either relatively small or negative. None of the New England cities represented acquired area or population by annexation.

The growth of the suburban ring was considerably affected by annexation. In Austin and Tucson, for example, the suburban ring experienced a nominal population decline. In other cases, the rate of increase was low relative to the increase in the population in the SMSA. However, if the effect of annexation is eliminated, all cities experienced a substantial growth of the suburban rings.

The rate of growth in SMSA's varied from a low of 6.7 per cent for the Worcester area to a high of 121.1 for the San Jose area. SMSA's in the Northeast experienced low rates of growth; the percentage increases for the 6 New England SMSA's in Table 7 were substantially lower than the rate of increase for all Northeastern SMSA's (34.8 per cent). The Worcester and Providence-

/ Table 7

Population in 1950 Area and Annexed Parts of 21 Central Cities, 1960, and Percentage Change in Central City, Suburban Ring, and SMSA, 1950-1960

Central City	1960 Pop. (000)			1950 Pop. (000)	Per cent Change 1950-1960			
	Total	In 1950 Area	In Annexed Area		In 1950 Area Central City	In 1960 Area		
						Central City	Suburban Ring	SMSA
Albuquerque	201.2	177.5	23.6	96.8	83.4	107.8	24.9	80.0
Austin	186.5	149.2	37.4	132.5	12.6	40.8	-10.3	31.8
Bridgeport	156.7	156.7	-	158.7	- 1.2	- 1.2	54.6	22.2
Charlotte	201.6	144.8	56.7	134.0	8.1	50.4	12.0	38.1
Des Moines	209.0	190.0	18.9	178.0	6.8	17.4	19.3	17.8
Flint	196.9	163.1	-	163.1	20.7	20.7	64.5	38.1
Grand Rapids	177.3	176.6	0.7	176.5	0.1	0.5	66.3	26.0
Hartford	162.2	177.4	-	177.4	- 8.6	- 8.6	58.4	29.2
Jacksonville	201.0	201.0	-	204.5	- 1.7	- 1.7	155.6	49.8
Mobile	202.8	140.4	62.4	129.0	8.8	57.2	9.2	36.0
New Haven	152.0	152.0	-	164.4	- 7.5	- 7.5	51.6	15.6
Providence <sup>1</sup>	207.5	207.5	-	248.7	-16.6	-16.6	22.7	7.4
Sacramento	191.7	139.0	52.7	137.6	1.0	39.3	122.9	81.4
St. Petersburg <sup>2</sup>	181.3	180.7	0.6	96.7	86.8	87.4	68.4	88.8
Salt Lake City	189.4	186.0	3.5	182.1	2.1	4.0	108.7	39.3
San Jose	204.2	104.8	99.4	95.3	10.0	114.3	124.4	121.1
Spokane	181.6	179.4	2.2	161.7	10.9	12.3	61.6	25.6
Springfield <sup>3</sup>	174.5	174.5	-	162.4	7.4	7.4	29.0	15.7
Syracuse	216.0	215.8	0.2	220.6	- 2.2	- 2.1	42.2	21.2
Tucson	212.9	45.8	167.1	45.4	0.7	368.4	-44.9	88.1
Worcester	186.6	186.6	-	203.5	- 8.3	- 8.3	37.3	6.7

Source: U. S. Bureau of the Census, U. S. Census of Population: 1960, Series PC (1) - A.

1. Providence is the major central city in the Providence-Pawtucket SMSA. Including Pawtucket, the central cities declined by 12.6 per cent.
2. St. Petersburg belongs to the St. Petersburg-Tampa SMSA. Tampa had a population increase of 106.1 per cent, but 83 per cent of the 1950-1960 increase came from annexation.
3. Springfield belongs to the Springfield, Holyoke, Chicopee SMSA. All central cities together increased by 8.4 per cent.

Pawtucket SMSA's experienced the lowest rates of growth (6.7 and 7.4 per cent respectively) among the 21 cities in this class. Only two other SMSA's in the United States with populations as large or larger than that of the Providence-Pawtucket SMSA (861,148) had equal or lower rates of growth. The Boston SMSA (2,589,301) had a growth rate of 7.4 per cent, and the Jersey City SMSA declined by 5.7 per cent. 21 small SMSA's in the United States also had lower rates of growth (7 were negative). In all cases these areas had a heavy dependence on a single resource or industry - coal, lead, textiles, leather, railroad transportation, etc. - and the decline in the rate of economic activity resulted in a slow or negative rate of population growth.

The low rate of growth of the Providence-Pawtucket SMSA is of considerable significance in the explanation of the relatively large population decline in Providence City. Given the high population density of Providence, the generally strong trend toward decentralization, and the inability of the SMSA to retain a larger population because of its location in a depressed economic area, the population loss in Providence becomes explicable. Moreover, since in this case the population of the SMSA is large relative to that of the central city, the brunt of the population shift would necessarily fall on Providence.

The impact of these population changes and their social and economic consequences will be referred to in subsequent sections.

### 2.2.3 The Relation Between the Central City and the SMSA

The central city plays an important role in the SMSA through the provision of certain types of economic and social services. Financial, legal, business and allied services are normally concentrated in the central city. In many cases, the central city will serve as the locus of wholesale and, to a lesser extent, retail trade.

Since industry has not followed the same course of decentralization as the population, the central city may also be the place of employment for many who live in the suburban ring. Finally, the central city may be the major source of cultural and other social activities.

The functions which a central city performs for the entire SMSA or the urbanized area are subject to the forces of decentralization induced by the shifts of population. As decentralization occurs, both in terms of population and economic activities, the relationship between central city and SMSA also changes. These changes carry obvious implications for the provision of governmental services within the central city. In this section some aspects of this relationship will be examined with particular reference to the 21 cities under comparison.

In Table 8 the ratios of the population of the central city to the population of the SMSA and the urbanized area are shown.<sup>1</sup>

A high ratio of central city population to the SMSA or the urbanized area population suggests a comparatively low intensity of use by residents of the suburban ring of service functions carried out in the central city by either the private or the public sector. Conversely, low ratios imply a high intensity of use.

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1. In all cases except St. Petersburg-Tampa, whenever a SMSA has more than one central city by Census definition only the principal central city is represented in the ratios. In the St. Petersburg-Tampa SMSA the two central cities are large and of equivalent size. The ratio of one of these cities to the entire SMSA would have relatively little meaning. It is suggested that the ratio of population of St. Petersburg to that of Pinellas County, which may be regarded as a sub-SMSA, is more appropriate for comparative purposes. This ratio is 48.4 per cent.

Table 8

Ratio of Population in Central City to Population in Standard Metropolitan Statistical Area and in the Urbanized Area, 21 Selected Cities, 1960

Central City	Ratio of Population in Central City to Population in	
	SMSA	Urbanized Area <sup>1</sup>
Albuquerque	76.7	83.4
Austin	87.9	99.7
Bridgeport	46.8	42.8
Charlotte	74.1	96.2
Des Moines	78.5	86.7
Flint	52.6	70.9
Grand Rapids	48.8	60.3
Hartford	30.9	42.5
Jacksonville	44.1	54.0
Mobile	64.5	75.6
New Haven	48.8	54.5
Providence	25.4	31.5
Sacramento	38.1	42.4
St. Petersburg-Tampa	59.1	72.8
Salt Lake City	49.5	54.3
San Jose	31.8	33.9
Spokane	65.2	80.0
Springfield	36.4	38.8
Syracuse	38.3	64.8
Tucson	80.1	93.6
Worcester	57.7	82.8

Source: U. S. Bureau of the Census, U. S. Census of Population, 1960, PC (1) - C.

1. An urbanized area, by census definition, consists of one or more central cities of at least 50,000 inhabitants and the urban fringe. This is sometimes referred to as a conurbation. See the source of the table for a detailed definition.

The ratios for the 21 cities shown in Table 8 range from 25.4 to 87.9 per cent for SMSA's, and from 31.5 to 99.7 per cent for the urbanized areas. In both cases, the ratios for Providence are the lowest among the 21 cities and, in general, the differences between Providence and other cities is very large. Providence, therefore, is the central service area for a substantially greater urban population than the other cities under comparison.

If the problem is phrased in terms of the potential use of public services provided by the central city, the burden on the central city would tend to increase as the ratio to SMSA or urbanized area decreased. It is interesting, then, to compare the relationship between other SMSA's in a size-class comparable to the Providence-Pawtucket SMSA and the corresponding central cities. For 13 other SMSA's in the population size-class 600,000 to 1,000,000 (approximately), with single central cities, the ratio of population in the central city to that in the SMSA ranged from 45.3 per cent (Portland, Oregon) to 85.5 per cent (San Antonio, Texas). Stated otherwise, by these standards the equivalent central city required to serve the Providence-Pawtucket SMSA would have ranged in size between 370,000 and 698,000 people.

Although a low SMSA or urbanized area ratio implies a comparatively heavy use of services generated in the central city, what in fact can be said about the 21 cities and especially Providence?

The daytime influx of population into a central city comes from two main sources: persons who live outside the central city and (1) work in the central city or (2) use central city services such as retail and wholesale trade, finance, business services, etc. Direct estimates of the number of employed persons commuting to the central city as the place of work may be made. The available data, however, permit only inferences about the inflow into the central city for other purposes.

In Table 9 data with respect to the residence and place of work of employed persons in the 21 SMSA's and central cities are shown. These estimates are based on the 25 per cent census sample (1960). Column (1) shows the number of employed persons living in the SMSA outside the central city (i.e., in the suburban ring) who work in the central city. Column (2) expresses this number as a percentage of the permanent population of the central city. The worker inflow varies among the 21 cities from a low of 4,430 in Austin to a high of 53,680 in Providence. In terms of the percentage of the permanent population, Providence (25.9) yields first place to Hartford (28.8 per cent).

The number of persons living in the central city and working outside is shown in Columns (4), (5) and (6). The total outflow ranges from 4,660 in Austin to 24,310 in San Jose. The Providence outflow is 14,900 of which 3,510 work outside the SMSA. In most cases the inflow of workers is substantially larger than the outflow. In Albuquerque, Austin and Spokane the two flows are nearly balanced and in Tucson the outflow is more than double the inflow. The net inflow is larger in Providence than in any of the 20 cities.

Table 9

Residence and Place of Work, Employed Persons in Selected Standard Metropolitan Statistical Areas and Central Cities, 1960

Central City	Live in SMSA Outside of Central City, Work in Central City		Live in Central City		
	Number	As Per cent of City Population	Work in SMSA Outside Central City	Work Outside SMSA	Total
	(1)	(2)	(3)	(4)	(5)
Albuquerque	10,650	5.3	8,460	1,660	10,120
Austin	4,430	2.4	2,970	1,690	4,660
Bridgeport	24,140	15.4	8,740	4,920	13,660
Charlotte	16,130	8.0	4,460	3,560	8,020
Des Moines	9,430	4.5	4,970	2,290	7,260
Flint	33,200	16.9	8,860	1,000	9,860
Grand Rapids	25,820	14.6	8,720	1,630	10,350
Hartford	46,790	28.8	13,260	2,890	16,150
Jacksonville	49,740	24.7	10,280	1,280	11,560
Mobile	14,010	6.9	3,770	1,210	4,980
New Haven	29,090	19.1	7,780	4,230	12,010
Providence	53,680	25.9	11,390	3,510	14,900
Sacramento	38,620	20.2	12,730	2,530	15,260
St. Petersburg	13,860	7.6	5,410	850	6,260
(Pinellas Co.) <sup>1</sup>	12,730	7.0	4,630	1,640	6,270
Salt Lake City	31,490	16.6	5,350	3,310	8,660
San Jose	37,720	18.5	19,810	4,500	24,310
Spokane	10,680	5.9	9,740	2,050	11,790
Springfield	21,680	12.4	10,210	4,790	15,000
Syracuse	42,380	19.6	13,040	1,180	14,220
Tucson	6,470	3.0	13,540	2,050	15,590
Worcester	21,030	11.3	3,880	3,860	7,740

Source: U. S. Bureau of the Census, U. S. Census of Population and Housing: 1960, Census Tracts, PHC (1).

1. Tampa and St. Petersburg are central cities of equivalent size. For better comparability, a sub-SMSA consisting of Pinellas County was defined.

The data of Table 9 are incomplete since they do not indicate the number of workers who live outside the SMSA and work inside the central city. For 5 of the 21 cities the census reports do tabulate the place of work for employed residents of some census tracts adjacent to the SMSA. In the case of Providence these adjacent tracts cover all of Rhode Island outside the SMSA so that a fairly complete count is available. There are 1,710 in Rhode Island outside of the Providence-Pawtucket SMSA whose place of work is Providence. Thus it is estimated that approximately 55,400 persons commute to Providence to work. Comparable data are not available for all the other cities.

Data indicating the increase in the daytime population due to persons entering the central cities for services other than employment are not available. Origin and destination studies, which might provide clues to the magnitude of this flow, are not available on a basis which is comparable with respect to time and method. However, inferences about the direction, but not the magnitude, of the flow can be made from the Census of Business. This Census tabulates the sales, number of establishments, number of employees, and other data, for wholesale and retail trade and a range of selected services.

In the case of Providence, it is clear that although the decentralization of population has stimulated some decentralization of these trades, there remains some degree of dependence on the central city. The degree of dependence varies with the type of service. In retail trade, while Providence has lost position relative to the SMSA in general, the percentage of total sales by Providence establishments in the SMSA is significantly greater than the percentage of total Providence population in the SMSA. The per capita retail sales in Providence establishments are substantially

larger than in the SMSA. These results vary by type of retail outlet: apparel and accessories; general merchandise; furniture and fixtures; lumber and building materials; and eating places have retained positions of importance in the SMSA.

Similar trends may be found in wholesale trade and in the selected service categories.

These data suggest a continued inflow of non-residents into Providence, but the magnitudes of the flow cannot be measured.

The impact of an increase in the daytime population of a city has an obvious impact on the provision of governmental services. Even where there is a near balance of inflow and outflow the services required by a resident who works outside the city are not identical with the services required by the non-resident who uses the central city as a place of work or for other purposes. Both groups, therefore, may make net additions to such service requirements as fire protection, traffic control, safety, highway maintenance, etc. As a consequence, per capita expenditures on these functions will, other things equal, be larger than in cities with small flows.

The increased per capita expenditure, however, does not indicate a proportional increase in the per capita burden on central city residents. The buildings and physical facilities required for the productive employment of non-residents, the wealth produced by these productive activities, and the facilities required for the sale of services to other entrants into the city contribute to the tax revenue. The higher per capita expenditure (and revenue and governmental employment) is therefore partially a statistical artifact. Nevertheless, the burden imposed on the residents of the central city may not be completely offset. In any case the size of the daytime population as a factor in larger per capita expenditures and revenues must be taken carefully into account when inter-city

comparisons are made.

### 2.3 The Quantity and Efficiency of Government Services

The quantity and scope of services provided by local governmental units will depend on a complex of factors including the historical and the accidental. Inter-city comparisons, therefore, can provide only proximate guides as to what services should be optimally provided in a given community. The specific factors which gave rise to the structure of demands for public services need also to be analyzed.

Efficiency in the provision of government services poses many difficult problems and the techniques for analyzing, as well as achieving, efficiency are only incompletely developed. In some cases objective tests (engineering tests, for example) are available to test efficiency in the narrow sense of least expenditure for a given level of service. The larger question of whether an expenditure on a specific service is more efficient than the same expenditure on another service, or no expenditure at all, in terms of the general welfare, is not ordinarily the object of study.

Certainly, inter-city comparisons can provide only the most general of clues for rational judgment. As a simple example, a smaller per capita expenditure on a specific service in one city as compared to another does not necessarily imply a lesser cost to the taxpayer. He may have to supplement the service by purchases from the private sector or other private costs (e.g., insurance) may be higher. The relevant factors in this case are the comparative costs of public and private provision of the service and whether the provision of this service (rather than another) is more efficient.

Attention is called to these questions because they are important. Unfortunately, in this report it will be feasible to make only incomplete references to them.

### 3.1 Local Government Employment

Earlier in this report it was stressed that the municipality, the county, school districts and special districts had widely varying responsibilities for the provision of local governmental services to the residents of a city. (See Table 3.) The direct comparison of employment rates for the municipalities is, therefore, generally meaningless unless subsets of municipalities with essentially similar functions are selected. A preferred procedure is to consolidate the employment by all local governmental units overlaying a city and to express the results in terms of employment per 1000 population to eliminate the effect of variations in population size.

However, even this procedure will not yield fully comparable results since the division of responsibility between state and local governments will influence employment rates.

Finally, local units may elect certain utility functions not undertaken publicly in other cities. In some cases, the water supply, traditionally a local function, may be privately owned and operated. The problem posed by the operation of utilities may be easily handled by excluding the employment in these functions from the consolidated accounts.

#### 3.1.1 Local Government Employment in 21 Cities, 1957

The 1957 Census of Governments presents data which permit the consolidation of employment by all local government units providing services within city areas. There are some restrictions on these consolidated data which must be considered in interpretation. First, total employment includes part-time and full-time employment and the

proportion of full-time employment may vary significantly among cities. The reduction of total employment to full-time equivalent employment would avoid most of the difficulties (all bias cannot be eliminated) and this procedure is employed in this report whenever possible.<sup>1</sup> Full-time equivalents have been computed for the total employment by municipalities, but the data are not sufficiently detailed to allow the computation of full-time equivalents for consolidated total employment or for employment in specific services whether on a consolidated basis or not.

A second limitation on the data arises from the variability of employment in some functions from year to year. Force-account construction on highways or sanitation facilities, for example, may swell employment in one year compared to others. Therefore, when making inter-city comparisons of employment by detailed function caution must be exercised not to construe a temporarily high employment level as typical. Examples will be cited later.

Table 10 shows local government employment per 1000 population for the municipal government and for all local units overlaying a city. Column (1) contains the full-time equivalent employment in all functions performed by the respective municipalities. These data will be commented on later in this section. Column (2) shows total (full-time plus part-time) employment by the municipalities and stands in sharp contrast to Column (3) which shows the consolidated employment for all services by all local government units on behalf of the residents of a city. Full-time equivalent employment on a consolidated basis cannot be computed because of insufficient data with respect to counties and special districts.

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1. Full-time equivalent employment is computed in terms of average pay rates for full-time work.

