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REPORT BY THE

Comptroller General

OF THE UNITED STATES

How Revenue Sharing Formulas Distribute Aid: Urban-Rural Implications

Several formulas distribute revenue sharing aid. Rural areas generally receive larger per capita grants than urban areas. This raises an apparent question of whether equity is achieved in the revenue sharing program. Resolving this equity issue requires a "need" criterion which applies to both urban and rural areas.

GAO made a case study of 57 county governments in New York State to examine the geographic distribution of "need" based on three generally accepted criteria:

--fiscal capacity,
--fiscal effort, and
--fiscal pressure.

The study shows that rural county governments received larger per capita revenue aid because they tended to have lower fiscal capacities and higher fiscal effort as measured by the revenue sharing formula.

The study also examines what would happen to urban and rural areas if changes were made in the measurement of fiscal effort.

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APRIL 22, 1980

COMPTROLLER GENERAL OF THE UNITED STATES
WASHINGTON, D.C. 20548

B-198287

A.S.

The Honorable James J. Leach
House of Representatives

The Honorable Patrick J. Leahy
United States Senate

Pursuant to your respective requests, this report discusses the targeting of Federal revenue sharing aid to States and local governments classified by their metropolitan-nonmetropolitan status. It also shows how formulas which would target aid based on measures of fiscal capacity, tax effort, and fiscal pressure would alter the metropolitan-nonmetropolitan distribution of aid.

As requested by Senator Leahy's office we have included a discussion of the problems of measuring costs differentials in supplying local public services produced by governments located in urban and rural environments. This discussion is contained in appendix VI of this report.

As arranged with your offices, unless you publicly announce its contents earlier, we plan no further distribution of this report for 48 hours from the date of the report. At that time we will send copies to interested parties and make copies available to others upon request.

Comptroller General
of the United States

DLG 11496

REPORT BY THE
COMPTROLLER GENERAL
OF THE UNITED STATES

HOW CHANGES IN THE DISTRIBUTION CRITERIA WOULD AFFECT REVENUE SHARING AID TO URBAN AND RURAL AREAS

D I G E S T

Because the formulas that distribute revenue sharing aid to rural and urban areas result in rural areas receiving greater aid on a per capita basis than urban areas, this report raises the issue of equity.

EQUITY: NEED INDICATORS AND THEIR URBAN-RURAL IMPLICATIONS

To determine if the urban-rural distribution of revenue sharing aid is consistent with the geographic pattern of need, GAO used 57 county governments in New York as a case study applying three generally accepted measures of need:

--Fiscal capacity: A measure of the ability of a local government to finance services from local sources.

--Fiscal effort: The actual effort being made by a local government to finance services from local sources.

--Fiscal pressure: A measure of the fiscal strain experienced by a local government in providing local services.

GAO found that while each of these need indicators is meaningful from a conceptual standpoint their empirical measurement presents some significant methodological problems. Consequently, weaknesses in each of these measures are discussed. In the case of fiscal effort it is shown that minor changes in definition imply significant changes in the urban-rural distribution of revenue sharing aid.

FINDINGS CONCERNING THE URBAN-RURAL DISTRIBUTION OF NEED

Fiscal capacity

The rural counties in New York State tended to be more heavily concentrated in the low fiscal capacity category than did the urban counties. Since low fiscal capacity as measured by per capita personal income appears directly in the revenue sharing formula this factor partly explains why rural areas tended to receive higher amounts of per capita aid. (See chapter 5.)

Fiscal effort

The urban-rural distribution of the fiscal effort indicator changed significantly with minor alterations in the method of measurement. Using the ratio of all locally raised revenues to full market value of taxable property indicated that urban counties tended to exhibit higher effort. GAO criticizes this method of measuring fiscal effort because a high income community raises more revenues and is therefore better off than a low income community with an identical fiscal effort.

An adjusted fiscal effort would compensate for this weakness and indicates that rural county governments exhibit greater fiscal effort compared to urban county governments. (See pp. 20-26.)

A final alteration in the measurement of fiscal effort was to replace all local revenues with tax revenues. With this change rural governments exhibited less fiscal effort although the difference between the rural and urban governments was smaller. The implication is if all local revenues were used to measure fiscal effort in the revenue sharing formula more aid would be redistributed to rural areas.

GAO also measured fiscal effort by substituting personal income for the full market value of taxable property. This change resulted in urban counties exhibiting less fiscal effort compared

to rural ones. Since income is used in the revenue sharing formula for purposes of measuring tax effort this also explains why rural areas tend to receive more aid per capita.

Fiscal pressure

To measure the financial pressure experienced by county governments, GAO constructed a fiscal pressure index made up of three components: (1) the gap between expenditures and revenues, (2) the long-term debt of a county government relative to its tax base, and (3) its fiscal effort. This indicator is not in the revenue sharing formula and therefore, not surprisingly, the distribution of aid is unrelated to this measure of need. The urban county governments tended to score higher on the fiscal pressure indicator, implying that if revenue sharing aid were distributed on this criterion, urban governments would benefit over rural ones.

AGENCY COMMENTS

Treasury generally agreed with GAO's methodology. It commented that the study represents a useful line of inquiry in evaluating the performance of the revenue sharing formulas and would provide a valuable analytical method for assessing other Federal formula based programs.

C O N T E N T S

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CHAPTER 1

INTRODUCTION

A BRIEF HISTORY OF FEDERAL REVENUE SHARING

The first general revenue sharing proposal subject to wide public discussion was put forth just prior to President Lyndon B. Johnson's re-election in 1964. The proponents of the program agreed that part of the fiscal dividend resulting from the economic expansion of the early 1960s be used to provide fiscal relief to State and local governments.

As the fiscal dividend dwindled due to spending on President Johnson's "Great Society" initiatives and the Vietnam War, the support for revenue sharing developed among Republican groups. The rationale for support of a revenue sharing program also changed. Republicans tended to support the program as a way to simplify the complicated administrative rules associated with categorical grants and increase the decisionmaking authority of local officials concerning the use of Federal aid. This support became the cornerstone of President Nixon's New Federalism efforts.

In late 1969 a coalition of six major public interest groups 1/ lobbied for passage of the program. Compromises between the Nixon administration, the House, and the Senate were worked out and the State and Local Fiscal Assistance Act was signed into law on October 20, 1972 for 5 years terminating December 31, 1976. The legislation provided $30.2 billion to be distributed in roughly equal amounts over the 5-year period.

On October 13, 1976, President Ford signed legislation extending the general revenue sharing program for an additional 3-3/4 years from January 1, 1977 through September 30, 1980 providing $25.6 billion, distributing $6.85 billion annually.

1/The six groups were the National League of Cities, the U.S. Conference of Mayors, the National Association of Counties, the International City Management Association, the National Governors' Conference and the Council of State Governments.

SCOPE

We examined the distribution pattern of revenue sharing aid to urban and rural areas at three levels: State areas, county areas, and county governments. 1/ Previous studies 2/ have examined the distribution pattern of revenue sharing aid to States and to county areas. The important patterns relating to urban and rural States are summarized in chapter 3.

The objective of the revenue sharing formula is to distribute aid to local governments which are responsible for providing a variety of public services to citizens. Past studies, which have confined themselves to evaluating the distribution of aid to geographic areas, such as States or county areas, have ignored issues concerning the efficiency of the revenue sharing formula in distributing aid to local governments responsible for providing services. To overcome this weakness, an attempt has been made in this report by selecting three need criteria (fiscal capacity, fiscal effort, and fiscal pressure) prevalent in discussions of targeting to assess how well the formula distributes aid to New York county governments.

We use New York State county governments in our analysis to provide some preliminary information on the effect of analyzing distribution patterns to areas as opposed to governmental units. We also use county governments because all county governments in New York State have roughly the same public service responsibilities, which eliminates the problem of comparing governments with differing needs resulting from varying responsibilities.

OBJECTIVE

This report has three objectives:

--to provide basic information on differences in the amounts of per capita revenue sharing aid distributed to urban and rural jurisdictions (distribution patterns);

1/Distribution of aid to county areas refers to the sum total of aid to all general purpose local governments within the geographic area of a county and is distinct from the overlying county government.

2/Two of many, the Brookings Institution and the Rand studies, are reviewed in chapter 3.

--to raise the issue of equity between urban and rural areas by determining the extent to which urban-rural differences in revenue sharing aid can be accounted for by differences in several common fiscal need indicators (distributional equity);

--to indicate how efficiently the revenue sharing formula operates in that similar amounts of aid are distributed to governments that are experiencing the same levels of need as measured by the fiscal need indicators (targeting efficiency).

QUALIFICATIONS

We note two important qualifications regarding the aid distribution pattern in New York State. First, we have excluded New York City from our analysis. Given the unique position the city plays in the national economy, it is not appropriate to make comparisons with the remaining 57 counties based on the simple need criteria we use here.

Second, we have not assessed the distribution of revenue sharing aid to cities, towns, and villages. We have confined our analysis to county governments for two reasons. County governments vary enough in urban and rural differences to establish differences in aid distribution patterns among these groups. By excluding cities, towns, and villages, we eliminate the problem of accounting for the substantial differences in public service responsibilities that exist among them. However, simplifying this analysis also reduces the generality of our conclusions, since cities, towns, and villages account for roughly 40 percent of the total expenditures made by general purpose local governments in fiscal year 1975. County governments account for the remaining 60 percent.

CHAPTER 2

THE REVENUE SHARING FORMULAS

An understanding of the urban-rural distribution of revenue sharing aid requires some familiarity with the various formulas used to distribute revenue sharing aid.

THE INTERSTATE DISTRIBUTION FORMULAS

The House Ways and Means Committee tended to support a revenue sharing program as a means of supplying fiscal relief to local governments that had experienced relatively rapid growth in public service needs while having relatively slow growing tax bases. The result was an insufficient supply of public services exhibiting relatively high levels of tax effort.

The growth in public service needs was felt to be closely associated with postwar urbanization. The House ultimately reflected this feeling by adopting a five-factor formula which allocates funds among the States on the basis of population, urban population, per capita income relative to the U.S. average, general tax effort, and income tax collections.

The House formula is as follows:

$$G_i = A\left[0.2201\,\frac{POP_i}{POP_{us}} + 0.2201\,\frac{URBPOP_i}{URBPOP_{us}} + 0.2201\,\frac{POP_i\left(\frac{PCY_{us}}{PCY_i}\right)}{\Sigma_j POP_j\left(\frac{PCY_{us}}{PCY_j}\right)} + 0.1698\,\frac{\left(\frac{SLTAX_i}{AGINC_i}\right)SLTAX_i}{\Sigma_j\left(\frac{SLTAX_j}{AGINC_j}\right)SLTAX_j} + .01698\,\frac{YTAX_i}{\Sigma_j YTAX_j}\right]$$

where G_i = Revenue sharing grant to State i

A = Total amount appropriated

POP_i = Population of State i

POP_{us} = Population of United States

$URBPOP_i$ = Urban population of State i

PCY_i = Per capita income of State i

$SLTAX_i$ = Net taxes collected by State i and its local governments.

$AGINC_i$ = Aggregate personal income of State i

POP_j = Population of State j

$YTAX$ = Net State income taxes

The Senate Finance Committee, whose members represented more rural, low income constituencies compared to the House, not surprisingly modified the allocation formula by deleting the urban population and income tax collections factors and combining the remaining three factors in a multiplicative, rather than additive, form of the House version.

The Senate formula is as follows:

$$G_i = A \left[\frac{POP_i \left(\frac{SLTAX_i}{AGINC_i} \right) \left(\frac{PCY_{us}}{PCY_i} \right)}{\sum_j POP_j \left(\frac{SLTAX_j}{AGINC_j} \right) \left(\frac{PCY_{us}}{PCY_j} \right)} \right]$$

All symbols as defined above.

To avoid tying up in debate the two versions of the formula, a compromise was reached. A State was allowed to choose either the House or the Senate formula, whichever formula provided more funds. But since this method would allocate more than 100 percent of the amount available countrywide, each State's allocation was reduced proportionately.

The urban-rural incidence of the House and Senate formulas

The urban-rural incidence of the formulas can be compared by computing per capita allocations for each State using each of the formulas to see if either formula exhibits an urban or rural pattern. To do this the ratio of the allocation using the Senate formula is divided by the allocation using the House formula. Thus, the ratio for Mississippi based on data from entitlement period 1 is 2.11. This means that using the Senate formula Mississippi would receive 211 percent of what it would receive using the House formula. Calculations were made for each State; the results are shown in table 1 for the five States with the highest and the five with the lowest ratios. The entitlements under the revenue sharing act are also shown relative to the U.S. average. 1/ The table shows that the Senate formula tends to favor more rural States while the House favors the more urban States. The wide variations under the two formulas indicate very different notions of what constitutes an equitable distribution of funds among the States. In appendix III data are presented showing how each of the five factors in the House formula affects each State's allotment.

Table 1

Per Capita Distribution of Federal Revenue Sharing for Entitlement Period 1 Relative to the U.S. Average (U.S. Average = 100)

States with 5 highest ratios	Ratio Senate/House	Revenue sharing act
Mississippi	211	153
South Dakota	198	139
North Dakota	197	138
Wyoming	176	115
Maine	171	120
5 lowest ratios		
Massachusetts	80	111
New Jersey	80	89
Maryland	79	105
New York	78	124
Delaware	77	112

1/A complete table for all States is shown in appendix II.

THE INTRASTATE FORMULA

The intrastate formula gives one-third of each State's entitlement to the State government and two-thirds to the local general purpose governments and Indian tribes within each State. The distribution to substate governments is accomplished in steps.

First, the two-thirds local share is allocated among county geographic areas according to a formula similar to the Senate interstate formula, differing only by defining local taxes as net nonschool taxes raised by local general purpose governments. With this alteration, the county distribution formula can be shown to depend on per capita income and an aggregate effective tax rate for the county area. The Federal intrastate formula for county areas is:

$$G_i = \frac{2}{3} G_s \left[\frac{POP_i \left(\frac{PCY_s}{PCY_i} \right) \left(\frac{LTAX_i}{AGINC_i} \right)}{\sum_j POP_j \left(\frac{PCY_s}{PCY_i} \right) \left(\frac{LTAX_i}{AGINC_i} \right)} \right]$$

where G_i = Allocation to county i

G_s = Allocation to State s

POP_i = Population of State i

PCY_i = Per capita income for county i

$LTAX_i$ = Net nonschool taxes of general purpose governments in county i 1/

$AGINC_i$ = Aggregate personal income in county i

The first term in parentheses represents the county's per capita income relative to the State average and the second term is the ratio of tax collections to total income or the effective rate of taxation.

