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USING FEDERAL OUTLAYS DATA TO MEASURE PROGRAM EQUITY--OPPORTUNITIES AND LIMITATIONS

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Introduction

Since the late 1960's, annual detailed reports on federal spending in small areas have been available. This effort was initiated in the Community Services Administration (formerly the Office of Economic Opportunity) in 1966 to monitor poverty program funds and was soon expanded to include most federal activities. Currently CSA has working annual files and published volumes for fiscal years 1969 through 1976. Published reports--known as the Federal Outlays series--are issued separately for each state and list the amounts of individual program funds spent by federal agencies in each county and in each city with a population of 25,000 or more. In total, over 1,300 program entries are reported for each county unit in the United States. The Federal Outlays is the only comprehensive series of county-level data on the federal government's spending.

Earlier editions of the reports suffer from serious problems of completeness, accuracy, program identification and definition; many of these problems have been resolved in recent issues, however. Beginning with the 1975 issue, program identification was greatly improved by labelling programs with the program numbers given in the Catalog of Federal Domestic Assistance. This matching provides the user of the Outlays files easy access to the program descriptions in the Catalog.

The purpose of this paper is two-fold: to provide illustrations of how the Federal Outlays data series can be used to address equity issues at the substate level, and to give a brief overview of the current limitations of this data series. In exploring the equity issues, the Outlays

data are used in conjunction with data from the Census of Population, Census of Governments, Internal Revenue Service, and selected State Departments of Taxation. The equity analysis uses data from 1972, the latest year for which comparable data from all sources was available. It should be underscored that the simple equity analyses which follow are illustrations of possible uses of the Outlays files and are not meant to provide firm answers to any issues of equity in federal spending.

Using the Federal Outlays Data in Equity Analyses: Some Illustrations

The definition of equity is not very well settled among either scholars or politicians, and various conceptions may be found in both analyses and grant-in-aid formulas. Aside from definitional differences, equity analyses can be conducted on several levels. Thus, the appropriateness of individual equity criteria in part depends on the analytic level at which one focuses. Many analyses have focused on federal aid programs, principally grants, often treating groups of related programs comprising a functional area. Other studies have evaluated the distribution of funds under individual programs (U.S. National Science Foundation; De Leon and Le Gates). Finally, there has been some interest--heightened by attention to the "sunbelt" issue--in the analysis of total federal spending (e.g., macro-level equity) and its relationship to the strength and growth of state and regional economies (Havemann, et al.; Jusenius and Ledebur).

The following sections focus on equity questions from different levels of program aggregation and by using alternative measures of equity. First, a more micro approach is taken by relating selected individual program funds to proxies for target populations from the Census of Population.

Second, for selected states, differences in per capita outlays for community development and urban renewal are compared with differences in fiscal capacity and fiscal effort at the local and state level. Finally, a macro approach is taken to assess equity in total federal spending among metro and nonmetro areas and regions under three equity criteria.

Micro-Level Equity Analyses

Federal outlays versus target variables. Perhaps the most common method of evaluating equity is to weigh expenditures for a function against variables indicating need; for example, variables indicating the size of the poverty population might be used to weigh the distribution of poverty funds, just as measures of the quality or quantity of available housing might be used to evaluate housing funds. Such need measures are frequently used in grant allocation formulas--poverty level population, percent unemployed, age of housing stock, and population aged 65 and over are examples.

As one illustration, the Fourth Annual Report on Government Services to Rural America (U.S. President, 1974, p. 33) compares the distribution of FY 1972 outlays for social security benefits and grants-to-states for public assistance (welfare) payments with selected target variables. Social security old-age and survivors benefits were distributed among metropolitan and nonmetropolitan county groups in approximately the same proportions as the aged population. However, relative to the distribution of the poverty population, the distribution of public assistance grants strongly favored metro counties. Nonmetro counties contained 39.8 percent of the poverty population but received only 26 percent of federal outlays for welfare programs. The difference is almost entirely attributable to the Aid-to-Families with Dependent Children program (AFDC). While some states have

elected to provide benefits to intact families, the AFDC program is geared primarily to poverty families with female heads. Since relatively fewer nonmetro poverty families are headed by females (23.2 percent vs. 39.8 percent for metro families), a smaller share of the nonmetro poor are eligible for welfare payments. In addition, only 19.6 percent of AFDC outlays accrued to nonmetro counties, despite the fact that 27 percent of the population under 18 in female-headed poverty families resided in nonmetro counties. Further, almost 40 percent of the total poverty population under 18 years of age were nonmetro residents. This disparity reflects the fact that the more rural states have generally set lower benefit levels than their more urbanized counterparts.

