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BY THE COMPTROLLER GENERAL

Report To The Congress

OF THE UNITED STATES

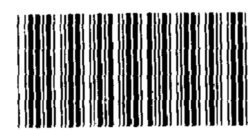
The Impact Of Tiering And Constraints On The Targeting Of Revenue Sharing Aid

The General Revenue Sharing Program (GRS), first authorized in 1972 and extended through fiscal year 1980, has distributed aid to State and local governments based on a distribution formula that has remained unchanged throughout the history of the program.

The GRS allocation formula is designed to aid those governments whose per capita incomes are low and those governments who help themselves through tax effort. The combined effect of the income factor and the tax factor is called "fiscal effort."

If the formula worked equitably, two governments with equal levels of fiscal effort would receive equal revenue sharing grants on a per capita basis. GAO's analysis of New York State county governments shows that inequitable differences in per capita payments do exist.

The poor targeting performance of GRS aid was analyzed by comparing it with the New York State revenue sharing program, which is funded from State revenue sources and which uses a formula that has no constraints and does not contain a tiering process.



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

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To the President of the Senate and the
Speaker of the House of Representatives

This report demonstrates that constraints on the formula used to distribute general revenue sharing aid to local governments and the distribution procedures, referred to as "tiering," significantly impairs the targeting efficiency of general revenue sharing aid to county governments in New York State. This represents the first of several reports which will examine similarities and differences in the intergovernmental grant distribution policies of the Federal and New York State governments. This study was undertaken to draw attention to the fact that the interrelationship between a State and its local governments represents a unified governmental fiscal system. Consequently, Federal policymakers should be conscious of these policies when designing grant programs which are intended to impact local governments.

We are sending copies of the report to the Governor and New York State congressional delegation.

Elmer B. Staats

Comptroller General
of the United States

COMPTROLLER GENERAL'S
REPORT TO THE CONGRESS

THE IMPACT OF TIERING AND CONSTRAINTS ON THE TARGETING OF REVENUE SHARING AID

D I G E S T

In 1980 the Congress will consider renewal of the Federal Revenue Sharing Program. In this report, GAO examines the targeting efficiency of the Federal intrastate revenue sharing formula to provide the Congress with useful information concerning renewal of the program.

GAO compared the Federal revenue sharing formulas with New York State's revenue sharing program, which distributes funds to local governments under a completely different set of formulas. The comparison offers some insights into the sources of the relatively poor targeting performance of the Federal intrastate formula.

The Federal Government began a revenue sharing program in 1972, many years after New York began one of its own. In 1975, both programs distributed roughly the same amount of aid to New York local governments--$470 million by the Federal and $600 million by the State. Both programs have the same objective--to relieve local fiscal pressures. However, because of their separate historical developments, each program distributes its aid dollars through different distribution formulas. The Federal formula tiers aid to geographic areas (e.g., county areas) before distributing money to local governments. The New York program, on the other hand, targets aid directly to local governments, based on the State's legal classifications of cities, towns, counties, etc. Also, constraints are placed on the Federal formula on how much aid is distributed to individual local governments, whereas the State formula is not bound by any constraints.

EVALUATION CRITERIA USED

To analyze the aid distribution patterns of the Federal and State programs, GAO developed several evaluation criteria to assess the

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distribution patterns. It also limited its analysis to a single type of government--the county--to ensure that only governments with similar service responsibilities were analyzed.

GAO's criteria are based on several measures often used to assess the effectiveness of formulas that target dollars to State and local governments in need. Although there is no consensus about the best indicator of need, and more research is required to determine new and better indicators, the two criteria used by GAO represent appropriate measures that can be used now.

--Fiscal capacity. A measure of a local government's ability to pay for services, based on local levels of per capita income.

--Fiscal effort. A measure of the degree to which local governments attempt to meet their needs through their own resources and which accounts for differences in per capita income.

GAO FINDINGS: THE FEDERAL PROGRAM

With respect to county governments, GAO's analysis revealed that:

--The Federal intrastate formula, "in principle" rewards governments which are making a high fiscal effort to provide local public services from local revenue sources.

--Because the Federal intrastate formula only rewards fiscal effort low income jurisdictions will only receive more Federal revenue sharing aid if they exhibit greater fiscal effort than high income jurisdictions.

--The amount of per capita revenue sharing aid distributed to county governments was most closely associated with the level of their fiscal effort.

--There was a slight tendency for jurisdictions with low per capita income to receive more aid per person because of a slight tendency for low income jurisdictions to exhibit greater fiscal effort.

--While the Federal program did tend to reward high fiscal effort governments the targeting was inefficient. This was demonstrated by governments with comparable fiscal effort receiving widely differing levels of revenue sharing aid.

GAO FINDINGS: THE STATE PROGRAM

GAO's analysis of the New York State revenue sharing formula for county governments revealed that:

--The State program "in principle" rewards low per capita income jurisdictions irrespective of their level of fiscal effort.

--The State program was more consistent than the Federal program in distributing higher amounts of per capita aid to low income jurisdictions thus emphasizing the fact that the Federal intrastate formula rewards fiscal effort and not necessarily low per capita income.

--The State's targeting on the basis of fiscal effort was ambiguous. Under one definition of fiscal effort the State distributed more aid to high effort governments. But, under an alternative definition the State distributed more aid to low effort governments. This results from the fact that effort is not explicitly incorporated into the State formula.

Constraints and Tiering Reduce the Targeting Efficiency of the Federal Program

GAO's comparison of the Federal intrastate revenue sharing formula and distribution procedures with those employed by New York State in distributing its local revenue sharing program revealed that the State program was more efficient in targeting its aid to county governments. By more efficient we mean that governments with the same need (as measured by the distribution criteria considered in this report) were more likely to receive equal amounts of per capita revenue sharing aid under the State program than was true of the Federal program.

In comparing the Federal and State programs significant structural differences in the two programs exist. The important differences are:

(1) The Federal program employs a geographic tiering process by which the aid funds are allocated to successively smaller geographic areas before it is distributed to actual governments. In contrast, the State program bypasses this tiering process and distributes aid directly to governments.

(2) The Federal program places a 145 percent maximum constraint, a 20 percent minimum and 50 percent budget constraint on the intrastate formula. The State program has no such constraints in the State formula.

These two structural differences in the two programs are responsible for the relatively poor targeting of the Federal intrastate formula.

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CHAPTER 1

INTRODUCTION

In 1980 the Congress will consider the renewal of the Federal revenue sharing program. To help the Congress in its deliberations, this report focuses on one aspect of Federal revenue sharing: the targeting efficiency of the intrastate revenue sharing formulas. The conceptual foundation of this report was developed in an earlier study "How Revenue Sharing Formulas Distribute Aid: Urban-Rural Implications" (PAD-80-23) which analyzed the revenue sharing formulas effect on geographic areas. Our framework for analysis is a case study that compares the Federal revenue sharing formulas with the formulas New York State applies to its county governments.

While the Federal and State programs have a similar objective--relieving local fiscal pressure--they differ in their methods of distributing aid. The State program is much older than the Federal program. New York began revenue sharing (originally called per capita aid) in 1946. In its current form, the program stems from a major overhaul of the State formula, which occurred in 1970. The Federal revenue sharing program (31 U.S.C. §1221) was created in 1972 as a keystone for President Nixon's New Federalism efforts. (See appendix II for a more detailed history of both revenue sharing programs.)

Since 1975, there have been no major changes in the distribution formulas of either the Federal or the State programs. During that year, the Federal Government distributed $470 million to New York local governments, and the State distributed $600 million of its income tax receipts to the same local governments.

SCOPE AND METHODOLOGY

We limited our analysis to county governments because they constitute a valid case study for making targeting comparisons. To measure the ability of revenue sharing programs to distribute aid according to local fiscal abilities, we sought governments with similar responsibilities for supplying public services. We did not think it appropriate to compare, for example, the targeting of aid to county governments who are responsible for funding major welfare programs with towns that pay for road construction, but not welfare needs. Such a comparison would be invalid. Since New York county

governments are assigned specific service responsibilities by the State, we chose them as the objects of our study. 1/

In most cases, we report data only for 1975 because patterns and relationships were relatively stable between 1969 and 1975 for the State program, and between 1972 and 1975 the Federal program did not change and was renewed in 1976 with no formula changes.

We used econometric analysis to evaluate the targeting performance of the Federal and State programs. The statistical results that support our findings and conclusions are contained in appendix III of this report.

PURPOSE

Our purpose is to find out how well both programs target aid to county governments with the greatest need. Throughout this report, we use two indicators of need: low fiscal capacity and high tax effort. These indicators compose our evaluation criteria for assessing the efficiency of the Federal and State revenue sharing programs. We judged the two programs by how closely they distribute the same amount of per capita aid to county governments with similar levels of need, as measured by the two indicators.

We also analyzed the geographic patterns of distribution of both programs by metropolitan and rural areas.

QUALIFICATIONS TO OUR FINDINGS

We found that the New York State program generally targets its aid more efficiently than the Federal program. Note, however, two important qualifications before drawing any conclusions about whether the State formula is better than the Federal formula. First, the Federal program provides approximately two and one half times more aid to county governments than the State program. So, although we might say the State funds were targeted better, the Federal program distributes more aid dollars. Second, our analysis is limited to county governments only; it does not include cities, towns, and villages.

1/The Federal intrastate formula indirectly attempts to reflect differences in service responsibilities by dividing money between county governments, municipalities, and townships on the basis of revenues collected by each group of governments.

FURTHER RESEARCH UNDERWAY

Because the scope of this report is limited, we wanted to know if our conclusions would hold true generally. We are now applying our methodology to all 39,000 local governments in the United States. To date, our current research supports the conclusions reached in this study. Based on the preliminary results of this additional work, we have testified before the House Subcommittee on Intergovernmental Relations and Human Resources and the Senate Subcommittee on Intergovernmental Relations. In our testimony we recommended that the Congress eliminate the tiering procedures (explained in chapter 2) and consider raising the maximum and reducing the minimum allowable per capita grants.

CHAPTER 2

FEDERAL AND NEW YORK STATE REVENUE SHARING FORMULAS

SUMMARY

Although the Federal and New York State revenue sharing programs pursue the same objective--providing fiscal relief to local governments--each has devised different means of achieving this objective. Figure 1 summarizes the differences between the Federal and State methods of distributing aid to substate governments. In 1972 the Federal program adopted a system of geographic tiering: aid to county areas is determined first, then the aid is subdivided into three allocations--one for the county government, one for all municipalities within the area, and one for all the townships within the area. In short, the amount of aid a local government receives depends on the county area it is in. New York State, on the other hand, has been distributing revenue sharing dollars directly to local governments since 1947. 1/ The result of the State's method is that the amount of aid a county area receives depends on the number of governments within its borders.

THE FEDERAL INTRASTATE FORMULA

The current Federal formula for distributing revenue sharing funds 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 a series of four steps. First, the two-thirds local share is allocated among county geographic areas according to a formula that defines local taxes as net nonschool taxes raised by local general purpose governments. Under this formula, the county area allocation depends on per capita income and an aggregate effective tax rate for the county area.