1/Taxes must be adjusted under the formula to exclude revenues used to finance education, regardless whether the revenues are raised through a general tax or through a tax explicitly denominated a "school tax."

Second, funds are distributed to Indian tribes based on the fraction of the county's population belonging to such tribes. Third, the remaining funds for each county area are divided into separate pots for the county government, the municipalities, and townships. The fraction going to each jurisdiction is proportional to its share of the county's nonschool taxes collected by each type of jurisdiction within the county area. Fourth, the distribution to the municipalities and townships is made according to the formula used for intercounty allocations.

Constraints on the intrastate formula

The formula for distributing revenue sharing money among local government units has four limits:

1) No county area or unit of local government can receive more than 145 percent of the statewide average per capita amount destined for local governments;

2) With the exception of county governments, no unit or county area can receive less than 20 percent of the statewide average;

3) No local government may receive an amount in excess of one-half of its net nonschool taxes plus its intergovernmental receipts; and

4) If application of the formula results in a town or municipality receiving an entitlement of less than $200, the entitlement is transferred to the county government.

Complex procedures are used to make the adjustments necessitated by these limits. At the county area level, money produced by the 145 percent ceiling is redistributed proportionately among the unconstrained county areas. Similarly, in the few instances where resources are needed to boost some county areas up to the 20 percent floor, the amount going to unconstrained areas is reduced proportionately to raise the amount needed for this boost.

The money produced by imposing the 145 percent ceiling on townships and municipalities is used to boost other such governments up to the 20 percent floor. In cases where the funds generated by the 145 percent limit are insufficient to cover the resources needed to bring all townships and municipalities up to the 20 percent floor, each unconstrained

government will be reduced proportionally. This reduction will also cut into the amounts received by unconstrained local governments, even in county areas where no unit is affected by a limit. The only unconstrained local governments that are spared are those located in the county areas which were themselves constrained.

When the 145 percent limit produces more revenue than is needed to pull jurisdictions up to the 20 percent floor, the surplus is prorated among all units of local government that are not affected by a restriction and are not in a constrained county area. When a township or municipality is hit by the restriction limiting a unit's grant to 50 percent of its taxes and transfers, the excess amounts entitled to it through the formula are given to the county government. Finally, when the county government reaches this 50 percent ceiling, the excess funds are transferred to the State government. Thus, a number of State governments--including West Virginia, Kentucky, and Delaware--received well over one-third of the total revenue-sharing allotments provided their State areas in 1972. The maximum of 50 percent of adjusted taxes plus intergovernmental receipts takes precedence over the 20 percent of the average per capita statewide distributions. Therefore, 1,569 of the townships and municipalities that get shared revenue receive less than the 20 percent floor.

CHAPTER 3

THE DISTRIBUTION OF REVENUE SHARING AID TO COUNTY AREAS: URBAN-RURAL DIMENSIONS

In this chapter we examine the results of the intrastate formula used to distribute aid among county areas by summarizing the findings of previous studies. Briefly, our review found that the county area formula tends to favor more rural counties. Progressively more urban counties received progressively less aid with the exception of the most highly urbanized counties, which received the highest amount of aid on a per capita basis. Our review also indicated that the relative income factor in the formula tends to favor rural counties while the effective tax rate factor tends to favor the most urban counties.

REVIEW OF PREVIOUS STUDIES

Since its inception, the revenue sharing program has been subjected to considerable evaluation research. The results of two studies that deal with the urban-rural dimensions are reported here to provide the basic information on the patterns generated by the county area formula.

The first study 1/ was performed by the Brookings Institution as part of their continuing efforts to monitor general revenue sharing. The second 2/ is a study by the Rand Corporation dealing with alternative distribution formulas prepared for consideration by the Congress while the revenue sharing program was being considered for renewal in 1976.

Each study reports its results for only one time period (Brookings for entitlement period 1, from January 1972 to June 1972, and Rand for entitlement period 4, from July 1973 to June 1974.

1/R.P. Nathan and J.M. Jaffe, "Effects of the Statutory Formula Alternatives [Section 108(c)(1)]," Brookings Studies of Revenue Sharing Formula Alternatives, Brookings Institution, June 15, 1975.

2/S.M. Barro, "The Distribution of General Revenue Sharing Funds Among County Areas," Working Note 9459, The National Science Foundation, April 1976.

The Brookings study

The Brookings study used data from the Office of Revenue Sharing and demographic and local government fiscal data from the Bureau of the Census. The distribution of shared revenue was analyzed on the basis of revenue per capita. The study ranked counties within each State according to population density 1/ from lowest to highest, and then divided the counties into five quintiles, each containing the same number of counties but which differed dramatically in population, government spending, etc. In fact, the 20 percent highest-density counties contained over two-thirds of the nation's population, while the 20 percent lowest-density counties contained only 3 percent.

The quintile average was reported as a percentage of the statewide average. Table 2 reflects the figures obtained for three States compared with the national average.

Table 2

The Distribution of Revenue Sharing Funds in Counties by Population Density - Shared Revenue Per Capita

	Indexes for quintiles of county areas				
	High density				Low density
	1	2	3	4	5
50 State average	92	97	99	105	108
Iowa	78	96	97	114	115
Vermont	143	85	103	101	109
New York	85	87	93	114	120

On a per capita basis, the 20 percent most densely populated counties in the United States are 8 percent below their respective State averages while the least-densely populated counties average 8 percent more. Thus, rural counties receive moderately larger allocations than urban counties.

1/The study also reports distributions for quintile groups by income, proportion of poor families, and minority group as well.

Iowa and New York follow this trend, though the variations between high and low density are greater than the national average. There are, however, some notable exceptions. For example, the highest-density quintile in Vermont receives 43 percent more than the State average. Thus, the distribution formula in this relatively rural State favors the more urban areas. Rural States such as Alabama, Alaska, Virginia, and West Virginia also fall into this category.

The Rand study

Groupings of counties in the Rand study differ from those of the Brookings study in two important ways. First, while the Brookings study ranked counties within each State, according to population density, the Rand study used the proportion of people living in urban places to rank counties (from lowest to highest). The study then divided the counties into 10 equal groups according to population. Each decile contained approximately one-tenth of the U.S. population, not one-tenth of the county areas.

Second, while the Brookings study grouped counties on a state-by-state basis and then averaged across States, the Rand study simply ranked all counties in the United States. Thus, the Rand study has the strength of measuring the urban-rural continuum across groups of relatively equal population size, but has the weakness that the observed distribution of shared revenue funds results not only from the intrastate formula but also carries the effects of the interstate formula as well. Recall that the interstate distribution formula allocates funds according to income, urban population, etc. Thus, any change in the interstate distribution mechanism would alter the intercounty distribution pattern, which is shown in tables 3 and 4, even if the intercounty distribution formula remained unchanged.

In table 3, the most urban and the least urban counties receive the largest allocations. With the exception of the most urban counties, per capita allocations generally falls as larger portions of county populations reside in urban areas. However, the rate of decrease is even less pronounced than was shown in the Brookings study, and relatively flat over the middle range of deciles. A slightly different view of the same data is shown in table 4, in which counties are broken down by population size and metropolitan status.

Table 3

Per Capita Allocations to County Areas by Percent of Urban Population Living in Urban Areas (Population Deciles, 3,136 U.S. County Areas) a/ 1974

Deciles of percent urban population	Mean per capita allocations to county areas
1. (least urban)	$21.63
2.	20.13
3.	19.66
4.	18.94
5.	18.84
6.	18.02
7.	18.63
8.	18.49
9.	16.23
10. (most urban)	22.92

a/Each decile contains approximately one-tenth of the U.S. population, not one-tenth of the county areas.

Table 4

Per Capita Allocations to County Areas by Population Size and Metropolitan Status

Category of county areas	Number of county areas	Mean per capita allocation
• Population Size		
0 - 9,999	879	$23.51
10,000 - 24,000	1,016	20.67
25,000 - 49,999	567	18.64
50,000 - 99,999	332	17.80
100,000 - 199,000	152	17.73
200,000 or larger	190	18.58
• Metropolitan Status		
Metropolitan county, no central city	294	$14.44
Metropolitan county, with central city	341	19.21
Nonmetropolitan county	2,501	21.51
All U.S. counties	3,136	20.53

URBAN-RURAL EFFECTS OF RELAXING FORMULA CONSTRAINTS AND ELIMINATING THE TAX EFFORT INDICATOR

The previous discussion of the intrastate formulas indicated that the 20 percent floor and 145 percent ceiling prevents the income and tax effort variables from completely determining the distribution of funds. The Rand study performed simulations of the allocation formula with these constraints removed and also with the tax effort variable deleted. The results are shown in tables 5 and 6 along with allocation from the existing formula.

Removing the constraints from the county area allocation formula would moderately increase allocations to both the most urban and least urban counties, enjoying a $1.90 and $1.72 per person increase respectively. On the basis of population size, counties with populations under 25,000 gain, with the biggest gainers being in the under 10,000 group while all others lose moderate amounts. By metropolitan status, central city counties are affected little by the constraint deletion while suburban counties lose an average $0.52 per person, and nonmetropolitan counties gain an average $1.14 per person.

Deleting the tax effort factor results in a very different outcome. In this case, the least urban counties gain the most while the more urban counties lose, with the exception of surburban counties. Twenty percent of the population in the least urban counties gain $2.68 and $2.71 per person respectively while the most urban counties lose an average $6.13 per capita. This is also reflected in the loss registered by central city counties while suburban counties gain substantial amounts and nonmetropolitan counties gain moderately. On the basis of population size, allocations to the smallest and largest counties remained almost the same while the remaining county areas tend to gain.

The results here are similar to those reported in the Brookings study. The 60 percent smallest counties (in population and urbanization) receive above average allocations; the remaining larger counties receive below average allocations.

Table 5

Per Capita Allocations to County Areas by Percent Urban and Population Size; Constraints and Tax Effort Factor Deleted

Population deciles by percent urban	Mean Per Capita Allocation: Existing formula	Upper and lower bounds deleted	Tax effort factor deleted
1. (smallest 10%)	$21.63	$23.35	$24.31
2.	20.13	20.06	22.84
3.	19.66	19.88	21.59
4.	18.94	18.88	20.51
5.	18.84	19.60	19.38
6.	18.02	17.77	18.75
7.	18.63	19.32	17.62
8.	18.49	18.65	16.62
9.	16.23	15.86	16.33
10. (largest 10%)	22.92	24.82	16.79

Table 6

Per Capita Allocations to County Areas by Population Size and Metropolitan Status; Constraints and Tax Effort Factors Deleted

Category of county areas	Existing formula	Constraints deleted	Tax effort factor deleted
• Population size			
0 - 9,999	$23.51	$26.81	$23.80
10,000 - 24,999	20.67	20.87	23.74
25,000 - 49,999	18.64	18.26	22.17
50,000 - 99,999	17.80	17.51	20.87
100,000 - 199,999	17.73	17.36	19.53
200,000 - or larger	18.58	18.34	18.22
• Metropolitan status			
Metropolitan county, with central city	$19.21	$19.26	$18.75
Metropolitan county, without central city	14.44	13.92	19.51
Nonmetropolitan county	21.51	22.65	23.51

CHAPTER 4

THE DISTRIBUTION OF REVENUE SHARING AID TO NEW YORK STATE COUNTY GOVERNMENTS: EVALUATION CRITERIA

The urban-rural patterns of aid described in chapter 3 are based on county area aggregates. But evaluating the effectiveness and equity of the distribution formulas using county areas as the primary unit of analysis has some important weaknesses. First, individual units of local government provide public services to citizens. Restricting the analysis to aggregate county areas could result in reaching misleading conclusions. Data reported for county areas represent averages for all the units of local governments within the county area. Looking only at averages can ignore some important differences among individual local governments. For example, using 1974 data, Nassau County residents had an average per capita income of $5,566, but the residents of Kings Point Village averaged $12,900 while those in Island Park Village averaged just $3,758. Ignoring these differences can produce misleading conclusions, for example, concerning the income targeting.

Alternatively, to analyze all governments which receive revenue sharing aid would require examining some 39,000 local government units. Therefore, we have limited our analysis to a case study using 57 county governments in New York. This limited analysis will provide an indication of how effectively the formula distributes aid to those governments with the greatest need in an urban-rural context.

TARGETING CRITERIA USED

To evaluate the effectiveness of the formulas in distributing aid to those governments with greater need, and consequently whether the urban-rural patterns described earlier are equitable, some explicit definitions of need are required.

The revenue sharing formulas contain two need indicators: per capita income, which represents a measure of the community's ability to finance public services, or its fiscal capacity; and local tax collections which serve as a measure of a community's fiscal effort.

The debate over revenue sharing prior to its adoption referred to the financial squeeze experienced by State and local governments due to public service needs growing more rapidly than they could be financed. Therefore, we have also

included a third criterion, an index of fiscal pressure, to measure how well aid is targeted to governments experiencing relatively more financial stress.

FINDINGS

We found that county governments throughout New York State exhibit wide variations in all three criteria used in this report. We also found that the more rural areas tend to have lower fiscal capacities but were experiencing relatively less fiscal pressure. The more urban areas, on the other hand, had relatively high fiscal capacities but were experiencing relatively more fiscal pressure. Both urban and rural areas showed relatively high levels of tax effort depending on how it was measured.

DISTRIBUTION CRITERIA: FISCAL CAPACITY

Justification as a targeting criteria

Fiscal capacity represents the local government's prospective ability to pay for a given level of public service need. If, for example, two communities have the same level of service needs and population, but one community has a greater tax base (that is, a greater capacity) per resident, and if both communities tax themselves at the same rate, the high capacity community would be able to raise more revenues to address the same level of need. The extra revenue raised enables the high capacity community to lower its tax rate to the point where revenues raised are just sufficient to cover needs. The result would be that the low capacity community would have to sacrifice a larger share of its fiscal capacity to meet the same level of public service need. To compensate for this, more aid should be distributed to low fiscal capacity communities.

Operational measures of fiscal capacity

Various measures of fiscal capacity have been used in the evaluation of the revenue sharing program. They have varied from relatively simple measures such as per capita income or full market value of property to more abstract measures such as the yield of a representative tax system. We have chosen per capita personal income as the basic measure of fiscal capacity since this is the measure used in the formulas already.

