GAO

United States
General Accounting Office
Washington, D.C. 20548

160552

General Government Division

B-280035

May 29, 1998

The Honorable Dan Miller
Chairman
Subcommittee on the Census
Committee on Government Reform and
Oversight
House of Representatives

Subject: Using Census Data for Funds Allocations

Dear Mr. Chairman:

This letter responds to your April 20, 1998, request for information reported after the 1990 Census regarding the potential effects of using census data, adjusted for undercounts, in the allocation of federal funds. You were particularly interested in any information we might have regarding the estimate that jurisdictions would have gained an additional $56 per undercounted person, had the 1990 Census been adjusted to reflect those undercounts. The $56 estimate was suggested in an article by Professor Michael P. Murray[1] in 1991.

BACKGROUND

Census data have two primary applications for funding purposes. First, census data may be used to determine eligibility for a particular program. At the federal level, eligibility tied to census data usually focuses on measures of household or family income and whether an area meets threshold requirements to qualify for various official designations, such as urban, metropolitan, or rural. Second, population data can be used as statistical factors in the allocation formulas for federal grant and assistance programs. The formulas may call for data on total population or only particular subpopulations such as persons in specific age groups or living in urbanized or rural areas. The formulas may also use census population data indirectly, as in the calculation of per capita rates. While the number of federal programs using population data, in whole or in part, to allocate funding varies over time, most studies, including those that we

[1]Michael P. Murray is the Charles Franklin Phillips Professor of Economics at Bates College, Lewiston, ME, and is the author of 40 articles and 2 books on economic matters.

160552

have done, have identified approximately 100 such programs. However, a small number of very large programs, including Medicaid, the Federal-Aid Highway Program, and grants to local educational agencies account for most of the federal obligations.

To respond to your request we relied primarily on one of our previous reports[2] and our analysis of Professor Murray's 1991 report.

RESULTS IN BRIEF

Citing a single figure to estimate the potential effects of census undercounts on federal funds distribution tends to oversimplify a complex subject. Census population data are rarely the only element in allocation formulas. Other data elements and a variety of provisions that affect the size of formula allotments, such as floors and ceilings, also have an important impact on the final amounts distributed to states. It is also important to recognize that many federal formula grants have a fixed pool of funds to distribute. If some allocations go up, others must go down. In separate studies completed in 1991, both we and Professor Murray estimated that adjusting census population data to reflect net undercounts in the 1990 Census would redistribute only a fraction of 1 percent of total federal funds allocated through formula programs.

On the basis of his analysis, Professor Murray estimated that, for the 34 to 41 percent of states that might gain additional funding from an adjustment, such gains would average about $56 per miscounted (i.e., net undercounted) person. This estimate tends to oversimplify the effects because it is a composite average and applies only to the jurisdictions gaining funds and it, therefore, is not applicable to the remaining jurisdictions. It also does not fully consider the variety of potential changes in allocations for each federal formula program. Furthermore, both our and Professor Murray's analyses were completed using the estimates of 1990 net undercount rates that were available at the time the Secretary of Commerce made his decision on statistical adjustment. The Bureau of the Census subsequently lowered those undercount estimates to correct for a computer coding error and to reflect other revisions made that resulted from further research. At the national level, the net undercount rate was lowered from around 2.1 percent to about 1.6 percent. This downward revision would lessen even further the relative redistributional effects we and Professor Murray had identified.

Even when the changes are relatively small, the actual dollar amounts involved may appear substantial, especially to the affected jurisdictions. The overall magnitude of federal funding allocated on the basis of formulas using population data, in whole or in

---

[2]Formula Programs: Adjusted Census Data Would Redistribute Small Percentage of Funds to States (GAO/GGD-92-12, Nov. 7, 1991).

part, has increased dramatically since 1991. Professor Murray reported total obligations for 108 programs in 1989 of $58.7 billion. We reported that 100 programs using population data in fiscal year 1991 had estimated obligations of over $116 billion. By fiscal year 1996, just the 20 largest programs on our list had estimated obligations of over $170 billion. The effect of changes in funds distribution would also become more substantial when applied over the course of an entire decade.

OUR ANALYSIS OF REDISTRIBUTION EFFECTS IN NOVEMBER 1991

In 1991, we were asked to report on the use of population-related data in federal grant programs and the potential implications of the proposed use of 1990 census adjusted population by the federal government in direct allocations to states and local governments.[3] Two conclusions from that work are particularly germane to estimating the effect of statistical adjustment on funding redistribution. We found that the effect of using adjusted population data for federal funding is difficult to predict precisely, but our work also indicated that the general effect would be relatively small.