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 three pots for the county government, municipalities, and townships. The fraction going to each

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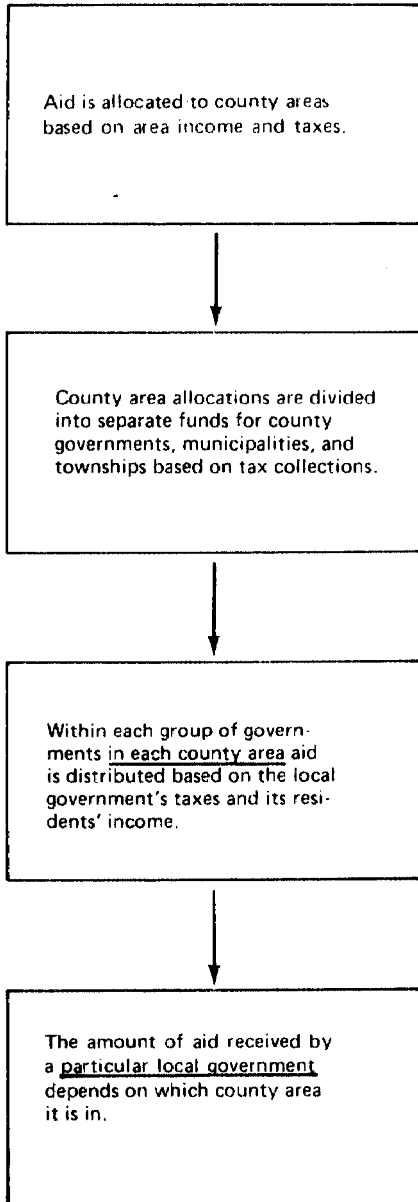
1/Local general purpose governments in New York State fall into one of five jurisdictional types: cities, villages, towns, towns outside of villages, and counties.

FIGURE 1

COMPARISON OF TIERING PROCEDURES USED BY THE FEDERAL AND NEW YORK STATE REVENUE SHARING PROGRAMS

FEDERAL



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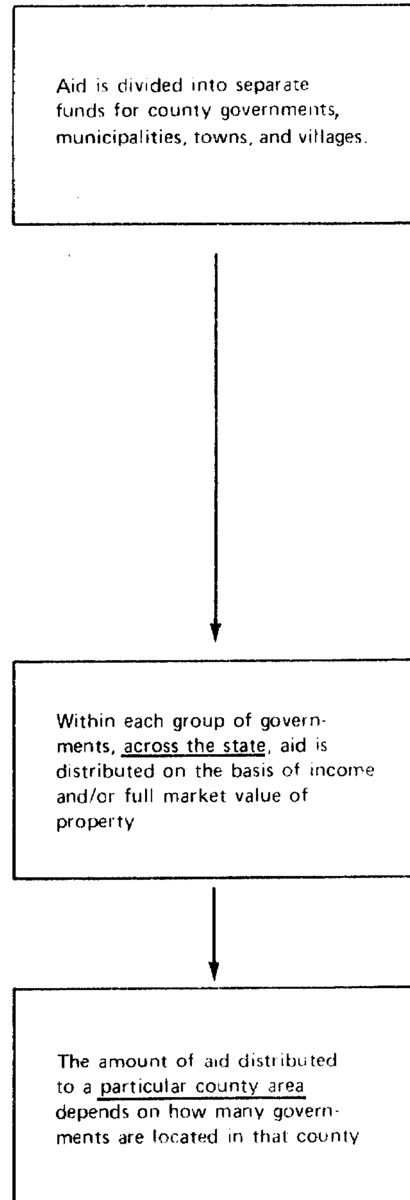

is proportional to its share of the county's nonschool taxes collected by each jurisdiction within the county area. Fourth, the distribution to the municipalities and townships is made according to the formula used in step one.

The Federal distribution formula for county areas is as follows:

$$G_i = \frac{2}{3} \quad G_s \quad \frac{\left(POP_j\right)\left(\frac{PCY_s}{PCY_i}\right)\left(\frac{LTAX_i}{AGINC_i}\right)}{\sum_j POP_j \left(\frac{PCY_s}{PCY_j}\right)\left(\frac{LTAX_j}{AGINC_j}\right)}$$

where G_i = Allocation to county area i
G_s = Allocation to State s
POP_i = Population of county i
PCY_i = Per capita income for county i
$LTAX_i$ = Net nonschool taxes of general purpose governments in county i (referred to an adjusted taxes in the legislation)
$AGINC_i$ = Aggregate personal income in county i
j = Index of summation

The second term in parenthesis represents the county i's per capita income relative to the State average. The third term is the ratio of tax collections to total income or the effective tax rate.

Constraints on the intrastate formula 1/

The Federal formula for distributing revenue-sharing money among local government units is not allowed to operate in an unconstrained fashion. There are 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;

1/This section is based on a description of the formula constraints by Robert Reischauer appearing in: Financing the New Federalism, Wallace Oats, ed. Johns Hopkins University Press, Baltimore, 1975.

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 county areas not affected by the constraints discussed above. Similarly, in the few instances where resources are needed to push 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.

The money produced by imposing the 145 percent ceiling on townships and municipalities is used to push 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, a proportional reduction is made. This reduction cuts 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 the 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 bumps against this 50 percent ceiling, excess funds are transferred to the State government. As a result of this, in 1972, a number of State governments--including West Virginia, Kentucky, and Delaware--received well over one-third of the total revenue-sharing allotments. 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.

NEW YORK STATE REVENUE SHARING FORMULA

Unlike the Federal program, which is funded by congressional appropriations, the New York State program is truly shared revenues. Eighteen percent of its previous year's income tax receipts are set aside to be shared with its local governments. Half of this 18 percent is a special aid to cities; 1/ the remainder is distributed among all general purpose local governments.

New York's formula for distributing aid to its local governments varies according to jurisdictional types, as shown in table 1.

Table 1

Per Capita Amounts Used To Compute State Revenue Sharing Aid to Local Governments In 1975

Jurisdictional type	
Cities	$8.60
Villages	3.60
Towns	3.55
Towns outside villages	2.05
Counties	0.65

The flat per capita amount that applies to each jurisdiction is increased 5 cents for each $100 per capita if the full-market value of the jurisdiction's property tax base falls below $8,000. This "equalization modifier," which increases aid to relatively poorer communities, applies to all jurisdictional types except towns inside of villages. For county governments, the equalization modifier is based on a weighted average of per capita income and full market value of property.

After the equalization modifier is applied, the per capita payment levels for each jurisdiction are determined. A jurisdiction's "initial" allocation is calculated by multiplying the per capita payment by its population. When all jurisdictions' initial allocations are summed, they still fall short of the revenue sharing funds generated by the State income tax. To compensate for this, each jurisdiction's initial

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1/The special city aid is distributed on a flat per capita basis and does not take into account a city's fiscal capacity or tax efforts.

allocation is increased proportionately until the State's total revenue sharing allotment is exhausted.

Weakness of the New York State formula

If the five types of local governments defined by the State program represented groups of local governments with different levels of fiscal responsibilities, then the State's per capita payments could be set to reflect these differences. For example, if all cities were responsible for the bulk of local public services and all cities provided the same types of services, then their per capita aid would be the greatest. If villages had fewer public service responsibilities, their per capita aid would be less. However, the State program has been criticized because this is not the case. 1/ Cities vary widely in terms of their responsibilities. Some villages have more responsibilities than some cities; consequently, the amount of State revenue-sharing aid these villages receive is unrelated to their service responsibilities.

County governments as a group, however, are comparable in terms of the kinds of services they are responsible for providing. Thus, they provide a means of comparing the targeting efficiency of the Federal program, which emphasizes geographic areas, with the State program, which emphasizes homogenous jurisdictional types (with respect to county governments at least). A more exhaustive study would address the issue of varying service responsibilities and would include municipalities and townships.

1/Report of the Temporary State Commission on State and Local Finances. Vol. 1: State Revenue Sharing, February 1975, chapter 4.

CHAPTER 3

EVALUATION CRITERIA USED

TO ASSESS THE TARGETING OF REVENUE SHARING

Low fiscal capacity and high tax effort are the evaluation criteria we used to assess the targeting efficiency of revenue sharing. Our choice of criteria was based on the shared objective of the two programs: to provide fiscal relief to local governments.

Both the Federal and the New York State programs use personal income in their distribution formulas. Personal income serves as an indication of a community's fiscal capacity, or its ability to finance public services.

The Federal formula also uses local tax collections to determine the extent of local governments' efforts to meet their public service needs. New York, however, does not consider local tax effort, although it has been the subject of State legislative debate for several years. We have developed several alternative measures of tax effort and have included them as part of our evaluation criteria.

DISTRIBUTION CRITERION: FISCAL CAPACITY

The fiscal capacity of local governments varies from one community to another. 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 fiscal capacity) per resident, and if both communities tax themselves at the same rate, the higher-capacity community would be able to raise more money than the lower-capacity community to address the same level of needs. The community with the greater fiscal capacity would be able to lower its tax rate to the point where revenues are just sufficient to cover needs. The result would be two communities with the same level of need, but different tax rates. To compensate for this, more aid is is often distributed to communities with lower fiscal capacities.

Operational measures of fiscal capacity

Various measures of fiscal capacity have been used to evaluate revenue sharing. These measures have ranged from relatively simple ones such as per capita income or full market value of property, to more abstract measures such as yield

of a representative tax system. 1/ We chose per capita personal income as the basic measure of fiscal capacity since the Federal and State programs use it in their distribution formulas and because data for personal income are more accurate than data for full market value, the other simple alternative. The use of more sophisticated measures would entail research not within the scope of this report.

By limiting our measure of fiscal capacity to per capita income instead of full market value, or more sophisticated measures, we are ignoring other important sources of tax revenues, such as tourism, commuters, and high-value industrial and/or agricultural property.

EVALUATION CRITERION: FISCAL EFFORT

Justification of tax effort as a targeting criterion

Tax effort is intended to indicate the degree to which a local government is attempting to meet its service needs from its own revenue sources. The rationale for using tax effort as one element in an aid distribution formula is that it will identify and provide more aid to those communities who are already using relatively large amounts of local resources to meet their public service needs. There is an important distinction between tax effort and fiscal capacity:

> fiscal capacity represents the community's ability to finance local public services, whereas tax effort represents the actual amount of local tax resources used to meet local service needs.

Weakness of tax effort as a targeting criterion

The most common measure of tax effort is the ratio of local taxes (revenues) to personal income (tax base), commonly referred to as the effective tax rate. This is used in the Federal revenue sharing program.

As a measure of tax effort, the effective tax rate has two serious weaknesses. First, it is incomplete because it ignores other sources of local revenue such as user charges

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1/Advisory Commission on Intergovernmental Relations, Measuring the Fiscal Capacity and Effort of State and Local Areas. (Washington, D.C.: Government Printing Office, 1971).

and special assessments that are also used to meet local service needs. 1/ And second, since the effective tax rate is determined by the ratio of local taxes to personal income, the same effective tax rate in a jurisdiction with a large fiscal capacity will generate more revenue than it will in a low-capacity jurisdiction. The extra revenue results in more services being available in the high-capacity community. This is shown in table 2, where county B represents a community with an average tax base of $6,000 per person, and counties A and C are respectively ten percent below and above the average. The same effective tax rate ($5.00 per hundred dollars of per capita income) generates $270 per capita in the low income community and $330 in the high income community.

Table 2

Relationship Between Tax Base and Tax Revenues

County	Tax base per capita	Effective tax rate	Revenues per capita
A	$5,400	$5.00	$270
B	6,000	5.00	300
C	6,600	5.00	330

FISCAL EFFORT: AN ALTERNATIVE MEASURE OF TAX EFFORT

What should be used to measure "effort" if the effective tax rate is inappropriate? We decided to apply the principle that equal tax rates should provide equal amounts of public services. Applying this principle leads to an adjustment in the effective tax rate that takes into account the differences in each jurisdiction's local tax base. This adjusted tax rate will be referred to as fiscal effort throughout the remainder of this report. We feel this is a better measure of "effort" because it overcomes the objections to using effective tax rates as a measure of tax effort raised in the previous section.