However, personal income as a measure of fiscal capacity has some weaknesses. First, personal income for some communities does not indicate the additional tax base available to it from such sources as tourism, commuters, or the existence

of a large industrial base. Secondly, it does not reflect geographic differences in the purchasing power of income. For example, if two communities with identical per capita incomes are compared, the one with the lower cost of living will be able to purchase more goods and services. However, reliable data for cost of living differences among county areas are not available. We realize this is a consideration which should be explicitly included but we are not able to account for it with current data.

Distribution of fiscal capacity by metropolitan status: 1975

To facilitate presenting our findings in an urban-rural context we have combined the 62 counties of New York State into several groups. The five counties which make up New York City have been excluded from the analysis, leaving 57 counties. Because of the ease of obtaining socioeconomic data by Standard Metropolitan Statistical Area (SMSA), and its rough correspondence to urban and rural areas, we grouped the counties by metropolitan status as defined by the Office of Management and Budget. This classification defines counties as either metropolitan or nonmetropolitan, depending on whether or not the county contains a population center of 50,000 or more people. The metropolitan counties were further subdivided into those containing a central city and those which do not. Throughout this report, the non-metropolitan counties are referred to as rural, the metropolitan counties are designated as containing or not containing a central city by referring to them as central city metro and noncentral city metro, respectively. (See figure 1.)

The distribution of counties by personal income and metropolitan status is shown in table 7 and figure 2. In table 7 we have grouped the 57 counties by income and metropolitan status. We have designated the 14 highest counties on our fiscal pressure scale as high fiscal pressure counties and similarly for the 15 low fiscal pressure counties. The data indicate that the central city metropolitan counties lean heavily toward the high income side while the noncentral city counties lean moderately toward the high side. The rural counties are heavily concentrated on the low income end of the scale. This factor indicates that aid targeted on the basis of low fiscal capacity would tend to favor rural areas.

FIGURE 1.
SMSA DESIGNATIONS
BY OMB IN 1975

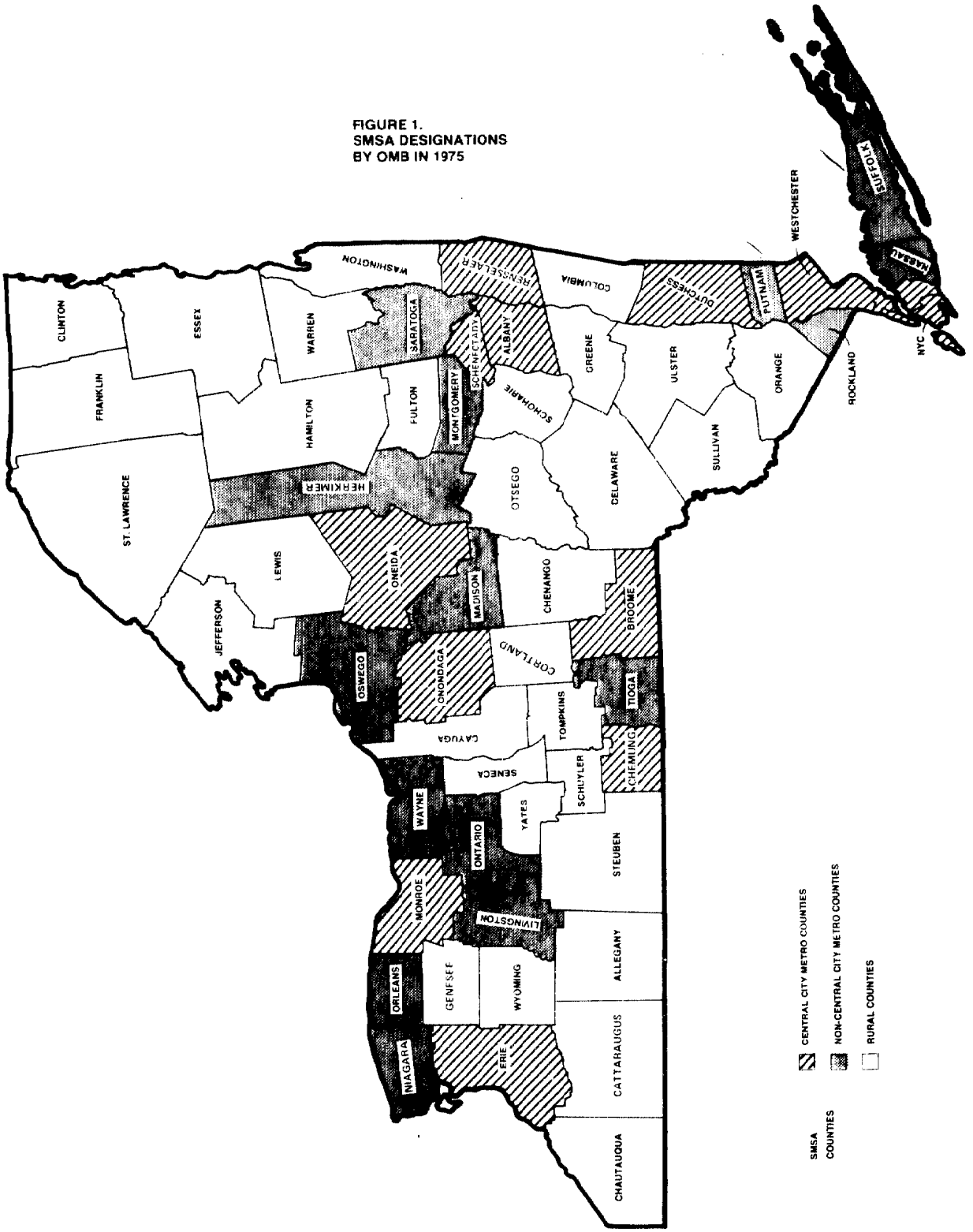


Table 7

Distribution of High, Medium, and Low Income Counties: 1975

County areas	Per capita income High	Medium	Low	Number of counties	Percent a/
Central City Metro	8	3	0	11	19
Noncentral City Metro	6	7	2	15	26
Rural	0	18	13	31	54
Number of Counties	14	28	15	57	
Percent	25	49	26	-	100

a/Does not add due to rounding.

Per capita income ranged from a low of $4,100 in Franklin County to $9,106 in Westchester County. Half the counties had income levels less than $5,300 while the statewide average was just under $5,450 per person. Figure 2 shows that the central city metropolitan counties averaged $6,269 per capita compared to just $5,014 among the 31 rural counties.

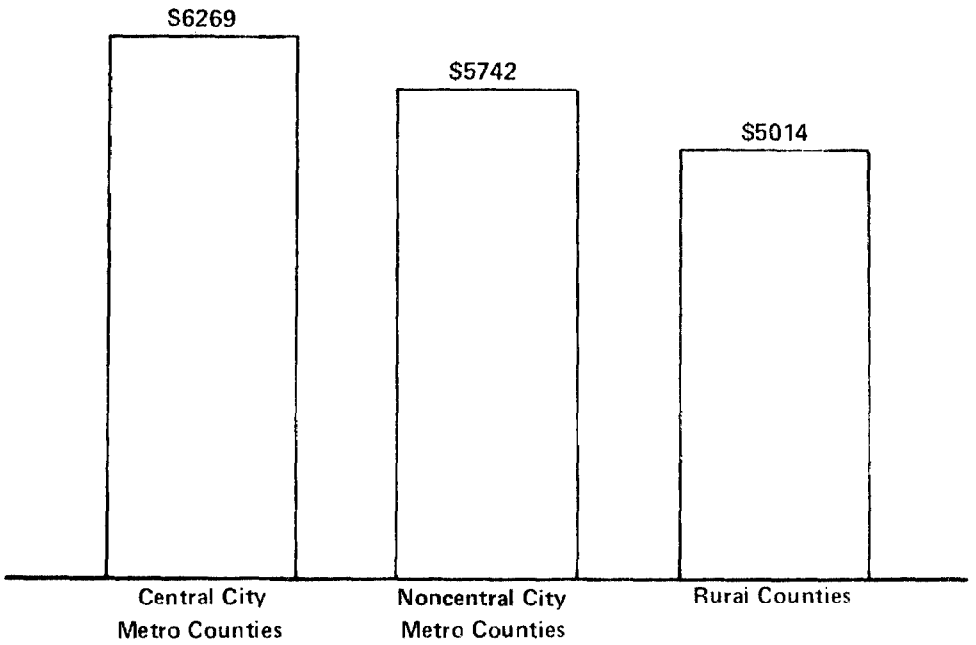
DISTRIBUTION CRITERIA: TAX EFFORT

Justification as a targeting criterion

Tax effort measures the degree to which a local community tries to meet its service needs from its own revenue sources. The basic rationale for using tax effort in an aid distribution formula is to provide more aid to those communities which are already using relatively large amounts of local resources to meet their public service needs. The important distinction between tax effort and fiscal capacity is that fiscal capacity represents the community's "ability" to finance local public services while tax effort represents the "actual" amount of local tax resources used to meet local service needs.

FIGURE 2

AVERAGE PER CAPITA INCOME BY METROPOLITAN STATUS: 1975



The intrastate formula and tax effort

The most common measure of effort is the ratio of local taxes to personal income, generally referred to as the effective tax rate. The discussion of the intrastate revenue sharing formula in chapter two indicated that this is the measure of tax effort used.

Using the ratio of tax revenues to personal income (the effective tax rate) as an index of tax effort has one serious flaw. Because the effective tax rate is measured relative to the fiscal capacity of the local government, the same effective tax rate in a jurisdiction with a large fiscal capacity will generate more revenue than a low capacity jurisdiction. This extra revenue generated by the same effective tax rate results in more services being available in the high capacity community. If the intent of aid distribution policy is to help those communities which are making greater efforts to provide a given level of public services, then, to properly measure "effort," the effective tax rate should be adjusted to compensate for the difference in revenue raised by the high capacity community. This is precisely what the relative

income factor in the intrastate formula does. 1/ An example will demonstrate this point. Suppose we have three county governments with the same effective tax rate of $2.55 per $100 of per capita personal income. They differ only in that county A has a fiscal capacity 10 percent below the average capacity and county C whose capacity is 10 pecent above the average. The adjustment is shown in table 8. 2/

Table 8

Adjustments Made to Correct Effective Tax Rates to Compensate for Differences in Fiscal Capacity (Hypothetical Example)

	Fiscal capacity per capita (1)	Effective tax rate (2)	Actual revenues per capita (3)=(1)x(2)	Adjustment factor (4)	Adjusted tax effort a/ (5)=(2)x(4)	Adjusted revenues (6)=(1)x(5)
County A	$18,000	$2.55	$459	1.111	$2.833	$510
County B	20,000	2.55	510	1.0	2.550	510
County C	22,000	2.55	561	0.909	2.318	510

a/In the remainder of the report, "adjusted tax effort will be referred to as "fiscal effort."

1/Recall that the formula contained two factors:

$$\left(\frac{PCY_s}{PCY_i}\right)\left(\frac{LTAX_i}{AGINC_i}\right)$$

the first represents the formula's measure of fiscal capacity, the second is the effective tax.

2/Column 2 of table 8 represents the effective tax rate contained in the intrastate formula while column 4 represents the measure of relative fiscal capacity contained in the formula.

The example demonstrates two points. First, the same effective tax rate (column 2) raises very different amounts of revenues (column 3) depending on fiscal capacity (column 1). Second, when the effective tax rate is adjusted for the differences in fiscal capacity (column 4) this adjusted tax effort (column 5) represents the same level of public services which can be financed from local revenues (column 6). We can conclude from this example that the intrastate formula can be interpreted as strictly a tax effort formula where the effective tax rate is adjusted to represent a nearly equal revenue yield irrespective of the size of the local governments tax base. We also conclude that this "adjusted tax effort" more accurately reflects the "effort" put forth by the local government in providing a given level of public services. 1/ FROM NOW ON, WE WILL DEFINE "ADJUSTED TAX EFFORT" AS "FISCAL EFFORT."

Definitional problems in measuring effective tax rates and fiscal effort

The discussion so far has implicitly used the definitions of tax revenues and the tax base as measured and used in the revenue sharing formula. This formula uses a narrow definition of local revenues which ignores important sources of revenues such as user charges and special assessments, which also represent burdens on local citizens. A previous GAO report criticizes this narrow definition and argues that a broader measure be used which includes these revenue sources as well. 2/ Consequently our present analysis also includes an alternative measure of fiscal effort which includes these additional revenue sources.

The definition of the tax base also presents a problem. While the revenue sharing formula uses per capita income most local governments rely much more heavily on local property taxes. Consequently our analysis also includes an alternative measure of the tax base using the full market value of taxable property in measuring effective tax rates and fiscal

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1/Empirical support for this proposition is presented in chapter 5.

2/"Adjusted Taxes: An Incomplete and Inaccurate Measure for Revenue Sharing Allocations," GGD-76-12, October 28, 1975.

effort. 1/ This is the method adopted by New York State in their local government aid program.

Use of fiscal effort in place of effective tax rates favors rural counties

The implication of using fiscal effort instead of effective tax rates for targeting to urban and rural counties is shown in figure 3. 2/ These calculations were computed using full market value and include user charges, etc., in the definition of local revenues. When the effective tax rate is used, the central counties average 9 percent above the median while the rural counties fall just below. When the adjustment for differences in fiscal capacity are made, to produce our measure of fiscal effort the rural counties average 18 percent above the median while the central city metro counties are just below. In both cases the noncentral city metro counties average well below the median. Using fiscal effort would favor rural counties. If per capita income were used in place of full market value, the shift to rural counties would remain, although it would be less dramatic.