Fiscal capacity. Another equity measure which commonly appears both in program analyses and grant-in-aid formulas is fiscal capacity--the ability of the area to finance its public services from its own revenue sources. This criterion assumes that areas with the lowest capacity are least able to provide adequate services from their own resources. Although there are various means of measuring local fiscal capacity and differing views as to which is the most appropriate, the most frequently used measure is average per capita personal income (Nathan, et al., pp. 136-45).

The highest per capita community development funding was directed toward metropolitan counties, with core counties in the largest SMSA's receiving an average of $23 per capita, nearly twice the average for the four states (Table 1). Counties in both medium and small metro areas had higher outlays than most nonmetro counties, and only the fringe counties in larger SMSA's received less than the nonmetro average. As measured by per capita adjusted gross income,[1] the pattern of fiscal capacity is just

Table 1-Comparison of Per Capita Community Development and Urban Renewal Grants with Fiscal Capacity and Tax Effort Levels, Selected States, Fiscal Year 1972

Item	Number of Counties[a]	Per Capita Community Development and Urban Renewal Grants	Adjusted Gross Income Per Capita		State-Local Taxes as Percent of Income	
			Dollars	Percent of Four State Average	Tax Effort Factor[b]	Percent of Four State Average
Total, Four States	282	13	3,431	100.0	12.4	100.0
Metropolitan Total	87	15	3,635	105.9	12.0	97.6
Greater Metropolitan Areas	26	19	3,793	110.6	12.5	100.8
Fringe Counties	18	6	3,620	105.5	10.6	85.5
Core Counties	8	23	3,848	112.2	13.1	105.6
Medium Metropolitan Areas	33	12	3,658	106.6	11.6	93.5
Lesser Metropolitan Areas	28	10	3,159	92.1	11.3	91.1
Nonmetropolitan Total	195	7	2,713	79.1	14.5	116.9
Urbanized Counties:						
Adjacent to an SMSA	33	6	2,966	86.4	12.4	100.0
Not Adjacent to an SMSA	6	2	2,837	82.7	20.1	162.1
Less Urbanized Counties:						
Adjacent to an SMSA	64	10	2,537	73.9	15.6	125.0
Not Adjacent to an SMSA	33	5	2,394	69.8	14.3	115.3
Totally Rural Counties:						
Adjacent to an SMSA	25	4	2,109	61.5	18.9	153.2
Not Adjacent to an SMSA	34	12	2,541	74.1	15.4	125.0

Sources: Outlays data: U.S. Community Services Administration; income data: U.S. Treasury Department; state-local tax data: U.S. Bureau of the Census, Census of Governments, 1972, and various state sources as described below.

[a] The four states included in this analysis are Colorado, Florida, Louisiana, and Ohio.

[b] The tax effort factor is total state and local government tax collections in each county as a percentage of adjusted gross income. Total state tax collections by county were estimated by the following methods. Figures were obtained from the 1972 annual report of the Colorado Department of Revenue for income tax liability, motor vehicle registration, and net sales tax by county; these taxes, which equalled 60.4 percent of total state taxes in 1972, were inflated to equal total state tax collections. Florida tax collections by county were obtained from the Florida Comptroller's 1972 County Finances and Fee Officers Report, which reported data for major state taxes comprising 73.8 percent of the total; the county totals for these taxes were inflated to equal the state total. Michael and Jones estimated total 1969 Louisiana state tax burdens by parish, which were inflated to equal 1972 total state tax levels. Data for fiscal 1972 sales, personal income, motor fuel, and cigarette tax collections in Ohio counties were provided by the Ohio Department of Taxation. Total tax collections in each county were estimated by inflating these taxes, which comprised 60.4 percent of the total, to 100 percent.

the reverse; average incomes in the metro counties were well above the four-state average while nonmetro counties ranged from roughly 60 to 85 percent of that figure. Although one might conclude from these figures that community development and urban renewal grants were distributed inequitably among metro and nonmetro counties, it should be noted that the four sample states were selected because of the availability of state tax data and that the same conclusion might not hold for the entire nation.