1/For a more detailed discussion of this issue, see "Adjusted Taxes: An Incomplete and Inaccurate Measure for Revenue Sharing Allocations," U.S. General Accounting Office, GGD-76-12, October 28, 1975.

Table 3 shows how the adjustment to the effective tax rate, which yields our measure of fiscal effort, is made. Using the effective tax rate shown in column 3 to measure tax effort, counties B, C, and D would be judged as making the same effort while county A would be identified as a low effort government. As in table 2, the same tax rate ($5.00 per hundred dollars of income) generates more revenue in jurisdictions with bigger tax bases. (See columns 2 and 4.) In fact, if each government were to increase its local tax rate by the same 1 percent, this would yield $54 in additional revenues per person in A and B, $60 in C, and $66 in D. (See column 5.)

The adjustment factor needed to achieve equal increases in revenue with equal increases in tax rates is shown in column 6. It is the ratio of State per capita income to local per capita income. 1/ Application of this factor produces the adjusted tax rate and adjusted county revenues displayed in columns 7 and 8. Column 9 shows that when the tax rate is adjusted, each 1 percent increase in the local effective tax rate produces equal increases in local revenues irrespective of county per capita income. Our adjusted tax rate measures the "effort" each community is making to provide local public services, irrespective of the size of the community's local tax base.

After the adjustment for differences in fiscal capacity is made, we see that low-income county A and high-income county D are both low fiscal effort governments, while the other low-income government, county B, is making the greatest fiscal effort.

THE FEDERAL INTRASTATE REVENUE SHARING FORMULA DISTRIBUTES AID BASED ON FISCAL EFFORT

Our description of the Federal intrastate formula said that the amount of per capita revenue sharing aid depended on two factors, relative per capita income and the effective tax rate. 2/ The combination of these two factors is identical to fiscal effort as developed in table 3 and shown in column 7.

1/The derivation of this adjustment factor is shown in appendix III.

2/The intrastate revenue sharing formula is shown on page 6.

Table 3

Adjustments to Effective Tax Rates Necessary To Achieve Equal Revenues from Equal Tax Rates

County	Per capita income Y	Effective tax rate (t=R/Y)	Revenue per capita (R=tY)	Revenues for tax rate R/t	Adjustment factor (Ys/Y)	Adjusted tax rate $t^* = \frac{Ys}{Y} \; \frac{R}{Y}$	Adjusted revenues $R^* = (t)(Y)$	Adjusted revenue per tax rate R^*/t
A	$5,400	4.1%	$221	$54	$\frac{6000}{5400}=1.11$	4.55%	$246	$60
B	5,400	5.0	270	54	$\frac{6000}{5400}=1.11$	5.55	300	60
C	6,000	5.0	300	60	$\frac{6000}{6000}=1.00$	5.0	300	60
D	6,600	5.0	330	66	$\frac{6000}{6600}=0.91$	4.55	300	60
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)

Conclusion

If the Federal intrastate revenue sharing formula were to operate without the constraints and the geographic tiering described in chapter 2, each government would receive per capita revenue sharing grants in direct proportion to its fiscal effort as defined in the previous section and as exemplified in table 3, column 7.

BECAUSE THE FEDERAL INTRASTATE FORMULA DISTRIBUTES AID BASED ON FISCAL EFFORT, MORE AID DOES NOT NECESSARILY GO TO LOW INCOME JURISDICTIONS

In table 4 we continue the example begun in table 3. Columns 2 and 3 show respectively each jurisdiction's per capita income and fiscal effort. 1/ To keep the example simple, we assume each community has 10,000 residents and $500,000 is to be distributed among the five governments. Using the intrastate formula, each community's share of the total revenue sharing allocation is presented in column 4 and its per capita grant in column 5.

Table 4

Relationship Among Tax Base, Fiscal Effort, and Revenue Sharing Grant

Community	Per capita income	Fiscal effort	Percentage of revenue sharing allocation	Per capita grant
A	$5400	4.55	18.1%	$ 9.05
B	5400	5.55	22.0%	11.00
C	6000	5.00	19.8%	9.90
D	6600	4.55	18.1%	9.05
E	6600	5.55	22.0%	11.00
(1)	(2)	(3)	(4)	(5)

1/These figures are the same as columns 2 and 7 in table 3. An additional community E is added for illustrative purposes.

Table 4 demonstrates several important points. First, assuming the intrastate formula had no constraints or geographic tiering, the greater the fiscal effort made, the more per capita aid the jurisdiction receives. (Compare the size of the grant received by communities A, B, and C.) Second, two communities with the _same_ per capita income could receive very _different_ amounts of per capita aid because of differences in their fiscal effort. (Compare communities A and B or D and E.) Finally, a high-income community can actually receive more per capita aid than a low-income community if the high income community is making a greater fiscal effort. (Compare communities A and E.)

Conclusion

In general, even if the Federal intrastate revenue sharing formula were to operate without constraints or utilize the geographic tiering procedure described in chapter 2, it would only distribute more aid to low-income jurisdictions if they exhibited greater fiscal effort than high-income jurisdictions.

Operational measures of fiscal effort

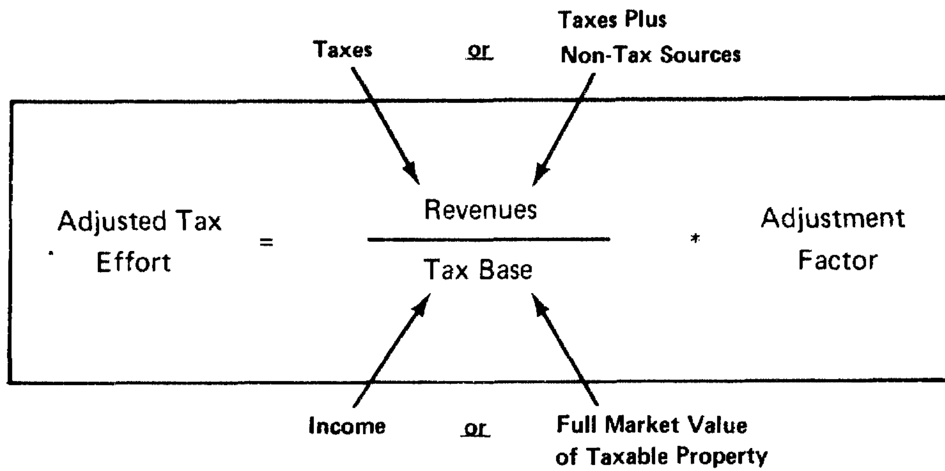
As with the measurement of fiscal capacity, choices must be made in the measurement of fiscal effort. The effective tax rate was defined as the ratio of revenues to the tax base. Earlier we chose to measure the tax base by per capita income to determine a community's fiscal capacity. We did not use the full market value of taxable property because the Federal and State revenue sharing programs are both better targeted to income. However, this is not the case when measuring fiscal effort. Consequently, we have used both income and full market value of taxable property so that the distributional implications of this choice are made explicit.

Choices in the definition of local revenues must also be made. We chose local _tax_ revenues as defined by the Federal revenue sharing program. This definition excludes user charges and special tax assessments. Our second measure of revenues _includes_ these revenue sources.

The possible alternative definitions of fiscal effort are illustrated in figure 2.

FIGURE 2

ALTERNATIVE DEFINITIONS OF
LOCAL GOVERNMENT FISCAL EFFORT



CHAPTER 4

TARGETING FEDERAL AND STATE

REVENUE SHARING AID TO NEW YORK COUNTY GOVERNMENTS

SUMMARY OF FINDINGS

Both the Federal and State programs target aid on the basis of fiscal effort, although the degree of targeting achieved is very sensitive to alternative definitions of revenues and tax base, as discussed in chapter 3. For example, using income as the measure of the tax base, the Federal program rewarded high-effort governments while the State program penalized them. But if the full market value of property is used, the State program rewards rather than penalizes high-effort governments and the Federal program is neutral, distributing the same amount of aid to both high and low fiscal effort governments.

Once differences in fiscal effort are taken into account, the Federal formula fails to target more aid to low income areas. The modest degree of targeting to low-income governments that is achieved results from the fact that high fiscal effort county governments, on average, have modestly lower per capita incomes. In contrast, the State program shows a high degree of targeting to low fiscal capacity governments (based on per capita incomes). Our analysis indicates that, on average, a county with ten percent additional income would lose nearly 12 percent of its State revenue sharing aid (in per capita terms), compared to a 6 percent loss under the Federal program. 1/

The Federal program is targeted to only one of the two criteria considered in this report, fiscal effort, whereas the State program is targeted to both fiscal capacity and fiscal effort. 2/ If we accept each program's criteria

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1/The decline in Federal aid is based on the fact that the higher income counties tend to exhibit lower fiscal effort, which would result in the loss of aid. Note also that if income and fiscal effort were independent, higher income would not imply any loss in Federal aid.

2/Recall that if fiscal effort is defined using income as the measure of the tax base and charges are excluded from the definition of revenues, then fiscal effort is identical to the definition used in the Federal formula except for the constraints mentioned in chapter 2 and that the formula applies to county "areas," not governments. See chapter 2 for a description of how the distribution to county governments is achieved.

for targeting funds, our analysis shows that, overall, the State program targets its aid more efficiently. 1/ By more efficient, we mean that county governments with equal need were more likely to receive the same amount of revenue sharing aid. For example, two county governments with identical income and fiscal effort are more likely to receive the same amount of State revenue sharing aid ($3.70 per capita was the average). In the Federal program, however, two county governments with the same fiscal effort can differ in the amount of revenue sharing aid they receive by a ratio of 2 to 1 or more (Federal aid ranged from $5.00 per capita to $10.00 per capita). 2/

The poor targeting of Federal revenue sharing aid is a result of its tiering procedure for distributing funds. 3/ The State program distributes aid directly to county governments while the Federal program first distributes money to county "areas" and only then to county governments. The second source of inefficiency in the Federal program stems from the 145 and 20 percent maximum and minimum constraints placed on the amounts of per capita aid that can be received by a local government and the 50 percent budget constraint.

THE DISTRIBUTION OF FEDERAL AND STATE REVENUE SHARING TO COUNTY GOVERNMENTS VERSUS COUNTY AREAS

Because our analysis is limited to the targeting of aid to county governments, it is important to note the differences between the distribution of aid to governments versus geographic areas. Although the two programs distributed roughly the same amount of revenue sharing dollars (about $550 million) in 1975, New York county governments received slightly more than two and one-half times more aid from the Federal program than from the State (see table 5). This discrepancy indicates that the State distributes a much larger

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1/See the statistical results reported in tables III-2 and III-3 in appendix III.

2/As we pointed out in chapter 1, although the Federal program distributes more dollars, this larger amount of aid is just not targeted as effectively as the State program.

3/In this comparison, we are judging each program based on its own criteria of need; thus, the differences in each program's targeting efficiency are a result of structural differences in their respective methods of distributing funds.

share of its funds to cities, towns, and villages than does the Federal program. 1/ When revenue sharing aid received by all governments is summed up within a county area, State funds are heavily concentrated in central city metropolitan counties. But if we consider only county governments, then the distribution of State funds is moderately skewed toward rural counties.