Use of per capita income in place of full market value of taxable property in measuring fiscal effort favors rural counties

The choice of full market value or per capita income as the base for computing fiscal effort produces different

---

1/As a general formula the fiscal effort can be expressed as:

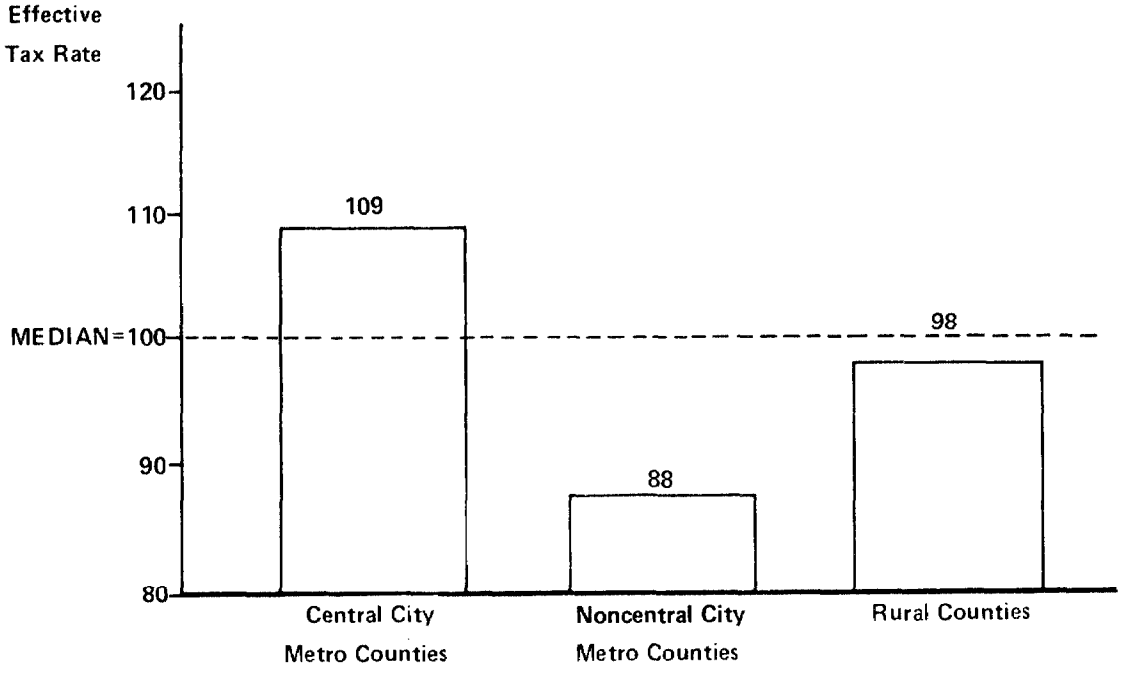
$$\text{Fiscal Effort} = \frac{\text{Local Revenues}}{\text{Local Tax Base}} \times \frac{\text{Average Tax Base}}{\text{Local Tax Base}}$$

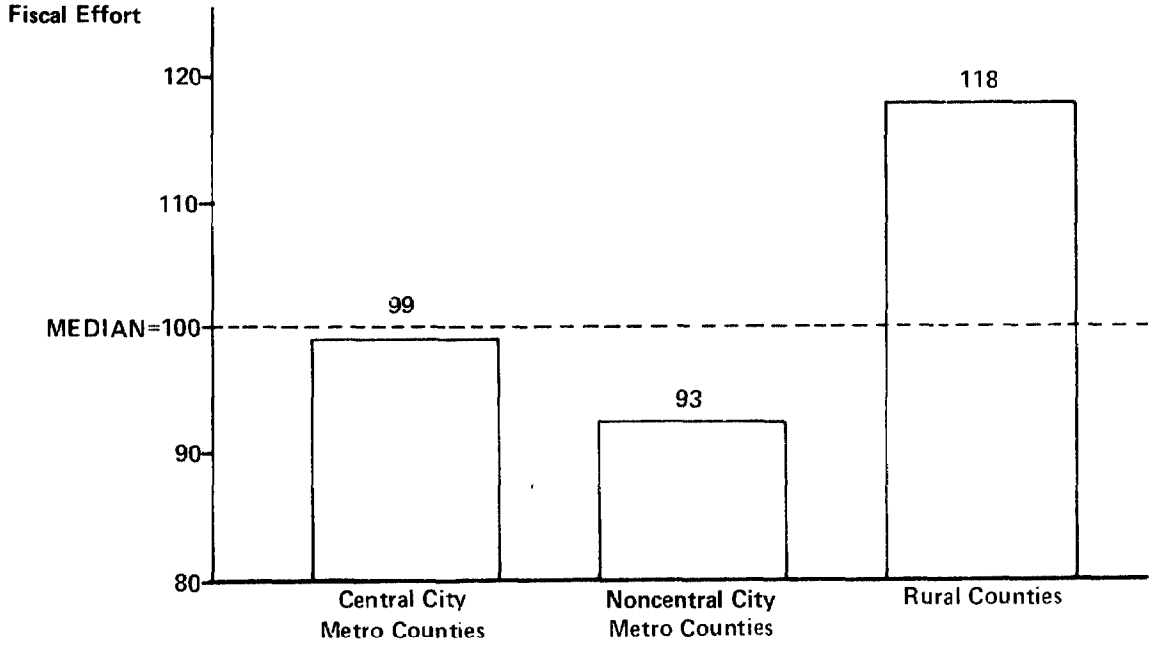
We use two measures of local revenues, one which includes user charges and special assessments, and one which excludes them. We also use two measures of the local tax base, per capita income and the full market value of taxable property.

2/The effective tax rates and fiscal effort have been normalized so that the median county has a value of of 100.

FIGURE 3

AVERAGE VALUE OF EFFECTIVE TAX RATE AND FISCAL EFFORT INDEX
57 County Governments, 1975





targeting patterns. In figure 4 the distribution of fiscal effort by metropolitan status is compared using per capita income and full market value. In both cases the measure of local revenues is consistent with that used in the Federal formula which excludes user charges and special assessments.

Excluding user charges and special property tax assessments in the measurement of local revenues favors central city metropolitan counties

We noted earlier that the Federal program excludes user charges and special assessment from local revenues for purposes of computing fiscal effort. This exclusion redistributes funds away from rural counties since the smaller, more rural jurisdictions tend to rely much more on these sources of revenues compared to more urban jurisdictions. This situation is shown in figure 5.

DISTRIBUTION CRITERIA: FISCAL PRESSURE

Justification as a targeting criterion

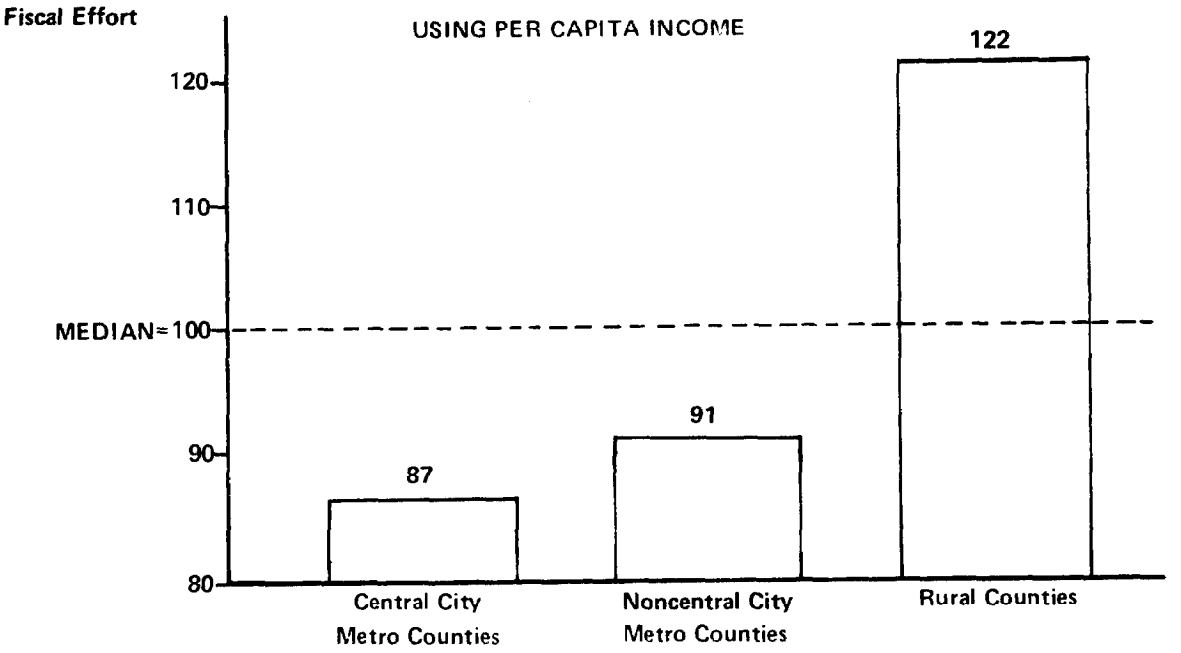
One of the major arguments appearing in the public debates concerning the adoption of general revenue sharing was that local governments were experiencing a fiscal squeeze with increases in service demand outstripping their ability to finance them. This line of thought continues today and is reflected in the arguments for excluding State governments from the program if it is renewed in fiscal year 1980.

While a measure of fiscal pressure does not appear directly in the formula, we have ventured to include this in the analysis by attempting to measure this phenomenon by a simple index.

Operational measures of fiscal pressure

We chose three factors which measure possible fiscal pressures on local government budgets. The first component of the index was computed by taking the ratio of current expenditures to current revenues from all sources. When this ratio exceeds one it indicates that the local government had to reduce its current account surplus to meet its expenditure requirement. Alternatively when the ratio is below one it indicates that the local government had sufficient revenues to increase its surplus providing a larger balance to meet unexpected expenditure needs. The second component in the index is fiscal effort. Its construction was described

FIGURE 4
COMPARISON OF FISCAL EFFORT BY METROPOLITAN STATUS USING PER CAPITA INCOME AND FULL MARKET VALUE, 1975



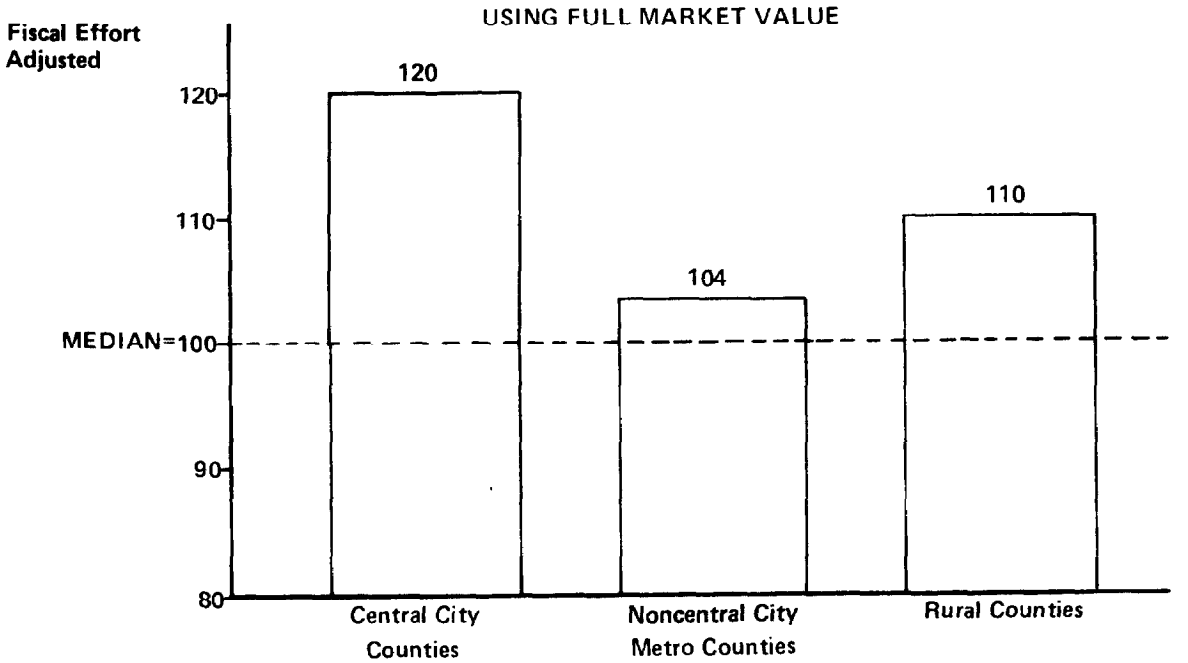
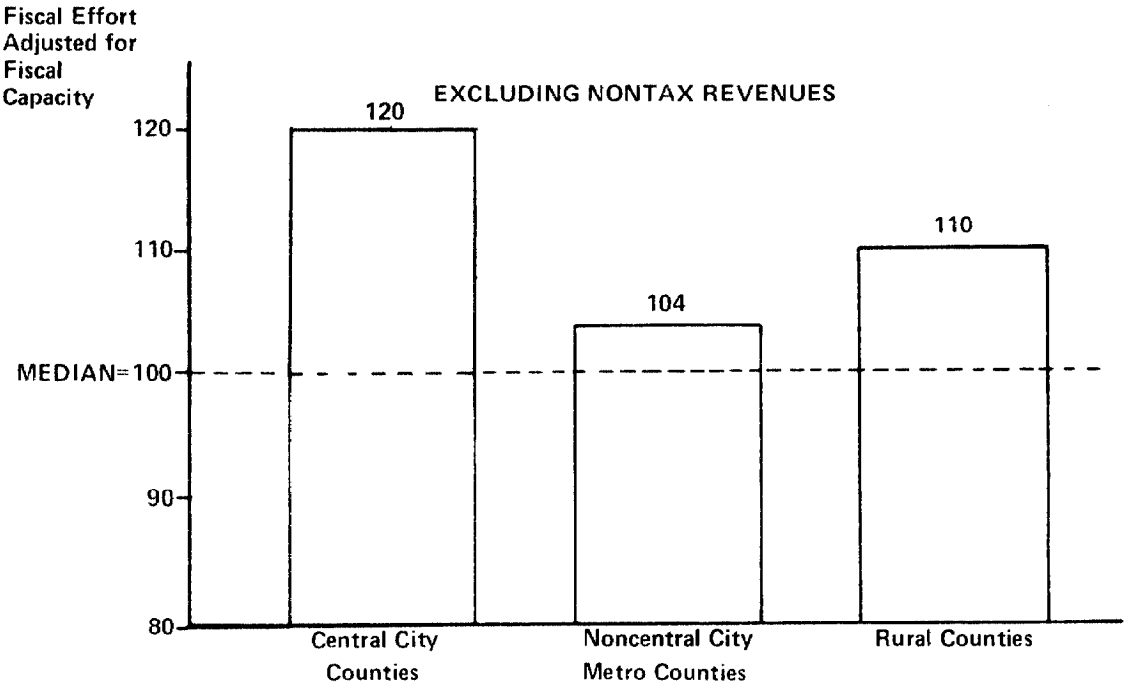
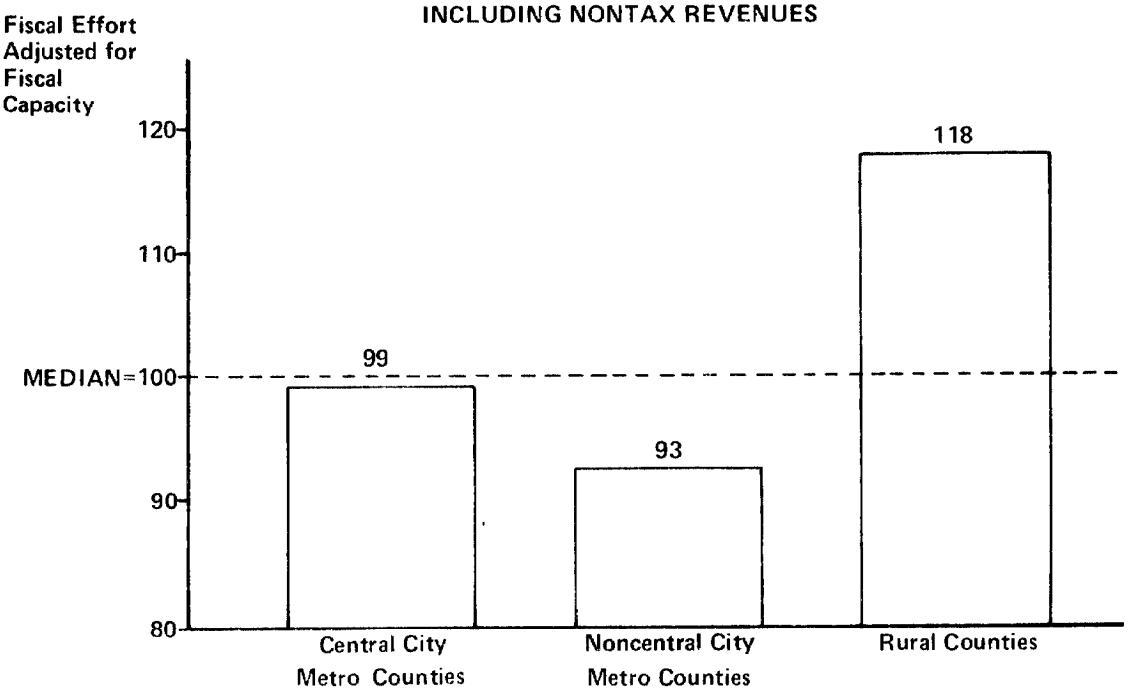