Tax effort. A related equity measure is tax effort, which argues that areas which tax themselves at a higher percentage of their capacity deserve larger shares of federal aid. This criterion is one element in the General Revenue Sharing formula. State and local government taxes as a percentage of adjusted gross income are compared with per capita outlays for community development and urban renewal programs in Table 1. In general, this criterion suggests an inequitable distribution of community development and urban renewal grants, though the pattern is not entirely consistent. Tax effort is higher in nonmetro counties than in metro counties, while per capita outlays for community development were higher in SMSA's than outside them. However, within metro counties, the highest outlays go to the core counties, which have the highest tax effort, while the lowest tax effort, in the fringe counties of larger SMSA's, is rewarded with the smallest level of federal community development spending.

Macro-Level Equity Analyses

The recent "sunbelt-frostbelt" debates have focussed attention on yet another level of equity analysis--the effect of total federal spending on state and regional economies. In this section, three measures of equity in total spending are illustrated: (a) total outlays relative to income

level, (b) total outlays relative to federal personal income tax liability, and (c) federal effort (federal tax liability as a percent of income) relative to outlays.

Income levels. Comparisons of the levels of per capita outlays in nonmetropolitan and metropolitan areas and Census regions with their average per capita incomes are made in Table 2. The figures suggest that nonmetro areas gain less than equitable shares of outlays--both per capita incomes and outlays are lower in nonmetro counties--and that the West gains more than equitable portions of outlays.

Ratio of federal outlays to income tax liability. A second way of evaluating whether federal spending is equitably distributed is to compare spill-ins of spending to spill-outs of federal taxes. The analysis here compares per capita outlays to personal income tax liability.[2] By this measure, nonmetro areas as a whole receive a net benefit at the expense of metro counties with the least populous nonmetro counties receiving the highest net inflow of federal dollars. The primary losers are the fringe counties in the nation's largest SMSA's, which both pay high taxes and receive back comparatively little federal expenditure. Similarly, the Southern and Western regions are significant net beneficiaries, both in their metro and nonmetro areas.

Federal tax effort. A third way of looking at equity in the distribution of total outlays is to consider them in relation to the federal tax burdens borne by the residents of each area. Here we measure federal tax burden as federal personal income tax liability as a percentage of adjusted gross income. While there is some relationship between the average federal tax effort and outlays to metro and nonmetro counties, that relationship is hardly a consistent one (Table 2). The metropolitan counties as a whole bear higher than average tax burdens and receive in return higher than

Table 2-Three Criteria for Studying Equity in Total Federal Outlays Among Metro and Nonmetro Counties, By Regions, 1972