Table 5

Distribution of State and Federal Revenue Sharing Funds by Metropolitan Status: 1975
(dollars per person)

Metropolitan status	County governments		County areas	
	State	Federal	State	Federal
Central city metropolitan	$3.34	$ 7.97	$28.34	$18.22
Noncentral city metropolitan	3.42	8.77	19.49	18.17
Rural	3.96	11.49	20.51	23.88
State average (excluding New York City)	3.70	10.10	21.76	21.28

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

In chapter 3 our discussion of tax effort centered around the ratio of local revenues to the tax base. We referred to this ratio as the effective tax rate and we adjusted it to compensate for the greater revenue raising abilities of wealthier jurisdictions. This "adjusted" effective tax rate is our measure of "fiscal effort."

1/A report by the New York State Temporary Commission on Revenue Sharing (1975) stated that different amounts of aid distributed to cities, towns, villages, and county governments has no normative basis and bears no relation to differences of public service needs.

Fiscal effort targeting: the Federal program

Chapter 3 shows that our fiscal effort criterion was identical to the Federal intrastate distribution formula as it applies to county areas. 1/ Therefore, we concluded that in principle the Federal intrastate formula distributes revenue sharing aid in proportion to fiscal effort.

Not surprisingly, if the Federal program's definition of revenues (local tax revenues excluding user charges, etc.) and tax base (per capita personal income) are used, fiscal effort is the single most important factor in explaining the targeting of Federal revenue sharing aid to county governments. However, even under these most favorable circumstances, the fiscal effort criterion can account for only 49 percent of the variation in per capita revenue sharing aid going to county governments. That is, 51 percent of the variation in per capita revenue sharing aid distributed to New York State county governments cannot be accounted for by the factors in the Federal revenue sharing formula.

There are four reasons for this relatively poor performance.

1. The constraints placed on the intrastate formula described in chapter 2.

2. The geographic tiering procedure employed by the program whereby the total revenue sharing allocation is successively broken down to smaller geographic areas, also described in chapter 2.

3. The data used in our analysis represent actual money reported as being received by the county governments, which, for a variety of reasons can differ from formula allocations.

4. The data used to calculate adjusted tax effort were based on current data for the years analyzed (only 1975 is reported here), while the formula must use data from earlier years because current data is unavailable. 2/

1/Actually it is identical if we adopt the same definitions of revenues and tax base as used in the Federal formula.

2/Work is currently underway using allocation data which will eliminate distortions caused by points three and four. We will also separate the distortions resulting from points one and two.

If a more comprehensive definition of revenues (which includes fees, charges, and special assessments) is used, the targeting efficiency of the Federal formula is worse. Under this definition, fiscal effort can account for only 20 percent of the variation in per capita revenue sharing aid distributed. Finally, if the full market value of taxable property is used to measure the tax base in place of per capita income, no targeting to high fiscal effort governments is achieved.

These results are shown in figure 3. Panel A shows the relationship between per capita aid and fiscal effort for the 57 New York counties based on the Federal program's definition of revenues and tax base. The upward sloping trend line indicates that high fiscal effort counties tend to receive greater amounts of per capita aid. However, the relatively wide scatter around the trend line shows there are many exceptions to this general trend.

Panel B reflects the inclusion of the non-tax revenue sources and the wider scatter indicates the poorer targeting based on the Federal definition of fiscal effort. Finally, panel C reflects the use of full market value. The horizontal trend line indicates that there is no targeting to high fiscal effort governments based on this measure of the tax base.

Fiscal effort targeting: the State program

In chapter 2 we said that fiscal effort does not directly enter into the State's distribution formula, although the possibility of doing so has been discussed in the New York legislature. However, our analysis indicates that a relationship between State per capita revenue sharing and fiscal effort actually does exist. And, as is true in our analysis of the Federal program, the degree of targeting achieved depends on the definition of fiscal effort.

Based on the Federal program's definition of fiscal effort, 1/ high-effort governments would receive _less_ State revenue sharing per capita. This is shown in figure 4 (panel A), where the trend line has a _negative_ slope. This is precisely the opposite of the Federal program, which distributes _more_ aid to _high_ fiscal effort governments. The

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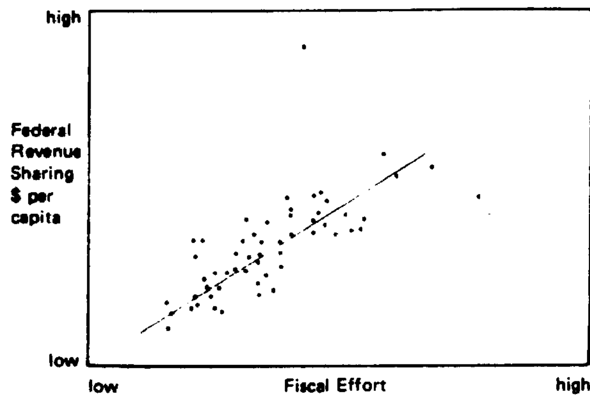
1/Revenues defined to exclude charges and special assessments and the tax base is measured by per capita income.

FIGURE 3
FEDERAL REVENUE SHARING VS. FISCAL EFFORT

PANEL A

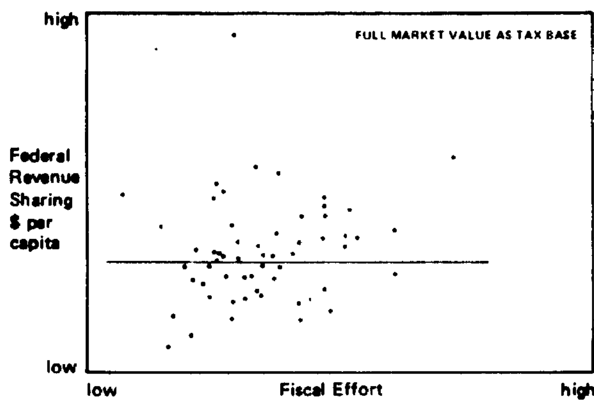


TAXES AS THE MEASURE OF REVENUES AND INCOME AS THE MEASURE OF THE TAX BASE

PANEL B

TAXES PLUS NON-TAX REVENUES AS THE MEASURE OF REVENUES AND INCOME AS THE MEASURE OF THE TAX BASE

PANEL C



TAXES AS THE MEASURE OF REVENUES AND FULL MARKET VALUE AS THE MEASURE OF THE TAX BASE

relatively wide scatter around the trend line in panel A indicates that the targeting efficiency (with respect to fiscal effort) is relatively poor in the sense that governments with equal fiscal effort tend to receive widely differing amounts of aid. 1/ A similar relationship is found if fees and charges are included in local revenues (not shown).

If the full market value of property is used in place of income for measuring the tax base, we find that high tax effort governments receive more rather than less State revenue sharing aid per capita. This is shown by the upward sloping trend line in panel B, figure 4. Eliminating this ambiguity in the State program would require that fiscal effort be defined and incorporated into the State distribution formula.

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

Measuring the targeting of aid to areas of low fiscal capacity (as measured by per capita income) presents a difficult statistical problem. County governments with low per capita incomes also tend to exhibit greater fiscal effort. Consequently, even if funds were distributed only on the basis of fiscal effort, indirectly more aid would go to low-income areas because of the relationship between high fiscal effort and low income. Therefore, we have two sources of income equalization, the indirect effect of aid being distributed to high fiscal effort governments--which also tend to have low incomes--and the direct effect of aid being distributed on the basis of per capita income irrespective of the level of local governments' fiscal effort. 2/

Fiscal capacity targeting: the Federal program

Once fiscal effort is taken into account (whether charges are included or excluded from local revenues and using income to measure the tax base), the Federal program shows no tendency to target more aid to low-income governments. In other words, the direct effect is zero. The only source of income

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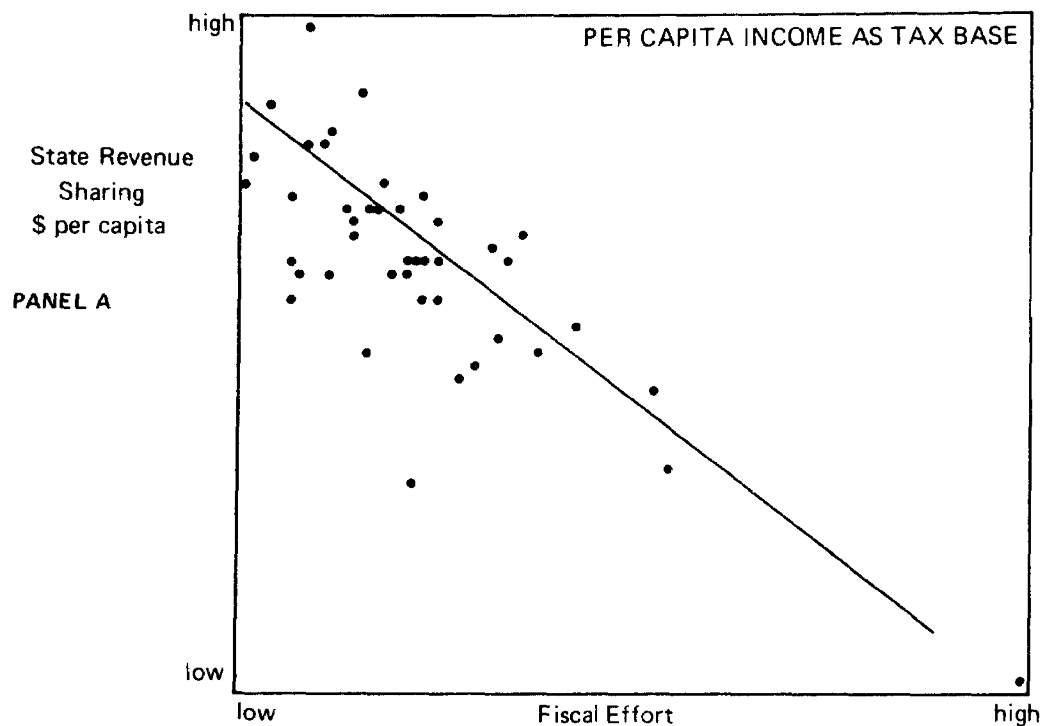
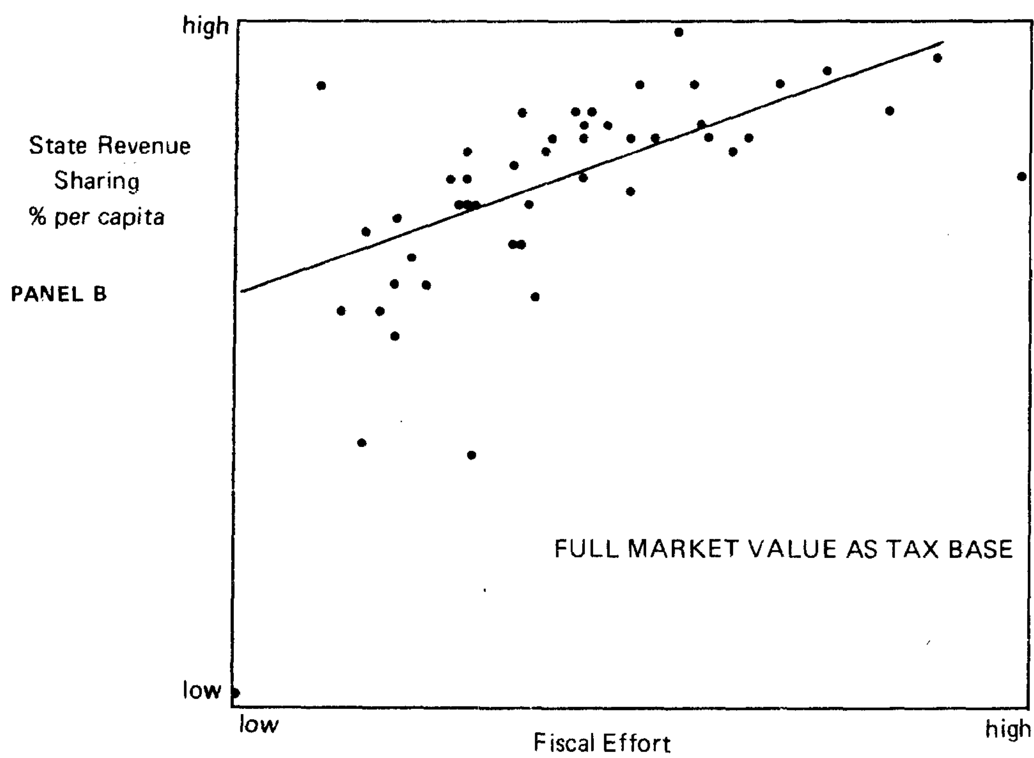
1/Figure 4 is based on the partial relationship between revenue sharing aid and tax effort, holding income constant.