FIGURE 5
COMPARISON OF FISCAL EFFORT INCLUDING AND EXCLUDING NONTAX REVENUES BY METROPOLITAN STATUS





earlier in this chapter. The final component is the ratio of long-term outstanding debt to full market value. This is intended to measure the future financial obligation on its tax base and impending future tax increases. 1/

Targeting aid on the basis of fiscal pressure favors urban counties

As with per capita income, we have designated the 14 highest counties on our fiscal pressure scale as high fiscal pressure counties and similarly for 15 low fiscal pressure counties. The distribution of fiscal pressure by metropolitan status is shown in table 9 and figure 6. It is clear from this data that the central city metropolitan counties were experiencing the greatest fiscal pressures in 1975. The same index was constructed using 1969 data with essentially the same pattern prevailing. The rural counties on the other hand leaned more heavily to the low fiscal pressure end and the noncentral metro counties were more or less evenly distributed.

Table 9

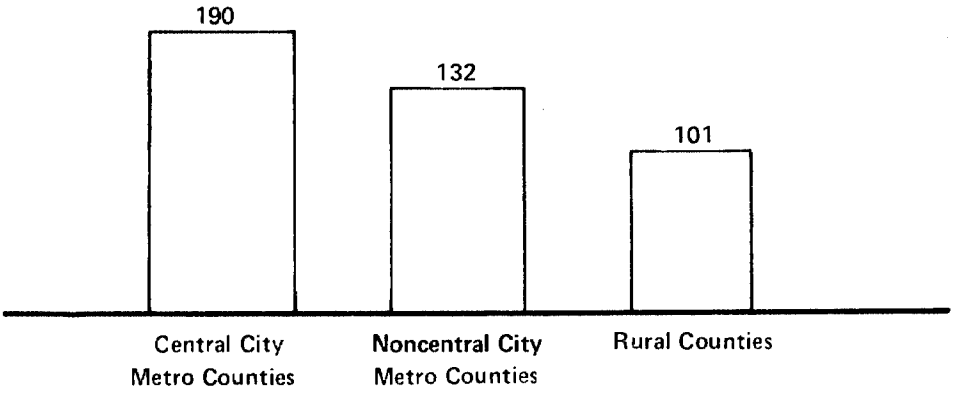
Distribution of High, Medium, and Low Fiscal Pressure Counties

	High	Medium	Low	Number of counties	Percent
Central city metro	8	3	0	11	19
Noncentral city metro	3	8	4	15	26
Rural	3	17	11	31	54
Number of counties	14	28	15	57	-
Percent	25	49	26	-	100

1/Details concerning the construction of the index is contained in appendix IV.

FIGURE 6

AVERAGE VALUE OF FISCAL PRESSURE INDEX BY METROPOLITAN STATUS: 1975



If funds were targeted on the basis of fiscal pressure, we would expect to find more aid being distributed to central city urban counties.

CONCLUSIONS

Our review of the various distribution criteria used in our analysis indicates that they differ significantly in their urban-rural incidence. The results are summarized in table 10. Targeting aid on the basis of low fiscal capacity tends to favor rural areas while high fiscal pressure would favor central city urban counties. The measurement of fiscal effort was subject to several alternative definitions, each favoring urban and rural areas differently.

Table 10

Urban-Rural Incidence of Criteria
Used to Evaluate the Geographic Distribution
of Revenue Sharing Aid

Evaluation criteria	Strongly rural	Rural	Urban	Strongly urban
Fiscal capacity		X		
Fiscal effort				
Effective tax rate a/			X	
Fiscal effort				
Using full market value b/,c/		X		
Using per capita income d/	X			
Excluding fees and changes e/		X		
Fiscal pressure				X

a/Defined as the ratio of local revenues to the full market value of taxable property where local revenues include fees, user charges, and special property tax assessments.

b/Represents the effective tax rate adjusted to compensate for differences in fiscal capacities.

c/This definition of fiscal effort is the current revenue sharing formula.

d/Per capita income is used in place of full market value as a measure of the local tax base.

e/Uses income as a measure of the tax base, and includes user charges and special assessment in local revenues.

CHAPTER 5

THE DISTRIBUTION OF REVENUE SHARING AID TO NEW YORK STATE COUNTY AREAS AND GOVERNMENTS IN RELATION TO THE EVALUATION CRITERIA

In this chapter we describe the relationship between the amounts of revenue sharing aid distributed and the evaluation criteria introduced in chapter 4. But first, we present the distribution of aid to New York State county areas and governments.

REVENUE SHARING AID IS MOST HEAVILY CONCENTRATED AMONG RURAL COUNTY AREAS AND GOVERNMENTS

The distribution of revenue sharing aid by metropolitan status is shown in table 11.

Table 11

Revenue Sharing Aid Per Capita Distributed Among New York Counties Fiscal Year 1975

Metropolitan status	County governments		County areas	
	Per capita	Percent of State average	Per capita	Percent of State average
Central City Metropolitan	$ 7.97	79	$18.21	86
Noncentral City Metropolitan	8.77	87	18.17	85
Rural	11.49	114	23.88	112
State average	$10.10	100	$21.28	100

County governments received slightly less than half the amount of aid distributed within its borders. County areas averaged $21.28 per capita in 1975, of which $10.10 was distributed to the county government on the average.

The rural areas averaged significantly more aid in per capita terms than did the metropolitan areas of the State, $23.88 per person, which was 12 percent above the State average. A similar pattern with respect to county governments was also observed, where rural counties were 14 percent above the State average.

Rural concentration of revenue sharing explained on the basis of low fiscal capacity and high fiscal effort

The information in chapter 3 indicated that rural areas tended to have lower fiscal capacities and exhibited higher levels of fiscal effort. Consequently, that revenue sharing aid leans toward the rural counties can be explained by these two need criteria. A more detailed analysis of these relationships is presented in the following two sections.

THE PATTERN OF REVENUE SHARING AID VERSUS FISCAL CAPACITY

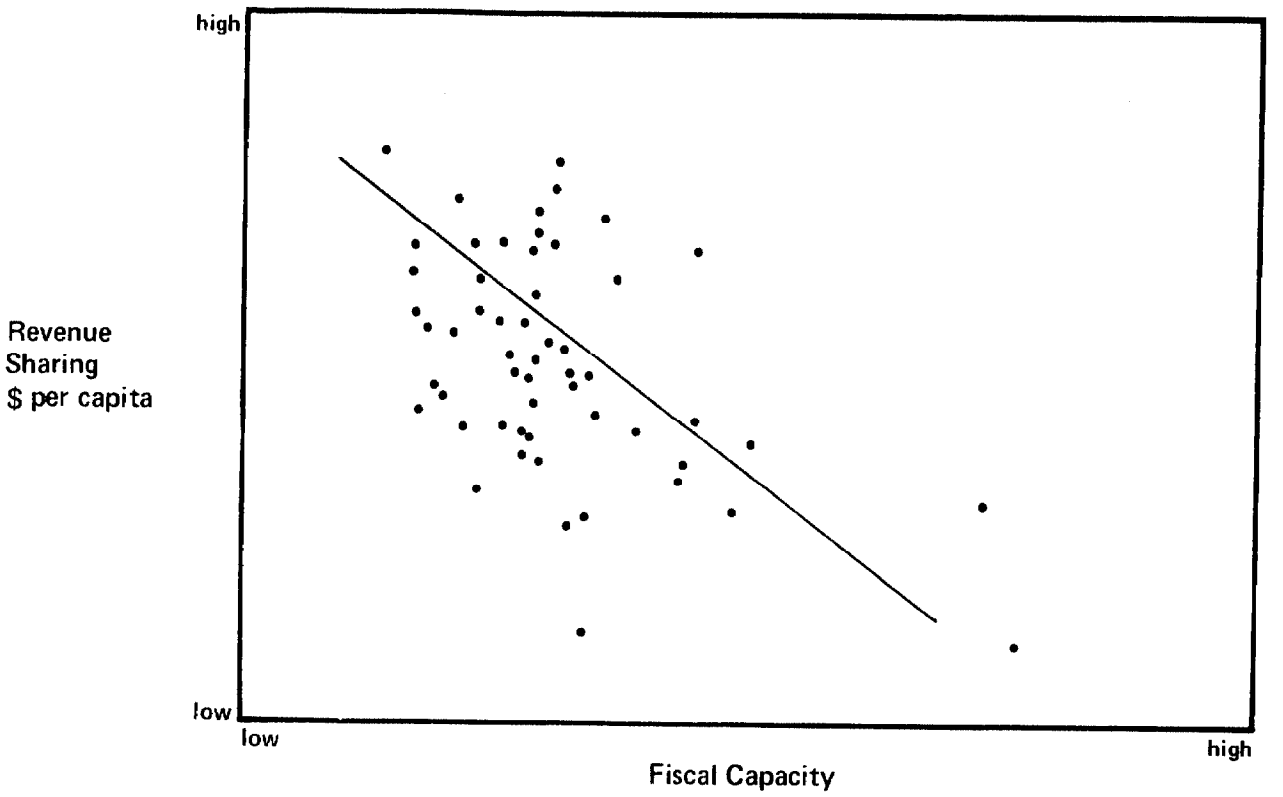
Measuring the targeting of aid to areas of low fiscal capacity presents a difficult statistical problem. The problem is that those county governments which have low fiscal capacity, as measured by per capita income, also tend to exhibit greater fiscal effort. Therefore, even if funds were distributed only on the basis of our fiscal effort measure, indirectly more aid would be going to low capacity areas because of the correlation between fiscal effort and fiscal capacity. Therefore, we have two sources of fiscal capacity equalization, the "indirect effect" of aid being distributed to high fiscal effort areas, which also tend to be low capacity areas, and the "direct effect" of aid being distributed to low fiscal capacity areas irrespective of their level of fiscal effort.

The fact that low capacity county governments tend also to be high fiscal effort areas is taken into account in figure 7. Due to this correlation, the distribution of Federal revenue sharing does demonstrate some fiscal capacity equalizing effects (note the downward sloping line). From the data we estimate that 10 percent more fiscal capacity is associated with approximately a 6 percent reduction in revenue sharing. 1/

1/The scatter diagrams presented are based on regression equations of the form $Y = B_o + B_i X_i$. The dependent variable in each graph is of the form, $Y - B_o - \sum_{i \neq j} B_i X_i$ and is plotted versus X_j. The estimated equations are presented in appendix V.

FIGURE 7

REVENUE SHARING VS. FISCAL CAPACITY



THE PATTERN OF FEDERAL AND STATE REVENUE SHARING AID VERSUS FISCAL EFFORT

The measure of targeting revenue sharing to areas of high tax effort is very sensitive to how tax effort is measured. The effective tax rate is the ratio of locally raised revenues to the tax base. As outlined in chapter 4, both local revenues and the tax base are subject to different definitions. One alternative considered defines local revenues to include or exclude fees and user charges. Our analysis indicated that this difference in definition did not affect the measure of targeting although it does influence significantly how much particular governments receive and incentives for substituting among taxes versus user charges as a source of revenue.

However, the choice of using per capita income or full market value as a measure of the local tax base significantly affects the measure of targeting to areas exhibiting high fiscal effort. This is demonstrated in figure 8. The upper panel plots revenue sharing versus adjusted tax effort using full market value as a measure of the tax base while the lower panel displays the same information but using per capita income. Using full market value indicates no targeting of Federal aid to high tax effort governments (a random pattern with respect to fiscal effort). When per capita income is used, a highly significant upward trend is observed. In this case we estimate that 10 percent more tax effort is, on the average, associated with approximately 7.3 percent additional revenue sharing aid.