Table 10  
Local Government Employment Per 1000 Population,  
Selected Cities, 1957

City	Employees Per 1000 Population			
	Municipal Government		All Local Government Units	
	Full-time equivalent	Total employment	All Services	Excluding Utility Services
	(1)	(2)	(3)	(4)
Albuquerque	7.2	7.6	25.2	24.5
Austin	15.4	16.4	32.7	29.8
Charlotte	8.9	9.1	25.0	24.3
Des Moines	8.9	8.7	24.4	23.5
Flint	13.7	18.1	35.1	34.5
Grand Rapids	8.8	9.2	21.4	20.3
Jacksonville	18.4	18.5	32.7	27.0
Mobile	8.4	8.5	22.6	21.4
Sacramento	11.1	11.1	38.6	33.5
St. Petersburg	15.9	16.5	27.3	25.2
Salt Lake City	8.9	9.1	25.4	24.4
San Jose	5.3	6.4	21.9	21.9
Spokane	8.3	9.5	23.3	22.5
Syracuse	20.1	21.7	26.3	25.5
Tucson	5.8	7.0	25.5	24.9
Bridgeport	20.0	21.0	22.3	22.3
Hartford	21.2	22.4	24.3	22.5
New Haven	19.0	20.3	21.1	21.1
Springfield	25.7	28.5	29.0	28.0
Worcester	26.5	27.0	28.2	27.4
Providence	22.6	23.4	24.0	23.1

Source: U. S. Bureau of the Census, 1957 Census of Governments,  
Vol. 6.

Some examples will illustrate the composition of the consolidated employment. In Albuquerque, local services are provided by 4 independent governmental units making the following contributions to local government employment: Albuquerque municipality, 7.6 employees per 1000 of population; Bernalillo County, 4.4; school districts, 13.2; and special districts, 0.1. Hence, total employment per 1000 of population for all local functions in Albuquerque was 25.2. In contrast, Providence municipality handled functions employing 23.4 persons per 1000 of population and one special district (housing and community development), had 0.6 employees per 1000 of population. In the case of Providence, a county government structure does not exist and the school systems are fully dependent.

In Column (4) the employment per 1000 of population in utility functions has been excluded for comparability. Some cities, such as Bridgeport, New Haven and San Jose, provide no utility services (including water) while cities like Austin, Jacksonville and Sacramento own and operate electric, gas and transit services as well as water systems.

Local governments in the 21 cities had consolidated employment per 1000 ranging from 20.3 in Grand Rapids to 34.5 in Flint. It is interesting that the cities at the extremes are located in the same state. Some of the factors in this large difference will appear in the discussion. The median employment rate is 24.4 (Salt Lake City). Providence had 23.1 employees per 1000 of population and ranked 14 (from the top). The seven cities ranking higher than Providence had employment rates ranging from 20.3 to 23.1, the 13 cities ranking below Providence had rates ranging from 23.1 to 34.5.

Given the limitations on the data small inter-city differences are probably not significant. As already noted, part of the observed differences may be due simply to the different compositions

of part-time and full-time employment. The full-time equivalent employment per 1000 of population recorded in Column (1) of Table 10 suggests that the inter-city range would be reduced by 4 or 5 units if the consolidation could be based on a full-time equivalent basis. Note that in Flint the employment per 1000 of population is 18.1 compared to a full-time equivalent of 13.7.

It may be noted that if the differences between employment rates in Columns (1) and (2) are taken into account the relative rankings of the 21 cities is not essentially altered. Providence would rank 14.5 on a full-time equivalent basis rather than 14.

In terms of employment per 1000 of population for all services, Providence ranks favorably among the 21 cities.

Sufficient data are available in the 1957 Census of Governments to construct consolidated employment per 1000 of population for a limited number of specific functions. The functions are education, highways, police, fire, health and hospitals and sanitation. They are important local functions and, in the case of Providence, for example, make up approximately 81% of total local employment.

Considerable care must be taken in interpreting the employment data for specific functions because of the large differences in the proportions of part-time and full-time employees. It has been seen that in Flint part-time employment inflated significantly the total employment rate. The data are not sufficiently detailed to indicate how part-time employees are distributed by function.

Similarly, short-term variations in employment, as in the case of force-account construction on highways or sewer systems, may yield employment rates for individual functions which are not typical of longer-run levels for individual cities. Highway employment in Springfield in 1957 is a case in point. In that year the number of recorded employees was 4-5 times larger than in any succeeding year.

Table 11

Local Government Employment Per 1000 Population,  
Selected Functions, Selected Cities, 1957

City	Employees Per 1000 Population					
	Education	Highways	Police	Fire	Health & Hospitals	Sanitation
Albuquerque	13.1	0.7	1.3	1.0	1.7	1.5
Austin	12.0	1.3	1.8	1.5	3.7	1.6
Charlotte	13.1	0.8	2.0	1.6	1.0	2.0
Des Moines	12.2	1.6	1.5	1.3	1.6	1.2
Flint	14.2	1.2	2.4	1.4	7.7	1.1
Grand Rapids	8.8	1.5	1.8	1.5	1.6	0.5
Jacksonville	10.7	2.2	2.6	1.8	2.1	2.7
Mobile	13.3	0.8	1.6	1.0	2.1	1.0
Sacramento	16.7	0.7	2.1	1.5	3.2	1.7
San Jose	10.4	1.0	1.2	1.1	2.3	0.5
St. Petersburg	13.2	2.1	1.1	0.7	4.1	1.6
Salt Lake City	11.6	2.3	2.1	1.2	2.5	0.4
Spokane	10.7	2.1	1.8	1.3	0.9	0.9
Syracuse	8.9	1.2	2.5	1.9	1.3	1.9
Tucson	13.3	1.9	1.5	0.7	1.3	0.6
Bridgeport	7.5	0.7	2.5	2.4	2.1	1.5
Hartford	8.6	0.6	2.8	2.6	2.4	n.a.
New Haven	9.0	0.4	2.9	2.3	0.6	1.6
Springfield	10.3	4.9	2.4	2.8	2.3	n.a.
Worcester	8.3	1.0	2.6	2.3	6.0	1.2
Providence	8.0	1.5	3.0	2.3	1.6	2.4
Low	7.5	0.4	1.1	0.7	0.6	0.4
Median	10.7	1.2	2.1	1.5	2.1	1.5
High	16.7	4.9	3.0	2.8	7.7	2.7

Source: U. S. Bureau of the Census, 1957 Census of Governments, Vol. 6.

n.a. = not available.

In Table 11 the employment rates for specified functions are shown for the 21 cities. Comparisons based on these data should take account of the limitations just discussed.

Education, highways, police, fire and sanitation may be regarded as common local functions in the sense that local governmental units have primary responsibility. The function of health and hospitals, however, is allocated in varying proportions to state and local governments. Hence, direct inter-city comparisons may not be meaningful.

Within the stated limitations, the data quite generally conform to expectations with respect to the relative, if not the absolute, magnitude of employment per 1000 population in the stated functions among the 21 cities. The expectations, it will be recalled, are formed out of the physical, social and economic characteristics of the respective cities.

If attention is focused on education, police and fire -- functions not appreciably affected by force-account construction or differences in the state-local allocation of responsibility -- a clear pattern is evident for the 6 New England cities. This pattern tends to be followed by the older cities which have been in their present population class for a substantial period of time.

In the New England cities, employment rates in education are below the median of the 21 cities -- and, with the exception of Springfield, substantially below. On the other hand, employment rates for police and fire functions in these congested, highly-industrialized cities are above the median. The more rapidly growing, younger cities of the South and West have reversed patterns. Employment rates in education tend to be high because of the age distribution of the population, while the physical structure of the cities and high rates of economic growth permit lower employment rates for police and fire protection.

In comparisons of governmental operations the temporal position of a city with respect to population size is an important factor. It is well established that governmental employment in relation to population increases systematically with population. In 1961, for example, local full-time equivalent employment per 1000 population in non-school functions increased from 7.4 for cities less than 25,000 in population to 18.7 for cities in the 1,000,000 and over class. As a city grows it may expect a rising ratio of employment to population in local functions. If the population growth is sufficiently rapid, as might occur with substantial annexation, there is likely to be a time-lag in the growth of the population ratio. When a city moves from one population class to another typically it will be at the upper end of the employment range in the old population class and the lower end of the range in the new population class. The implications for older cities with a stable, or a declining, population are self-evident.

In Providence, the ratio of employment to population is below the 21 city median for education and health and hospitals, and above the median for police, fire, highways and sanitation. The employment ratio in education is next to lowest and reflects the age distribution of the Providence population and the proportion of children attending non-public schools.

The Providence employment ratios for fire protection and police protection are consistent with the New England pattern. The employment ratio for police protection may be slightly inflated, relative to other cities, by the somewhat larger proportion of part-time employment in the Providence police department.<sup>1</sup> The computation of a

1. In some years the Municipal Yearbook tabulated crossing guards separately from other police department employees. The proportion of crossing guards -- all part-time employees -- was higher in Providence than in other New England cities and, with one exception, in all 21 cities. In a number of cities no crossing guards are employed.

full-time equivalent employment ratio, however, would still place Providence at the higher end of the range for the 21 cities.

The employment ratios for highways, health and hospitals and sanitation must be judged in light of the factors producing the large relative variation among cities. The ratio of employment to population for health and hospitals, for example, must be examined in terms of the degree of state responsibility, while the ratios for highways and sanitation can be properly interpreted only if employment on force-account construction is known. The variability in the employment ratio for sanitation also reflects the scope of sanitation services performed by local units; in some cases sanitation services may be performed under contract by private firms.

### 3.1.2 Changes in the Ratio of Employment to Population, 1957-1961

Data are not available for the consolidation of local government employment for a more recent year than 1957. However, employment by city governments (municipalities) are compiled annually. It is then possible to get an indication of the change in local government employment between 1957 and 1961. Caution must be used since a measure of the change in employment by a municipal government is not a measure of the change in employment by consolidated local governmental units. The two measures would deviate by varying amounts due to the difference in the composition and the scope of local services performed by the municipality. In the decade ending in 1961, municipal employment in functions other than schools, for example, increased by 28 per cent, whereas school employment in those municipalities with responsibility for education increased by nearly 40 per cent. Moreover, municipalities with dependent school districts are heavily concentrated in the northeastern states.

It follows, therefore, that Providence and, to a lesser extent, other New England cities in which the municipalities have almost complete responsibility for local functions will have changes in employment ratios which are large relative to those registered by other cities in which school districts and county governments play important roles.

Table 12 shows the percentage change in (a) the number of municipal employees and (b) the ratio of employment to population for total employment (part-time plus full-time), full-time employment, and equivalent full-time employment.

The differences between pairs of Columns (1) and (2) and (3) and (4) reflect shifts in the percentage of part-time employees. In some cases, notably Flint, the shift involved large numbers of employees. There is a tendency for this shift to be related to population change; typically the proportion of part-time employees declines as population increases. Because of the limitations on the data, little significance should be attached to small differences.

Providence, contrary to the experience of most other New England cities, increased the proportion of full-time employees.

Attention may be focused on Columns (3) and (6) which are based on equivalent full-time employment. There is a clear, although not a simple, association between the percentage change in municipal employment and the change in population. The effect of a declining population is reflected in the ratios of equivalent full-time employment to population. Whereas 14 of the 21 cities had larger percentage increases in the number of equivalent full-time employees than did Providence, only 7 of the 21 had larger increases in terms of the ratio of employment to population. Three other cities had nearly equal ratios (9.5). The significance of this lies in the fact that it is extremely difficult to reduce employment in services established

Table 12

Per cent Change, April, 1957 to October, 1961 Number of City Employees and Ratio of City Employment to Population, Total Employment, Full-time Employment, Full-time Equivalent Employment, Selected Cities

City	Per cent Change, April, 1957 to October, 1961					
	Number of Employees			Ratio of Employment to Population		
	Total	Full-time	Equivalent Full-time	Total	Full-time	Equivalent Full-time
	(1)	(2)	(3)	(4)	(5)	(6)
Albuquerque	34.8	41.0	39.5	14.0	11.9	18.0
Austin	16.0	14.0	14.7	6.1	4.2	5.2
Charlotte	41.7	40.7	40.8	27.7	12.7	12.7
Des Moines	19.4	18.2	12.6	14.1	13.0	7.9
Flint	-10.8	23.9	15.2	-15.3	17.5	9.5
Grand Rapids	5.4	1.1	1.7	5.3	0.9	1.1
Jacksonville	18.2	15.5	16.1	18.9	16.2	16.3
Mobile	25.9	21.2	22.3	12.2	8.0	9.5
Sacramento	11.2	9.6	2.8	2.1	0.5	- 5.4
St. Petersburg	48.4	47.7	47.6	27.6	26.9	27.0
Salt Lake City	1.7	- 7.2	- 3.3	0.4	- 8.3	- 4.5
San Jose	60.5	75.0	69.2	34.6	46.8	43.4
Spokane	5.2	6.5	6.8	2.0	3.3	3.6
Syracuse	4.9	6.9	5.3	5.6	7.6	6.0
Tucson	37.1	60.4	56.0	4.9	12.2	19.0
Bridgeport	0.8	3.6	3.2	1.4	4.2	4.0
Hartford	14.7	7.6	9.1	17.8	10.4	11.8
New Haven	9.5	5.9	6.7	12.1	8.4	9.5
Springfield	8.7	3.9	3.0	6.4	1.7	1.2
Worcester	7.9	3.8	0.4	11.9	7.7	4.2
Providence	2.2	5.5	4.4	8.2	11.7	10.2

Source: U. S. Bureau of the Census, 1957 Census of Governments; City Employment in 1961, G-GE 61 - No. 2.

at a level appropriate to a larger population while, at the same time, new problems require the establishment of additional services such as urban redevelopment.

### 3.1.3 Municipal Employment in 6 New England Cities, 1961

The municipalities in New England dominate local government employment. In 1957, for example, the percentages of total local government employment accounted for by the municipality were: Hartford, 92; Bridgeport, 94; New Haven and Worcester, 96; and Springfield and Providence, 98. Hence, although employment data for these 6 cities are not fully comparable, reasonably accurate measurements of employment changes are possible.

The Census Bureau annually reports city employment. However, 1958 was the first year for which the data are sufficiently detailed or stated on a basis to permit a direct comparison with 1961 employment. Hence, the employment comparisons in this section will be based on 1958 data.

Table 13 shows the ratios of equivalent full-time and actual full-time employment to population for all functions and the full-time employment ratios for selected functions. The percentage change in full-time employees between October, 1958 and October, 1961 are also shown. In an effort to secure directly comparable total local employment, the equivalent full-time employees per 1000 population were adjusted (relative to Providence) to reflect the ratio of municipal employment to total local government employment. These adjusted figures are contained in Column (2). The effect of the adjustment is to shift the rank of Providence from 3 in terms of actual employment to 4 in terms of adjusted employment (see Columns (1) and (4)).

Table 13

Employees per 1000 Population, 1961  
and Per cent Change in Employment, 1958-1961  
Six New England Cities

City	Employees per 1000 Population, 1961						
	Equivalent full-time		Full-time Employees				
	Actual	Adjusted	Total	Highways	Police	Fire	Education
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Bridgeport	20.8	21.7	20.6	0.8	2.4	2.9	7.6
Hartford	23.7	25.3	23.0	1.5	2.5	2.5	8.8
New Haven	20.8	21.2	20.1	1.1	2.6	2.5	8.7
Providence	24.9	24.9	24.7	1.2	2.8	2.4	8.5
Springfield	26.0	26.0	25.1	0.9	2.1	2.7	9.3
Worcester	27.6	28.1	26.8	1.1	2.2	2.6	9.3

Per cent Change in Employment, 1958-1961

Bridgeport	6.4	6.5	-11.3	0.5	-0.9	5.4
Hartford	2.0	0.6	12.6	-8.2	-6.0	4.5
New Haven	5.2	3.2	71.7	-6.5	3.0	5.1
Providence	3.3	2.8	-31.6	1.0	-1.7	4.3
Springfield	-4.7	-4.9	-29.0	12.7	-2.7	0.9
Worcester	0.3	0.0	0.0	-1.2	7.0	10.8

Source: U. S. Bureau of the Census, City Employment in 1958, G-GE 58, No. 2; City Employment in 1961, G-GE 61, No. 2.

The specific functions selected for comparison are limited to education, police, fire and highways. Because of differences in methods of reporting or in function classification occurring between 1958 and 1961 complete data for all 6 cities are not available for other types of services.

Employment in highways is, for reasons previously cited, the most variable. Providence and Springfield made substantial reductions in full-time highway employees whereas New Haven had a large increase. The ranking of the 6 cities, therefore, changed considerably between 1958 and 1961, Providence being the only city to retain its rank of 2.

City ranks with respect to employment in the police function remain initially unaltered from 1958 (or 1957). Providence continued to rank 1, but the differences among the four top ranking cities are small. Changes in employment on fire protection tended to be small with 4 cities registering a decline in full-time employees. City ranks underwent some rearrangement from 1958 (and 1957) but Providence retained its position with a rank of 6. The employment ratios of the 6 New England cities show a remarkable similarity.

In education, the changes in full-time employment between 1958 and 1961 left the 1958 (and 1957) ranking unaltered except for an interchange of place by New Haven and Worcester, Providence had a rank of 5; only Bridgeport had a lower employment ratio.

The comparative data presented in Sections 3.1.1, 3.1.2, and 3.1.3 clearly indicate that employment changes in the period 1957-1961, or 1958-1961, have not appreciably altered the position of Providence relative to other New England cities. Relative to some non-New England cities among the 21 selected for comparison, the relative changes experienced by Providence, especially in the ratios

of employment to population, suggest some shifts in the rank of Providence. However, if limitations on the 1961 data are taken into account, it is likely that these shifts are relatively small.

The examination of the available employment data has not revealed anything in the employment pattern of Providence that can be considered inconsistent with (1) the comparative performance of cities of the same size and (2) the physical, economic and social conditions affecting local government operations in these cities.

#### 3.1.4 Average Pay Rates, Full-time Employees, 1958 and 1961

In subsequent sections the expenditures and revenues of the 21 cities will be examined. It will be useful in the interpretation of the comparative data to have some knowledge of the pay rates in the various cities. Table 14 shows the average pay rates on an annual basis for full-time employees in common functions for October, 1958 and 1961. The most important omitted category of employees is education for which the average pay rates would be larger than the rates shown for each city.

Little comment is required. The average pay rate in common functions in Providence was below the median in both 1958 and 1961. The low rate of increase (4.6 per cent) means that the Providence rank increased. An examination of these pay rates in each of the 21 cities suggests that neither the relative position nor the rate of change of Providence is inconsistent with general labor market conditions in the respective cities.

Table 14

Average Pay Rates, Annual Basis, Full-time Employees  
in Common Functions, Selected Cities, October, 1958 and 1961

City	Average Pay Rates, Annual Rates		Per cent Change
	1958	1961	1958-1961
Albuquerque	3952	4315	9.2
Austin	3610	4023	11.4
Charlotte	3538	4067	15.0
Des Moines	4435	5270	18.8
Flint	5241	5996	14.4
Grand Rapids	4754	5143	8.2
Jacksonville	4189	4763	13.7
Mobile	3335	4188	25.6
Sacramento	5155	6174	19.8
Salt Lake City	3915	4686	19.7
San Jose	5633	6547	16.2
Spokane	4685	5432	15.9
Syracuse	3948	4424	12.1
Tucson	4274	4949	15.8
Bridgeport	4453	4764	7.0
Hartford	4530	5324	17.5
New Haven	4002	5133	28.3
Springfield	4296	5406	25.8
Worcester	3783	3859	2.0
Providence	3975	4159	4.6

Source: U. S. Bureau of the Census, City Employment in 1958, G-GE 58, No. 2; City Employment in 1961, G-GE 61, No. 2.