Item	Federal Outlays	Federal Personal Income Tax Liability	Per Capita Adjusted Gross Income		Ratio of Federal Outlays to Tax Liability		Federal Personal Income Tax Liability as a Percent of Adjusted Gross Income	
	Dollars per Capita		Dols. per Capita	Pct. of U.S.	Total	Pct. of U.S.	Pct.	Pct. of U.S.
United States Total	1,062	459	3,565	100.0	2.31	100.0	12.9	100.0
Metropolitan Total	1,125	512	3,873	108.6	2.20	95.2	13.2	102.3
Greater Metropolitan Areas	1,219	565	4,172	117.0	2.16	93.5	13.5	104.7
Fringe Counties	889	631	4,537	127.3	1.41	61.0	13.9	107.8
Core Counties	1,368	535	4,009	112.5	2.56	110.8	13.3	103.1
Medium Metropolitan Areas	998	459	3,578	100.4	2.17	93.9	12.8	99.2
Lesser Metropolitan Areas	1,016	402	3,241	90.9	2.53	109.5	12.4	96.1
Nonmetropolitan Total	896	318	2,751	77.2	2.82	122.1	11.6	89.9
Urbanized Counties:								
Adjacent to an SMSA	915	372	3,116	87.4	2.46	106.5	11.9	92.2
Not Adjacent to an SMSA	1,067	342	2,914	81.7	3.12	135.1	11.7	90.7
Less Urbanized Counties:								
Adjacent to an SMSA	751	306	2,678	75.1	2.45	106.1	11.4	88.4
Not Adjacent to an SMSA	876	293	2,577	72.3	2.99	129.4	11.4	88.4
Totally Rural Counties:								
Adjacent to an SMSA	854	252	2,309	64.8	3.39	146.8	10.9	84.5
Not Adjacent to an SMSA	1,065	251	2,295	64.4	4.24	183.8	10.9	84.5
Northeast	1,131	540	4,044	113.4	2.09	90.5	13.4	103.9
Metropolitan	1,181	566	4,179	117.2	2.09	90.5	13.5	104.7
Nonmetropolitan	829	381	3,209	90.0	2.18	94.4	11.9	92.2
North Central	844	470	3,619	101.5	1.80	77.9	13.0	100.8
Metropolitan	834	530	3,939	110.5	1.57	68.0	13.5	104.7
Nonmetropolitan	865	341	2,926	82.1	2.54	110.0	11.7	90.7
South	1,090	392	3,097	86.9	2.78	120.3	12.7	98.4
Metropolitan	1,243	463	3,499	98.1	2.68	116.0	13.2	102.3
Nonmetropolitan	841	277	2,439	68.4	3.04	131.6	11.4	88.4
West	1,262	451	3,672	103.0	2.80	121.2	12.3	95.3
Metropolitan	1,272	479	3,857	108.2	2.66	115.2	12.4	96.1
Nonmetropolitan	1,221	340	2,946	82.6	3.59	154.4	11.5	89.1

Sources: Outlays data: U.S. Community Services Administration; income tax liability and adjusted gross income: U.S. Treasury Department, Internal Revenue Service, Statistics Division.

average outlays per capita. Within the metro and nonmetro groups, however, there is little apparent relationship. The figures for the four regions support this conclusion; the two regions with the highest average tax effort rank second and fourth, respectively, in per capita outlays.

Limitations of the Federal Outlays Data Series

The major limitations of the current Outlays files relate to (1) the methods used to estimate and report county level outlays, (2) matching individual programs with their descriptions in the Catalog of Federal Domestic Assistance, and (3) year-to-year changes in the Outlays data and in federal programs themselves which result in problems in using the data in time series analyses.

Allocation Methods

For fiscal year 1976, only 35.4 percent of all outlays reported to the county level represented actual outlays rather than estimated amounts.[3] Almost two-thirds (63.8 percent) of the funds were allocated to the county level by a variety of proration techniques. These allocation methods were used because of the difficulty of accounting for federal spending at such levels of geographic detail and of coordinating the reporting effort across all federal agencies.

The proration methods differ widely in sophistication and, as a result, in their probable effects on research conclusions. A majority of the programs, with about two-fifths of total outlays, involve proration methods which are reliable enough that the data can be used with some confidence. Of these programs, those involving the largest amounts of money are primarily benefit payments to individuals whose county level expenditures are estimated on the basis of target population size (the number of

recipients) by assuming an equal benefit payment per case.

There are a number of programs, involving about one-fifth of total outlays, for which the county level detail is not reliable enough to support valid research conclusions. Of these, the most important group includes both grant and contractual spending programs for which the county level spending is either unknown or unmeasurable and for which no attempt at proration was made. Included in this group are federal payments to prime contractors and formula grants to state governments, for which the Outlays data reports only the initial payment and not the final expenditure of the money by the intermediaries. In addition, spending under some 12 programs is estimated on the basis of each county's population--clearly too crude a method to support valid research conclusions.

Matching the Outlays Series with the Catalog of Federal Domestic Assistance

One of the major improvements in the Federal Outlays data in recent years resulted from identifying many Outlays program categories with program numbers appearing in the Catalog of Federal Domestic Assistance. The descriptive detail in the Catalog helps to flesh out the cryptic program titles in the Outlays publications and is of great benefit to the researcher, who might otherwise have to struggle to identify the content of programs.