Fiscal effort was the most significant factor in explaining the distribution of revenue sharing aid

When both fiscal capacity and fiscal effort were analyzed jointly in relation to revenue sharing aid, we found that the differences in the amounts of aid received could be accounted for almost exclusively by fiscal effort. The importance of fiscal capacity is explained primarily because it is correlated with fiscal effort. 1/

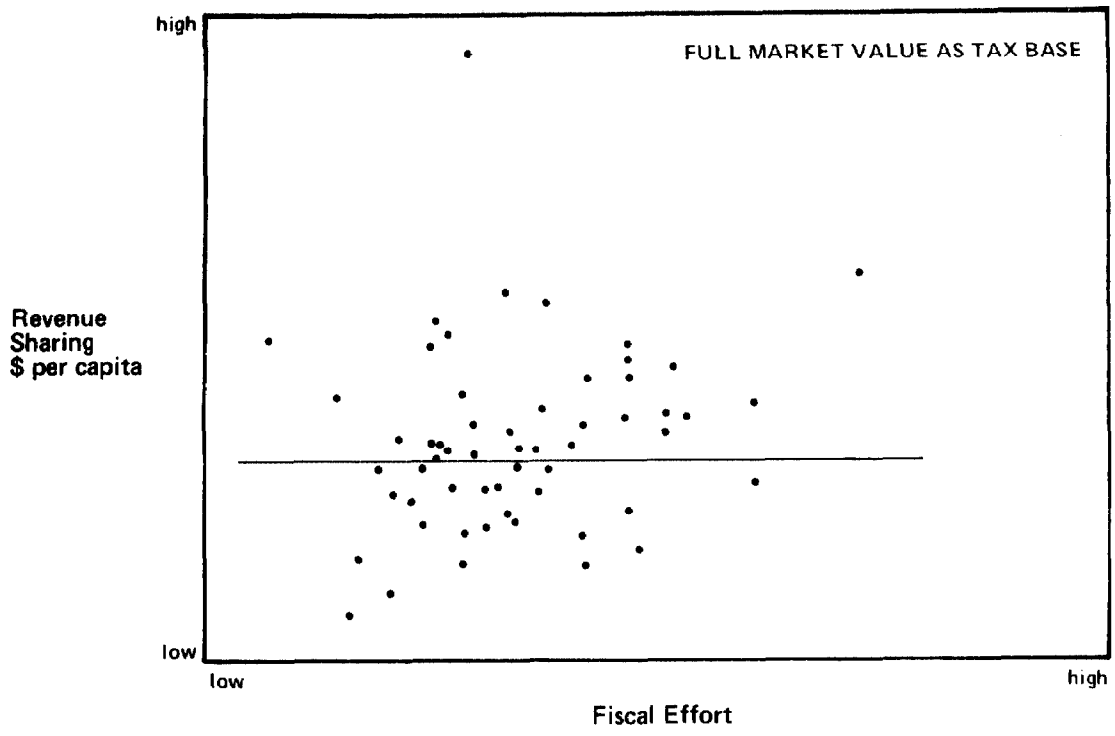
THE PATTERN OF REVENUE SHARING AID VERSUS FISCAL PRESSURE

The data in chapter 3 indicated that the more urban county governments were experiencing higher levels of fiscal pressure. We found no pattern between the amount of revenue sharing aid received and the amount of fiscal pressure experienced by county governments. The data for county governments is shown in figure 9. The trend line is horizontal, indicating that no relationship exists between the amount of aid received and the level of fiscal pressure.

1/See appendix V for details supporting this conclusion.

FIGURE 8

REVENUE SHARING VS. FISCAL EFFORT



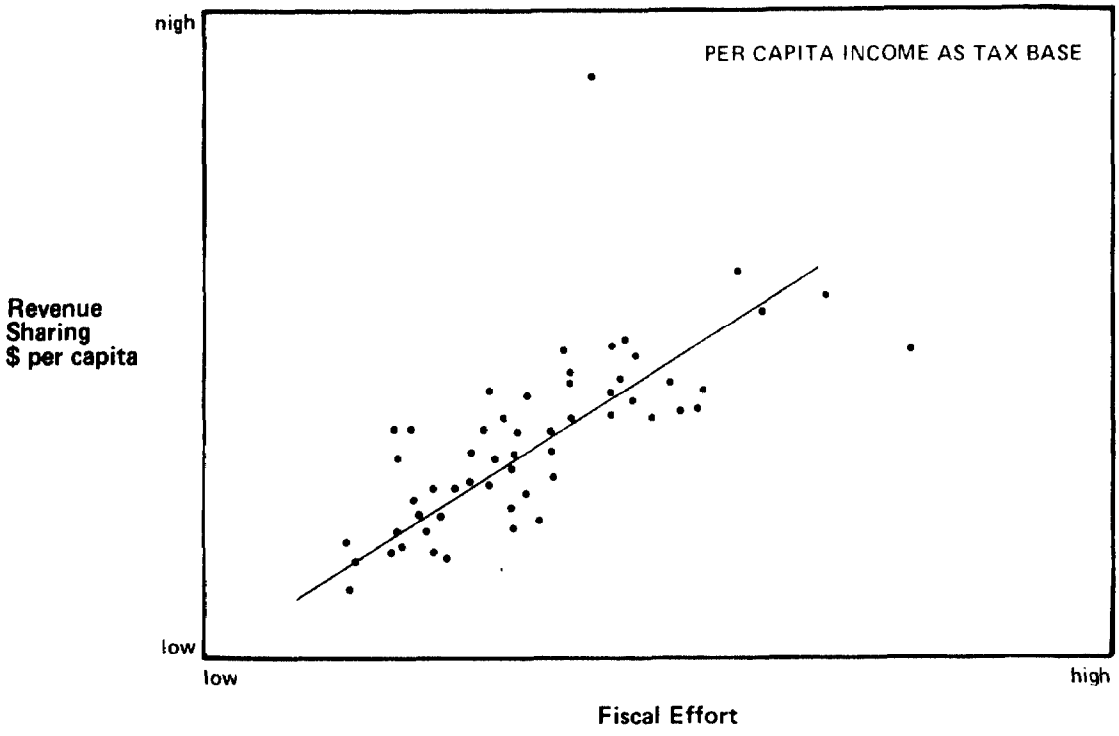
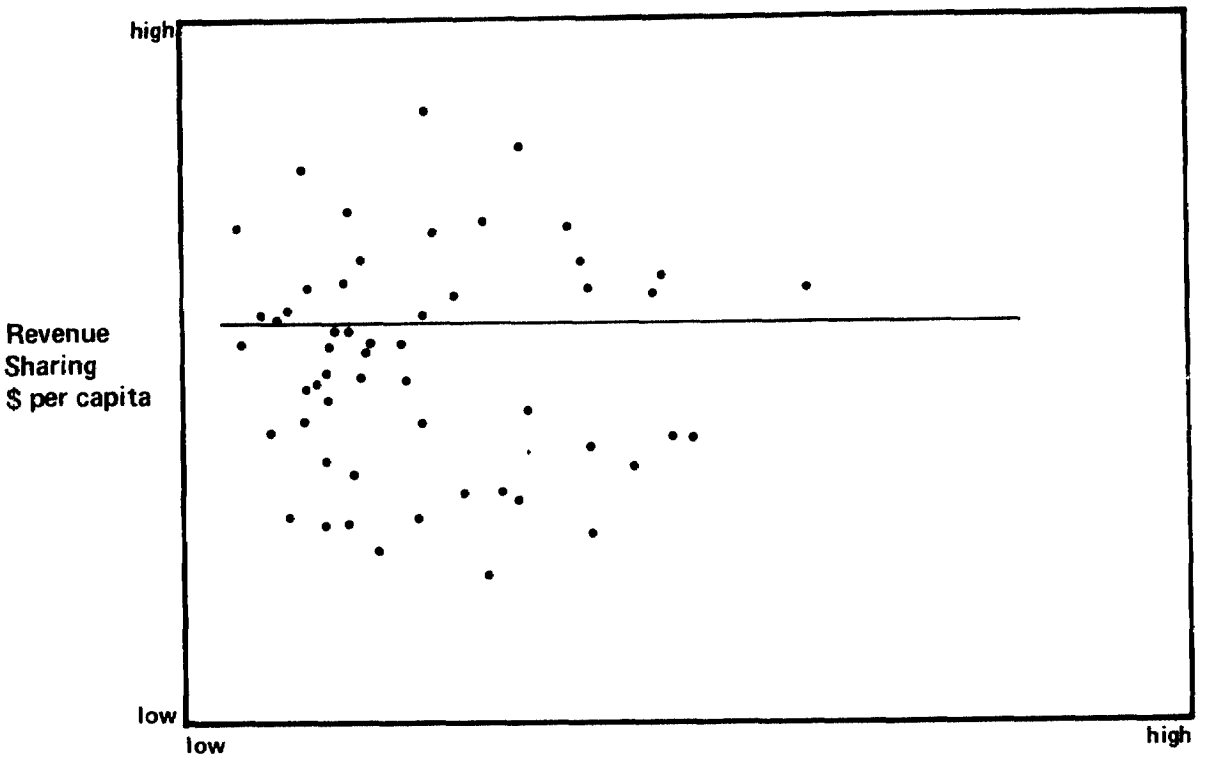


FIGURE 9

REVENUE SHARING VS. FISCAL PRESSURE



CHAPTER 6

SUMMARY AND AGENCY COMMENTS

SUMMARY

In principle the intrastate revenue sharing formula represents a sound basis for distributing general purpose aid to local governments, if the goal is to distribute more aid to those governments making a greater effort to provide local public services from locally raised taxes. We have shown that distributing aid on this basis generally favors nonmetropolitan (rural) counties over central city metropolitan counties. This was true when data was analyzed for county areas which represent aggregations of all local governments located within its borders (chapter 3) and for the sample of 57 county "governments" in New York (chapter 5).

In chapter 4, using 57 counties of New York, we then showed that alternative definitions of local revenues and tax bases would alter the geographic (metropolitan-nonmetropolitan) distribution of revenue sharing aid. For example, by using a more comprehensive measure of local revenues which included such nontax revenue sources as license fees, user charges, etc., revenue sharing aid would be redistributed more toward rural areas since they tend to rely more on these revenue sources than do metropolitan governments. If the full market value of taxable property were used in place of income to measure the local tax base aid would shift away from nonmetropolitan areas. There is a wider disparity in incomes between the two groups than is true of full market value.

Using three measures of need: per capita income, fiscal effort, and fiscal pressure, the targeting of the intrastate formula was evaluated using 57 counties in New York. Our analysis indicates that there was a tendency to distribute more revenue sharing aid to high "effort" governments and to low income governments, and there was no observed tendency to target more aid to governments with high fiscal pressure.

We concluded the analysis with a discussion of the targeting efficiency of the intrastate formula with respect to adjusted tax effort and per capita income. In both cases we found the targeting efficiency of the formula was relatively poor in relation to 57 county governments of New York. The two major reasons for the poor targeting performance of the formula are the various constraints placed on the intrastate formula and geographic tiering process.

We also concluded that targeting efficiency with respect to income would always be worse than the targeting efficiency with respect to fiscal effort.

AGENCY COMMENTS

The Department of the Treasury generally agreed with GAO's analytical method. It commented that the study represents a useful line of inquiry in evaluating the performance of the revenue sharing formulas and would provide a valuable analytical method for assessing other Federal formula-based programs.

MAJOR DATA IN THIS REPORT: SOURCES AND QUALITY

Financial information on Federal aid distribution exists in many forms at various levels of government, but because of nonstandardized data collection techniques, it is difficult to make intergovernmental comparisons of financial aid distribution or relate the aid distribution to other factors, such as local fiscal conditions, target population needs, or program goals.

We collected financial, program, and socioeconomic data from a variety of sources and arranged the data in a standardized format. The data were then analyzed to identify trends and aberrations.

FINANCIAL DATA

1. Comptroller, State of New York, Annual Financial Reports of the Comptroller, 1969-1975, Local Assistance Audit Bureau.

2. Comptroller, State of New York, Reports on Municipal Affairs, 1969-1975, Municipal Research and Statistics Bureau.

3. U.S. Department of Health, Education, and Welfare, Supplemental Security Income, State and County Data, 1974 and 1975.

4. U.S. Office of Revenue Sharing, Federal Revenue Sharing in New York State, unpublished, 1972-1975.

The first two data sources are the most important. They include revenues from Federal, State, and local sources.

The first data source is the State's disbursement records of Federal aid to county areas. These are aggregate data of all units of government in the geographic bounds of each county. The second is the revenue and expenditure balance sheets submitted by each unit of government within the geographic boundaries of each county (in our analysis we chose the county government).

Each of these sources has advantages and disadvantages. The disbursement records are compiled on cash accounting principles and may not reflect actual expenditures. The information is on a State fiscal year basis (ending March 31). The data covers all dollars disbursed to a county and all local governments located within its bounds.

On the other hand, the local revenue data were collected on a calendar year basis for over 180 different categories on a uniform basis through accrual accounting methods. This allowed detailed analysis of sources of program revenues for county units of government.

SOCIOECONOMIC DATA

6. U.S. Bureau of Census, 1970 Fourth Count Census.

7. U.S. Bureau of Economic Analysis, Local Area Personal Income, 1969-1975.

8. New York State Department of Commerce, Employment and Unemployment Statistics (unpublished), 1969-1975.

9. New York State Division of the Budget, Statistical Yearbooks, 1968-1977.

DATA RELIABILITY

Because of the different sources of data, there was concern about the quality of the data. Interviews were conducted with State officials responsible for primary data collection and cross-checks were performed on data when more than one source existed. The financial data were the most reliable. They have been audited and used by State agencies for years, and officials consider them accurate and uniform.

Because two different financial data sources are used, two sets of policy interpretations exist. In the case of revenue sharing, for instance, the disbursement data are the aggregate of all units of government within the county as reported by both the State and Federal governments. The aggregations were not checked for their accuracy. The revenue data as reported by county governments were checked for the Federal revenue sharing but not for the State.

The reliability of the socioeconomic data was assessed on a case-by-case basis because some of the data were constructed estimates based on census information. Survey data such as unemployment statistics were collected in accordance with accepted sampling procedures. Other data, such as population and earnings, were estimated based on accepted methodologies.