#### 4.1 Local Government Expenditure, 1957

In this section consolidated expenditures for all local governmental units serving a city area will be examined. Reference to Table 3, Page 8, will indicate the relative importance of the municipality, the county, the school and special districts for each of the 21 cities under comparison. Table 15 shows the consolidated local government expenditures by broad category on a per capita basis.

Certain definitions are necessary. Total expenditure refers to all governmental payments except for debt retirement, investment in securities, and agency and private trust transactions. Intergovernmental expenditures are the amounts paid to other governments as grants-in-aid or as compensations for services. The intergovernmental payments recorded in Table 15 are net of transfers among the local units involved in the consolidated accounts and cover payments to states and other local governments. Direct expenditures are those made to non-governmental recipients. Hence, direct plus intergovernmental expenditures make up total expenditures.

Total expenditures may also be classified by function or activity -- in broad terms, general, utility and retirement system expenditures. Employee retirement expenditures are payments to beneficiaries of contributing retirement programs. The cost of administration and city contributions are part of general expenditure. In this report, retirement systems will be considered only to the extent that general expenditures are affected.

Table 15

Local Government Expenditure in Selected Cities,  
by Broad Category, Per Capita, 1957

City	Expenditure per Capita						
	Net	Direct		Total	General	Utility	Employee Retirement
	Inter-Gov't. <sup>1</sup>	Current Purposes	Capital Outlay				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	
Albuquerque	1.0	117.6	47.8	166.4	150.0	16.4	--
Austin	0.3	131.6	70.5	202.4	152.2	49.2	0.1
Charlotte (A)	0.7	111.2	41.2	154.1	131.6	22.2	0.3
Charlotte (B)	(0.9)	(131.5)	(41.6)	(173.8)	(153.1)	(22.2)	(0.3)
Des Moines	5.8	131.6	42.0	179.4	165.9	11.2	2.2
Flint	0.6	162.1	69.8	232.5	215.8	15.0	1.8
Grand Rapids	1.0	122.2	54.2	177.4	156.9	19.6	0.8
Jacksonville	3.8	209.1	94.2	307.1	176.0	123.4	7.6
Mobile	1.4	100.6	76.7	178.7	159.7	18.3	0.7
Sacramento	--	262.6	99.0	361.6	256.7	99.4	5.6
St. Petersburg	0.9	139.3	59.2	199.4	162.9	33.0	4.2
Salt Lake City	--	122.4	50.6	173.0	154.2	18.5	0.4
San Jose	0.4	143.6	47.7	191.7	190.8	--	0.9
Spokane	2.4	127.2	55.6	185.2	171.8	9.6	3.2
Syracuse	2.2	169.2	36.2	207.6	196.1	8.8	2.7
Tucson	0.1	135.6	70.0	205.7	198.2	6.9	0.6
Bridgeport	--	139.5	11.9	151.6	147.9	--	3.8
Hartford	0.2	168.9	36.0	205.1	178.0	15.2	11.9
New Haven	0.3	129.5	66.1	195.9	190.0	--	5.9
Springfield	0.4	197.4	33.2	231.0	211.7	15.0	4.2
Worcester	1.2	188.7	30.0	219.9	207.3	8.5	4.2
Providence	0.6	136.9	37.4	174.9	160.4	10.2	4.3
Rank	--	11	17	17	14	13	--
Low	0.0	100.6	11.9	151.6	131.6	--	--
High	5.8	262.6	99.0	361.6	256.7	123.4	11.9
Median	--	136.9	50.6	195.9	171.8	15.0	2.7

1. Net of transfers between local units serving the city areas.

Source: U. S. Bureau of the Census: 1957 Census of Governments,  
Vol. 6.

Special notice must be taken of the per capita expenditure data for Charlotte, North Carolina. North Carolina is the only state among those represented which makes direct expenditures for the operation of local schools. Certain basic fiscal requirements of local school administrative units are met by direct state payments which may be supplemented by city tax levies. This joint state-local direct responsibility for local schools introduces a bias into the inter-city comparisons since in all other cases direct educational expenditures are entirely local. To maintain comparability a second set of expenditures data has been computed for Charlotte by treating state direct expenditures as state grants-in-aid. Expenditures data designated as Charlotte (A) are on an "as reported" basis whereas Charlotte (B) is on the new basis. Clearly, inter-city comparisons should be made in terms of Charlotte (B).

Total expenditures per capita (Column 4) varied widely among the 21 cities. The low was 151.6 (Bridgeport) and the high was 361.6 (Sacramento). The range -- 210.0 dollars per capita -- thus actually exceeded the median total expenditure. The variation in total expenditure is partially explained by the inter-city differences in capital outlays and utility expenditures.

Capital outlays varied from 11.9 to 99.0, with a median of 50.6. Direct expenditures for current purposes, which are net of capital outlays and intergovernmental payments, varied from 100.6 to 262.6 with a median of 136.9. The range -- 162.0 dollars per capita -- is substantially lower than that for total expenditures. Nevertheless, it exceeds the median.

Per capita utility expenditures ranged from zero to 123.4 per capita. The median was 15.0, which emphasizes that the high expenditure of 123.4 was atypical. General expenditures, which are net of

utility and retirement system expenditures, have a range of 125.1. This is only slightly less than the low per capita general expenditure of 131.6 (Charlotte). The large range in per capita expenditures for general functions and activities reflects a wide variation in the requirements and conditions of individual cities as well as differences in the allocation of responsibilities between state and local governmental units.

Per capita expenditures in Providence were below the medians for total, general and utility expenditures and for capital outlay and equal to the median for direct expenditures for current purposes. The Providence ranks with respect to the various expenditure categories are shown in Table 15. The rankings run from high to low, i.e., a high rank indicates a low per capita expenditure.

Table 15 suggests that for making inter-city comparisons attention should be focused on general expenditure. Cities may exercise a wide choice with respect to the provisions of utility services and, as has been seen, the range of expenditures is large in practice. Among the 21 cities, 3 provide no utility service whatsoever, whereas local units in Sacramento operate water, transit and electric utilities; Jacksonville provides water, electricity and gas; St. Petersburg, water and transit; and Austin, water and electricity. Even where utility operations are restricted to water there are differences in the areas which may be served.

From Table 16 it can be seen that large variations are characteristic of capital outlays as well as current operations. Utility expenditures thus have a significant effect on both direct expenditures for current purposes and total capital outlay. Inter-city comparisons of governmental expenditures, therefore, are better made by the exclusion of utility expenditures. In fact, the impact of utility expenditures is more likely to be felt on (the revenue structure of a city than on expenditures for general functions.

Table 16  
Local Government General and Utility Expenditure  
in Selected Cities, per Capita, 1957

City	General Expenditure			Utility Expenditure		
	Total	Current Purposes	Capital Outlay	Total	Current Purposes	Capital Outlay
	(1)	(2)	(3)	(4)	(5)	(6)
Albuquerque	150.0	110.1	39.9	116.4	8.5	7.9
Austin	152.2	112.2	42.0	49.2	20.7	28.5
Charlotte (A)	131.6	106.6	25.0	22.2	6.0	16.2
Charlotte (B)	(151.3)	(125.9)	(25.4)	(22.2)	(6.0)	(16.2)
Des Moines	165.9	128.6	37.3	11.2	6.5	4.7
Flint	215.8	152.1	63.7	15.0	8.9	6.1
Grand Rapids	156.9	115.7	41.2	19.6	6.6	13.0
Jacksonville	176.0	137.2	39.8	123.4	69.0	54.4
Mobile	159.7	90.4	69.3	18.3	10.9	7.4
Sacramento	256.7	193.1	63.6	99.4	64.0	35.4
St. Petersburg	162.9	114.8	47.4	33.0	21.2	11.8
Salt Lake City	154.2	110.9	43.3	18.5	11.2	7.3
San Jose	190.8	143.1	47.7	--	--	--
Spokane	171.8	120.9	50.9	9.6	4.9	4.7
Syracuse	196.1	160.9	35.2	8.8	7.8	1.0
Tucson	198.2	130.4	67.8	6.9	4.7	2.2
Bridgeport	147.9	136.0	11.9	--	--	--
Hartford	178.0	152.5	26.5	15.2	5.7	9.5
New Haven	190.0	123.9	66.1	--	--	--
Springfield	211.7	185.1	26.6	15.0	8.4	6.6
Worcester	207.3	181.3	26.0	8.5	4.5	4.0
Providence	160.4	124.7	35.7	10.2	8.4	1.8
Low	147.9	90.4	11.9	--	--	--
High	256.7	193.1	69.3	123.4	69.0	54.4
Median <sup>1</sup>	171.8	128.6	41.2	15.0	7.8(8.4)	6.6(7.35)
Rank-Providence	14	12	15	13	9.5	17

1. Medians in parentheses are for the 18 cities with utility expenditures.

Source: U. S. Bureau of the Census: 1957 Census of Governments, Vol. 6.

The analysis of general expenditures requires the separation of capital outlays from payments for current purposes. Capital outlays reflect the conditions of a city differently than do expenditures on current operations and the assignment of sources of inter-city variation is obscured if only the total is observed. Moreover, capital outlays in any year are reckoned in terms of actual disbursements on capital projects. Hence, they tend to be irregular even though over a longer period a clear expenditure pattern consistent with local conditions tends to emerge. Current operations are more stable and tend to show small change from year to year. Over longer periods, of course, substantial variations can occur.

General expenditures for current purposes and for capital outlay are shown in Table 16. Per capita expenditures for current purposes ranged from 90.4 (Mobile) to 193.1 (Sacramento) with a median of 128.6. Providence with expenditures of 124.7 was appreciably below the median and had a rank of 12.

Although general expenditures for current purposes are affected by a complicated set of factors certain interesting patterns are evident. There is an observable relationship between the magnitude of per capita expenditures by local governments and the percentage of total state and local expenditures made by local units. In those states where the local share of total state and local general expenditures are higher than average, local government expenditures tend to be higher than average.

Also, the cities of the South and Southwest have, with few exceptions, per capita general expenditures for current purposes significantly below the 21-city median.

Patterns of capital outlay are less easily discerned because of the diversity of factors involved. Per capita outlays ranged from 11.9 to 41.2 with a median of 41.2. Providence had an outlay of 35.7 and ranked 15.

4.2 Per Capita Local Government General Expenditures by Function, 1957

The magnitude of per capita aggregate general expenditure carries no implication with respect to expenditures on specific functions. Differences in aggregate general expenditure per capita may arise because of different allocations of responsibility between the state and the local units or because the levels of expenditure on the various functions may vary among cities. It is thus necessary to examine the composition of aggregate general expenditure. In Sections 4.2.1 - 4.2.6 the per capita expenditures on specific functions will be analyzed.

The different functional compositions of general expenditure among the 21 cities are summarized in the form of percentage distributions in Table 17. A casual study of the expenditure patterns of the cities seems to show complete diversity. This, of course, is true since the specific expenditure requirements of each city is the product of a unique set of conditions: Nevertheless, some regularities are present. The old, industrialized cities in the Northeast are characterized by larger per capita expenditures on housing and community development, police and fire protection and smaller expenditures on highways and education. The rapidly growing and low density (population) cities have larger expenditures on schools and highways and lower expenditures on police and fire protection and only rarely any expenditure on housing and community development (urban renewal). The effect of differences in the state-local division of functions is reflected in the variations in the percentages of expenditure on public welfare, hospitals and health.

Table 17

Percentage Distribution, Per Capita G  
by Function, Selected Cities

City	Total <sup>1</sup>	Educa- tion	High- ways	Public Welfare	Hospitals	Health	Police	Fire	Sev and pos
Albuquerque	100.0	48.4	6.6	0.2	4.0	0.6	4.2	4.1	7
Austin	100.0	42.6	8.6	1.1	8.1	1.1	6.5	4.9	4
Charlotte (A)	100.0	26.0	8.8	8.0	3.4	3.5	6.4	5.5	2
Charlotte (B)	(100.0)	(36.4)	(7.8)	(7.1)	(3.0)	(3.1)	(5.7)	(4.9)	(2
Des Moines	100.0	51.0	10.3	3.0	5.1	0.8	4.7	3.8	2
Flint	100.0	29.4	13.8	2.7	18.1	1.1	7.1	4.0	5
Grand Rapids	100.0	38.1	19.6	2.3	3.0	1.6	7.0	5.6	3
Jacksonville	100.0	32.4	8.8	0.5	3.5	2.2	10.3	5.4	2
Mobile	100.0	22.6	30.2	0.2	5.2	0.6	4.6	3.0	9
Sacramento	100.0	33.2	6.4	10.6	4.6	2.0	5.3	3.3	2
St. Petersburg	100.0	24.9	8.2	1.1	13.1	0.8	4.0	2.1	18
Salt Lake City	100.0	46.9	10.7	0.3	4.1	1.5	6.5	4.0	8
San Jose	100.0	33.8	8.2	12.5	4.5	3.1	5.4	3.2	4
Spokane	100.0	41.2	16.0	0.2	1.3	1.2	7.3	4.6	9
Syracuse	100.0	27.1	14.1	10.2	1.6	2.5	7.7	5.2	6
Tucson	100.0	52.8	11.4	(a)	2.6	0.5	3.8	1.9	1
Bridgeport	100.0	27.4	3.7	1.4	5.8	1.3	8.7	11.0	3
Hartford	100.0	28.8	4.3	3.0	5.4	1.8	7.4	7.4	5
New Haven	100.0	35.5	4.8	4.1	1.1	1.7	7.5	7.5	2
Springfield	100.0	31.7	8.2	12.0	5.3	2.1	6.0	6.8	7
Worcester	100.0	25.4	7.0	15.2	10.5	3.1	5.5	5.4	7
Providence	100.0	28.8	6.0	6.6	3.5	1.4	7.5	6.5	7

Source: U. S. Bureau of the Census: 1957 Census of Governme  
because of rounding. (a) Less than 0.05.

The fact remains, however, that conditions specific to each city are impressed upon the pattern of expenditure. The magnitudes of per capita expenditures are not, therefore, adequate tests of the appropriateness of the level of service performed in any city. It is a task of great magnitude to undertake a systematic examination of questions of the proper level of services or the efficiency of performance. Therefore, such inquiries will not be undertaken in subsequent sections, although a more detailed analysis will be made of certain services whenever existing data permit.

#### 4.2.1 Local Government Expenditures on Education, 1957

Education takes a larger share of general expenditures than any other function in all cities with the exception of Mobile. In the latter city, highways take the largest share.

Except for North Carolina, direct expenditures by state governments on primary and secondary education are of negligible importance. In the case of North Carolina, if direct expenditures on education are interpreted as state grants-in-aid (and therefore added to the reported direct expenditures), comparability is restored and differences in state-local responsibility are not involved in inter-city comparisons.<sup>1</sup>

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1. The direct expenditure on education by the State of North Carolina made in the Charlotte school system is not reported. It has been estimated from data compiled by the U. S. Office of Education, Circular No. 537, "Current Expenditures per Pupil in Public School Systems: 1956-57." The data reported cover the current educational costs and therefore exclude expenditures for certain services rendered by a school system, e.g., community services, expenditure for the care of children in special institutions, tuition paid to other school districts, expenditures for adult education classes, etc. Hence, the estimate used in this report understates the direct expenditure by the state.

Table 18

Local Government Expenditure on Education,  
Selected Cities, Per Capita 1957

City	Expenditure Per Capita		
	Total	Current Purposes	Capital Outlay
Albuquerque	72.6	60.4	12.2
Austin	64.9	46.9	18.0
Charlotte (A) <sup>1</sup>	34.3	20.6	13.7
Charlotte (B)	(53.9)	(39.7)	(14.2)
Des Moines	84.7	62.1	22.6
Flint	63.4	52.7	10.7
Grand Rapids	59.7	48.1	11.6
Jacksonville	57.0	44.0	13.0
Mobile	36.1	35.0	1.1
Sacramento	85.4	68.6	16.8
St. Petersburg	40.4	34.3	6.1
Salt Lake City	72.4	48.1	24.3
San Jose	64.5	55.3	9.2
Spokane	70.9	53.4	17.5
Syracuse	53.1	49.7	3.4
Tucson	104.6	67.4	37.2
Bridgeport	40.4	40.1	0.3
Hartford	51.2	46.9	4.3
New Haven	67.4	44.1	23.3
Springfield	67.1	56.0	11.1
Worcester	52.8	49.7	3.1
Providence	46.2	40.2	6.0
Low	36.1	34.3	0.3
High	104.6	68.6	37.2
Median	63.4	48.1	11.6
Rank-Providence	17	17	16

Source: U. S. Bureau of the Census: 1957 Census of Governments, Vol. 6.

1. Charlotte (A): On "as reported" basis.

Charlotte (B): State direct expenditures considered as grants-in-aid to local units.

The per capita expenditures on education by the 21 cities are shown in Table 18. Total expenditures ranged from \$36.1 per capita in Mobile to \$104.6 in Tucson. The median expenditure of \$63.4 exceeded the Providence expenditure (\$46.2) by a substantial margin. Providence ranked 17 among the 21 cities.

Capital outlay is an important factor in the variation of per capita expenditures. Capital outlays ranged from \$0.3 to \$37.2. Providence, with a rank of 16, fell significantly below the median of \$11.6. In terms of per capita expenditures for current purposes (i.e., educational operations), the range ran from \$34.3 to \$68.6. The median was \$48.1 compared to a Providence per capita expenditure of \$40.2. Providence had the same rank for expenditures on educational operations as for total expenditures, namely 17.

Among the New England cities, Providence and Bridgeport had equal per capita expenditures on educational operations; the other cities -- Hartford, New Haven, Springfield and Worcester -- had larger expenditures.

The magnitude of per capita expenditures on education are not necessary accurate measures of the relative cost of education per student in the public school systems. The relationship between per capita expenditures and per student expenditures for city systems will be perfect only if all cities have (1) the same age distribution of the population; (2) the same rate of attendance of school-age children; and (3) the same proportion of elementary and secondary school pupils enrolled in public schools.

Each of these factors varies among the 21 cities. The joint effect of the age distribution and the rate of attendance may be measured by the percentage of total population enrolled in elementary and secondary schools (Table 19). In 1960, this percentage ranged from 15.5 in St. Petersburg to 24.8 in Mobile. The Providence ratio was 18.5; all but 3 cities exceeded this percentage. Table 19.