2/The statistical procedures estimating the direct, indirect, and combined effects are described in appendix III.

FIGURE 4
STATE REVENUE SHARING VS. FISCAL EFFORT





equalization comes from the indirect effect; that is, low-income governments tend to exhibit higher fiscal effort and are rewarded with more aid.

The relationship between per capita revenue sharing and income is shown in figure 5 for the 57 counties. The negatively sloped trend line in panel A illustrates the tendency for higher income counties to receive less per capita aid. The wide scatter indicates the relatively poor performance of the Federal formula in terms of distributing equal amounts of aid to governments with equal income. For example, the two counties circled have nearly the same per capita income, but one receives a very low amount of aid while the other is among the highest. 1/

Based on the trend line in panel A, figure 5, a 10 percent rise in income results in a 6 percent per capita loss of Federal revenue sharing aid.

Fiscal capacity targeting:
the State program

In contrast to the Federal program, after fiscal effort is taken into account, the State program shows a very strong tendency to target more per capita aid to low income governments. 2/ Our analysis shows that State per capita revenue sharing aid declines an average of 15 percent for each 10 percent increase in per capita income. In the Federal program, this direct effect was zero.

However, the total effect of income on the amount of revenue sharing aid received is somewhat less because of the indirect effect described earlier. As shown in the previous section on fiscal effort, less aid was distributed to high tax effort governments. Since these governments tend to have lower incomes, the fiscal effort factor indirectly distributes less aid to low income governments.

Figure 5, panel B, shows the combined direct and indirect effect of income on State per capita revenue sharing aid. Based on the trend line, a 10 percent higher income is associated with about a 12 percent loss in aid. Note that the scatter around the trend line is much more compact for

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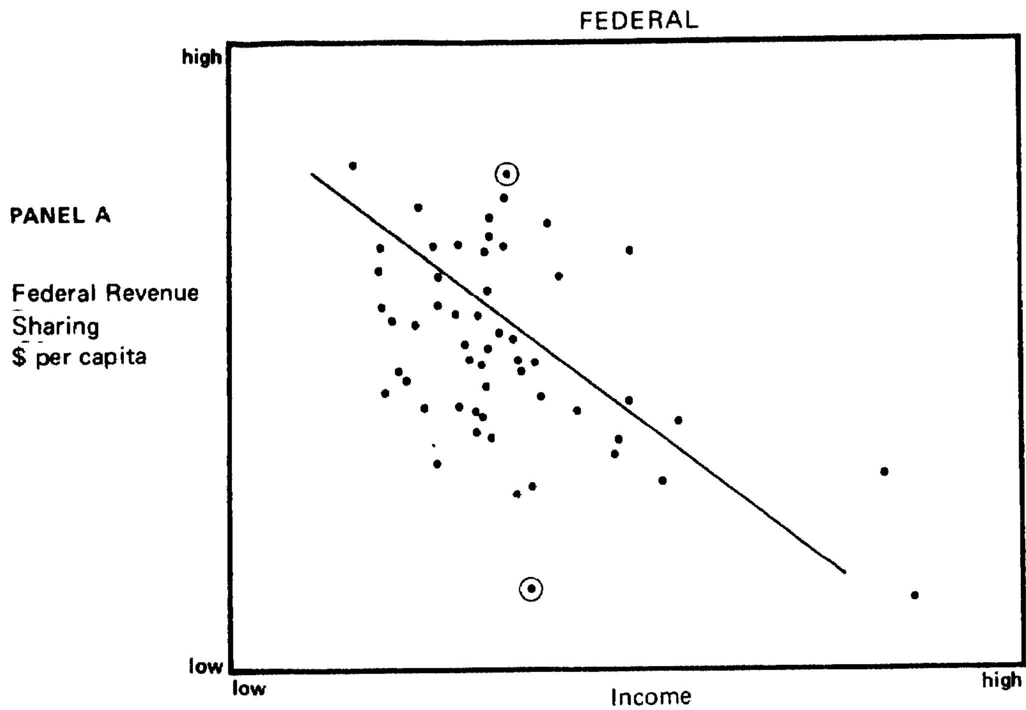
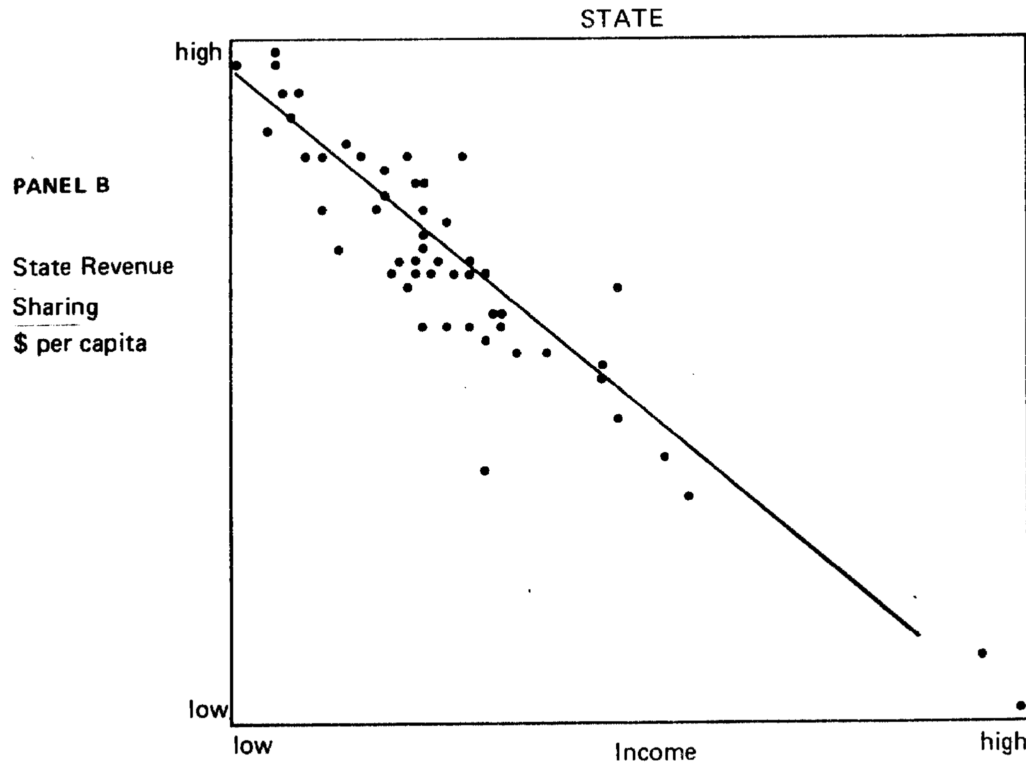
1/This is an example of the situation described in table 4 where counties A and B had the same income but received different amounts of aid because their fiscal effort differed.

2/Again this is based on the Federal program's definition of revenues and tax base.

FIGURE 5

FEDERAL AND STATE REVENUE SHARING VS. FISCAL CAPACITY





the State program than for the Federal program. 1/ This implies that governments with equal income are much more likely to receive equal amounts of aid from New York State than they do from the Federal program.

Conclusion

The State revenue sharing program provides twice the income equalization as the Federal program provides. For county governments, a 10 percent higher income is associated with a 6 percent loss in Federal revenue sharing aid and a 12 percent loss in State revenue sharing aid.

The State revenue sharing program more efficiently targets on the basis of per capita income because it more consistently distributes equal amounts of per capita aid to county governments with equal incomes. Targeting aid on the basis of income is an objective of both programs.

The proper degree of income equalization

According to our analysis, the State program provides twice the degree of income equalization than does the Federal program. 2/ How much income equalization is the right amount? Does the State program provide the right amount and the Federal too little, or is the reverse true? In general, there is no objective answer to the question of how much income redistribution should take place. However, the Federal intrastate formula provides a standard for judging how much income equalization should be achieved.

In chapter 3 we demonstrated that the Federal intrastate formula in principle distributes aid on the basis of tax effort by adjusting the local effective tax rate to compensate for the revenue raising advantage associated with high per capita income. Appendix III, section A, shows that the degree of income equalization depends on the relationship between local revenues and per capita income. This relationship is expressed by the following formula: 3/

1/The simple correlations of Federal and State per capita revenue sharing aid with per capita income is .30 and 0.74 respectively.

2/Remember, that although the State formula provides more "equalization," the Federal program provides more "dollars."

3/See appendix III for the derivation of this formula.

The percentage decline in aid per one percent increase in income	=	The percentage increase in local revenues per one percent increase in income	- 2%

For example, if there was no relationship between local tax collection and local incomes, then the first term on the right would be zero. In this case the unconstrained Federal intrastate formula would reduce a jurisdiction's revenue sharing grant by 2 percent for each 1 percent increase in its income. As another example, if local taxes increased in proportion to income (1 percent more income produced 1 percent more local taxes), then the formula would reduce a jurisdiction's aid by 1 percent for each 1 percent increase in its income.

Our analysis of the 57 New York county governments indicates that the first term on the right is approximately 0.8 1/, which suggests that the unconstrained Federal formula would reduce the amount of aid by 1.2 percent for each 1 percent increase in income. This is precisely the degree of income equalization achieved by the State formula reported in the previous section. The Federal program, however, fell short of this mark by 50 percent. 2/

Conclusion

Based on the relationship between local revenues and income, the Federal intrastate formula implies that jurisdictions with 10 percent more income should receive 12 percent less aid. The New York State revenue sharing program achieves this objective, but the Federal program falls short of it by 50 percent.

There are three important structural differences in the Federal and State programs that explain why this happens.

1. The State program distributes aid directly to county governments, while the Federal program distributes aid to county areas first then divides the aid into three portions, one to be distributed to municipalities, one to townships, and one to county governments. Therefore, the amount of aid distributed to a county government depends in part on how much tax revenue is raised by other local governments

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1/See table III-5 in appendix III.

2/Recall for the Federal program 10 percent more income was associated with a 6 percent decline in aid.

that are within its borders, rather than its tax effort relative to that of other county governments in the State.

2. The Federal program operates with the 20 percent, 145 percent, and 50 percent constraints that distort the distribution of aid, while the State formula contains no such constraints.

3. The Federal formula excludes important local revenue sources, such as user charges and special tax assessments. This exclusion also distorts the distribution of aid.