LIMITATIONS ON DATA INTERPRETATIONS

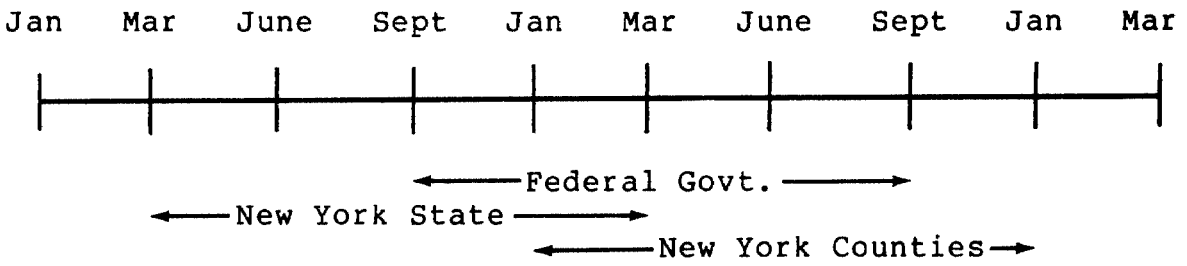
The variety of data sources creates problems in data comparability because of differing standards in primary data collection. The information has been reprocessed to a standardized format to allow easy comparisons of the numbers, but the limitations on the use of those numbers remains. Some of those limitations are presented below.

Different fiscal years

Different sources use various end points for their data collection periods, as shown in figure I-1. Because of the overlap, it is difficult to make direct comparisons on an annual basis.

Figure I-1

Comparison of the Overlap of Fiscal Years (FY) for Five Types of Governments



Allocations vs. entitlements vs. reported revenue sharing receipts

The revenue sharing data used in this report is from the Comptroller of New York State and represents reported revenue sharing aid received during the county governments fiscal year. Therefore, the data used does not represent allocation or entitlement data as published by the Office of Revenue Sharing.

The fiscal socioeconomic data used to construct the targeting criteria used in the report come from a variety of sources and does not reflect the data elements used in the revenue sharing formula. For example, entitlements during 1975 were calculated by the revenue sharing formula using data for per capita income from earlier years, while the targeting criteria used in chapters 4 and 5 are based on per capita income for 1975. Thus the results reported in chapter 5

APPENDIX I

do not represent an evaluation of the revenue sharing formula itself but rather an evaluation of the actual distribution of revenue sharing aid against the distribution criteria defined in chapter 4.

APPENDIX II

A COMPARISON OF PER CAPITA REVENUE SHARING UNDER THE HOUSE AND SENATE FORMULAS, AND THE STATE AND LOCAL FISCAL ASSISTANCE ACT BY STATE

[Per capita distribution for entitlement period 1 under the Senate and House formulas, and the State and Local Fiscal Assistance Act of 1972, relative to the U.S. average (U.S. average = 100)]

State	Senate formula	House formula	Ratio Senate/ House	State and local fiscal assistance act
Alabama	110	81	135	101
Alaska	92	86	107	84
Arizona	118	101	118	109
Arkansas	120	77	156	109
California	92	117	85	108
Colorado	101	103	98	95
Connecticut	75	93	81	85
Delaware	94	122	77	112
District of Columbia	72	132	55	121
Florida	90	85	106	83
Georgia	100	86	116	92
Hawaii	126	129	98	118
Idaho	125	85	147	114
Illinois	86	103	83	95
Indiana	92	86	107	84
Iowa	112	91	123	102
Kansas	98	80	121	89
Kentucky	113	85	132	104
Louisiana	141	89	158	129
Maine	131	76	171	120
Maryland	90	114	79	105
Massachusetts	97	122	80	111
Michigan	95	106	90	97
Minnesota	114	117	97	107
Mississippi	167	79	211	153
Missouri	87	88	99	81
Montana	124	93	133	113
Nebraska	109	87	126	100
Nevada	95	99	96	90
New Hampshire	94	72	130	86
New Jersey	78	97	80	89
New Mexico	136	85	160	124
New York	105	135	78	124
North Carolina	112	86	131	103
North Dakota	150	76	197	138
Ohio	76	84	90	77
Oklahoma	96	79	122	88
Oregon	96	106	90	97
Pennsylvania	97	99	99	90
Rhode Island	101	107	95	98
South Carolina	116	82	142	107
South Dakota	151	77	198	139
Tennessee	105	78	136	97
Texas	93	85	108	85
Utah	121	104	116	110
Vermont	139	95	146	127
Virginia	91	96	95	88
Washington	96	87	110	88
West Virginia	125	80	155	114
Wisconsin	128	118	107	116
Wyoming	126	72	176	115

Source: Calculated from data published in Staff of the Joint Committee on Internal Revenue Taxation, General Explanation of the State and Local Fiscal Assistance Act and the Federal-State Tax Collection Act of 1972 (Feb. 12, 1973), p. 26.

The relatively rural States of Arkansas, Louisiana, Maine, Mississippi, New Mexico, North Dakota, South Dakota, West Virginia, and Wyoming all would receive over 50 percent more under the Senate formula than they would using the House version with Mississippi receiving over twice as much. The wide variation in allocations under the two formulas is indicative that the formulas represent very different notions of what constitutes an equitable distribution of funds among the States.

APPENDIX III

A COMPARISON OF FACTORS INFLUENCING FEDERAL REVENUE SHARING ALLOTMENTS BY STATE

[Factors influencing the per capita revenue sharing allotments for entitlement period 1]

State	$\frac{POP_i}{POP_{us}}$	$\frac{URBPOP_i}{URBPOP_{us}}$	$\frac{POP_i\left(\frac{PCY_{us}}{PCY_i}\right)}{\sum POP_i\left(\frac{PCY_{us}}{POP_i}\right)}$	$\frac{(SLTAX_i)^2}{AGINC_i}$ $\sum\frac{(SLTAX_i)^2}{AGINC_i}$	$\frac{YTAX_i}{\Sigma YTAX_i}$
Alabama	1.69	1.08	2.23	0.81	0.83
Alaska	0.15	0.0	0.12	0.13	0.28
Arizona	0.87	0.98	0.91	0.99	0.63
Arkansas	0.95	0.30	1.35	0.44	0.44
California	9.82	13.63	8.30	14.56	12.39
Colorado	1.09	1.20	1.07	1.09	1.21
Connecticut	1.49	1.78	1.17	1.59	0.83
Delaware	0.27	0.30	0.25	0.28	0.61
District of Columbia	0.37	0.64	0.30	0.40	0.81
Florida	3.34	3.49	3.34	2.43	0.12
Georgia	2.26	1.59	2.61	1.36	1.78
Hawaii	0.38	0.37	0.34	0.59	0.87
Idaho	0.35	0.72	0.41	0.32	0.37
Illinois	5.47	6.64	4.78	5.73	5.69
Indiana	2.56	2.02	2.54	1.98	1.69
Iowa	1.39	0.71	1.47	1.38	1.44
Kansas	1.11	0.66	1.15	0.89	0.57
Kentucky	1.58	0.95	2.0	0.94	1.16
Louisiana	1.79	1.44	2.35	1.52	0.69
Maine	0.49	0.15	0.59	0.46	0.17
Maryland	1.93	2.19	1.68	2.14	3.38
Massachusetts	2.80	3.66	2.51	3.49	4.98
Michigan	4.37	4.78	3.97	4.70	5.58
Minnesota	1.87	1.61	1.88	2.22	3.79
Mississippi	1.09	0.27	1.73	0.75	0.33
Missouri	2.30	2.18	2.38	1.50	1.58
Montana	0.34	0.12	0.39	0.33	0.44
Nebraska	0.73	0.50	0.80	0.67	0.45
Nevada	0.24	0.28	0.21	0.33	0.12
New Hampshire	0.36	0.15	0.37	0.27	0.14
New Jersey	3.53	5.13	2.78	3.48	1.73
New Mexico	0.50	0.25	0.63	0.44	0.28
New York	8.97	12.05	7.59	16.00	18.56
North Carolina	2.50	1.02	3.09	1.59	2.46
North Dakota	0.30	0.45	0.38	0.32	0.11
Ohio	5.24	5.61	5.00	3.15	2.29
Oklahoma	1.26	0.89	1.43	0.73	0.52
Oregon	1.03	0.83	1.00	0.90	1.85
Pennsylvania	5.80	5.84	5.78	5.22	5.97
Rhode Island	0.47	0.63	0.46	0.47	0.45
South Carolina	1.27	0.55	1.69	0.70	0.91
South Dakota	0.33	0.64	0.42	0.35	0.75
Tennessee	1.93	1.26	2.39	1.04	0.56
Texas	5.51	5.84	6.02	3.38	1.86
Utah	0.52	0.62	0.59	0.46	0.50
Vermont	0.22	0.0	0.24	0.29	0.34
Virginia	2.29	2.02	2.33	1.59	2.73
Washington	1.68	1.58	1.53	1.79	0.63
West Virginia	0.86	0.29	1.12	0.57	0.55
Wisconsin	2.17	1.74	2.19	3.05	4.17
Wyoming	0.16	0.0	0.17	0.20	0.57

Source: Department of the Treasury, Office of Revenue Sharing, "Data Used for Interstate Allocation" (no date). Multiplied by 100.

APPENDIX III

The way in which the various factors appearing in the formulas affect the per capita distribution can be seen by contrasting the fraction of the U.S. population (see table above, column 1) with the values of the other distributional factors (columns 2 through 5).

Since Alaska, Wyoming, and Vermont do not contain a city large enough to be considered a central city, they have no urbanized population (column 2). While a number of States do not collect income taxes, the income tax term is never zero because the revenue sharing act allows States to substitute an amount equivalent to 6.67 percent of the Federal income tax liability of their residents into the formula in lieu of the State income tax figures.

A State like New York, for example, highly urbanized with 8.97 percent of total population but containing 12.05 percent of total urbanized population, makes a high level of fiscal effort collecting 16 percent of all State and local net taxes and relying heavily on income taxes. Thus all three factors (population, income, and tax effort) serve to increase the State's allocation over a straight per capita distribution. Only the relative income factor serves to reduce it. In contrast, only the relative income factor serves to increase Mississippi's allocation over a straight per capita distribution. Mississippi has a relatively small share of the urban population (0.27 percent compared to 1.09 percent of total population), a low local fiscal effort, and modest income tax collections.

CONSTRUCTION OF INDICES USED

Chapters 4 and 5 assess the targeting of general revenue sharing aid to local governments in New York State. The analysis is performed using two indices: fiscal effort and fiscal pressure. The construction of these indices are presented in this appendix.

FISCAL EFFORT

Fiscal effort is measured for each county as the ratio of total locally raised revenue to the full market value of all taxable property:

$$(1) \quad t_i = R_i/V_i$$

where t_i = fiscal effort (effective tax rate) of government i

R_i = total locally raised revenues of government i

V_i = tax base of government i

For reasons detailed in chapter 4 this formula is adjusted to correct for the fact that communities with a large tax base (V) with the same effective tax rate as that of a community with a low tax base will raise more revenues and enjoy more public services. Therefore, the effective tax rates of communities with a below average tax base are adjusted upward and those above average are adjusted down to reflect more accurately fiscal effort:

$$(2) \quad t_i^* = t_i \frac{\bar{V}}{V}$$

where t_i^* = fiscal effort of county i

$\bar{V}$ = average tax base of all governments

Each county's fiscal effort is then normalized by dividing by the fiscal effort of the median county.

$$(3) \quad t_i^N = t_i^*/t_{med}^*$$

FISCAL PRESSURE

The fiscal pressure index is also composed of three factors, the fiscal effort shown in equation 2, the ratio of long-term outstanding debt to full market value, and the ratio of current expenditures to current revenues (including State and Federal aid). Each variable was normalized and the three components were averaged giving each component equal weight as shown in equation 4.

$$(4) \quad FP_i = 1/3[t_i^N + (D/V)_i^N + (E/R)_i^N]$$

where FP_i = fiscal pressure index for ith county

t_i^N = normalized fiscal effort

$(D/V)_i^N$ = normalized long-term debt to full market value

$(E/R)_i^N$ = normalized ratio of current expenditure to revenues

Table IV-1 groups the 57 counties (excluding New York City) by metropolitan status and the three distribution criteria, fiscal capacity (personal income), fiscal effort, and fiscal pressure are shown.

This table reprsents a very crude index of fiscal pressure in that it is composed of only three of many possible factors that could be included in such an index and does not take into account changes over-time in any of the three components.

Table IV-1

Distribution Criteria for 57

New York State Counties

Central city metropolitan counties	Personal income per capita	Fiscal effort	Fiscal pressure
Albany	$6461	0.86	15.05
Broome	5719	0.86	2.04
Chemung	5438	1.23	1.92
Dutchess	6549	0.62	1.18
Erie	5921	0.89	2.47
Monroe	7009	0.65	2.44
Oneida	5218	1.21	2.34
Onondaga	5802	1.00	4.05
Rensselaer	5308	2.29	1.91
Schenectady	6430	0.84	0.37
Westchester	9106	0.45	1.02
Average	$6269	0.99	3.10
Noncentral city metropolitan counties			
Herkimer	$4731	0.78	0.96
Livingston	5097	0.83	1.40
Madison	5030	1.18	1.34
Montgomery	5246	1.81	1.68
Nassau	8841	0.59	2.89
Niagara	5821	1.03	2.08
Ontario	5578	0.78	1.15
Orleans	5479	1.21	1.05
Oswego	4565	0.97	0.74
Putnam	6565	0.37	0.48
Rockland	6854	0.73	1.50
Saratoga	5205	1.20	1.34
Suffolk	6094	0.64	2.19
Tioga	5284	1.00	0.62
Wayne	5731	0.82	0.57
Average	$5742	0.93	1.33
Rural counties			
Allegany	$4443	1.36	0.82
Cattaraugus	4805	1.67	1.37
Cayuga	5207	1.43	1.26
Chautauqua	5270	0.78	0.66
Chenango	4997	1.28	0.77

Table IV-1

Distribution of Criteria for 57 New York State Counties--Cont.

Rural counties	Personal income per capita	Fiscal effort	Fiscal pressure
Clinton	$4336	1.96	1.47
Columbia	5259	0.83	0.59
Cortland	5526	1.50	0.85
Delaware	4647	0.62	0.44
Essex	4860	1.06	0.59
Franklin	4099	2.56	0.82
Fulton	4856	1.60	0.82
Genesee	5578	0.98	1.75
Greene	5309	0.89	1.41
Hamilton	5684	0.14	0.45
Jefferson	5054	1.57	2.23
Lewis	4335	2.14	1.98
Orange	5718	0.82	1.03
Otsego	4878	1.38	0.78
St. Lawrence	4322	1.34	0.69
Schoharie	4388	0.83	0.58
Schuyler	4523	1.08	1.10
Seneca	5307	1.04	0.68
Steuben	5399	1.11	0.77
Sullivan	5132	0.52	1.69
Tompkins	5329	1.04	1.28
Ulster	5593	0.67	0.87
Warren	5430	0.63	1.01
Washington	4669	1.72	0.69
Wyoming	5299	1.54	1.38
Yates	5185	0.52	0.68
Average	$5014	1.18	1.02
Average-All Counties (Except NYC)	$5448	1.08	1.52
Median-All Counties (Except NYC)	$5299	1.00	1.00

STATISTICAL METHODOLOGY

The analysis of targeting was performed by use of multiple regression analysis. This appendix explains procedures used to correct for some statistical problems encountered in using this technique, as well as the source of the quantitative results presented in the text.