Despite its value, the Catalog, which contains descriptions of the main characteristics of over 1000 federal aid programs, including most grants-in-aid and a number of other forms of assistance, was intended to help state and local governments and other applicants to identify their potential eligibility for federal assistance. Thus, it is often inadequate as a comprehensive and reliable classification of the programs and

activities reported in the Federal Outlays files. While the Catalog does not include all federal programs, it does purport to contain most discretionary federal assistance programs such as grants, loans, and technical assistance. As a result, the Catalog's lack of comprehensiveness may have less serious effects on equity analyses taking a micro approach (viewing equity for individual or selected groups of programs) than on those taking a more macro level view (as measured by total federal outlays).

The Catalog's value is further limited by occasional changes in its program classifications from one issue to the next, by alterations in the identification numbers which apply to a particular program, and by a lack of full coordination between the Catalog and the Outlays. The need for better coordination between the two series is illustrated by comparing the Catalog identification numbers used in the 1976 Outlays publication against the most recent year they were listed in the Catalog. Of the 645 Catalog numbers referenced in the 1976 Outlays files, 92.5 percent (597) were described in the 1976 Catalog. However, the Outlays files used 24 Catalog numbers which were not described in the current Catalog (though they were listed in earlier issues); an additional 24 program numbers have never been listed in any issue of the Catalog. While such discrepancies between the two sources remain irritating to the researcher, the Catalog remains the most useful available tool for identifying individual programs found in the Outlays files.

Using Outlays Data in Time Series Analyses

One benefit of an annual data series is its potential for use in time series analyses. The researcher who attempts to use the Federal

Outlays data in this fashion faces several obstacles, of which the most significant is the difficulty of identifying equivalent component programs in each of several years. The constant change in federal policy, as new programs are created and old ones consolidated with others or eliminated outright, is a major source of frustration in such time series efforts. The difficulties are magnified when the study involves a period of major transition in federal policy from one set of programs to another. An improved Catalog of Federal Domestic Assistance could support time series analyses by helping researchers to identify and trace changes in federal policies and programs over time.

Summary and Conclusions

This paper illustrates the use of the Outlays data in evaluations of equity in the distribution of Federal spending among regions and between metropolitan and nonmetropolitan areas. These illustrations point out the potential value of the Outlays series for this purpose and the usefulness of the data when used in conjunction with other statistical series. The analysis demonstrates the measurement of equity at several different levels and uses various criteria for equity. The results indicate clearly that the choices of both level of analysis and evaluative standards are important ones that can be expected to have a significant impact on research findings.

The paper also considers the limitations of the Federal Outlays data series. The major advantage of the Outlays data is its high levels of detail, both geographically and programmatically, which make it amenable to the pursuit of hypotheses which could not otherwise be addressed. Its

primary limitation centers around the fact that much of its county-level detail represents estimates, rather than actual figures. Approximately 27 percent of the programs, involving 64 percent of total outlays on the 1976 file, employed some allocation technique to arrive at county-level figures. However, about two-thirds of these outlays used allocation methods which were judged to be acceptable for most research purposes. Many of the allocation techniques could be improved or eliminated entirely by incorporating other existing statistical series into the Outlays data reporting activity.

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Footnotes

*The authors are Economist and Social Science Analyst, respectively, with the Economic Research Service, U.S. Department of Agriculture, Washington. An extended version of this paper is available from the authors.

[1]Adjusted gross income is the result of reducing gross income from all sources subject to the federal tax by adjustments for business expenses, moving expenses, depreciation, sick pay, losses from sales of capital assets, carryover of "net operating loss" to businesses, and contributions by the self-employed to retirement funds.

[2]Although federal income taxes comprised only 45 percent of all federal revenues in fiscal year 1972, they are used here to compare with outlays because data on other sources of revenue--such as corporate income taxes and employment taxes--are unavailable at the county level.

[3]Federal outlays include all spending by the Federal government's executive branch agencies, including such items as grants-in-aid to state and local governments, salaries and administrative expenses, military procurement and research contracts, and transfer payments to individuals (such as social security and civil service retirement benefits). The outlays amounts are not budget outlays as displayed in the annual budget documents, but primarily represent funding obligations and new loan commitments. The method used to report outlays varies: some programs report on a cash basis, while others report on an obligations basis (e.g., the amounts of new awards of funds) or some other basis.