Table 19

Percentage of Total Population Enrolled in Public Schools  
and Percentage of All Pupils Enrolled in Public Schools, Selected Cities,  
1960

City	Per cent of Total Population Enrolled in Elementary and Secondary Schools	Per cent of All Pupils Enrolled in Public Schools
Albuquerque	24.2	93.2
Austin	19.8	92.2
Charlotte	22.0	94.7
Des Moines	21.4	87.8
Flint	22.9	86.0
Grand Rapids	22.4	63.7
Jacksonville	20.8	95.1
Mobile	24.8	81.2
Sacramento	21.1	88.6
St. Petersburg	15.5	88.9
Salt Lake City	22.5	95.1
San Jose	21.8	93.4
Spokane	21.5	80.2
Syracuse	19.0	70.5
Tucson	23.5	86.4
Bridgeport	19.6	75.1
Hartford	18.0	79.4
New Haven	18.2	75.9
Springfield	21.4	75.9
Worcester	20.0	77.3
Providence	18.5	70.4

Source: U. S. Census of Population: 1960, General Social and  
Economic Characteristics, PC (1) - C.

also shows the percentage of all elementary and secondary pupils who were enrolled in public schools. Grand Rapids had the lowest percentage -- 63.7, followed by Providence with 70.4. The maximum percentage among the 21 cities was 95.1, shared by Jacksonville and Salt Lake City. In general, cities in the Northeastern states had low ratios compared to Southern and Western cities.

The effect of these factors is easily seen. Other things equal, the higher the percentage of total population enrolled in public schools the higher the per capita expenditures on education. Similarly, the higher the percentage of public school students, the higher the per capita expenditure. A comparison of Tables 18 and 19 will indicate that some of the inter-city variation in per capita expenditures on education is explained by age distribution, rate of attendance and the relative importance of public school enrollment.

If education costs rather than direct questions on the per capita tax burden are involved, comparisons are more meaningful when expressed in terms of expenditures per student. Comparable cost data are available in the form of expenditures on current education per pupil in average daily membership.<sup>1</sup> Table 20 shows the current expenditures on education per pupil in average daily membership for five major accounts for 14 cities for 1956-57.<sup>2</sup>

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1. Cost data are also presented in terms of expenditure per pupil in average daily attendance. Since school systems make provisions for enrolled students, the average daily membership basis is preferred. Current expenditures exclude capital outlays and debt service. For better comparability the following types of expenditure are excluded: community services, care of children in special institutions and external tuition and services and supplies to non-public school children.

2. The 14 cities are those among the 21 under comparison for which data are available in the Office of Education circulars.

Table 20

Annual Current Expenditures Per Pupil in Average Daily Membership in Public School Systems, by Regions and Selected Cities, 1956-57

Region <sup>1</sup> and City	Total	Administration	Instruction	Operation and Maintenance, Physical Plant	School Services <sup>2</sup>	Fixed Charges <sup>3</sup>
<u>Medians:</u>						
Group I B <sup>4</sup>	285.49	7.31	220.30	44.49	6.97	7.95
Northeast	348.26	9.81	250.33	60.12	12.22	16.61
North Central	319.35	7.59	214.68	51.39	7.99	18.06
South	239.52	5.68	188.75	32.03	7.58	6.11
West	372.66	10.57	239.67	46.54	12.36	23.61
Albuquerque	254.76	8.48	205.23	24.73	5.86	2.59
Charlotte	253.09	3.82	187.04	25.32	29.74	7.17
Des Moines	295.42	7.48	208.16	49.44	11.25	19.09
Flint	292.75	7.83	220.30	59.14	4.46	1.02
Grand Rapids	317.73	8.92	235.19	65.65	7.74	0.23
Jacksonville <sup>5</sup>	214.73	2.30	169.20	19.73	7.59	2.88
Sacramento	352.12	10.77	257.29	53.81	7.97	16.72
Salt Lake City	204.54	6.09	152.73	29.31	4.69	11.72
Syracuse	377.22	5.28	253.09	58.26	12.47	29.50
Tucson	361.33	10.60	256.75	49.73	13.20	8.60
Hartford	403.94	8.69	279.20	64.57	11.66	39.82
New Haven	318.27	7.75	247.75	49.69	3.43	9.65
Worcester	296.17	6.81	232.75	45.20	11.41	--
Providence	335.61	7.70	235.46	71.37	10.64	10.44

Source: U. S. Department of Health, Education and Welfare, Office of Education, "Current Expenditures Per Pupil in Public School Systems: 1956-57," 1959. Circular No. 537.

1. Regional data based on 85 cities with population of 100,000 or more.
2. Includes medical and dental services, welfare work, extracurricular activity, transportation, etc.
3. Includes pension funds, insurance, rents, etc.
4. 80 cities with population between 100,000 and 1,000,000.
5. Includes all of Duval County.

The expenditure for educational purposes per student in average daily membership varies regionally and with the size of the city (or county).<sup>1</sup> For Group I (over 100,000 population) systems median expenditures per student were \$348.26 in the Northeast, \$332.66 in the West, \$319.35 in the North Central, and \$239.52 in the South.

An examination of Table 20 will reveal a high order of variability among cities in the same region or in the same population group. It would be unwarranted to take these differences as measures of varying efficiency among the cities. Although the level of expenditures per student will be influenced by efficiency, there are other factors which tend to dominate current expenditures. These factors are (1) the scope and quality of educational services provided; (2) the age and physical condition of the school plant; (3) the distribution of students by class of school (per student costs are higher in secondary than in elementary education); (4) the distribution of teachers by salary brackets, and (5) the trend in school enrollment.

It is difficult to measure output in an educational sense, but the relevant question with respect to efficiency is, what is the relationship between expenditure and the quality of education provided? Basically, this question cannot be answered in terms of the financial data. An examination of such data can serve only as a basis for determining the effect of factors other than scope and quality of educational services on the costs of education.

Average current expenditures in Providence in 1956-57 were \$335.61 per student in average daily membership (ADM), which exceeded the median for Group I B systems (\$285.49). The Providence expenditure

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1. By population size-group, the median current expenditure per student in average daily membership was \$318 for cities in the 100,000 and over class and \$294 in cities in the 25,000 to 100,000 class.

was less than that for 22 Group I B cities in the Northeast (\$348.26). Providence ranked 11 in this 22 city group, and 5 in the 14 city group shown in Table 20. Because of the regional heterogeneity, however, the rank within the 14 city group has little significance.

In 1956-57, current expenditures per pupil (ADM) in Providence were below the Northeast median for "other services," fixed charges and administration. Current expenditures for instruction were appreciably lower than the Northeast median and equal to or less than per student expenditures for this purpose in the other New England cities. However, expenditure for the operation and maintenance of physical plant was substantially larger than the Northeast median and other cities in the same size class or region.

The major categories of expenditure (instruction and operation and maintenance) have been examined in detail for Providence recently.<sup>1</sup> There have been no essential changes in the data and it will suffice to give only the outlines of the analysis here.

Salaries of classroom teachers is the principal element of instruction costs. Expenditures for teachers per student (ADM) depend on: (1) the salary scale, (2) the distribution of teachers within this salary scale (i.e., experience years) and (3) the scope of the teaching program with respect to the number of students per teacher and the extent of special educational services provided (e.g., special classes for educable children, remedial work, etc.).

In terms of the minimum and maximum salaries of teachers, Providence in 1957 (and subsequent years) has ranked at or below the first quartile (lowest 25 per cent) for cities of comparable

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1. Cf. Report of the Mayor's Committee on Municipal Revenue, 1959, pp. 90-97. See also the statistical sections of the Budget of the Providence Public Schools, various years.

size. Cities with lower maxima and minima than Providence tend to be concentrated in the South.<sup>1</sup>

The Providence salary scale for teachers is low relative to other cities of similar size and location. However, because of the continuous decline in enrollment beginning as far back as 1933, there has been a gradual decline in the instructional staff. With a low rate of new entrants into the teaching staff the average length of service has increased. In September, 1958, 57.4 per cent of all teachers in Providence schools had 20 or more years of experience. The high average length of service is reflected in the salary distribution. Over two-thirds of non-substitute teachers were on the maximum for their qualifications. The result is an average salary which is high relative to the salary scale. Therefore, the costs of teachers per student (ADM) may be as high in Providence as in cities with high salary scales but with increasing school populations and a high rate of new entrants to the teaching force.

Another factor influencing the expenditure on teachers' salaries per student is the student-teacher ratio. The available evidence indicates that this ratio for Providence is below the median for cities of comparable size, and approximately at the median for cities in the Northeast. The importance of variations in the student-teacher ratio cannot be judged independently of knowledge concerning the distribution of students in the different curricula (e.g., academic vs. vocational). It does not appear likely that the student-teacher ratio is an important factor in explaining the discrepancy between the salary scale and expenditures for teachers' salaries per student in Providence. It is, however,

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1. Cf: Report on Municipal Revenue and the National Education Association Research Circulars.

a factor explaining part of the inter-city variations noted in Table 20.

The expenditures per student on the operation and maintenance of the physical plant in 1956-57 was high in Providence relative to all other cities in the same size class and independently of region. The relatively high costs in this category of expenditure in Providence are due to (1) the physical nature of the school plant, especially the size and construction of some units, which makes a balanced use of custodial help impossible and also raises the fuel costs, (2) extensive deferred maintenance, and (3) the unbalanced utilization of a school plant due to loss of population and intra-city shifting of population. The high cost of operation cannot be explained in terms of wages paid to custodians, or their workload, or to the costs of fuel in Providence.

#### 4.2.1.1 Local Government Expenditures per Student for Education, 1959.

In Table 21 the most recent available data on school expenditures prepared on a consistent basis are shown. These data are for the year 1958-59. Expenditures per student in 1959-60 are currently being prepared for publication in Section III of the Biennial Survey of Education.

Unfortunately, the expenditures data for 1958-59 cannot be compared directly with the data for 1956-57 presented in Table 20. The content of some of the reported accounts have been revised. No revision has occurred in instruction and fixed charges so that comparisons can be made between 1956-57 and 1958-59. However, the other accounts have been altered by recombination of subaccounts and by the exclusion of net expenditures for school lunch and student activities. Inter-city comparisons of these accounts may be made within the limitations discussed earlier in this section.

Table 21

Annual Current Expenditures per Pupil in Average Daily Membership  
in Public School Systems, by Regions and Selected Cities, 1958-59

Region and City	Total	Administration	Instruction	Operation and Maintenance, Physical Plant	Other School Services	Fixed Charges
<u>Medians:</u>						
Group I B	327.96	7.83	246.84	49.91	6.62	10.67
North Atlantic	373.00	8.74	265.25	57.27	9.07	12.54
Great Lakes & Plains	329.23	7.81	242.87	54.55	6.78	20.84
Southeast	250.82	5.01	200.54	32.50	2.13	6.00
West & South-west	323.85	9.02	249.92	44.03	6.65	12.44
Albuquerque	276.10	6.27	220.44	29.71	7.54	12.13
Charlotte	250.82	4.05	210.45	26.22	1.79	8.31
Des Moines	351.60	8.85	249.76	57.68	13.21	22.14
Flint	313.65	9.04	233.84	63.93	5.38	1.45
Grand Rapids	350.78	7.59	256.77	71.32	13.80	1.28
Jacksonville <sup>1</sup>	236.85	3.73	200.51	23.89	5.75	2.95
Sacramento	406.69	10.00	314.53	55.64	10.88	15.63
Salt Lake City	257.21	7.06	192.82	35.66	5.02	16.64
Syracuse	394.89	6.40	275.94	60.41	10.76	41.38
Tucson	384.22	11.86	290.93	61.05	10.73	9.64
Hartford	444.29	8.74	316.09	65.63	10.94	42.89
New Haven	373.00	8.60	289.14	51.98	13.76	9.53
Worcester	317.82	6.56	255.30	45.33	10.36	0.25
Providence	389.59	10.62	271.82	79.04	11.84	16.27

Source: U. S. Department of Health, Education, and Welfare, Office of Education, "Current Expenditures per Pupil in Public School Systems, Urban School Systems, 1958-59," 1961.

<sup>1</sup>Includes all of Duval County.

The expenditure data for 1958-59 indicate no essential differences in the conditions underlying school system operations by region or city; that is, the same patterns of variation by region and size of city exist. The range of variation among cities in each category continues to be large. Expenditures per student in average daily membership for instruction and for operation and maintenance of physical plant are again the accounts requiring explanation in the case of Providence. The factors responsible for the level of these two accounts are essentially the same as in 1956-57.

The longer-run outlook for the position of the Providence school system relative to systems in other cities in the region or population group is one of improvement. Programs of modernization and consolidation should reduce (relatively) the per student expenditures on operations and maintenance. Shifts in the composition of the teaching staff toward lower average service years should reduce the expenditures per student for instruction relative to the salary scale. Some early indications of a shift of this type are already in evidence. The average salary for teachers in Providence is now higher in elementary than in secondary schools. However, instructional costs per student follow the typical United States pattern; expenditures per student are higher in secondary than in elementary education.

#### 4.2.2. Local Government Expenditures for Police and Fire Protection

Government expenditures for police and fire protection are essentially local. In all 21 cities considered the municipality has sole responsibility for fire protection. In a number of cities with overlying county governments the municipality has predominant responsibility for police protection; the county makes small

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1. In 1958-59, expenditures per student in average daily membership for teachers were \$236.77 in elementary, \$248.29 in junior high, and \$273.35 in senior high. U.S. Office of Education, "Current Expenditures Per Pupil in Public School Systems, 1958-59."

contributions through the provision of detention facilities and, in some cases, manpower. Direct expenditures by states on police and law enforcement may have some effect on the expenditures required by local units. The net effect, however, is probably small.

#### 4.2.2.1 Expenditures for Police Protection

Table 22 shows the consolidated local government per capita expenditure for police protection in 21 cities during 1957 and the percentage change in per capita costs between 1957 and 1960. The percentage change has been computed on the basis of the per capita expenditures made by the municipality and therefore can serve only as an index of change.

Table 22

Local Government Expenditure on Police Protection,  
Selected Cities, Per Capita, 1957, and Percentage Change,  
1957-1960

City	Expenditures Per Capita	
	Amount, 1957	Per Cent Change, 1957-1960
Albuquerque	6.3	92.6
Austin	9.8	25.0
Charlotte	8.5	21.0
Des Moines	7.8	31.3
Flint	15.3	-2.1
Grand Rapids	10.9	11.7
Jacksonville	18.1	31.7
Mobile	7.3	12.4
Sacramento	13.5	12.2
St. Petersburg	6.5	79.8
Salt Lake City	10.0	31.0
San Jose	10.3	47.2
Spokane	12.5	2.8
Syracuse	15.1	6.1
Tucson	7.5	73.7
Bridgeport	12.8	11.1
Hartford	13.2	20.4
New Haven	14.3	8.8
Springfield	12.7	4.2
Worcester	10.7	18.3
Providence	12.1	35.5
Low	6.3	
High	18.1	
Median	10.9	
Rank - Providence	10	

Source: U. S. Bureau of the Census: 1957 Census of Governments,  
Vol. 6; 1960 Compendium of City Government Finances.

Per capita expenditures on police vary according to region and population group. In 1960, for example, cities over 1,000,000 population spent more than double the amount expended by cities in the 25,000 to 50,000 group. There is a progressive increase in police expenditures with city size. The 21 cities represented in Table 22 are in the same population group, but the impact of rapid population growth, and, therefore, the relatively recent movement into this specific population class, is clearly visible. A number of these cities can expect rapidly mounting future costs for police protection.

Cities in New England, the middle Atlantic and other heavily urbanized areas (cities with high population densities) typically have higher per capita expenditures than less heavily urbanized areas.

Within the regional patterns, however, there is a wide range of variation for individual cities, reflecting local conditions.

Per capita expenditures in 1957 ranged from \$6.3 to \$18.1 with a median of \$10.9. Providence expended \$12.1, which exceeded the median for the 21 cities and gave the city a rank of 10. Expenditures for police are predominantly on salary account and, therefore, inter-city variations must be essentially the result of the number of police employees, the wage scale and the length of the work week.

The length of the work week is not an important factor in the observed variation since all cities, except Des Moines (43 hours) and Jacksonville (48 hours) have 40 hour work weeks.

The salary scales in effect in the various cities explain part of the observed differences in per capita expenditures. However, the number of police employees per 1,000 population is responsible for a larger share of the variation.

An examination of salary schedules for cities in the 100,000 to 250,000 population group reveals that Providence is below the median for both entering and maximum salaries for patrolmen. In fact, the maximum salary is closer to the first quartile than to

the median. In terms of the 21 cities compared in Table 22, Providence ranks 14 (from the top) with respect to entering salaries and 17 with respect to maximum salaries. The position of Providence, and the other New England cities, relative to other United States cities in a comparable size class is primarily the result of the number of police employees per 1,000 population.

There is no single or simple criterion for the determination of the desirable number of police employees in a city. Many diverse factors such as city size and population density, size of the metropolitan area and the traffic flow generated by commuters and transients, the type of equipment in use, and the nature of the crime problem must be taken into account. The employment rates in Table 11, the per capita expenditures and the rates of change in Table 22 must be interpreted in terms of these conditions.

The crime problem in the United States has grown in magnitude. In the post-war period the United States has experienced a large increase in the number of criminal offenses. In each of the periods 1952-1959 and 1957-1961, the crime rate<sup>1</sup> has increased by approximately 25 per cent.

The Crime Index, defined by the U. S. Department of Justice as the total of seven important offenses (see note) known to the police, shows interesting variations in its regional patterns (Table 23). Crime rates are higher in metropolitan complexes than in non-metropolitan cities or rural areas. Hence, predominantly rural regions show lower crime rates than those with extensive metropolitan developments. The western states with sharp population increases typically have the highest crime rates. Crimes against

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1. The crime rate is computed as the number of offenses per 100,000 population in 7 crime classifications: murder and non-negligent manslaughter, forcible rape, robbery, aggravated assault, burglary (breaking or entering), larceny \$50 and over, and auto theft. Uniform crime reports for the United States are compiled annually by the U. S. Department of Justice.

persons - murder, rape and aggravated assault - are relatively more important in the Southern states.

Table 23  
 Index of Crime, United States  
 and by Regions, 1961  
 Rate per 100,000 Population

Region	Total	Murder and Non-Negli- gent Man- slaughter	Forc- ible Rape	Rob- bery	Aggra- vated Assault	Burg- lary	Larceny \$50 and over	Auto Theft
United States	1,052.8	4.7	8.8	50.1	72.7	466.0	272.3	158.3
New England	811.3	1.3	4.5	14.4	20.1	360.5	211.7	198.9
Middle Atlantic	919.3	3.0	6.5	38.2	63.6	361.6	282.6	163.8
East North Central	1,113.9	3.7	9.7	87.0	71.1	467.8	274.4	200.1
West North Central	778.4	2.5	6.4	36.6	27.9	382.2	203.5	119.2
South Atlantic	982.9	8.2	8.1	38.0	114.6	441.3	231.4	141.3
East South Central	745.4	9.4	6.3	25.9	73.1	357.9	172.8	100.0
West South Central	999.9	7.4	9.4	33.1	86.4	489.5	223.6	150.5
Mountain	1,275.9	4.4	10.5	56.6	46.7	546.7	365.6	250.3
Pacific	1,698.5	3.4	15.5	74.9	94.0	784.0	443.4	283.4

Source: U. S. Department of Justice, Federal Bureau of Investigation, Uniform Crime Reports - 1961, 1962.