Estimating the effect on federal funding of adjusting for census undercounts is difficult because the level of funding allocations is influenced by many factors. First, funding levels may be influenced by whether a program has a fixed pool of funds to distribute, as in most grant programs, or has no fixed amount, as in federal reimbursements to states under Medicaid. If there is a fixed pool, any change that increases the allocation for some jurisdictions must be matched by decreases in the allocation for other jurisdictions. In other words, even if every jurisdiction had a net undercount (as was estimated for states in the 1990 Census), all of them could not gain additional funding if there is a fixed pool to draw from.

The allocations are also influenced by multiple factors within the funding formulas, including the type and level of population data used in funding formulas, the use of data elements other than population, and the effect of additional formula provisions.

- Formulas might use data on total population or only particular subpopulations, for example, persons in specific age groups or living in urbanized or rural areas. Population can also indirectly influence a formula data element, as in per capita income.

- Population data may be used in only part of a formula. We found that the formulas may include and even emphasize other data elements, such as income, school enrollment, public road mileage, number of rental units in urban areas,

---

[3]GAO/GGD-92-12.

number of community water systems, or number of clients receiving a particular service.

- The level of funding can be influenced by provisions that designate minimum or maximum allotments, set aside portions of an appropriation for specific grantees, establish hold-harmless allotments to ensure that states or territories would receive at least a percentage of a prior year's funding, or specify equal distributions among states for at least a portion of the available funds. In some cases, a formula only applies if the program's funding is above a certain threshold. A grant amount may also be constrained by matching requirements at state or local levels.

Because of all these factors and variations across different federal formula programs, the effect of using adjusted census data would have to be calculated on a program by program and year-by-year basis. Further, one would need all of the applicable data elements, not just changes in population. In some cases, funding information or other data from prior years would also be required. It is clear, however, that the influence of a single data element, such as population, is limited in the context of the multiple variables involved in calculating fund allocations.

We simulated allocations for three major federal programs–Social Services Block Grant and the Federal-Aid Highway Program in which population is a factor, and Medicaid–to illustrate the potential effects on funds distribution using adjusted and unadjusted census data. The programs we selected were of sufficient size and variety to indicate the relative magnitude of possible changes in federal allocations to states. At the time of our analysis, these programs accounted for 60 percent of all funds allocated by federal formula programs using population data. In addition, each of these examples used population data in different ways. The Social Services Block Grant Program allocated funds on the basis of a state's share of the total population, the Federal-Aid Highway Program used population data as only one element, among many, in funding formulas, and Medicaid used population indirectly in calculating per capita income.

Our results showed that using adjusted data as the basis for allocations would have had little relative effect on the distribution of annual funding to states. For the three programs that we examined, less than half of 1 percent of total funding would be redistributed by using the revised population counts. However, by using the adjusted data, some individual states would have incurred estimated changes of over $1 million in their allocations. The simulations also showed that an increase in a state's population to adjust for net undercounts would not necessarily result in a gain in federal funding. In fact, using adjusted population data in our simulations reduced total federal spending for two of the three programs (Federal-Aid Highway and Medicaid). This occurred because of the combined effects of various formula and program provisions, such as the floors and ceilings on Medicaid reimbursement rates.

A subsequent revision of the estimated undercount rates for the 1990 Census is likely to have reduced our estimates of funds redistribution even further. For our simulations, we used the most current estimates available at the time of our analysis, which were the results of the 1990 Post Enumeration Survey (PES) as of July 1991, when Secretary of Commerce Robert Mosbacher decided not to adjust the 1990 Census. Several months after that decision, the Bureau discovered a computer coding error in the 1990 PES estimation procedures. Correcting for that error, together with other subsequent modifications and edits, lowered the PES estimates of the national net undercount in the 1990 Census by about half a percentage point, from around 2.1 percent to about 1.6 percent. Therefore, the relative adjustments in population data would have been even lower than those reflected in the data set we used for our simulations.

PROFESSOR MURRAY'S ANALYSIS OF REDISTRIBUTION EFFECTS IN MAY 1991

Professor Murray did a similar report on the estimated effects of 1990 census undercounts, but he worked with information on federal grant allocations from 1989.[4] He calculated that the total federal allocation from formula grants was about $236 per capita for eligible jurisdictions. However, after recalculating the individual formulas for federal grant programs taking into account the net undercount for each state and local jurisdiction, Professor Murray stated, ". . . I conclude adjustment of census counts leads to 0.32 percent of the $58.7 billion in grants being reallocated, with between 34 and 41 percent of states experiencing gains that average $55.74 per miscounted person." Notwithstanding, his overall conclusion bears repeating in full:

> "My analysis confirms what others have found: census adjustment will not much alter the distribution of federal transfers to state and local governments. Grants targeted to local governments are likely to be more affected by adjustment than are grants to states, but in both cases, the reallocations rates of grants tend to be less than half the aggregate adjustment rate for population, and across all programs I estimate that the reallocations from one community to another is one seventh the aggregate adjustment for population."