DISTRIBUTION OF TARGETING CRITERION BY METROPOLITAN STATUS

Chapter 4 presented the criteria used to evaluate the targeting of revenue sharing. These results were developed by constructing two dummy variables for the central city metro and noncentral city metro counties. Regression equations were estimated between each criterion and the two dummy variables. Rural counties are represented by the intercept of the estimated equation.

The following definitions are employed:

Y = per capita income.

FS = fiscal pressure index defined in appendix IV.

T_{rv} = the effective tax rate defined as the ratio of all locally raised revenues (r) to the full market value of property (v).

T^*_{rv} = fiscal effort equal effective tax rate adjusted for differences in the local tax base as shown in appendix IV.

T^*_{ry} = fiscal effort using per capita income in place of full market value to measure the local tax base.

T^*_{ty} = fiscal effort using only local "taxes" in place of "all" local revenues and measuring the local tax base with per capita income.

T^*_{tv} = fiscal effort using tax revenues and full market value.

The results of the estimation are shown in table V-1.

Table V-1

Targeting Criteria by Metropolitan Status, 1975

Targeting criterion		Rural (intercept)	Central city metro	Noncentral city metro	$\bar{R}^2$
(1)	Y	5014	+1225 (4.5) a/	+728 (2.9)	.27
(2)	FS	101	+209 (3.3)	+31 (0.5)	.14
(3)	T_{rv}	0.98	+0.11 (1.2)	-0.10 (1.2)	.04
(4)	T^*_{rv}	1.18	-0.19 (1.1)	-0.25 (1.70	.02
(5)	T^*_{ty}	1.22	-0.35 (2.9)	-0.31 (2.9)	.16
(6)	T^*_{tv}	1.10	+0.10 (0.4)	-0.06 (0.6)	-.02
(7)	T^*_{ry}	1.47	-0.62 (3.2)	-0.52 (3.0)	.18

a/The numbers in parentheses are t-statistics.

Figure 2 in chapter 4, showing the distribution of per capita income by metropolitan status, is based on equation 1. The distribution of tax effort shown in figures 3, 4, and 5 are based on equations 3 thru 7 of table V-1 while the fiscal pressure index in figure 6 is based on equation 2 but with Albany deleted due to its unusually large outstanding debt in 1975.

THE TARGETING OF FEDERAL REVENUE SHARING AID

The targeting of per capita revenue sharing aid was analyzed by estimating multiple regression equations with the three targeting criteria: fiscal effort, per capita income, and fiscal pressure. The statistical results are shown in table V-2.

Table V-2

Regression Equations for Federal Revenue Sharing Per Capita Versus Need Criteria Tax Effort, Income, and Growth: County Governments 1975

Equation	Constant	Y	FS	T^*_{ty}	T^*_{ry}	T^*_{rv}	$\bar{R}^2$
1	7.38	-.000397	-.00123	4.728			.29
t-statistics		(0.87)	(0.59)	(4.27)			
2	4.62			5.116			.30
t-statistics				(4.95)			
3	6.95				2.587		.20
t-statistics					(3.84)		
4	9.64					0.416	-.01
t-statistics						(0.43)	
5	16.18	-0011					.07
t-statistics		(2.33)					

APPENDIX V

The income and fiscal pressure variables were insignificant as indicated by the t-statistics shown in parentheses in equation 1. Only the tax effort variable, as defined by the Federal program, is statistically significant. The results of deleting the income and fiscal pressure variables is reported in equation 2. The adjusted $\bar{R}^2$ provides a statistical measure of the targeting efficiency of the intrastate formula in that county governments with equal adjusted tax effort receive the same per capita revenue sharing aid. The relatively low $\bar{R}^2$ of .30 indicates the poor performance of the procedures used by the Federal program to distribute its aid to county governments.

The effect of using a more comprehensive measure of taxes that include all local revenues is shown by equation 3. The fiscal effort coefficient falls by half. The $\bar{R}^2$ falls to .20, indicating a reduction in targeting efficiency of 10 percentage points. Finally, using a comprehensive measure of revenues and using the full market value of property to measure the local tax base results in no targeting of per capita revenue sharing aid, based on the adjusted tax effort criterion.

Equation 5 of table V-2 indicates a very weak but statistically significant relationship between per capita revenue sharing and per capita income. This result stems from the correlation between fiscal effort and income. When both fiscal effort and income are taken into account (equation 1) income is insignificant, thus the reason for the relationship between revenue sharing and income is due to the indirect effect resulting from the correlation between fiscal effort and per capita income.

The graphic presentation of the targeting patterns shown in chapter 5 are based on the regression equations shown in table V-2. Specifically, figure 10 is a scatter diagram based on equation 5. The upper and lower panels of figure 11 are based on equation 4 and 2 respectively while figure 12 is based on equation 1, where the vertical axis measures per capita revenue sharing with the effects of income and fiscal effort removed. 1/ The horizontal axis measure the fiscal pressure index.

1/The quantity measured along the vertical axis is:
$G - 7.38 + .0003974 - 4.728\ T$

METHODOLOGICAL PROBLEMS OF MEASURING DIFFERENCES IN THE UNIT COST OF SUPPLYING LOCAL PUBLIC SERVICES

A possible criterion which could be used for evaluating the distribution of Federal aid to local governments is differences in the unit cost of providing public services among local governments. Substantial differences in unit cost may exist between jurisdictions located in urban and rural locations. Some initial work attempted to determine the feasiblity of including this factor into the present study. Although it represents an important consideration it was excluded from the analysis for reasons outlined below.

There is no simple way to compare public service costs because what we can observe--different expenditure levels--is a composition of (1) quantity differences, (2) quality differences, and (3) production cost differences. In each local jurisdiction this combination of quantity, quality, and production costs results in the provision of public services. In the majority of cases we cannot mesure quantities of public services because a unit of service is virtually impossible to define. Some services like trash collection can be measured by the ton, or police protection by the number of street miles patrolled each night, but quantity measurements such as these can be deceptive. The output quantified does not capture what citizens really desire. Citizens want clean streets and safety from crime, which introduces a quality dimension.

Quality in the public sector, however, is far more subjective than private sector quality measurements like the various grades of meat or gasoline. It is even possible that the receiver of a service may not be aware of a difference in quality. Suppose a school lunch program in one area of the country provides the most nutritious meals possible for the given budget, while in another area nutrition in the school lunch receives a low priority. Expenditures in each area could be the same, but the cost per quality unit will vary. Unfortunately, data of sufficient detail are not available to establish the degree of difference in quality. Since adequate measurement of quantity and quality is highly unlikely, it becomes practically impossible to isolate production cost differentials.

Some indirect aspects of production cost differences can be measured, but these data can be misleading. While it is possible to determine the costs (prices) of various inputs like labor, comparison cannot be made solely on the basis of input prices. Comparisons must be made on the per unit cost of output produced. If two jurisdictions pay

policemen different wages, any policy recommendations based on that difference alone can be specious because the process of production, which combines inputs to obtain the output, is ignored. If the jurisdiction that pays policemen higher wages also obtains more output per policeman (due to the way other inputs are combined with policemen), then the cost per unit of output may be lower. Policy initiatives designed to offset costs in the jurisdiction that pays policemen higher wages will miss the other jurisdiction that has higher costs per unit of output. However, a unit of public service, as indicated earlier, usualy cannot be measured.

Another problem associated with the analysis of input price differences is that the goal or objective of many public programs may be accomplished most efficiently through the provision of different types of services in areas with different population density. Consider the meals on wheels program that provides nutritious meals to those who are housebound. In a city the least-cost way to provide balanced meals may be through daily delivery. In a rural area transportation cost for such services may be exorbitant, so that the least-cost way of providing a balanced diet for the home bound may be to provide them with freezers and deliver easy to prepare frozen foods on a weekly or even monthly basis. Since there is such a difference between urban and rural daily living it may be wise to design programs that give administrators the necessary flexibility to meet the needs of those being served in the most economically efficient way possible.

The difference in education between urban and rural areas is another example of different inputs used to produce the same output--an educated citizen. Fostering a learning atmosphere in an urban area may include teacher aids, while teacher aids in rural areas may not be as necessary as adequate busing to keep children's travel time low. Comparison of cost differentials would be invalid since different processes are used to obtain program objectives.

In summary, the major obstacle involved in establishing whether or not urban-rural cost differentials exist is that the information needed is not directly observable. Differences in quantity, quality, and production costs are reflected in the only observable piece of information--expenditures. Yet it is virtually impossible to separate expenditures into these three components. Coupled with this obstacle is the problem of how to adjust for particular circumstances that call for differences in the delivery process to meet the program objective in the most efficient (least-cost) manner.

ASSISTANT SECRETARY

DEPARTMENT OF THE TREASURY
WASHINGTON D C 20220

December 5, 1979

Dear Mr. Voss:

Secretary Miller has asked me to respond to your letter of October 2 requesting comments on the draft report, "A Review of the Revenue Sharing Formulae in an Urban-Rural Context." In general, the Treasury believes that this study contributes to an understanding of the distributional equity of the General Revenue Sharing program. Our specific comments are enclosed. Thank you for the opportunity to comment.

Sincerely,

Roger C. Altman

Mr. Alan R. Voss
Director
General Government Division
General Accounting Office
441 G Street, N.W.
Room 3866
Washington, D.C. 20548

Enclosure

TREASURY COMMENTS ON

A REVIEW OF THE REVENUE SHARING FORMULAE
IN AN URBAN-RURAL CONTEXT
Prepared by the Staff of the
U.S. General Accounting Office

This study makes several useful and policy-relevant contributions to an understanding of the general revenue sharing program. While focusing on the distribution of revenue sharing funds between urban and rural jurisdictions (New York State counties, but excluding New York City), the study presents a number of general observations on the distributional equity of the interstate allocation formula.

The study shows that, in New York State, county governments in rural (non-SMSA) areas and county governments that overlie the central city of an SMSA ("urban" governments) exhibit fiscal capacities lower than county governments in other SMSA counties ("suburban" governments). Fiscal capacity is defined as average per capita income. The study then shows that these rural and urban jurisdictions receive larger per capita revenue sharing payments than suburban jurisdictions, and that, therefore, the distribution of funds generated by the formula tends to equalize fiscal capacity. The central finding in this regard is that "the intrastate formula can be interpreted as strictly a tax effort formula where the effective tax rate is adjusted to represent a nearly equal revenue yield irrespective of the size of the local government's tax base." Thus, according to this study, the revenue sharing formula is contributing modestly to greater equity in the distribution of fiscal resources.

The report identifies several minor problems with the formula. For example, the allocation of funds to county governments is influenced by the number of other jurisdictions located in the same county, and this varies significantly among counties and reduces the targeting efficiency with respect to fiscal capacity and tax effort. Given the complexity of intrastate jurisdictional patterns and the availability of data for 39,000 different jurisdictions, problems of this sort will always be present in a national, formula-based allocation system.

There is a potential for misrepresentation of the report's discussion of fiscal pressure and the relationship of the revenue sharing allocation to fiscal pressure. Basically, fiscal pressure, as defined by GAO--a relative measure based on the revenue-expenditure gap, debt level, and tax effort--may be only incidentally related to the true

APPENDIX VII

underlying fiscal problems of a jurisdiction. It is just as likely that this concept of fiscal pressure is a measure of fiscal mismanagement. The study "* * * found no pattern between the amount of revenue sharing aid and the amount of fiscal pressure experienced by county governments." It is not clear, however, whether this is a criticism of the current program, and if so, what modifications might be implied.

Further, while the conclusions the paper draws are germane, they are difficult to generalize. This is because of the limited geographic sample and because the State-local system in New York State is similar to only a few other States. Thus, attempting to draw conclusions about other State-local systems--such as North Carolina, Tennessee, or Wisconsin--would be problematic and perhaps impossible.

Finally, while the study addresses the urban-rural distribution of revenue sharing payments, it does not adequately address the horizontal question--the treatment of similar urban jurisdictions and the treatment of similar rural jurisdictions--though it makes no pretense to do so. The study concludes that, as a group, each class fares well relative to suburban jurisdictions and other well-off enclaves. It is not possible to tell from the study, however, how well jurisdictions in similar situations fare relative to one another. Presumably, the results would be more or less consistent within States, but inconsistent among States. The GAO study does not address this important issue, however, and we would like to see such a study in the future.

The study nonetheless contributes to a particularly useful line of inquiry regarding the distributional equity of revenue sharing payments. Further extensions of this sort of analysis would be very valuable not only for the further consideration of revenue sharing, but also for assessing other Federal formula-based programs.

Office of State and Local Finance
Department of the Treasury
November 30, 1979

APPENDIX VIII

JIM LEACH
1st District, Iowa

COMMITTEES:
BANKING, FINANCE AND URBAN AFFAIRS
POST OFFICE AND CIVIL SERVICE

Congress of the United States
House of Representatives
Washington, D.C. 20515

March 20, 1978

Mr. Arnold P. Jones
Associate Director
General Government Division
U. S. General Accounting Office
441 G Street, N. W.
Washington, D. C. 20548

Dear Mr. Jones:

Your February 27, 1978, preliminary report on revenue sharing was very helpful and I greatly appreciate the time you and your staff spent at the meeting.

As I mentioned to you that day, I am concerned with several related issues and would like to request that the GAO consider the following questions:

1) How do changes in funds received over time by urban governmental units compare with such changes experienced by rural governmental units? (This comparison should take into account demographic trends, income changes, changes in the rate of economic growth, and structural changes in tax policy.)

2) Are there any indications that larger governmental units, which are financially and staff-wise in a better position to challenge statistics, have enhanced their population estimates at the implicit cost of smaller, rural units?

Again, I appreciate your efforts thus far in researching this federal program and will look forward to your early reply concerning the above.

Sincerely,

Jim Leach
Member of Congress

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