The number and the type of major crimes committed in a city are not a good index of police efficiency. Police action is necessarily limited to factors which can be controlled. Besides the performance and characteristics of the police department the crime rate will depend on such factors as the population and size of the city and the metropolitan area, the social characteristics of the population, the stability of employment and the income distribution of the population, the migratory characteristics of the population, the number of commuters, climate, cultural and recreational facilities, attitudes toward law enforcement, etc. Inter-city comparisons of crime, therefore, should be made primarily to identify the factors locally involved. The crime rate, therefore, essentially provides a measure of the crime problem faced by a city or a region.

As indicators of the crime problems, the 1961 crime rates for the 21 cities are shown in Table 24. The regional patterns observed in Table 23 are reflected in the crime patterns of the 21 states, but local factors play an obviously important role. Approximately half of the cities have total crime rates in excess of the average rate for the 80 cities in the 100,000 to 250,000 population class. Less than half have rates of crimes against persons and more than half have rates of crimes against property in excess of the 80-city average. This result is due in part to the fact that offenses against property tend to be city crimes and in part to the weighting of New England and western cities in the list.

Table 24

Index of Crime, Selected Cities, 1961  
Offenses Known to Police per 100,000 Population

City	Total	Murder and Non-Negli- gent Man- slaughter	Forc- ible Rape	Rob- bery	Aggra- vated Assault	Burg- lary	Larceny \$50 and over	Auto Theft
Albuquerque	1527.3	4.9	10.4	72.6	64.1	582.0	462.7	336.5
Austin	1201.6	6.4	5.4	29.5	124.4	739.9	144.8	151.2
Charlotte	1622.0	15.4	3.0	58.5	162.2	695.4	482.1	205.4
Des Moines	1243.5	1.9	8.1	40.7	27.8	471.3	472.2	221.5
Flint	1962.9	7.1	23.4	71.1	312.8	682.1	652.1	214.3
Grand Rapids	1306.3	2.8	6.2	41.7	67.7	672.9	354.8	160.2
Jacksonville	2945.3	15.9	2.0	317.4	209.0	1300.0	822.4	278.6
Mobile	1670.1	12.3	8.4	37.0	120.3	1040.0	247.5	204.6
Sacramento	2639.1	5.7	19.3	186.8	62.1	1009.9	749.1	606.2
St. Petersburg	1156.8	2.8	2.8	76.7	37.0	617.8	335.9	83.8
Salt Lake City	1992.6	1.1	7.9	56.0	43.8	893.9	596.6	393.3
San Jose	1631.6	0	7.3	43.1	30.8	793.3	293.8	463.3
Spokane	871.7	2.2	5.0	22.0	20.4	406.9	217.5	197.7
Syracuse	983.8	1.4	2.8	31.0	19.4	366.7	373.1	189.4
Tucson	2097.2	7.0	17.4	85.5	142.3	910.3	407.2	527.5
Bridgeport	1344.6	2.6	0.6	25.5	56.2	685.4	310.1	264.2
Hartford	1408.7	4.3	3.7	24.0	66.6	680.6	281.8	347.7
New Haven	964.7	1.3	0.6	5.9	53.3	380.3	224.3	299.0
Springfield	1047.4	1.7	0.6	7.4	20.0	363.3	258.4	396.0
Worcester	1198.7	0.5	2.1	18.2	19.8	530.0	229.9	398.2
Providence	2021.3	1.9	3.4	24.1	65.1	789.4	531.1	606.3
4,142 Cities	1388.7	4.8	9.7	74.7	93.7	583.5	363.7	258.6
80 Cities 100,000-250,000 Population	1481.9	5.2	7.4	55.9	84.8	679.3	372.3	277.0

Source: U. S. Department of Justice, Federal Bureau of Investigation,  
Uniform Crime Reports - 1961, 1962.

It is noticeable that crimes against persons tend to be relatively more frequent in the southern cities. Crimes against property reflect more complicated sets of conditions and detailed study of the special problems affecting each city would be required to explain the variations in pattern. The New England cities, except for Providence, have crime patterns close to those expected in terms of the regional pattern. The Providence pattern deviates essentially only in the level of three types of crime against property, namely, burglary, larceny and auto theft. The relatively high levels of these three crimes may be explained in large part by instability of employment and a decline in the economy of the area. Other factors - principally social - are also involved.

The explanation for high rates of crime against property in Providence obviously will not apply in the cases of Jacksonville, Sacramento, Salt Lake City or Tucson which also have high crime rates.

For the further discussion of the crime problem in Providence and other cities it will be useful to know something about the trend of crimes in recent years. The available data make possible the construction of a crime index based on six major offenses known to the police - murder and non negligent manslaughter, robbery, aggravated assault, burglary, larceny \$50 and over, and auto theft - for 1957 and 1961. Rates of crime per 100,000 population for 1957 and 1961 and the percentage change in the index are shown in Table 25.

Table 25  
 Index of Crime <sup>1</sup>, Selected Cities, 1957 and 1961  
 Offenses Known to Police per 100,000 Population  
 and Per Cent Change in Full-Time Non-Civilian  
 Police Employees per 1000 Population, 1957-1961

City	Total Crime Rates		Per Cent Change 1957-61	
	1957	1961	Crime Rate	Full-Time Non-Civilian Police Employees per 1000 Population
Albuquerque	1889.5	1522.8	-19.4	31.8
Austin	956.6	1196.2	25.0	11.5
Charlotte	1307.3	1619.0	23.8	15.1
Des Moines	1209.8	1235.4	2.1	-2.5
Flint	1823.3	1939.5	6.4	4.8
Grand Rapids	1043.5	1300.1	24.6	8.5
Jacksonville	3107.8	2943.3	-5.3	9.4
Mobile	1199.1	1661.7	38.6	12.0
Sacramento	2194.0	2619.8	19.4	7.5
St. Petersburg	856.9	1154.0	34.7	52.6
Salt Lake City	1450.5	1984.7	36.8	6.8
San Jose	1396.4	1624.3	16.3	31.9
Spokane	967.0	866.7	-10.4	8.5
Syracuse	890.6	981.0	10.2	5.7
Tucson	1128.5	2079.8	84.3	34.0
Bridgeport	882.6	1344.0	52.3	2.0
Hartford	1482.9	1405.0	-5.3	3.1
New Haven	794.3	964.1	21.4	-3.5
Springfield	744.7	1046.8	40.6	-2.4
Worcester	1095.1	1196.6	9.3	4.3
Providence	1628.8	2017.9	23.9	8.4

Source: U. S. Department of Justice, Federal Bureau of Investigation, Uniform Crime Reports 1957, 1961, 1958, 1962.

below the New England average for larceny, and below both the United States and New England averages for forcible rape and aggravated assault. Unfortunately, data on clearances for other individual cities are not readily available.

Table 26  
Percentage of Major Offenses Cleared by Arrest,  
United States, New England, and Providence, 1961

Offense	United States 2,313 Cities	New England 200 Cities	Providence
Murder <sup>1</sup>	93.1	98.8	100.0
Manslaughter <sup>2</sup>	86.5	89.1	100.0
Forcible Rape	72.6	85.3	71.4
Robbery	41.6	47.0	50.0
Aggravated Assault	78.7	85.8	78.5
Burglary	30.0	28.3	38.3
Larceny	20.8	23.1	22.3
Auto Theft	27.8	27.8	32.1
Total	26.7	26.1	29.6

Source: U. S. Department of Justice, Federal Bureau of Investigation, Uniform Crime Reports - 1961, 1962; Providence Police Department, Annual Report, 1961.

<sup>1</sup> Murder and non-negligent manslaughter.

<sup>2</sup> Manslaughter by negligence.

#### 4.2.2.2 Expenditures for Fire Protection

Per capita expenditures for fire protection in 1957 and 1960 made by 21 cities are shown in Table 27. The percentage changes in full-time fire department employees per 1,000 population for the period 1957-1961 are also shown.

Expenditures for fire protection depend on a number of factors, all of which must be considered in making inter-city comparisons of cost. Among the more important conditions are the standard of performance of the fire department (i.e., equipment, training, location of stations, communications, leadership, etc.), adequacy of the water supply, the physical characteristics of the city and its structures, the composition of industry, climate, and physical hazards.

The expenditures data of Table 27 clearly reveal differences in local conditions. Providence, the other New England cities, and to a lesser extent the remaining industrialized cities have per capita expenditures in excess of the median for the 21 cities and also in excess of the average for all U. S. cities in the 100,000 to 250,000 population group.

The inter city variation in per capita expenditures is primarily a function of the number of employees per 1,000 population, the salary scale and the length of the work week. The Providence salary scale (both in 1957 and 1960) is low relative to most cities in the 100,000-250,000 population class. Both the entering and maximum salaries of firemen were below the medians for this class of cities. In terms of the 21 city group, in 1961, Providence ranked 10 with respect to the entering salary and 19 (from the top) with respect to the maximum salary. It is clear that the salary scale does not explain the relative magnitude of per capita expenditures for fire protection in Providence.

Local Government Expenditure for Fire Protection,  
Selected Cities, Per Capita, 1957 and 1960.

Percentage Change in Per Capita Expenditures, 1957-1960,  
and Employees, Per 1,000 Population, 1957-1961.

	Expenditures Per Capita		Per Cent Change	
			Expenditure per Capita 1957 - 1960	Employment per 1,000 1957 - 1961
	1957	1960		
Albuquerque	6.2	7.1	13.7	40.0
Austin	7.4	7.2	-2.4	-6.7
Charlotte	7.3	8.5	16.2	18.8
Des Moines	6.3	10.2	62.5	23.1
Flint	8.7	12.4	42.1	0.0
Grand Rapids	8.8	9.9	12.4	6.7
Jacksonville	9.4	11.5	22.0	27.8
Mobile	4.8	5.7	19.6	20.0
Sacramento	8.4	12.0	43.1	6.7
St. Petersburg	3.4	5.9	74.7	100.0
Salt Lake City	6.2	8.1	30.5	0.0
San Jose	6.0	11.5	91.2	18.1
Spokane	7.8	9.4	20.4	23.1
Syracuse	10.2	11.5	13.0	5.3
Tucson	3.8	6.5	71.8	71.4
Bridgeport	16.2	17.3	6.5	20.8
Hartford	13.1	16.3	24.2	-5.8
New Haven	14.2	13.5	-5.2	8.7
Springfield	14.5	15.3	5.2	-3.6
Worcester	11.1	13.1	17.9	13.0
Providence	10.5	13.4	27.9	4.3
Low	3.4	5.7	-	-
High	16.2	17.3	-	-
Median	8.4	11.5	-	-
Rank - Providence	6	5	-	-

Source: U.S. Bureau of the Census, 1957 Census of Governments, Vol. 6;  
1960 Compendium of City Government Finances; City Employment in 1961.

The work week in the 21 cities ranged from 48 to 78 hours in 1957 and from 42 to 72 hours in 1961. Reductions in the length of the work week have occurred in 10 of the 21 cities between 1957 and 1961. The reduction in hours ranged from a minimum of 3 to a maximum of 16. These changes explain part - in some cities a large part - of the percentage changes in expenditure and employment exhibited in Table 27.

The Providence work week was 56 hours in both 1957 and 1961. In other New England cities the 1961 work week was: Bridgeport, 42 hours; Hartford and New Haven, 56 hours; and Springfield and Worcester, 48 hours. Thus, the typically larger number of employees per 1,000 of population in New England cities is partially explained by the length of the work week. However, a more basic factor in determining the number of fire department employees is that Providence, in common with other New England cities, is an old, densely populated, industrialized city with especially difficult fire protection problems.

Per capita expenditure for fire protection is a poor index of the comparative effectiveness of fire departments. Valid performance criteria are available in the form of (a) fire loss and fire frequency experience data and (b) the uniform rating system of the National Board of Fire Underwriters.

The National Fire Protection Association annually compile data reported by city fire departments with respect to per capita fire losses and the number of building fires per 1,000 population. The fire loss data are not uniformly reported - in some cases only insured losses are reported - and hence cannot be used for inter-city comparisons. The reporting of the number of building fires per 1,000 is subject to only minor definitional problems and the data can be used for general inter-city comparisons provided due attention is paid to the basic fire problems in each city.

The number of building fires per 1,000 population for 21 cities is shown in table 28. Providence had 2.3 building fires per 1,000

Building Fires Per 1,000 Population and Total Fire Insurance Class, Selected Cities, 1960

City	Building Fires 1,000 Population	NBFU Fire Insurance Class <sup>1</sup>
Albuquerque	2.9	4
Austin	2.3	4
Charlotte	5.9	3
Des Moines	3.2	4
Flint	5.5	4
Grand Rapids	3.8	3
Jacksonville	3.4	4
Mobile	3.5	5
Sacramento	4.5	3
St. Petersburg	1.7	4
Salt Lake City	3.1	4
San Jose	2.3	4
Spokane	6.9	3
Syracuse	3.6	3
Tucson	2.2	4
Bridgeport	3.9	3
Hartford	3.6	2 - A
New Haven	4.5	3 - B
Springfield	4.4	2 - A
Worcester	10.0	2 - A
Providence	2.3	2 - A

Source: International City Managers Association, Municipal Yearbook, 1961.

<sup>1</sup>The N.B.F.U. ratings are not for the same year. The rating of any city is therefore subject to change on regrading.

population in 1960 compared to a median of 3.9 and a first quartile of 2.9 for cities in the 100,000 to 250,000 population group. Providence had significantly fewer building fires than the other New England cities in the same population class and ranked 17.5 among the 21 cities in Table 28. Cities with fewer building fires are, without exception, open, low density cities with relatively low fire potential. This record has resulted in Providence being a population class winner of the National Fire Protection Association award for fire prevention activity.

The National Board of Fire Underwriters employs a grading schedule on which the fire insurance rates of a city are partly based. This rating scheme thus provides a basis for judging the relative effectiveness of a fire department.<sup>1</sup> The engineering rating of the fire hazards and fire protection facilities of a city is based on standards prescribed on nine major items. Cities are graded into one of 10 classes depending on the number of deficiency points assessed for the failure to meet standards.

Providence is rated as a Class 2 city which is the highest rating given to any city over 25,000 population in the United States. In 1961, only 7 cities in the 100,000 to 250,000 class were rated in Class 2. No United States city is graded as Class 1 largely because of deficiency points assessed for the failure to meet the standards specified for building construction and because of climatic factors.

The New England Fire Insurance Rating Association appends an additional letter grade to the NBFU ratings indicating 6 grades of protection with respect to minimum fire insurance rates of dwelling house property. Class A cities have the lowest minimum insurance rates on dwellings. Providence has an A rating. The NBFU has no national counterpart to this letter grading.

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<sup>1</sup>Cities over 25,000 population are graded by engineers of the NBFU and cities under 25,000 are rated by local and regional rating associations.

The NBFU total insurance class ratings of the 21 cities are shown in Table 28. Only four cities have a Class 2 rating, and these are all in New England. The most frequent rating is Class 4.

Separate ratings for fire departments are made for all cities except those in New England and certain cities in Missouri, Pennsylvania, Texas and New Jersey. Although no outside rating of the Providence fire department is available, a judgment can be formed by checking the standards set by the NBFU. The organization of the Providence Fire Department meets all standards for location within a minimum distance from different types of buildings and with respect to the type and distribution of first-line apparatus. Stand-by equipment in Providence substantially exceeds the minimum standards.

#### 4.2.3 Local Government Expenditures on Highways and Sanitation

Highways and sanitation are the principal public works categories for cities. There are numerous difficulties in making inter-city comparisons. There are large differences in the amount and scope of services provided, and individual cities encounter wide differences in the conditions under which services are rendered. There are no simple criteria by which to judge the comparative efficiency of operations in different cities. The examination of comparative efficiency would require elaborate engineering or other studies in order to achieve a reasonable level of comparability.

At best, comparative cost data based on single measures such as per capita expenditures are useful to identify significant deviations from the average for a region or a population group. A detailed examination of the local factors responsible for the observed differences will then provide a basis for the interpretation of the cost data.

#### 4.2.3.1 Expenditures on Highways

The highway function involves the construction and maintenance of streets, sidewalks and related structures, bridges, street lighting, snow and ice removal and the operation of such facilities as toll highways and bridges. The responsibility for this function in United States cities is distributed in varying proportion among the local units - the municipal government, the county, and special districts - and the state. Part of the problem of non-comparability of data can be overcome by consolidating local accounts, but there is no meaningful way of assigning state costs to the residents of a city. Direct inter-city comparisons, therefore, are of limited value. Consolidated per capita expenditures for highways in 21 cities are shown in Table 29. These data relate to 1957, the latest year for which consolidation can be made. These data vary widely from a low of \$5.5 to a high of \$48.7. Differences in the temporarily variable capital outlays per capita explain a substantial part of the variation. Nevertheless, per capita expenditures on current account retain a high-order variability. The range is from \$5.1 to \$16.8 with a median of \$7.5.

It has been noted with respect to highway employment per 1,000 population that large relative shifts in activity in this function can occur within short periods of time. This is reflected in the percentage change in per capita expenditures by the municipal government for current purposes.<sup>1</sup> Between 1957 and 1960 changes in per capita municipal expenditures ranged from -42.6 per cent to 140.4 per cent. These changes are due to a variety of factors such as irregular maintenance, unusually severe (or mild) ice and snow conditions, etc.

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1. It is emphasized that the percentage changes in Table 29 are not based on consolidated data.

Table 29

Per Capita Local Government Expenditures on Highways, 1957  
and Per Cent Changes in Per Capita Expenditures by the  
Municipal Government for Current Purposes, 1957 - 1960,  
Selected Cities

City	Expenditures Per Capita			Per Cent Change, 1957-1960 Per Capita Expenditure by Municipality for Current Purposes
	Total	Current Purposes	Capital Outlay	
Albuquerque	9.9	4.8	5.1	-7.3
Austin	13.0	6.5	6.5	1.7
Charlotte	11.6	6.7	4.9	1.4
Des Moines	17.0	7.5	9.5	140.4
Flint	29.8	10.9	18.9	2.2
Grand Rapids	30.8	11.2	19.6	36.7
Jacksonville	15.6	11.0	4.6	20.9
Mobile	48.2	5.6	42.6	11.2
Sacramento	16.6	10.4	6.2	-0.4
St. Petersburg	13.4	6.4	7.0	32.5
Salt Lake City	16.6	14.3	2.3	-42.6
San Jose	15.7	6.0	9.7	28.0
Spokane	27.4	16.8	10.6	-21.3
Syracuse	27.6	12.7	14.9	12.6
Tucson	22.7	7.3	15.4	-3.2
Bridgeport	5.5	5.1	0.4	-0.6
Hartford	7.6	5.8	1.8	34.1
New Haven	9.2	5.6	3.6	36.8
Springfield	17.4	11.3	6.1	-2.2
Worcester	14.6	10.2	4.4	21.0
Providence	9.6	7.9	1.7	11.2
Low	5.5	5.1	0.4	-
High	48.2	16.8	42.6	-
Median	15.7	7.5	6.2	-
Rank-Providence	19	10	20	-

Source: U. S. Bureau of the Census, 1957 Census of Governments,  
1960 Compendium of City Government Finances.