---

[4]Murray, Michael P. "Census Adjustment and the Distribution of Federal Spending," originally dated May 1991 and appearing as appendix 15 in the official records of Secretary of Commerce Robert A. Mosbacher's "Decision on Whether or Not a Statistical Adjustment of the 1990 Decennial Census Should Be Made for Coverage Deficiencies Resulting in an Overcount or Undercount of the Population; Explanation" published July 15, 1991. The paper was subsequently reprinted in a 1992 issue of Demography 29 (3):319-332.

As noted regarding our 1991 report, this analysis used the PES undercount estimates for the 1990 Census that were available at the time of the adjustment decision by the Secretary of Commerce. Corrections and other revisions of the PES lowered the estimated undercount rates. If Professor Murray's calculations were redone to reflect these changes, they would presumably show even smaller distributional effects from a potential adjustment of the census data.

Even using Professor Murray's original analysis, it is also important to recognize that the estimated figure of about $56 per net undercounted person is an average amount that only applies among gaining areas. Therefore, it would be an oversimplification to attempt to apply that figure for every jurisdiction with an estimated net undercount. Also, as suggested by the complexity of many of the formulas we examined, national average estimates that attempt to combine the effects of all grant formulas in one figure are unlikely to adequately reflect the diversity in potential effects on individual jurisdictions. For example, the federal allocations for one state could conceivably increase for some programs, remain unchanged for others, or even fall for some programs.

On May 9, 1998, we provided a draft of this letter to Professor Murray for his review. He subsequently told us that the discussion in this letter about his May 1991 report is accurate.

WHILE RELATIVE EFFECTS ARE SMALL, TOTAL FEDERAL OBLIGATIONS ARE INCREASING

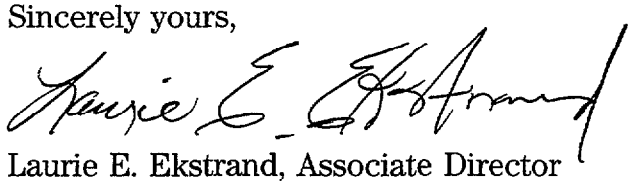
Even when the changes are relatively small, the actual dollar amounts involved in federal formula programs may appear substantial, especially to the affected jurisdictions. The overall magnitude of federal funding allocated on the basis of formulas using population data has increased dramatically since the 1990 Census. Michael Murray reported total obligations for 108 programs in 1989 of $58.7 billion. We reported that 100 programs using population data in fiscal year 1991 had estimated obligations of over $116 billion. By fiscal year 1996, just the 20 largest programs on our list had estimated obligations of over $170 billion. Medicaid accounts for most of this increase though inflation is also a factor. The effect of changes in funds distribution would also become more substantial when applied over the course of an entire decade.

- - - - -

We are sending copies of this letter to the Ranking Minority Member, Subcommittee on the Census, House Committee on Government Reform and Oversight; the Chairman and Ranking Minority Member, Senate Committee on Governmental Affairs; the Secretary of Commerce; and the Director, Bureau of the Census. Copies will be made available to others on request.

Please contact me on (202) 512-8676 or James H. Burow, Assistant Director, on (202) 512-3941 if you or your staff have any questions. The other major contributor to this letter was Timothy A. Bober, Senior Evaluator.

Sincerely yours,



Laurie E. Ekstrand, Associate Director
Federal Management and Workforce Issues

(410322)

Ordering Information

The first copy of each GAO report and testimony is free. Additional copies are $2 each. Orders should be sent to the following address, accompanied by a check or money order made out to the Superintendent of Documents, when necessary. VISA and MasterCard credit cards are accepted, also. Orders for 100 or more copies to be mailed to a single address are discounted 25 percent.

Orders by mail:

U.S. General Accounting Office
P.O. Box 37050
Washington, DC 20013

or visit:

Room 1100
700 4th St. NW (corner of 4th and G Sts. NW)
U.S. General Accounting Office
Washington, DC

Orders may also be placed by calling (202) 512-6000 or by using fax number (202) 512-6061, or TDD (202) 512-2537.

Each day, GAO issues a list of newly available reports and testimony. To receive facsimile copies of the daily list or any list from the past 30 days, please call (202) 512-6000 using a touchtone phone. A recorded menu will provide information on how to obtain these lists.

For information on how to access GAO reports on the INTERNET, send an e-mail message with "info" in the body to:

info@www.gao.gov

or visit GAO's World Wide Web Home Page at:

http://www.gao.gov

United States
General Accounting Office
Washington, D.C. 20548-0001

Bulk Rate
Postage & Fees Paid
GAO
Permit No. G100

Official Business
Penalty for Private Use $300

Address Correction Requested