SUMMARY OF OVERALL TARGETING PERFORMANCE OF THE FEDERAL AND STATE FORMULAS

Targeting on the basis of fiscal effort and income

Our analysis of Federal revenue sharing found that per capita aid was targeted to county governments on the basis of one criterion--fiscal effort. We also showed that this criterion implied that aid should be distributed inversely with income. The amount of redistribution to be achieved, based on fiscal effort, depends on the relationship between local revenues and income. We found that the Federal program failed to achieve the amount of income redistribution implied by the Federal intrastate formula. The reasons for this failure were due primarily to distortions created by the constraints on the formula and because the formula distributes aid to "areas" as an intermediate step before disbursing funds to "governments" and excludes fees and charges from local revenues.

In comparison, the State program, which is not constrained and distributes aid directly to "governments," came closer to achieving the degree of income redistribution plied by the Federal formula.

We also found, based on the Federal program's definition of fiscal effort, that the Federal program rewarded high fiscal effort governments, while the State program penalized them.

AGENCY COMMENTS

Draft copies of the report were sent to the Department of the Treasury and the Governor of New York. Treasury's comments were favorable, saying that "The Report is a very useful contribution to our understanding of the complex issues

involved in the intrastate distribution of Revenue Sharing funds * * *. Of particular interest to Treasury is the finding that inequities in the distribution of Revenue Sharing funds result from the tiering procedure in the formula * * * as well as from formula constraints."

Comments from the Governor's Division of the Budget stated that the report "* * * is an interesting case study and should prove a useful reference document for future discussions of distribution formulas in general." (The comments from Treasury and New York State are reproduced in their entirety in Appendix IV.)

MAJOR DATA IN THIS REPORT: SOURCES AND QUALITY

Financial information on Federal and State 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.

To address the policy issues in this report, we collected financial, program, and socio-economic data from many sources and arranged them into a standardized format. We then analyzed the data 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. 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 contains the records of the State's disbursement of Federal and State aid to county areas. These records are aggregate data of all units of government in the geographic bounds of each county. The second source are 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

4. U.S. Bureau of Census, 1970 FOURTH COUNT CENSUS.

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

6. NEW YORK STATE DEPARTMENT OF COMMERCE, Employment and Unemployment Statistics (unpublished), 1969-1975.

7. NEW YORK STATE DIVISION OF THE BUDGET, Statistical Yearbooks, 1968-1977.

DATA RELIABILITY

Because of the different sources of data, we were concerned about their quality. Consequently, we interviewed State officials responsible for primary data collection and crosschecked the 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 can 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 socio-economic 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. Others, such as population and earnings, were estimated based on accepted methodologies.

LIMITATIONS ON DATA INTERPRETATIONS

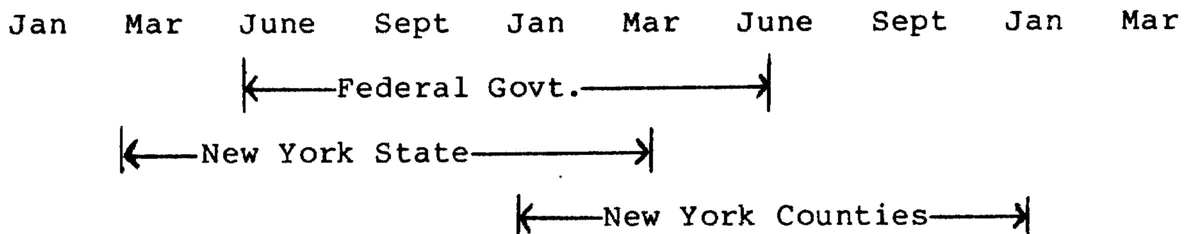
The variety of data sources creates problems in data comparability because of differing standards in primary data collection. The information has been reprocessed in a standardized format to allow easy comparisons of the numbers, but the limitations on the use of those numbers remains. Some of those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

Different fiscal years

Different sources use various end points for their data collection periods. The Federal Government usually uses the Federal fiscal year, which from 1969-75 ended on June 30. New York State uses its fiscal year ending point, March 31, and New York counties use December 31, the calendar year, as their end point. New York City uses the old Federal fiscal year, June 30. This prevented direct comparisons on an annual basis, but this difference diminishes if the data are used for time series analysis (see figure I-1).

Figure I-1

Comparison of the Overlap of Fiscal Years for Five Types of Governments



Allocations vs. entitlements vs. reported revenue sharing receipts

The revenue sharing data used here are taken from the Comptroller of New York State and represents reported revenue sharing aid received during the county governments fiscal year. Therefore, our data do not represent allocation or entitlement data as published by the Office of Revenue Sharing in the Department of the Treasury.

The fiscal and socioeconomic data we used to construct the targeting criteria come from a variety of sources, and thus do not reflect the data elements 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 in chapter 3 are based on per capita income for 1975. Thus, the results reported in chapter 4 are not 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 3.

A SHORT HISTORY OF REVENUE SHARING:

THE FEDERAL AND NEW YORK STATE PROGRAMS

INTRODUCTION

Revenue sharing is the means by which the Federal Government channels support to lower levels of government. New York State also conducts a program which directs general purpose funds to its localities. Although the Federal and State programs are separate, they have the same goals. Those localities unable to meet their fiscal responsibilities may obtain help from the State and Federal Government. However, Federal and State programs have evolved in different ways.

A SHORT HISTORY OF FEDERAL REVENUE SHARING

The early days

Congress first established a general assistance program in 1803, when it appropriated 5 percent of the proceeds from Federal land sales to the States in which the land was located. In addition, because of embarrassing surpluses of funds in the Treasury, Congress reduced the excess amount of revenue by sharing it with the States. However, the panic of 1837 prevented continued distribution of funds. In the 1880s, public pressure mounted for distributing surplus revenue, but the Federal Government did not take revenue sharing under serious advisement again until the 1960s.

The Heller-Pechman plan

Walter W. Heller, the chairman of the Council of Economic Advisors during the Lyndon Johnson Administration, developed the concept of revenue sharing, basing his premise on the notion that revenue sharing should supplement existing Federal grants. His proposal came at a time when the Federal Government found itself with a surplus of revenue, and State and local governments were having budgetary difficulties in supplying needed goods and services.

In 1964, Joseph A. Pechman, of the Brookings Institution, chaired a task force, appointed by President Johnson, that considered a revenue sharing plan similar to Heller's. However, opposition to an unconditional general purpose grant program drew sharp criticism from several fronts, and the Heller-Pechman plan, as it was called, was shelved for the rest of the Johnson Administration.

Continued support for revenue sharing

The interest in revenue sharing did not cease. In 1965, the liberal Republican Ripon Society and the Republican Governors' Association issued a joint research paper strongly supporting the Heller-Pechman plan. During the 89th Congress, largely by Republican initiative, several revenue sharing bills were sponsored.

However, as the fiscal surplus of the mid-sixties dwindled, in part due to the Vietnam War, the rationale for supporting revenue sharing shifted. No longer was revenue sharing tied to the fiscal dividend. Instead, as Heller suggested, revenue sharing could accomplish two goals: (1) alleviate the mismatch between Federal resources and State-local needs, and (2) strengthen the role of State governments in allocating revenue.

When Richard M. Nixon was elected in 1968, the prospects for revenue sharing brightened. Task forces emphasized decentralization of Federal domestic policy, and urged greater decisionmaking authority to the elected officials of State and local governments. Revenue sharing appeared to be imminent--only the question of size and structure remained.

In August 1969, Mr. Nixon delivered a message to Congress outlining his revenue sharing proposal:

1. Allocation to State and local governments would be based on a specified percentage of personal taxable income;

2. Allocation to each State would be based on its proportionate share of national population, adjusted for the revenue effort of the State;

3. Allocation to local governments would be established by formula, with the distribution to be made by the State, and States could develop alternative distribution plans;

4. Administrative requirements would be kept to a minimum.

Congressional action and implementation

During the first session of the 92nd Congress, a coalition of six public interest groups: 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--the "Big Six"--worked to mobilize support for the program, along with the Nixon Administration.

But differences among various groups delayed passage of a revenue sharing bill. Wilbur Mills, Chairman of the House Ways and Means Committee, thus put forth a proposal stressing urban needs and priority spending. Differences between Mills' proposal and that of the Administration were significant. Mills' bill:

1. Changed the method of determining the total amount.

2. Allocated one third the total amount, rather than one half, to the States.

3. Changed the period of appropriation from permanent to 5 years.

4. Encouraged States to use an income tax.

5. Prohibited using revenue sharing funds to match other Federal grant funds.

6. Inserted a list of priority-expenditure categories.

After the bill passed in the House, it faced some opposition in the Senate. Members of the Senate Finance Committee who primarily came from rural, low-income States, revised the allocation formula to meet the interests of their constituents. The Committee eliminated the State income tax factor, on the grounds that the Federal Government should not dictate to the States the structure of their tax laws. The Committee eliminated the list of priority-expenditure categories for local governments, adding that these governments should report to the Treasury Department on their planned and actual uses of revenue sharing funds. Also, a provision was made for social services expenditures. After several other changes were made, the Mills' bill passed in the Senate and went before a joint House-Senate conference.

The most significant problem with the bill was the divergent nature of the House and Senate versions. The House version favored giving funds to the more highly populated and industrialized States; the Senate version favored low income States with mostly rural populations. To avoid tying up the bill in lengthy debate, the conference reached a compromise. This compromise allowed a State 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.

Also, since the House and Senate versions clashed on the priority-expenditure categories, revisions were made that enlarged the permissible list of categories and allowed all types of expenditures. This action significantly reduced the impact the House bill had on priority categories. Finally, the revenue sharing bill, known as the State and Local Fiscal Assistance Act, became law on October 20, 1972. Signing the bill, President Nixon hoped that revenue sharing would "renew" the American Federal system created two centuries earlier.

Renewal of revenue sharing

In 1975, President Ford submitted legislative recommendations to extend the revenue sharing program, which was due to expire at the end of fiscal year 1976. The program was extended to September 30, 1980, authorizing maximum annual amounts of $6.85 billion.

The Act provided for automatic entitlements rather than subjecting the program to annual appropriations desired by the House Appropriations Committee. In addition, priority spending categories and the restriction on using funds for matching grant programs were eliminated since the funds were highly fungible; hence, enforcement of these provisions was considered impossible. Finally, provisions regarding public participation and civil rights enforcement were analyzed and strengthened.

A SHORT HISTORY OF NEW YORK STATE REVENUE SHARING

New York State has been sharing revenues with its localities since 1789. At first, these funds were categorical in nature. That is, they were not discretionary, nor were they intended to support local government. The State reimbursed expenditures or advanced funds to localities for programs in which the State was interested. Had revenue not been available, such programs probably would not have been implemented. Because of the State's interest in its municipalities, local problems were solved locally, and New York fostered a sense of home rule shared by only a few States in the Nation.

Originally, the State obtained revenue for its general purpose aid through a statewide tax on personal and real property. In 1879, 98 percent of the State's revenues came from this property tax, but such heavy reliance on just one tax created problems. Thus, a new series of taxes were levied, not nearly so much for aiding municipalities as for aiding the State.

About 1900, the State began to share the proceeds from these new taxes with its localities on a consistent basis.

Prior to this move, there was little agitation for State aid on the part of the localities. But the influx of revenue increased local interests and made New York more aware of the increasing fiscal needs of its municipalities.

Yet this shared tax system was not totally effective. It was more a stopgap measure in meeting local fiscal problems than it was a demonstration of the State's extremely effective means for gathering taxes for local needs. Thirty years after it began, the shared tax system was a jumble of uncoordinated legislation--an administrative nightmare.