The large inter-city and inter-temporal variation suggests that even a detailed examination of the highway function in one year would not provide a basis for judging comparative efficiency. A longer-run study would be necessary.

In terms of total expenditures per capita, Providence ranked 19 among the 21 cities. For current purposes, Providence expended, on a per capita basis, slightly more than the median. Capital outlays per capita were \$1.7 in Providence and were next to the lowest expenditures among the 21 cities.

In view of the absence of objective measures which are accessible other than by special engineering and performance studies, it can only be concluded that the data do not indicate, either in absolute terms or in relation to other cities, significant cost deviations in Providence for the highway services actually performed.

#### 4.2.3.2 Expenditures on Sanitation

Sanitation involves the functions of street cleaning, sewers and sewage disposal, and garbage and refuse collection and disposal. These functions, if undertaken by the government at all, are local in the sense that they are performed either by the municipal government or by a special sanitation district.

The conditions determining the sanitation costs to a city are truly varied. First, there are physical differences among cities such as population size and density, climate and terrain. Second, there are important differences in the composition of industry and therefore in the quantity and type of industrial waste subject to treatment and disposal. Third, there are differences in the amount and scope of sanitation services demanded by the community or offered by the local government. Fourth, sanitation services may be provided on a service-charge basis to communities or persons living outside the city limits. The increased total costs of operation are offset by revenue payments to the government. Per capita costs

for sanitation services will appear higher on a gross basis when computed in terms of the city population. Fifth, there are significant differences in the nature of local arrangements between the municipal government and industries concerning the handling of industrial wastes. In some cases, extensive pre-treatment by industry at its own expense will reduce the costs to the city. In other cases, industrial wastes are treated entirely by the city system. The division of responsibility for the treatment of industrial wastes varies widely among cities.

In this report it has been frequently stressed that meaningful inter-city comparisons require an analysis of the different conditions affecting local costs. The limited number of studies on specific sanitation service emphatically underscore this warning. In the words of one research report which relates to refuse collection practice but could equally well relate to any other aspect of sanitation: "There has been a strong tendency, among municipal officials as well as laymen, to compare cities and services solely on the basis of reported costs. Comparisons can be valid only when all influencing circumstances are properly accounted for. ... When cost reports are used without interpretation, conclusions may be wholly erroneous." ...

"Unless all dissimilar conditions are appraised, comparisons of such municipal cost data are worse than useless. . . . Such comparisons ... jeopardize progress...., for they tend to drive the level of service in all cities down to that of the most inadequate. It is safe to use information from other communities only when all of the salient facts behind the figures are known and taken into account."<sup>1</sup>

Per capita expenditures for sewers and sewage disposal and other sanitation (street cleaning, refuse collection and disposal)

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1. American Public Works Association Research Foundation, Refuse Collection Practices, Research Project No. 101, Public Administration Service, 1958.

in 1957 and 1960 are shown in Table 30. The 1960 expenditure data for sewers and sewage disposal are not available for Hartford which is served by a special sanitation authority.

The inter-city differences in per capita total expenditures for sewers and sewage disposal were very large in both 1957 and 1960. In 1957 they ranged from a low of \$0.6 to a high of \$29.2 and in 1960, from \$1.4 to \$38.0. The median declined slightly from \$7.9 to \$7.0. It is evident that differences in capital outlays per capita account for most of the variation in total expenditures. Cities which are expanding rapidly, both in terms of population and area, have been required to make large capital outlays to meet service needs. Some older cities, not undergoing population expansion, have made additions to sewage facilities in order to process industrial wastes and reduce pollution of water resources.

Per capita expenditures for current operations of sewers and sewage disposal systems ranged from \$0.1 to \$3.7 in 1957, and between \$0.8 and \$4.6 in 1960. It is clear that widely dissimilar conditions are involved in the 21 cities under comparison. Some cities (see Table 31) provide only minimal service; that is, a sewer system with discharge of raw effluent. Other cities treat sewage and dispose of digested solids under varying conditions with respect to the composition of wastes, terrain, climate, etc. In large industrialized cities the industrial waste problem may be highly complicated, and the costs of treating these wastes may be accordingly high.

In a number of cities listed in Table 30 new facilities and treatment plants were under construction during the period 1957-1960. As these facilities are brought into full use a rise in operating and maintenance costs will occur. This rise in costs may be forecast with fair accuracy.

Table 30

Local Government Expenditures on Sanitation,  
Selected Cities, Per Capita, 1957 and 1960

City	Expenditures Per capita							
	1957				1960			
	Sewers and Sewage Disposal			Other Sanitation Total	Sewers & Sewage Disposal			Other Sanitation Total
	Total	Current Purposes	Capital Outlay		Total	Current Purposes	Capital Outlay	
Albuquerque	11.8	0.9	10.9	5.7	15.8	1.3	14.5	7.1
Austin	6.6	2.1	4.5	3.8	11.8	2.6	9.2	4.1
Charlotte	3.7	2.1	1.6	5.2	15.2	2.5	12.7	5.9
Des Moines	4.1	2.5	1.6	4.2	5.2	3.3	1.9	5.1
Flint	11.0	2.3	8.7	3.6	7.4	2.6	4.8	3.4
Grand Rapids	5.2	2.0	3.2	2.3	7.9	2.6	5.3	2.1
Jacksonville	4.3	3.7	0.6	9.2	38.0	3.9	34.1	9.7
Mobile	15.6	1.0	14.6	1.1	4.9	1.8	3.1	1.5
Sacramento	5.8	2.1	3.7	5.9	4.5	4.2	0.3	6.4
St. Petersburg	29.2	2.9	26.3	4.8	19.2	4.4	14.8	6.3
Salt Lake City	12.4	0.5	11.9	1.3	2.4	0.9	1.5	3.1
San Jose	9.1	1.1	8.0	0.8	10.8	2.1	8.7	1.3
Spokane	15.6	0.8	14.8	7.7	9.2	2.7	6.5	5.0
Syracuse	0.6	0.1	0.5	8.3	1.4	0.8	0.6	8.0
Tucson	3.4	1.8	1.6	3.6	6.2	1.2	5.0	5.3
Bridgeport	5.1	2.6	2.5	6.2	5.8	3.0	2.8	7.1
Hartford	9.8	3.7	6.1	6.2	(1)	(1)	(1)	6.0
New Haven	6.9	1.5	5.4	1.4	5.4	2.1	3.3	3.3
Springfield	7.9	3.1	4.8	10.8	9.2	2.2	7.0	11.3
Worcester	7.9	2.0	5.9	2.6	4.1	2.8	1.3	2.0
Providence	12.4	2.9	9.5	5.0	6.7	4.6	2.1	6.7
Low	0.6	0.1	0.5	0.8	1.4	0.8	0.3	1.3
High	29.2	3.7	26.3	10.8	38.0	4.6	34.1	11.3
Median	7.9	2.1	5.4	4.8	7.0	2.6	3.2	5.3
Rank- Providence	4.5	4.5	6	10	11 (2)	1 (2)	15 (2)	6

Source: U. S. Bureau of the Census, 1957 Census of Governments;  
1960 Compendium of City Government Finances.

(1) Hartford is serviced by a special sanitation authority. Data not available for 1960.  
(2) Ranks are based on 20 cities.

There are other factors affecting per capita operating costs. The larger the average daily flow into sewage treatment plants for a given population size, the higher will be per capita costs. A city with a large and complex industrial waste problem and a high proportion of industrial waste to total waste will experience high per capita costs. Similarly, if a municipal treatment plant also handles waste for outlying communities on a service-charge basis, the apparent per capita costs to city residents will be higher. In this case, however, the expenditures are offset by revenues to the city. The net per capita cost to residents is below the nominal figure.

Between 1957 and 1960, per capita costs for current operations of sewers and sewage plants increased in 18 of the 20 cities for which data are available in both years. The percentage increases in per capita costs were not uniform. In cities experiencing a rapid population growth, per capita costs rose by small amounts while total costs increased substantially. In other cases, treatment systems were utilized at a higher load factor. Operating cost data clearly show that, for any type of sewage treatment plant, costs per unit (e.g., million gallons daily) decrease (at a decreasing rate) as the scale of the plant increases. It is reasonable to conclude that some expanding units were realizing economies to scale in this period.

In 1957, per capita expenditures for current operations of sewer and sewage disposal facilities in Providence were \$2.9. This exceeded the median for 21 cities and gave Providence a rank of 4.5. By 1960, per capita expenditures in Providence had risen to \$4.6 which was the highest among 20 cities and well above the median of \$2.6.

Table 31

Sewage Flows and Designed Treatment Plant Capacity, MGD, 1957  
and Sewer Service Charges, 1961, Selected Cities

City	Sewage Flow, MGD		Sewer Service Charge	Average Monthly Residential Charge	Number of Private Systems in Operation <sup>(1)</sup>
	Actual Average	Designed Treatment Capacity			
Albuquerque	16.0	24.0	Yes	1.20	None
Austin	10.8	22.0	Yes	n. a.	None
Charlotte	11.3	n. a.	Yes	2.40	4
Des Moines	16.4	30.0	Yes	0.80	2
Flint	n. a.	15.0	Yes	1.65	5
Grand Rapids	n. a.	32.5	n. a.	n. a.	None
Jacksonville	30	None	None	None	60
Mobile	3.5	4.2 <sup>(2)</sup>	None	None	7
Sacramento	54.0	54.0	Yes	0.90	17
St. Petersburg	n. a.	24.0	Yes	1.00	None
Salt Lake City	32.0	None	n. a.	n. a.	None
San Jose	25.0	34.0	Yes	1.25	3
Spokane	n. a.	None	Yes	1.50	16
Syracuse	n. a.	27.5 <sup>(3)</sup>	n. a.	n. a.	25
Tucson	11.5	12.0	None	None	11
Bridgeport	17.6	30.0	n. a.	n. a.	None
Hartford	22.4	40.0	(4)	(4)	None
New Haven	16.7	40.0	None	None	2
Springfield	24.0	33.0	None	None	None
Worcester	28.6	28.0	n. a.	n. a.	None
Providence	45.8	45.0 <sup>(5)</sup>	None	None	1

Source: United States Department of Health, Education and Welfare, Public Health Service, 1957 Inventory of Municipal and Industrial Waste Facilities; International City Managers Association, Municipal Yearbook, 1961.

- (1) Most industrial systems are small and may discharge only water used for cooling; in other cases more complex wastes may be involved.
- (2) Over 80,000 population not served by sewage systems in Mobile.
- (3) Treatment involves discharge to sludge lagoons.
- (4) Hartford is served by an independent sanitation district.
- (5) Capacity increased to designed flow of 63.0 mgd.

A number of important factors must be considered in the interpretation of cost data on sewers and sewage disposal. First, per capita costs will depend on the average daily flow of wastes treated. The relation between the daily flow and population size will depend on the volume of industrial wastes received by the system and the volume of wastes received from outlying communities. In the case of Providence, in addition to the normal flow from the city, part of the sewage flow from Cranston, and all of the flow from North Providence and Johnston is treated at the municipal plant. Without regard to industrial wastes, the treatment of the sewage flow from outside areas means that the Providence system had a population equivalent of 290,000 in 1957.

Treatment costs will also depend on the type of industrial wastes received by the system. Some industrial wastes are stronger than others, may contain elements which are toxic to the biological life essential to most treatment processes, or may contain other substances difficult to digest.

Second, the treatment costs per unit (mgd) will depend in part on the type of treatment plant. Treatment plants may be classified as primary, standard-rate filters, high-rate filters and activated sludge. Operating cost studies indicate that activated sludge plants have higher operating costs per unit (mgd) than other types of plants. However, this process has certain important advantages in terms of the percentage of solids and organic matter removed before effluent discharge.

The Providence plant is an activated sludge process with disposal of digested solids by incineration. In 1957 the treatment plant had a daily capacity of 45 mg. Planned capacity will be 63 mgd. The sludge incinerator is just barely adequate for normal flows and therefore can neither handle peak loads nor provide stand-by capacity in case of required repairs.

Third, costs of operations will in part depend on wage rates and prices paid for chemicals and supplies. The average pay rates

in effect in Providence (see Section 3.1.4) indicate that they are not a factor in explaining per capita costs for sewers and sewage disposal in Providence.

The fourth factor, and the most difficult to evaluate, is plant efficiency. An approach to this question may be made in terms of cost analysis for different types of treatment plants. In a recent study<sup>1</sup> 321 treatment plants (including Providence) reported annual operation and maintenance costs for actual plant operations. Administrative costs such as billing and collection and capital costs were excluded. Data were reported for the years 1955 through 1958 and means of uniform totals were used as the basis for a cost study. The plants were classified into the four basic types and statistical cost estimating equations were computed in relation to the average annual daily flow (mgd) and population served.

The cost equation for the activated sludge process is based on data from 60 plants. If the average flow (mgd) of the Providence plant for 1957-58 (45.8 mgd) is substituted into the statistical cost function, the estimated annual cost per mgd is \$9,235, or \$25.30 per m.g. The lower and upper one-standard error limits are \$7,499 and \$11,368.<sup>2</sup>

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1. Rowan, P. P., Jenkins, K. L. and Howells, D. H., "Estimating Sewage Treatment Plant Operation and Maintenance Costs," Journal of the Water Pollution Control Federation, Vol. 33, No. 2., Feb., 1961, pp. 111-121. The authors are all members of the Division of Water Supply and Pollution Control, U. S., Public Health Service.

2. The estimating equation for activated sludge plants is  $\log y = \frac{1}{0.40662 + 0.17223 \log x}$  where  $\log y =$  annual cost per mgd  $\times 0.001$  and  $x =$  average daily flow in mgd  $\times 100$ .

The lower and upper limits are defined in terms of one standard error below and above the estimated value. On the basis of the sample of plants, the chances are approximately two out of three that a plant of similar type and size chosen at random would have annual costs lying within the two limits.

By comparison, the actual cost per mgd in the Providence plant in 1957-58 was \$5,838 or \$16.00 per m.g. This figure is less than the lower limit at one-standard error. However, since in 1957-58 not all sludge was incinerated (part was barged) the Providence cost may be understated for comparative purposes. If total costs are reconstructed by assuming that all sludge was incinerated at actual 1958-59 per ton costs, the Providence equivalent actual operating costs would have been \$7,057 per mgd. This is still below the lower limit at the one-standard deviation level. The conclusion is that in terms of nation-wide operation of similar plants and for an average daily flow of 45.8 mgd., the annual operation and maintenance costs of the Providence treatment plant were low, i.e., significantly below the expected costs.

The costs of operation of sewage systems in other cities are not available, but some inferences concerning the per capita costs recorded in Table 30 may be inferred from the data summarized in Table 31. Only one of the 21 cities has a daily average sewage flow or a designed capacity of the treatment plant (on a mgd basis) which exceeds Providence. Since the costs per capita will depend on the sewage flow, mgd, it is evident the relatively higher costs in Providence are readily explicable.

Another technical measure of the load imposed on a treatment plant is expressed in terms of the population equivalent of the biochemical oxygen demand (BOD)<sup>1</sup>, that is, what population would be required to produce domestic sewage equivalent to the actual wastes received. In 1957 the population equivalent (BOD) of the sewage flow in Providence was 540,000 which was higher than the population

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1. BOD is the amount of oxygen absorbed during the purification process. Hence it is a useful indicator of the organic matter in the sewage received for treatment. The higher the BOD, the stronger is the sewage.

equivalent of any of the 21 cities except San Jose which seasonally receives large volumes of cannery waste high in organic content.

As a minor digression, attention is called to the existence of sewer service charges in a number of the cities included in the comparisons. These charges should be taken into account when comparisons are made on the revenue side of city operations.

The category of "other sanitation" covers street cleaning and the collection and disposal of refuse (garbage and rubbish). The amount and scope of services of this type provided by cities vary widely and the costs differ among cities providing equivalent services because of local conditions.

Per capita expenditures for "other sanitation" in 1957 and 1960 for 21 cities are shown in Table 30. Costs per capita vary from \$0.8 to \$10.8 in 1957 and from \$1.3 to \$11.3 in 1960. The median increased from \$4.8 to \$5.3.

Providence expended \$5.0 per capita in 1957 and \$6.7 in 1960. In both years these expenditures exceeded the median and gave Providence ranks of 10 and 6 in the two years. Providence collects and incinerates garbage and collects and disposes of non combustible rubbish in sanitary fills.

In a study of refuse collection practices published in 1958, unit costs for cities grouped according to the class of refuse collected were compiled.<sup>1</sup> Despite some differences in the cost elements reported for each city for 1955, the Providence per capita cost for collecting garbage and combustible rubbish was well within the range of per capita costs for cities in a comparable population class. The reported Providence cost was \$1.80 per capita and the range for all reporting cities was from \$0.96 to \$3.35. In terms of collection costs per ton, Providence reported \$11.28 per ton

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1. American Public Works Association, loc cit., pp. 497-511.

in 1955. By 1960-61 the collection costs had risen to \$11.00 per ton for garbage compared to a cost of \$9.44 per ton in 1955-56

In the period 1958 to 1961, garbage incineration costs decreased from \$3.32 per ton to \$3.27 per ton. In the same period, the collection and disposal of non-combustible rubbish increased from \$2.10 per ton to \$2.95 per ton.

Comparative cost data on street cleaning operations are not available for a recent enough year to be useful for present purposes.

#### 4.2.4 Local Government Expenditures on public welfare, hospitals and health, 1957

Expenditures on public welfare, hospitals and health are strongly affected by variations in State-local divisions of responsibility. Table 32 shows the consolidated per capita expenditures in 21 cities by all local units principally the municipalities and counties. Private operation of local hospitals and provision of health services is not taken into account.

The extreme variation in consolidated per capita expenditures for welfare services (including health and hospitals) illustrates the problem of State vs. local administration. Direct inter-city comparison, even on a consolidated basis, is virtually useless. Only a direct examination of services provided to city residents by all governmental (and private) agencies and the administration of these services would yield meaningful comparisons.

The per capita data of Table 32 are presented for purposes of completeness. More recent data for the 21 cities cannot be given on a consolidated basis.

#### 4.2.5 Local Government expenditures on Housing and Community Development, 1957

The responsibility for housing and community development may be exercised by the municipalities or by development authorities (special districts). Consolidated per capita expenditure for housing and community development for the 14 cities engaged in

Table 32

Local Government Expenditure on Public Welfare, Hospitals and Health, Selected Cities, Per Capita, 1957

City	Expenditures per Capita		
	Public Welfare	Hospitals	Health
Albuquerque	0.2	6.1	0.9
Austin	1.7	12.3	1.6
Charlotte	10.5	4.5	4.7
Des Moines	5.0	8.5	1.4
Flint	5.8	39.0	2.3
Grand Rapids	3.5	4.7	2.5
Jacksonville	0.9	6.2	3.9
Mobile	0.3	8.3	0.9
Sacramento	27.3	11.8	5.1
St. Petersburg	1.8	21.3	1.3
Salt Lake City	0.4	6.3	2.4
San Jose	23.8	8.6	6.0
Spokane	0.4	2.3	2.1
Syracuse	20.0	3.2	4.9
Tucson	0.0	5.1	0.9
Bridgeport	2.2	8.6	2.0
Hartford	5.3	9.7	3.2
New Haven	7.9	2.0	3.2
Springfield	25.4	11.3	4.4
Worcester	31.6	21.7	6.5
Providence	10.6	5.6	2.3

these activities are shown in Table 33. The data are for 1957; consolidated data for more recent years are not available.

Table 33

Local Government Expenditure on Housing and Community Development, Selected Cities, Per Capita, 1957

City	Expenditures Per Capita		
	Total	Current Purposes	Capital Outlay
Charlotte	3.2	3.2	0.0
Jacksonville	2.7	2.7	0.0
Mobile	14.6	9.4	5.2
Sacramento	16.1	4.3	11.8
St. Petersburg	1.4	1.4	0.0
San Jose	0.5	0.5	0.0
Syracuse	3.6	2.9	0.7
Tucson	0.3	0.3	0.0
Bridgeport	20.0	20.0	0.0
Hartford	14.4	14.3	0.1
New Haven	36.7	12.9	23.8
Springfield	6.5	2.9	3.6
Worcester	11.1	5.8	5.3
Providence	22.5	7.9	14.6

Urban redevelopment has become a vital problem, primarily in the older, industrialized cities and in some cities with large concentrations of substandard housing. Only 8 of the cities actually undertaking some phase of housing and community development are engaged in the activity at a "serious" level. All of the New England cities are represented in this group.

Providence expended \$22.5 per capita for housing and urban

redevelopment in 1957. Capital outlays accounted for \$14.6 and expenditures for current operations, \$7.9. A substantial share of expenditures for urban redevelopment is borne by the federal government.

4.2.6 Local Government expenditure for Parks and Recreation, General Control, Interest on General Debt, and Miscellaneous Functions, 1957.

Consolidated per capita expenditures for these functions are shown in Table 34 for 1957. Since local spending on parks and recreation is primarily the responsibility of the municipality, data are also available for 1960 and are included in Table 34.

Little comment is required with respect to these functions. Nothing significant can be said about the per capita expenditures on miscellaneous (all other general) functions because of the heterogeneous character of this category.

Per capita expenditures for parks and recreation ranged from \$2.6 to \$11.8 in 1957 and from \$3.1 to \$19.9 in 1960. In 1957 Providence expended \$6.0, just fractionally above the median and in 1960, spent \$5.6 which was also the median.

Expenditures on general control in Providence were \$6.3 per capita compared to a median of \$7.4. Providence ranked 18 among the 21 cities.

Per capita expenditures for interest on the general debt ranged from \$0.9 to \$6.9 in 1957. Providence ranked 4 among the 21 cities with expenditures of \$4.8 per capita. The level of outstanding debt in Providence was established by the expenditure pattern of the 1930's.

Table 34

Local Government Expenditure on Parks and Recreation, General Control, Interest on General Debt, and All Other General Functions, Selected Cities, Per Capita, 1957

City	Expenditures Per Capita				
	Parks and Recreation		General Control	Interest on General Debt	All Other General
	1957	1960	1957	1957	1957
Albuquerque	8.5	4.8	6.0	2.8	12.8
Austin	11.2	5.4	7.0	2.3	10.4
Charlotte	3.3	3.1	5.7	6.7	22.5
Des Moines	4.4	6.8	8.5	1.0	13.0
Flint	3.3	5.2	6.6	2.9	23.9
Grand Rapids	6.9	6.6	7.4	0.9	13.3
Jacksonville	11.8	19.9	19.2	1.9	15.7
Mobile	3.9	4.6	6.1	6.6	5.7
Sacramento	8.4	12.4	14.9	2.3	35.2
St. Petersburg	6.4	8.0	9.9	6.9	15.6
Salt Lake City	4.9	9.7	6.7	1.2	13.4
San Jose	2.6	6.0	9.2	1.4	32.2
Spokane	5.3	4.9	7.8	1.1	10.9
Syracuse	7.3	6.8	14.5	3.3	23.8
Tucson	4.4	5.6	8.8	1.3	31.6
Bridgeport	5.9	5.0	7.2	1.1	14.6
Hartford	8.8	10.7	7.5	1.8	26.0
New Haven	5.8	4.9	7.4	2.5	10.9
Springfield	6.2	6.8	8.0	2.3	17.3
Worcester	3.5	3.4	7.3	2.4	23.5
Providence	6.0	5.6	6.3	4.8	6.6
Low	2.6	3.1	5.7	0.9	---
High	11.8	19.9	19.2	6.9	---
Median	5.9	5.6	7.4	2.3	---
Rank - Prov.	10	11.5	18	4	---

Source: U. S. Bureau of the Census, 1957 Census of Governments; 1960 Compendium of City Government Finances.

#### 4.2.6 Per Capita Expenditures, Six New England Cities, 1960 and 1961.

In preceding sections inter-city expenditures comparisons were made on the basis of the 1957 consolidated data. For functions which are predominately the responsibility of the municipal government, comparisons of per capita expenditures based on 1960 fiscal-year data and employment per 1000 population based on 1961 data were made.

In this section direct comparisons of per capita expenditures for selected functions are made for six New England cities. The municipal operations of the six cities are not fully comparable. In 1957 the following percentages of total local government expenditures were made by the respective municipalities: Bridgeport, 85.4; Hartford, 85.5; New Haven, 92.7; Springfield, 94.8; Worcester, 91.6; and Providence, 95.7. In these cities, the county government played a minor role (even smaller in the recent governmental reorganization in Connecticut) and the major part of the difference between municipal and total local expenditures is accounted for by special districts - housing and urban renewal and sanitation.

In view of this, it is clear that total general expenditures per capita in Bridgeport, Hartford, New Haven and Worcester will be understated relative to Springfield and Providence. Nevertheless, comparisons of expenditures for common functions can be made on a broader basis among these New England cities than would be possible for other cities involved in earlier comparisons. Caution must be taken in making direct comparisons of total expenditures and total revenues.

Table 35 summarizes the per capita expenditures made in 1960 and 1961 for the principal general functions. The percentage changes between 1957 and 1961 are also shown. The 1957 per capita expenditures used as a base for the percentages are those made only

by the municipality involved and are not equal to the 1957 consolidated data.

Per capita expenditures on some functions reveal a substantial inter-city variability. In some cases, inter-city differences are primarily the result of variations in the distribution of responsibility between state and local governments. Public welfare, hospitals and health functions are notable examples. Springfield and Worcester make substantially larger direct expenditures on public welfare than the other New England cities. It will be noted later that these expenditures are compensated by larger intergovernmental payments by the State of Massachusetts.

It is evident from an examination of the percentage changes in per capita expenditures between 1957 and 1961 that changes in the state-local distribution of functions have occurred in welfare and health.

Inter-city differences in some categories of expenditure also reflect large differences in capital outlays per person. Differences in capital outlays are influenced by three factors:

- (1) variation in the timing of capital programs which tend to be irregular for specific functions;
- (2) differences in the distribution of functions between the municipality and special districts, especially in the case of housing and urban renewal and sanitation;
- and (3) differences in the extent of capital programs as a reflection of the nature of local problems or the willingness of the community to undertake capital expenditure programs.

Table 35. Per Capita Expenditures by Function, Six New England Cities, 1960 and 1961, Per Cent Change, 1957 - 1961

Function	Bridgeport			Hartford			New Haven		
	1960	1961	% Change 1957-61	1960	1961	% Change 1957-61	1960	1961	% Change 1957-61
General Expend.	143.7	152.8	21.1	204.1	218.2	43.9	212.1	272.2	54.9
Capital Outlay	13.3	16.6	46.3	34.0	40.3	6.8	78.1	116.4	80.3
Police	13.5	13.9	13.8	16.0	16.3	23.3	15.1	16.0	15.5
Fire	17.3	17.8	9.9	16.3	19.0	45.8	13.5	20.0	40.6
Highways	5.4	5.7	2.5	10.5	10.6	14.1	7.5	10.7	17.0
Less Capital Outlay	5.1	5.7	10.1	7.0	8.8	68.9	3.5	7.1	26.6
Sewers & Disposal	5.8	5.3	3.9	(1)	(1)	(1)	5.4	8.7	26.3
Less Capital Outlay	2.4	3.0	13.4	(1)	(1)	(1)	2.1	2.6	71.8
Other Sanitation	7.1	10.5	68.6	6.0	6.3	3.4	3.3	4.1	187.5
Public Welfare	4.9	4.9	77.0	11.1	12.6	137.2	14.1	10.6	35.8
Education	52.3	48.2	19.0	63.4	71.0	39.0	58.0	69.0	2.6
Less Capital Outlay	46.3	47.8	18.8	59.5	62.4	33.4	50.6	59.9	36.1
Hospitals	7.0	7.3	-15.1	13.4	12.8	31.8	2.8	--	--
Health	3.5	3.5	78.4	3.0	3.1	22.6	2.6	3.1	-1.6
Parks & Recreation	5.0	5.1	-12.6	10.7	13.0	49.1	4.9	6.6	13.7
General Control	7.1	6.9	8.6	8.6	8.6	33.3	7.4	7.1	11.2
Interest on General Debt	1.8	1.9	81.3	3.8	4.0	124.4	5.8	6.7	162.2
All Other	16.5	21.0	156.0	27.5	27.7	74.5	9.9	25.9	285.6
	Providence			Springfield			Worcester		
General Expend.	180.8	204.4	32.7	228.8	232.9	16.2	232.5	255.8	33.6
Capital Outlay	29.2	48.8	37.7	27.6	22.6	-1.5	30.1	28.0	39.8
Police	16.3	16.5	36.8	12.4	12.6	5.2	11.7	12.4	29.2
Fire	13.4	13.4	28.3	15.3	15.6	7.7	13.1	14.8	36.4
Highways	11.9	11.2	16.4	15.2	20.1	19.5	15.7	19.1	44.9
Less Capital Outlay	8.8	9.1	14.8	10.4	12.3	15.3	11.0	14.8	67.5
Sewers & Disposal	6.7	6.4	-48.6	9.2	8.6	8.8	4.1	4.7	-38.9
Less Capital Outlay	4.6	5.1	73.3	2.2	2.1	-32.1	2.8	3.0	54.1
Other Sanitation	6.7	6.3	25.5	11.3	7.7	-28.7	2.0	2.2	-12.9
Public Welfare	11.3	10.7	1.2	35.2	38.9	53.1	46.3	49.3	60.7
Education	55.7	62.5	36.0	75.6	78.5	17.0	68.7	74.3	45.1
Less Capital Outlay	51.1	52.7	31.8	68.6	71.6	27.6	60.1	66.5	37.9
Hospitals	6.9	7.2	30.4	10.1	10.1	-6.9	28.7	29.3	44.8
Health	2.1	2.2	-5.6	1.8	1.8	-59.3	2.0	1.9	-69.5
Parks & Recreation	5.6	6.5	9.0	6.8	7.4	18.3	3.4	4.4	27.3
General Control	9.0	8.6	36.5	5.9	6.2	12.4	7.2	5.8	69.5
Interest on General Debt	6.2	6.6	38.3	3.4	4.0	78.3	3.4	3.8	68.2
All Other	12.8	26.7	556.0	26.6	21.5	84.8	24.2	33.8	143.1

Source: U. S. Bureau of the Census, Compendium of City Government Finances, 1957, 1960, 1961.

(1) Hartford is served by an independent sanitary district.

A close examination of the patterns of expenditure on current operations (expenditures for current purposes only) reveals consistence with respect to the direction of change in expenditures for essential local functions. There exist, however, substantial differences in both the level of expenditures and the amount of change in per capita expenditures over short periods. Differences in the level of expenditures are usually explicable in terms of local conditions. For example, per capita expenditures for education are lower in Bridgeport and Providence than in the other New England cities partly because of the lower proportion of elementary and secondary pupils enrolled in public schools. In a similar vein, per capita expenditures on the police function tend to be higher in Providence because of the greater severity of the crime and traffic problems. On the other hand, per capita expenditures on fire protection are lower in Providence despite relatively greater fire hazards and a higher NBFU rating than in other New England cities. The explanation lies primarily in the modernization and relocation (physical facilities) program already completed in Providence. It should be understood, of course, that an explanation of inter-city differences in per capita expenditures is not a rationalization of the specific magnitude of expenditures in a city.

Changes in the level of per capita expenditures over short periods of time must be interpreted with care. An examination of local government expenditures by function reveals clear trends. Individual city governments conform to these trends over long periods, but in any given year may deviate significantly from aggregate behavior. This irregular conformance to major trends emphasizes the difficulties in basing comparisons on a single year or on a short time period. Small differences of timing in revenue or expenditure charges can produce the appearance of substantial differences in fiscal behavior. These differences may be of minor significance.

Consider now the rankings of the 6 New England cities with respect to per capita expenditures for predominantly local general functions in 1957 and 1961. An examination of Table 36 shows that, in general, shifts in ranks were small. In a small number of cases relatively large changes occurred. For example, with respect to expenditures for the police function, Providence ranked 4th in 1957 and 1st in 1961. Other examples can be found in the table.

In terms of general expenditures, both total and for current purposes only, the shifting of ranks was general, although no city changed rank by more than one. Providence improved its rank, moving from 4th place in 1957 to 5th place in 1961.

The rank in general expenditure for current purposes is the best indication of the average rank on individual functions. In terms of specific functions, Providence improved its relative position for some, lost position in others, and remained in the same position in approximately half of the categories. On net, as already stated, the position of Providence improved relative to the other New England cities between 1957 and 1961. In general, each city follows a tendency to develop the expenditure pattern consistent with the local problems referred to elsewhere in this report.

Table 36

Ranks of Per Capita Expenditures for Selected Function  
Six New England Cities, 1957 and 1961

Function	Bridgeport		Hartford		New Haven		Providence		Springfield		Worcester	
	1957	1961	1957	1961	1957	1961	1957	1961	1957	1961	1957	1961
General Expend.	6	6	5	4	3	1	4	5	1	3	2	2
Current Purposes	5	6	3	3	6	4	4	5	1	2	2	1
Police	3	4	2	2	1	3	4	1	5	5	6	6
Fire	1	3	4	2	2	1	6	6	2	4	5	5
Highways	6	6	5	5	4	4	3	3	1	1	2	2
Less Capital Out- lay	6	6	5	4	4	5	3	3	1	2	2	1
Sewers and Disposal	5	4	-	-	4	1	1	3	1	2	3	5
Less Capital Out- lay	3	3	-	-	5	4	2	1	1	5	4	2
Other Sanitation	2	1	3	3	6	5	4	4	1	2	5	6
Education	6	6	4	3	1	4	5	5	2	1	3	2
Less Capital Out- lay	5	6	3	3	4	4	6	5	1	1	2	2
Parks & Recreation	4	5	1	1	5	3	3	4	2	2	6	6
General Control	2.5	4	1	1	2.5	3	4	2	5	5	6	6

### 5.1 Local Government Revenues in 1957

As in the case of expenditures, valid inter-city comparisons of per capita revenue require the consolidation of the revenue accounts of all local governmental units providing services to the residents of cities. The data required for consolidation of all local accounts are available for 1957, and the results shown in Table 37. These data are consistent with the consolidated per capita expenditures presented in previous sections.

Governmental revenue is defined as all receipts from external sources other than the issue of debt. It will be recalled that the expenditures were defined to exclude payments made for the retirement of debt, sinking funds, or as agency transactions. Hence, the difference between revenues and expenditures represent net changes in the outstanding debt.

Total revenue consists of general revenue, utility revenue and employee retirement revenue. Per capita total revenue varied widely among the 21 cities with a low of \$134.5 and a high of \$351.3. The median was \$200.3. A substantial part of this variation is due to the differences in per capita utility expenditure which varied from zero to \$134.9 for the 21 cities.

Although the efficiency of local government utility operations is a matter of concern, the heterogeneity of services offered and the operating conditions makes meaningful comparison exceedingly difficult. Consequently, attention will be focused on general revenue.

For the 21 cities, per capita general revenue in 1957 ranged from \$111.9 in Austin to \$265.8 in Syracuse. The level of general expenditures obviously reflects the level of expenditures and the volume of borrowing for purposes of capital improvement. A comparison of general expenditures and general revenues for the 21 cities shows that 14 were net borrowers and 7 were retiring net debt.

Table 37

Local Government Revenue in Selected Cities,  
per Capita, 1957

City	General Revenue							Employ- ee Retire- ment
	Total Revenue	Taxes			Inter- Gov't.	Charges & Misc.	Utility Revenue	
		Total	All	Property				
Albuquerque	173.5	162.8	58.8	36.5	70.1	33.9	10.6	-
Austin	214.3	111.9	60.4	56.4	26.2	25.3	99.8	2.6
Charlotte (1)	165.1	153.8	68.0	64.0	53.3	32.5	11.2	0.4
Des Moines	174.4	160.0	123.2	118.3	14.9	21.9	11.4	3.0
Flint	226.2	209.4	99.7	97.8	58.3	51.5	13.6	3.2
Grand Rapids	166.9	155.9	75.1	72.9	56.2	24.6	9.3	1.9
Jacksonville	295.6	156.9	78.8	54.7	30.1	48.1	134.9	3.6
Mobile	134.5	117.7	48.0	25.3	37.6	32.1	16.4	0.4
Sacramento	351.3	237.0	127.5	102.1	72.9	36.6	107.1	7.2
St. Petersburg	235.8	200.4	105.2	79.6	37.8	57.4	28.8	6.8
Salt Lake City	159.3	141.2	96.2	88.1	26.6	18.3	17.8	0.3
San Jose	200.3	198.7	117.3	100.7	56.9	24.5	-	1.6
Spokane	153.0	141.2	64.8	52.0	49.9	26.5	8.6	3.2
Syracuse	280.4	265.8	158.9	132.6	83.8	23.1	14.5	0.1
Tucson	206.0	195.6	103.0	97.6	63.2	29.4	9.5	1.0
Bridgeport	147.0	146.5	99.7	98.0	14.2	32.6	-	0.5
Hartford	216.7	184.9	138.7	137.0	14.6	33.3	27.5	4.2
New Haven	156.6	155.2	109.1	106.9	25.3	20.8	-	1.5
Springfield	217.8	197.2	128.3	125.5	55.0	13.9	15.8	4.8
Worcester, Mass.	221.1	208.0	125.3	122.3	54.8	28.1	8.7	4.4
Providence	174.4	157.1	109.5	106.5	25.4	22.1	12.3	5.0
Low	134.5	111.9	48.0	25.3	14.2	13.9	-	-
High	351.3	265.8	158.9	137.0	83.9	57.4	-	-
Median	200.3	160.0	103.0	97.8	49.9	26.5	-	-
Rank-Providence	12.5	12	8	7	18	17	-	-

Source: U. S. Bureau of the Census, 1957 Census of Governments,

(1) State direct expenditures for Charlotte public schools counted as grant-in-aid and included in intergovernmental revenue.