Generally the distribution of revenue was not equitable. Not all taxes were shared equally by all specific classes of government (counties, cities, towns, and villages). In addition, the formulas for sharing were even more varied than participation. For example, localities with corporations benefitted from corporate franchise taxes far more than those areas without such endowments. Utility taxes were distributed to cities in proportion to population. The needs, capacities, services, and populations of individual areas were not considered when the State allocated funds. Often, the amount of shared taxes received was related to the need for services or the quality and quantity of services provided by the recipient government.

The Moore Commission proposals

In 1946, the Commission on Municipal Revenues and Reduction of Real Estate Taxes (known as the Moore Commission, after its chairman) convened to overhaul the State's assistance to localities. The Commission recommended that the State aid system divide its funds into four parts: per capita, education, social services, and highways. Of all the recommendations, that of per capita aid allocation was the most innovative.

The per capita aid program abolished the shared tax system as the means for distributing revenues to localities. The program also negated the concept that revenue should be returned to the jurisdiction from which it once came. Because duplication resulting from misuse of the categorical grant system was eliminated, the State found it had more flexibility in allocating its limited revenue, and the program strengthened the idea that the State was indeed concerned for the welfare of its jurisdictions. The per capita grant was considered by the Commission as "a new concept of cooperation."

Since its enactment, New York's per capita program has been the focus of much debate, but its basic precepts have

never been altered. Dissatisfaction began in the years following 1946 as population redistribution and political actions changed spending patterns. The per capita aid program did not accommodate these changes.

In 1955, the Buttenweiser Committee examined the per capita system, and found the concept to be basically sound. Yet counties were being excluded, and the system's formula failed to consider that not all jurisdications of one type were the same--jurisdictions with extensive resources were treated just like jurisdictions with fewer resources. The Committee concluded that fiscal need, effort, and capacity should be the criteria for determining fair distribution of revenue, not the legal classification of the locality receiving fiscal support.

To anticipate future needs of localities, the Second Moore Commission was established in 1962. Three years later, the Commission's recommendations were enacted into law. The first major alterations were made to the per capita aid plan since its inception in 1946. Allocations to cities and villages were increased, and county aid was included for the first time. Although allocations to towns remained constant, a new category, towns-outside-villages, entitled towns to receive additional revenue.

In addition, a low fiscal capacity modifier was added, which granted jurisdications more aid if per capita income or full market value of property fell below a specified amount. The net result of the provisions established by the Second Moore Commission doubled the output of per capita aid to local governments in 1965.

The current program

In response to cities' increasing fiscal difficulties, New York State established a special city aid program in 1968. An influx of low income families to the cities required an increase in expensive public services. Also, the limit of taxation on city real estate was more restrictive for large cities than for other jurisdictions.

Yet the need for additional revenues continued to increase, particularly in urban counties. Thus, in 1970 New York State instituted a State Revenue Sharing plan. Now, rather than receiving a fixed amount of revenue per capita, local governments would receive revenue in two ways--both connected with the growth of the State income tax. Of the 18 percent of the State income tax revenue collected in the previous year, half would be distributed according to the per capita aid formula, while the other half would finance

the special aid to cities. A city would receive money from this source of revenue based on the ratio of its population to the total population of all the cities in the State.

Nevertheless, dissatisfaction continued with the distribution of revenue based on jurisdictional classification. The establishment of the special city aid program certainly did not further the cause of equal distribution by jurisdiction. Though other commissions have been established in New York State since 1970 to study the continuing problems with the revenue sharing system, jurisdictional classification remains the basis for distributing aid to local governments within the State.

METHODOLOGY

A. THE FISCAL EFFORT CONCEPT

The effort put forth by governments to supply citizens with local public services has been measured in many different ways. The simplest method is probably the amount of local tax revenues collected on a per capita basis. This measure is easily criticized because it does not account for the relative sacrifice made by different communities in terms of the loss in private spending. To compensate, local revenues are often measured relative to the total resources available for both public and private spending. This measure is often referred to as the effective tax rate (t) and is sometimes measured by the ratio of local revenues (R) to tax base (Y).

Effective tax rates also have some weaknesses as a measure of tax "effort" because equal effective tax rates will produce more per capita revenues (and therefore more public services) in jurisdictions with a high per capita tax base. This means that the same proportional sacrifice will produce more public services per capita in wealthier areas.

To compensate for this weakness we have adopted the following equity norm: "equal effective tax rates should provide the same per capita public services irrespective of the local tax base (income)."

Other researchers have used this principle to determine the necessary distribution formulas and amounts of aid needed to achieve this standard. 1/ A slightly different approach is taken here. Equal revenues per tax rate can be expressed as:

(a) $R/t = k = \text{constant}$

where
R = local per capita revenue
Y = per capita income
$t = R/Y$ = effective tax rate.

This principle in effect equalizes the tax base of all communities. (Note $k=Y=\text{constant}$ for all jurisdictions.)

How is the tax effort to be measured? In order to equalize local per capita revenues per tax rate (R/t), 2/

1/See Barrow et al. [2]; LeGrand [6], pp. 531-547. LeGrand and Reschovsky [7], pp. 475-486; Thurow [8], pp. 23-35.

2/Thurow defines this as the benefit-effort ratio [8].

some hypothetical level of revenues (R^*) must be raised. To raise this level of revenue from local sources would require what might be referred to as an adjusted tax rate given by $R^*=t^*Y$, where t^* is defined as fiscal effort to distinguish it from the effective tax rate t. Substituting $R^*=t^*Y$ in equation (a) and solving for t^* we obtain:

$$\text{(b)} \qquad t^* = \frac{kt}{Y} = \frac{k}{Y} * \frac{R}{Y}$$

t^* represents an index of the additional local revenues a jurisdiction would have to make in order to achieve a specified benefit-effort ratio k.

B. THE EQUIVALENCE OF THE INTRASTATE FORMULA WITH THE FISCAL EFFORT CRITERIA

The intrastate revenue sharing formula is expressed as:

$$G_i = 2/3\ G_s * \frac{POP_i \left(\frac{PCY_s}{PCY_i}\right)\left(\frac{LTAX_i}{AGINC_i}\right)}{\sum_j POP_j \left(\frac{PCY_s}{PCY_j}\right)\left(\frac{LTAX_j}{AGINC_j}\right)}$$

where
G_i = revenue sharing grant for county area i
G_s = revenue sharing grant for state s
POP_i = population
PCY_i = per capita income
$AGINC_i$ = adjusted gross income
$LTAX_i$ = local non-school taxes
j = index of summation

In per capita terms, then, the revenue sharing formula depends on two factors: relative income and effective tax rates. In terms of the notation in equations (a) and (b) above, the formula can be expressed in per capita terms as:

$$\text{(c)} \qquad RS = \alpha \frac{Ys}{Y} * \frac{R}{Y}$$

where
RS = per capita revenue sharing grant
Ys = state per capita income
$\alpha = 2/3\ G_s/(\Sigma POP_j\ (PCY_s/PCY_j)(LTAX_j/AGINC_j)$

If we substitute t = R/Y in equation (b) and define k = Ys, equation (c) can be expressed as:

(d) $$RS = \alpha t^* = \alpha \frac{k}{Y} * \frac{R}{Y}$$

This says that the revenue sharing formula distributes aid in proportion to the measure of fiscal effort defined in equation (b).

C. DISTRIBUTION OF TARGETING CRITERION BY METROPOLITAN STATUS

In chapter 3 we presented the criteria used to evaluate the targeting of revenue sharing. The 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 presented by the intercept of the estimated equation.

The following definitions are employed:

Y = Per capita income.

G = Economic growth 1/.

T_{ry} = The effective tax rate defined as the ratio of all locally raised revenues (r) to personal income (y) (see the third term in equation C above).

T^*_{ry} = Fiscal effort, equal to the effective tax rate adjusted for differences in per capita income (the product of the relative income and effective tax rate in equation C above).

1/In this appendix we are including results concerning a third distribution criterion, economic growth, which we did not discuss in the main report because they are not germaine to our conclusions. However, since our analysis does indicate a relationship between this criterion and New York State revenue sharing aid, we present the results here for those who are interested.

The growth index is constructed from three components, population change, changes in per capita personal income, and change in total employment between 1969 and 1975. The change in each variable was normalized be dividing it by the value of the median county. That is the final growth

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 III-1.

D. TARGETING FEDERAL AND STATE 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 low growth. The statistical results for the Federal program are shown in table III-2, and the State program results are shown in table III-3.

The basic results for the Federal program are contained in equations (1) and (2) of table III-2. Both the income and growth variables were insignificant as indicated by the t-statistics shown in parentheses. Only the tax effort variable, as defined by the Federal program, is statistically significant. The results of deleting the income and growth variables is reported in equation (2). The adjusted $\bar{R}^2$ provides a statistical measure of the targeting efficiency of

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Footnote 1 continued

index is the sum of each of the three normalized variables.

$$\text{Growth index} = P_i^N + Y_i^N + E_i^N$$

where $P_i^N = P_i/P_{med}$; $Y_i^N = Y_i/Y_{med}$; $E_i^N = E_i/E_{med}$

P_i = population change of the ith county

P_{med} = population change of the median county

P_i^N = normalized population change of the ith county

Y_i = change in personal per capita income for county i

E_i = change in total employment for county i

Table III-1

Targeting Criteria by Metropolitan Status, 1975

Equation number a/	Targeting criterion	Rural (intercept)	Central city metro	Non-central city metro	$\bar{R}^2$
(1)	Y	5014	+1255 (4.5) b/	+728 (2.9)	0.27
(2)	T_{ry}	1.27	-0.37 (2.1)	-0.33 (2.1)	0.08
(3)	T^*_{ry}	1.47	-0.62 (3.2)	-0.52 (3.0)	0.18
(4)	T^*_{ty}	1.25	-0.43 (4.1)	-0.35 (3.7)	0.28
(5)	T^*_{tv}	1.10	+0.10 (0.4)	-0.06 (0.6)	-0.02
(6)	T^*_{rv}	1.18	-0.19 (1.1)	-0.25 (1.7)	0.02
(7)	G c/	3.50	-1.94 (3.2)	-0.14 (0.2)	0.14

a/Equations 1 and 7 indicate that the rural counties had relatively low income, but experienced higher rates of growth. A comparison of equations 2 and 3 shows that distributions based on fiscal effort, instead of effective tax rates, would favor rural areas. Using full market value as the measure of the tax base in place of per capita income (equations 4 and 5 or 3 and 6) shows a closing of the difference in fiscal effort between rural and metropolitan counties. Finally, comparing equations 3 and 4 indicates that when only tax revenues are used to measure fiscal effort, rural counties show lower effort, indicating their relatively greater reliance on nontax revenue sources to finance public services.

b/The numbers in parenthesis are t-statistics.

c/Each of the coefficients are divided by 3 to put the growth index on the same scale as the fiscal effect indices.