The composition and the magnitude of general revenues reflect (1) the distribution of functions between state and local government and (2) the historically developed revenue structure in the various cities and states. Equivalent per capita general revenue in different cities may involve widely different revenue sources: that is, the system of taxation and service charges are not uniform. Much discussion of local government finance centers on specific taxes. In most cases, since governmental revenues must be drawn from the income of the community, the real question is not the magnitude of a specific tax but rather (1) the size of the total tax burden and (2) the distribution of that burden among the various economic groups comprising the community. The distribution of the tax burden is a complex matter which involves questions of equity and economic effects.

In terms of the 1957 per capita general revenue, Providence ranked 12 (from the top) among the 21 cities and 4 among the 6 New England cities.

With one exception among the 21 cities, taxation is the principal source of general revenue and, in turn, the property tax is the mainstay of local tax systems. In New England cities, the property tax accounts for virtually all of the total tax revenue. This is true elsewhere, but in a number of cities sales, excise and other taxes play a substantially larger role.

Per capita total taxes in 1957 varied from \$48.0 to \$158.9 with a median of \$103.0. Providence and all other New England cities, with the exception of Bridgeport, exceeded the median. The rank of Providence was 8.

Per capita property taxes in 1957 varies from \$25.3 in Mobile to \$137.0 in Hartford, Conn. The median was \$97.8. Providence with per capita property taxes of \$106.5 ranked 8th among the 21 cities and 4th among the New England cities, although for practical purposes Providence and New Haven were tied.

Intergovernmental revenues are constructed net of inter-local transfers and therefore are receipts from the state and federal governments. The major part of these revenues are from the state, although in turn the state may receive part from the federal government. Per capita intergovernmental revenues varied from \$14.2 in Bridgeport to \$83.9 in Syracuse. Providence, with intergovernmental revenues of \$25.4 per capita, fell substantially below the median of \$49.9 and ranked 18 among the 21 cities.

The fact that local governments may be assigned a relatively large share of the responsibility for governmental functions does not mean a corresponding dependence on own sources of revenue. Inter-governmental revenues accruing to local units are largely derived from the state tax collections and this fact must also be taken into account in inter-city comparisons of the tax burden.

Charges and miscellaneous revenues (e.g. assessments) also exhibited substantial variability. Per capita charges ranged from \$13.9 to \$57.4. Providence with per capita charges of \$22.1 was moderately below the median of \$26.5 and ranked 17th among the 21 cities. Per capita charges for municipal services also directly affect the inter-city comparisons of the tax burden since in some cities residents may be charged for services (e.g. sewers and refuse collection) whereas in other cities these services are rendered "free", i.e., the cost is covered by the general tax levy. In many cases these special charges may be interpreted as in lieu of property taxes.

#### 5.2 Per Capita Revenues, 6 New England Cities, 1960 and 1961

Within the same limitations outlined in the section comparing per capita expenditures, the per capita revenues of the six New England cities may be compared for the fiscal years 1960 and 1961. Table 38 shows per capita general revenue and its principal components for 1960 and 1961 and the percentage changes between 1957 and 1961.

Table 38

Per Capita General Revenue, Six New England Cities  
1960 and 1961, Per Cent Change, 1957-1961

Type of Revenue	Bridgeport			Hartford			New Haven		
	1960	1961	% Change 1957-61	1960	1961	% Change 1957-61	1960	1961	% Change 1957-61
General	152.7	159.9	25.4	209.5	222.7	43.4	184.9	210.3	48.6
Taxes	118.3	124.9	26.2	164.2	168.7	31.7	118.9	145.6	34.4
Property	117.6	124.2	27.8	157.1	167.5	32.4	118.0	144.3	35.9
Intergov't.	19.0	20.1	44.4	25.6	30.9	124.2	48.6	51.1	104.8
State Only	16.2	16.4	51.9	20.0	29.4	132.4	30.4	26.7	69.7
Misc. Gen. Rev.	15.4	14.8	1.5	19.4	23.1	72.3	16.8	-13.7	65.9
	Providence			Springfield			Worcester		
General	184.1	192.7	29.7	200.3	210.1	4.7*	234.6	262.3	34.0
Taxes	131.9	131.1	19.9	127.1	130.2	-4.6*	143.0	158.1	30.2
Property	129.5	128.8	21.1	125.3	128.6	-3.2*	141.0	156.2	31.8
Intergov't.	29.8	41.0	61.7	57.6	64.8	18.4	60.6	68.5	27.0
State Only	27.1	34.2	42.0	52.6	60.2	17.2	57.3	63.1	21.1
Misc. Gen. Rev.	22.4	20.5	47.8	15.6	15.1	60.6	30.9	35.7	76.0

Source: U. S. Bureau of the Census, Compendium of City Government Finance, 1957, 1960, 1961.

\* See discussion in text.

General revenues increased in all six cities between 1957 and 1961 and between 1960 and 1961. The largest absolute change between 1960 and 1961 occurred in New Haven and Worcester, and the largest percentage change between 1957 and 1961 occurred in New Haven and Hartford. Springfield registered the smallest percentage change between 1957 and 1960, but this requires additional explanations.<sup>1</sup> If the normal percentage of the 1961 levy had been collected, Springfield would have avoided a budget deficit of \$7,693,261 and would have recorded a substantially greater percentage increase between 1957 and 1961. Providence ranked 5th among the six New England cities in per capita general revenues. With respect to total taxes and property taxes per capita Providence ranked 4th, but if adjustments are made to reflect the abnormally low collection ratio in Springfield the Providence rank would be 5.

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1. For many years Springfield employed a de facto classification system for assessing different types of property. A suit was instituted by a group of property owners seeking declaration of legality of the procedure. Injunction proceedings were simultaneously introduced to prevent the practice and to bill and collect for taxes so levied. In November, 1961 the Supreme Judicial Court of the Commonwealth of Massachusetts found the assessment method illegal and void and enjoined the City of Springfield from assessing and collecting taxes on this basis. Accordingly, corrected tax bills based on the full fair cash values and a new tax rate had to be prepared. Tax bills were substantially delayed.

The immediate consequence of this action was a substantial reduction in the percentage of the tax levy to be collected during fiscal 1960 and 1961. In 1960 the collection ratio was 80.4 and in 1961, 64.2 as contrasted with a normal collection ratio of 91-94 per cent in the preceding 5 years.

In 1961, therefore, a tax levy of \$27,210,662 resulted in collections of that levy of only \$17,459,162. Collections of previous years, notably 1960, raised total collections to \$21,102,490 - over \$16,000,000 short of the 1961 levy.

Per capita intergovernmental revenues are higher in the Massachusetts cities and lower in the Connecticut cities than in Providence. Total intergovernmental revenues (per capita) were larger in New Haven than Providence in 1961 because of the unusually large federal grants for urban renewal. Revenues from the state were lower in New Haven than in Providence. Hartford and New Haven had the largest percentage increase in per capita intergovernmental revenue reflecting large increases in both federal and state grants. In the case of Providence federal grants increased by a larger percentage than did state grants, again reflecting urban renewal activities.

Per capita miscellaneous general revenue decreased slightly between 1960 and 1961 in Bridgeport, New Haven, Providence and Springfield. Between 1957 and 1961, Providence had a percentage increase of 47.8. This substantially exceeded the rate of increase in Bridgeport and fell considerably short of the rates of increase registered in the other four cities.

The ranks of the six cities with respect to the various categories of revenue in 1957 and 1961 are summarized in Table 39. Essentially Providence improved its position relative to the six New England cities in the period 1957-1961.

Table 39

Ranks on General Revenue Categories, Six New England Cities, 1957 and 1961

Type of Revenue	Bridgeport		Hartford		New Haven		Providence		Springfield		Worcester	
	1957	1961	1957	1961	1957	1961	1957	1961	1957	1961	1957	1961
General	6	6	3	2	5	3	4	5	1	4	2	1
Taxes	6	6	2	1	5	3	4	4 (1)	1	5	3	2
Property	6	6	2	1	5	3	4	4 (1)	1	5	3	2
Intergov't.	5	6	6	5	4	3	3	4	1	1	2	2
State only	6	6	5	4	4	5	3	3	1	2	2	1
Misc. Gen.Rev.	2	5	4	2	6	6	3	3	5	4	1	1

(1) Would rank 5 if correction is made for delayed collection of 1961 tax levy in Springfield.

### 5.3 The Property Tax

The property tax accounts for almost 90 per cent of all tax revenues of local governments and is, therefore, likely to assume a central place in any discussion of municipal finance. In previous sections the per capita property tax collected in various cities have been compared. It was noted that, in general, Providence and other New England cities depended more heavily on the property tax than did cities in other sections of the nation. The rigidity of municipal tax structures, particularly in New England, has raised numerous questions about the equity and economic effects of the property tax. The merits of the major objections to the property tax cannot be discussed in this report. It may be pointed out, however, that given a tax structure heavily weighted by the property tax, equitable administration and a keen eye on the economic effects became of increasing importance.

Although the per capita property tax is a useful indication of tax severity, it is not easily interpreted in terms of the burden on an individual property owner, or on a class of owners, because of the diversity of tax practices. A number of factors must be considered, especially in comparative studies.

First, the state may levy property taxes as well as local units. Although, state assessments account for only about 8 per cent of total assessed valuations, the state share ranges from zero in 10 states (including Connecticut, Massachusetts, and Rhode Island) to more than one-third of local assessed valuations in Arizona, New Mexico and Utah. Hence, if only the property tax is under consideration the per capita tax rates for Tucson, Albuquerque, and Salt Lake City would have to be increased correspondingly.

In 36 states railroad property is assessed by the state, whereas four states (including Connecticut) exempt railroads from property taxation in favor of alternate forms of taxation. In 3 other states (including New York and Texas) the state assesses some forms of railroad properties and local governments assess the balance or special property tax rates are applied.

Operating property of public utilities is state-assessed in 31 states, including those states which assess only certain forms of property (New York and Texas). Some states exempt all utility properties (Pennsylvania) or the property of specific utilities. Special forms of taxation are applied to these properties.

In 21 states motor vehicles are assessed as personal property to which the standard rate applies. All other states have exempted motor vehicles from local general property taxation and have substituted either special property tax rates or an entirely different form of taxation. Among the states involved in the 21-city comparisons Connecticut, North Carolina, Rhode Island, Texas and Utah locally assess motor vehicles as personal property. Arizona, California, Massachusetts, and Washington tax motor vehicles at special rates.

In all of these states, except California and Washington, the taxes are collected locally.

A second factor is the treatment accorded to personal tangible property and intangible property whether locally - or state - assessed. In three states (including New York) personal property, as defined by statute, is completely exempt. Massachusetts exempts manufactured capital equipment and inventories. In Rhode Island specified, but limited, types of property, subject to other forms of taxation, are exempt.

Nineteen states, including Alabama, Arizona, Connecticut, Massachusetts, New York, Utah and Washington exempt intangibles from the general property tax, whereas 16 states apply special property taxes (including California, Iowa, Rhode Island, Florida, Michigan and North Carolina). In Michigan and North Carolina, these special taxes are state-collected but locally shared. Florida collects the tax entirely for state use.

The third factor in the interpretation of per capita tax rates in any city is the distribution of assessed valuations by types of property. Only limited information is available. The 1957 Census of Governments contains the only data on valuations which are consistent in time and in method. For most states the data are available for counties which act as the assessing agent. However, the data are available for the 6 New England cities and for 3 other cities in the Providence population class. The distributions of gross assessed valuations by type of property for these cities are shown in Table 40.

The data of Table 40 are estimates based on sample enumerations of properties on local assessment rolls. As expected, the New England cities have a relatively high proportion of commercial and industrial properties. Among the New England cities Providence had a lower percentage in commercial and industrial assessments than did Hartford and New Haven and essentially the same percentage as Bridgeport.

Table 40

Percentage Distribution of Gross Locally Assessed Valuation, by Type of Property, Selected Cities, 1956

City	Type of Property					
	Nonfarm residential		Acreage <sup>1</sup>	Vacant Lots	Commercial and Industrial	Other <sup>2</sup>
	Total	Single-family				
Bridgeport	52.4	44.1	--	1.7	45.9	--
Hartford	35.2	15.4	0.1	0.9	62.2	1.5
New Haven	47.0	44.7	--	1.5	51.3	0.2
Springfield	54.0	46.2	0.7	1.7	43.3	0.2
Worcester	56.9	54.8	0.2	1.6	41.0	0.3
Providence	47.3	44.6	--	2.9	45.6	4.2
Flint	61.1	61.1	0.4	1.9	36.6	--
Grand Rapids	65.2	63.8	--	0.6	34.1	--
Richmond	64.2	59.4	0.2	2.3	33.1	0.2

Source: U. S. Bureau of the Census, 1957 Census of Governments, Vol. V.

<sup>1</sup> Includes rural residences.

<sup>2</sup> Includes combined use and miscellaneous.

In terms of residential properties, Providence had a lower percentage of assessed valuation than all cities represented in Table 40 except Hartford. The New Haven percentage was essentially equal to Providence.

It is of interest to note that the percentage of assessed valuation in the form of industrial property alone was substantially higher in Providence than any of the cities for which information is available.

Except in the case of Hartford, it does not appear from Table 40 that a substantially heavier burden of taxation on real property falls on the owners of residential property as a group in Providence, compared to other cities in New England.

The fourth factor in the interpretation of per capita property taxes is the effective tax rate. The effective tax rate is defined in terms of the nominal tax rate and the ratio of assessed values to market value. There is a wide variation in nominal rates and assessment ratios among taxing agencies in the United States and meaningful comparisons are seriously hampered by the lack of consistently defined data on effective tax rates.

An approach to this problem can be made in terms of the effective tax rates on single family dwellings in the 6 New England cities. It is stressed that the interpretation of the results be carefully made with due attention to the limitations discussed in this section.

The 1957 Census of Governments contains sales-based assessment ratios for non-farm single-family residences for the 6 New England cities. These assessment ratios are based on measurable sales during a 6-month period during 1956. They are sample values and therefore subject to sampling error. The number of transactions involving other types of property were generally too small to permit the construction of assessment ratios for units as small as cities or counties. The assessment ratios for single-family residential units are summarized below.

City	Sales-based assessment ratio
Bridgeport	42.0 $\pm$ 1.6
Hartford	39.0 $\pm$ 2.1
New Haven	42.6 $\pm$ 1.6
Springfield	45.1 $\pm$ 1.0
Worcester	46.2 $\pm$ 1.6
Providence	59.9 $\pm$ 1.8

The standard error accompanying the average assessment ratio defines limits within which a complete enumeration of all measurable sales of single-family residential properties would fall with odds of 2 out of 3.

If it is now assumed that these ratios hold over time (except where a reassessment occurs) measures of the effective tax rate on single-family residential properties can be computed. It must be borne in mind that these ratios are averages and effective rates on individual pieces of property can differ by large amounts. The computations are summarized in Table 41.

The effective tax rates marked by an asterisk have been estimated on the basis of the overall changes in assessed values in the case of Hartford and Springfield.

The computations of Table 41 indicate that prior to 1960 Providence had effective tax rates on residential properties higher than those in Bridgeport, Hartford and New Haven and lower than those in Springfield and Worcester. The reassessments in Providence, Hartford and Springfield in 1961 and 1962 do not alter this ranking but, in terms of magnitude, reduce the differences between Providence and Hartford on the one hand and between Providence, Springfield and Worcester on the other.

This section may now be summarized. In terms of the per capita tax on all property (or in terms of the per capita tax on real estate alone) Providence compares favorably among the six New England cities. In fact, the rank of Providence moved from 4 to 5 between 1957 and 1961. However, as measured by the effective tax rates on single-family residential properties, Providence has moved closer to Springfield and Worcester, the two cities with the highest effective rates on this class of property. This fact, taken in conjunction with the per capita property tax, implies a relative shift of the property tax burden from commercial and industrial properties to

Table 41

Nominal and Estimated Effective Tax Rates on Single-family Residential Property, Selected Years, 6 New England Cities

Fiscal Year	Bridgeport		Hartford		New Haven	
	Nominal Rate	Effective Rate <sup>1</sup>	Nominal Rate	Effective Rate <sup>1</sup>	Nominal Rate	Effective Rate <sup>1</sup>
1957	---	---	39.75	15.50 ± 0.84	35.50	15.12 ± 0.57
1960	---	---	46.70	18.21 ± 0.98	35.50	15.12 ± 0.57
1961	40.8	17.14 ± 0.66	47.70	18.60 ± 1.00	39.25	16.72 ± 0.63
1962	---	---	49.00	19.11 ± 1.03	39.25	16.72 ± 0.63
1963	---	---	42.90*	25.74*		

Fiscal Year	Providence		Springfield		Worcester	
	Nominal Rate	Effective Rate <sup>1</sup>	Nominal Rate	Effective Rate <sup>1</sup>	Normal Rate	Effective Rate <sup>1</sup>
1957	35.50	21.26 ± 0.54	63.00	28.41 ± 0.63	64.80	29.94 ± 1.03
1960	39.00	23.26 ± 0.70	61.70	27.83 ± 0.61	73.40	29.29 ± 1.01
1961	39.00	23.26 ± 0.70	44.00*	29.83*	73.40	29.29 ± 1.01
1962	39.00	28.39*				

<sup>1</sup> The sampling limits given are at one standard error.

\* Change in assessment ratios.

residential properties. This does not imply an absolute change in the tax burden on industry or commerce. Residential property in Providence is not, on the average, taxed as heavily as in Springfield and Worcester. Other aspects of the particular structure of property taxes must also be taken into account. For example, the treatment of personal property associated with residential ownership is not known.

Given the Providence tax structure and the level of expenditure, the alternative is to deliberately shift the burden of property taxation towards commercial and industrial property. But given the fact that property holdings in Providence are heavily weighted by industrial properties and that industrial growth has been either slow or declining in the region, an increase in the cost burden on industry would be extremely unwise.