Table III-2

Regression Equations for Federal Revenue Sharing Per Capita versus Targeting Criteria: Tax Effort, Income, and Growth (County Governments 1975)

Equation	Constant	Y	G	T^*_{ty}	T^*_{ry}	T^*_{rv}	$\bar{R}^2$
(1)	3.02	0.00008	0.061	6.79			0.47
t-statistics		(0.3)	(0.2)	(6.5)			
(2)	2.62			6.93			0.49
t-statistics				(7.4)			
elasticity				0.7			
(3)	6.95				2.59		0.20
t-statistic					(3.8)		
elasticity					0.3		
(4)	9.64					0.416	-0.01
t-statistic						(0.0)	
elasticity							
(5)	16.18	-0.001					0.07
t-statistic		(2.3)					
elasticity		0.6					

Table III-3

Regression Equations for State Revenue Sharing versus Targeting Criteria: Tax Effort, Income, and Growth (County Governments 1975)

Equation	Constant	Y	G	T^*_{ty}	T^*_{ry}	T^*_{rv}	$\bar{R}^2$
(1)	10.71	-0.0010	-0.19	-0.85			0.74
t-statistics		(12.6)	(5.0)	(3.9)			
elasticities		-1.5	-0.2	-0.2			
(2)	10.23	-0.0010	-0.17		-0.51		0.75
t-statistics		(12.3)	(4.4)		(4.2)		
elasticities		-1.5	-0.1		-0.2		
(3)	6.69	-0.0006	-0.16			+0.88	0.79
t-statistics		(7.9)	(4.5)			(5.6)	
elasticities		-0.9	-0.1			+0.3	

the intrastate formula in the sense that county governments with equal tax efforts receive the same per capita revenue sharing aid. 1/ The relatively low $\bar{R}^2$ of 0.49 indicates the poor performance of the procedures and constraints used by the Federal program to distribute aid to county governments.

The effect of using a more comprehensive measure of taxes that includes all local revenues is shown by equation (3) in table III-2. The fiscal effort elasticity (evaluated at the sample mean) falls from 0.7 to 0.3. The $\bar{R}^2$ falls to 0.20.

Finally, if fiscal effort is measured using all local revenues and with full-market value used for the tax base, the fiscal effort coefficient is not significantly different from zero.

The results for the State revenue sharing program are strikingly different from those reported for the Federal program. The State program shows a high degree of targeting on the basis of all three criteria. All coefficients are statistically significant and account for as much as 79 percent of the variation in State revenue sharing distributed to county governments compared to 49 percent reported for the Federal program.

A comparison of the fiscal effort coefficients (equation 2 of table III-2 and equation 1 of table III-3) shows that the Federal program distributes more per capita aid to high tax effort governments (note that the Federal program's definition of tax effort is being used here), whereas the State program distributes less aid. Estimated elasticities evaluated at the sample means are 0.7 for the Federal program and -0.2 for the State program.

If the definition of tax revenues is broadened to include fees and charges, etc., the fiscal effort coefficient falls by half and the $\bar{R}^2$ remains relatively stable. However, if full market is used in place of per capita income, the fiscal effort coefficient changes sign, producing a tax elasticity of +0.3 that is statistically significant with an $\bar{R}^2$ of 79 percent.

In all three equations the growth index is statistically significant with more per capita aid being distributed to low growth counties. The coefficient is stable

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1/Recall from section B that the intrastate formula is identical to T^*_{ty}.

under all three definitions of tax effort. However, the elasticity is quite small, estimated to be between -0.1 and -0.2. 1/

In all three cases per capita income is statistically significant, although the estimated income elasticity varies considerably (from -1.5 to -0.9) under alternative definitions of tax effort. This would seem to suggest some interdependence between tax effort and income, which is not surprising considering that tax effort is a function of income.

Multicolinearity corrections

The simple correlation coefficients between income and the various definitions of tax effort are shown in table III-4. Although the correlations are moderate, they are large enough to influence the income coefficients. 2/

Table III-4

Simple Correlations Between Tax Effort and Per Capita Income

Tax effort	Correlation coefficients between income and tax effort
T^*_{ty}	-0.35
T^*_{ry}	-0.33
T^*_{rv}	-0.52

Because of the slight multicolinearity between fiscal effort and income, the basic equation was reestimated by the following procedure. First, we know that only income directly enters the State formula, while the statistical significance of the fiscal effort factor is an indirect byproduct of the

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1/All elasticities based on linear equations are evaluated at the sample means.

2/This was not a problem in the Federal program since the income variable was insignificant and we were informed that income does not enter the formula independently of the fiscal effort factor. Thus, any variation of revenue sharing with income is a result of the correlation of fiscal effort and income--and not the result of an independent income effect.

State formula. Therefore, it seems reasonable to attribute all covariance between fiscal effort and income to the income variable in the basic model.

The adjustment procedure is shown here for equation (3) of table III-3, which displayed the highest correlation. First, estimate a simple regression between fiscal effort and income. The result is

$$\text{(e)} \quad T^*_{rv} = 2.55 - 0.00027Y \qquad \bar{R}^2 = 0.26$$
$$(4.5)$$

The residuals from this equation represent fiscal effort with the effect of income removed, or residualized fiscal effort as denoted by RT^*_{rv}. This residualized fiscal effort is then used to replace T^*_{rv} in the basic model. The result of this estimation is

$$\text{(f)} \quad SRS = 8.94 - 0.00087Y + 0.50\ RT^*_{rv} - 0.161G \qquad \bar{R}^2 = 0.79$$
$$(12.4) \qquad (5.6) \qquad (4.5)$$

A basic property of ordinary least squares regressions is that the residuals are orthogonal to the independent variables. Therefore, based on equation (e), Y and RT^*_{rv} in equation (f) are orthogonal, which eliminates the multicolinearity problem.

Based on equation (f) above, the income elasticity is estimated to be -1.3, which is significantly greater than the -0.9 shown in equation (3) of table III-3. The important result is the fiscal effort coefficient. Even after attributing all the covariance between fiscal effort and income to the income variable, our results still show that fiscal effort is statistically related to the distribution of State revenue sharing. The coefficient for fiscal effort falls to 0.50, down from 0.88.

<u>The proper revenue sharing-income elasticity</u>

The results of the previous section indicate that the "partial" income elasticity of per capita revenue sharing was zero for the Federal program and approximately -1.3 for the State program. This raises the question of just how elastic the revenue sharing income schedule "ought" to be.

If we adopt the principle of equalizing benefit-effort ratios embodied in the Federal intrastate formula, we can

determine the proper degree of income equalization. The amount of per capita revenue sharing aid is proportional to tax effort. 1/

Using the notation of section B this can be expressed as:

(g) $RS = \alpha \; t^* = \frac{\alpha Ys}{Y} * \frac{R(Y)}{Y}$

where R(Y) makes explicit that local per capita revenues are a function of income. Since State per capita income is a constant, it can be subsumed into the constant term α and revenue sharing can be written as a function of income, which implies a given income elasticity. Performing the necessary algebra, we obtain: 2/

(h) $E_{rs.y} = E_{ry} - 2$

This relationship tells us that the amount of income necessary to equalize the benefit-effort ratio depends on the progressivity of the local tax structure. For example, if the local tax structure is proportional ($E_{ty} = 1$), then the income elasticity of revenue sharing should be -1. This, in part, explains the widely varying income elasticities across States reported by Tomer. 3/

In light of equation (i), the income elasticity of local per capita revenues was estimated along with the income elasticities of the Federal and State revenue sharing programs. Equations were estimated in both linear and double

1/See section A of this appendix.

2/Using the quotient rule, the derivative of revenue sharing with respect to income is: $(\alpha Y^2 R'(Y) - 2\alpha YR(Y) \;/\; Y^4$ and $Y/RS = Y^3/\alpha R(Y)$. Combining these results, we have:

$$\frac{dRS}{dY} \cdot \frac{Y}{RS} = E_{rs.Y} = E_{ry} - 2$$

3/Tomer [9, pp. 445-470] argues that the revenue sharing formula should equalize incomes, and he shows that the effective tax rate in the formula obstructs this equalization. What he did not realize is that the formula, in principle, equalizes revenues per tax rate and that to achieve this goal the income elasticity must vary with the progressivity of the local tax structure in the State.

log form and from the equations that corrected for multi-colinearity between income and tax effort. The results are shown in table III-5. 1/

Column one shows the estimated income elasticity of local revenues. Estimates under both specifications are quite similar. Based on these point estimates, the required revenue sharing income elasticities implied by equation (i) are shown in column two. Under the linear specification we see that the income elasticity of the State program is quite close to the desired level implied by the Federal intrastate formula. The estimate for the Federal program by comparison provides half the income equalization implied by the intrastate formula.

Based on the double log specification, the income elasticity of the Federal program still falls considerably short of the desired level, while the estimate for the State program shows even more income equalization than necessary to equalize the benefit-effort ratios implied by the Federal intrastate formula.

Table III-5

Income Elasticities of Local Taxes, Federal and State Revenue Sharing

Equation form	Local revenues	Revenue Sharing Desired	Revenue Sharing Federal	Revenue Sharing State
Linear				
elasticity	+0.86	-1.14	-0.57	-1.09
t-statistic	2.3	-	2.7	8.3
$\bar{R}^2$	0.07	-	0.10	0.57
Double Log				
elasticity	0.80	-1.20	-0.75	-1.6
t-statistic	2.7	-	2.9	8.2
$\bar{R}^2$	0.10	-	0.12	0.54
$\bar{R}^2$	-	-	-	0.74

1/The linear and double-log equations have one independent variable. The equations which corrected for multicolinearity were linear with two variables in the Federal program (T* and Y) and three for the State program (T*, Y, and G).

What is the reason for the poor performance of the Federal formula? Why does the State program appear to target aid more effectively when judged by the criteria implied by the Federal formula? Part of the answer is revealed by observing the structural differences in the two programs. First, the State program distributes its aid directly to county governments, while under the Federal formula aid is distributed to areas first, and then it is distributed to governments. This geographic tiering procedure distorts the distribution of aid based on the criterion of fiscal effort.

Second, the State formula operates without constraints, but the Federal formula is constrained by several factors (see chapter 2). Finally, the Federal program excludes important non-tax revenue sources from its definition of local revenues.

 APPENDIX III

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(972112)

DEPARTMENT OF THE TREASURY
WASHINGTON, D.C. 20220

April 30, 1980

ASSISTANT SECRETARY

Dear Mr. Voss:

We are pleased to have this opportunity to comment on your draft report, Federal and State Revenue Sharing Programs: A Case Study in New York State.

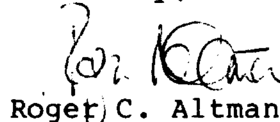
The report is a very useful contribution to our understanding of the complex issues involved in the intrastate distribution of Revenue Sharing funds, and is a worthy successor to GAO's earlier work in this field. Of particular interest to Treasury is the finding that inequities in the distribution of Revenue Sharing funds result from the tiering procedure in the formula (allocation to county areas and then to specific localities) as well as from the formula constraints.

The distribution of funds under New York State's revenue sharing program provides a useful contrast to the distribution under the Federal program. We would like to have seen several questions pursued in more detail in the report. For example, how does the New York State formula handle the allocation among types of governments--cities, counties, and towns? What are the joint distributional consequences of the State and Federal programs? An answer to this question would shed light on the important issue of State government responses to patterns of direct Federal aid to localities.

The technical discussion of some of the basic conceptual issues in formula design presented in Appendix III of the report is not as clearly presented as it might have been. The authors have a number of important points to make, but several peculiarities in the terminology and mathematics may cause some readers to misinterpret the discussion.

On balance, however, the report is a very useful contribution to an important and complex field. We are looking forward to the results of your continuing efforts in this area.

Sincerely,



Roger C. Altman

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STATE OF NEW YORK
EXECUTIVE DEPARTMENT
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C. MARK LAWTON
DEPUTY DIRECTOR

March 21, 1980

Mr. Harry S. Havens
Director
U.S. General Accounting Office
Program Analysis Division
Washington, D.C. 20548

Dear Mr. Havens:

Governor Carey has asked me to thank you for the draft copy of the report on the Federal and New York State revenue sharing programs. It is an interesting case study and should prove a useful reference document for future discussions of distribution formulas in general.

Sincerely,

U.S. GOVERNMENT PRINTING OFFICE : 1980- 620-386/169

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