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The Decennial Census:  
Potential Risks To Data Quality  
Resulting From Budget Reductions And  
Cost Increases.

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Statement of  
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Government Business Operations Issues  
General Government Division

Before the  
Subcommittee on Census and Population  
Committee on Post Office and Civil Service  
House of Representatives

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THE DECENNIAL CENSUS:  
POTENTIAL RISKS TO DATA QUALITY RESULTING  
FROM BUDGET REDUCTIONS AND COST INCREASES

SUMMARY STATEMENT OF  
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OPERATIONS ISSUES

The Census Bureau has made program changes to accommodate about \$129 million in congressional budget reductions in fiscal years 1988-90. The most substantial reduction, \$57.6 million, was made in the Bureau's fiscal year 1990 budget request.

As a result of this \$57.6 million reduction, the Bureau initially cancelled the vacant/delete program. This program is used to verify the occupancy status of housing units reported as vacant or nonexistent during the Bureau's follow-up operation. The Bureau estimates that this program added about 1.7 million persons to the 1980 census counts and could add 2 million persons in 1990.

Although the Department of Commerce has decided to reinstate the vacant/delete program, funds are not currently available to implement it. The Bureau plans to fund the program either through savings from a higher-than-expected mail response rate or a supplemental appropriation. According to Bureau officials, in the event it does not obtain the funding as planned, the Bureau may need to scale back postcensus operations beginning in August 1990. Under these circumstances, the Bureau would preserve operations aimed at developing counts for apportionment purposes, preparing redistricting counts for the states, and coverage evaluation activities needed for the possible adjustment of census counts. However, other operations may be at risk, and if they are not fully implemented or delayed, this could impair data quality more severely than in the 1980 census.

In addition to budget reductions, the Bureau had to adjust planned operations to accommodate unanticipated cost increases, the 1990 budget sequestration, and new program priorities. To accommodate these changes, the Bureau reduced edit follow-up for most mail-out questionnaires. Bureau officials recognize this may pose some risk to data quality; however, the Bureau has not determined its full effect. We encourage the Bureau to evaluate the impact of this change on data quality.

The Bureau may also be vulnerable to cost increases as full-scale operations begin. These vulnerable areas include difficulties in recruiting temporary workers and a lower-than-expected mail response rate. Although the Bureau has taken some important steps to better position itself for 1990 recruiting challenges, the Bureau is having difficulty meeting its early recruiting goals. If the Bureau encounters staffing shortfalls, operations could be delayed, contributing to increased costs.

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Mr. Chairman and Members of the Subcommittee:

We welcome this opportunity to discuss our observations on the decennial census budget issues. The Subcommittee asked that we discuss the Bureau's actions to accommodate the \$57.6 million reduction in its \$1.3 billion fiscal year 1990 decennial census budget request and the effect of these actions on the quality of census data. In addition, I will discuss other adjustments the Bureau has made to planned operations to accommodate unanticipated cost increases, the 1990 budget sequestration, and new program priorities.

I will also discuss areas where the Bureau is particularly vulnerable to additional cost increases as full-scale census operations are about to begin. These include difficulties in recruiting temporary workers and a lower-than-expected mail response rate.

My comments today are based on our review of the Bureau's cost estimates, its budget memoranda, and discussions with Bureau officials. We did not attempt to verify the accuracy of the Bureau's cost estimates. My comments on personnel issues are based on our soon-to-be-released report on the Bureau's recruiting for the 1989 address list development activities.

ACTIONS TAKEN TO ADDRESS BUDGET SHORTFALLS  
AND COST INCREASES MAY POSE RISK TO DATA QUALITY

The Bureau has made program changes to accommodate about \$129 million in congressional budget reductions for fiscal years 1988-90, a major portion of which occurs in fiscal year 1990. Delays in starting and completing several early 1990 decennial census operations--for example, address list development activities for suburban and rural areas--may have contributed to a total of about \$118.1 million in carryover funds from the Bureau's fiscal years 1987-89 appropriations. These carryover amounts may have contributed to congressional decisions to reduce the Bureau's budget requests for fiscal years 1988-90.

In addition to congressional budget reductions, to accommodate cost increases for other operations and to fund new program priorities, the Bureau made a major change in planned procedures. According to Bureau officials, this change may pose some risk to data quality. In addition, we believe this change could hamper the progress and the precision of coverage evaluation activities, such as the post enumeration survey. This survey determines whether each person was counted correctly or missed in the census. If an adjustment to the 1990 census counts is to be made, it will be based on these survey results.

Reductions Made  
to Meet Budget Shortfalls

To meet the \$57.6 million reduction in its fiscal year 1990 appropriations request, in late October 1989, the Bureau cancelled its most expensive coverage improvement program--the vacant/delete check, most recently estimated to cost about \$64 million. This check is used to verify that housing units on the Bureau's address list were correctly classified during nonresponse follow-up as vacant or nonexistent. During nonresponse follow-up, census enumerators visit households that did not return a questionnaire to verify their occupancy status.

In 1980 the Bureau, through its vacant/delete check, found that 768,000 of the 8.4 million housing units that were initially classified as vacant or nonexistent were in fact occupied. The Bureau estimated that this check added about 1.7 million persons to 1980 census counts, including a higher proportion of blacks than in the general population. This group has traditionally been undercounted. For 1990, the Bureau estimates that this program could add as many as 2 million persons to the count.

When the Bureau cancelled the 1990 vacant/delete program, it said that it would continue the necessary preparatory activities to implement the program should sufficient funding become available later in the census. The Bureau specifically identified possible savings from a higher-than-budgeted mail response rate as a

potential source of funding. On January 30, 1990, and again on February 28, 1990, the Department of Commerce's Undersecretary for Economic Affairs said in congressional testimony that the Bureau would proceed with the vacant/delete program as originally planned. The Undersecretary said that the Department would request a dire emergency supplemental appropriation, if necessary, to fund the vacant/delete program.

In order to fund the vacant/delete program within its current budget authority, the Bureau would need a mail response rate several percentage points higher than what it has assumed for planning and budgeting purposes. For planning the 1990 census, the Bureau has assumed a response rate of 70 percent, 5 percentage points below the response rate that was obtained for the 1980 census. While we agree that a higher-than-expected mail response rate would generate significant savings, there is no current reason to expect such an improvement.

According to Bureau officials, the Bureau will proceed with the vacant/delete program regardless of whether it obtains a higher-than-expected mail response rate or a supplemental appropriation. In the event it does not obtain funds from either of these sources, to cover these costs, Bureau officials said they would most likely scale back decennial operations beginning in August 1990. They said, however, that under this scenario, three areas would be protected from program reductions--activities associated

with delivering apportionment counts to the President, preparing redistricting counts for the states, and completing the post enumeration survey.

In scaling back operations, some postcensus activities may be cancelled or delayed, posing some risk to data quality. For example, Bureau officials said that the postcensus local review program may be cancelled. This cancellation would limit the opportunity of local governments to assist in ensuring a complete and accurate census count by identifying instances where the Bureau did not locate housing units.

In addition, Bureau officials said that delays may also occur in the search/match operation. This operation attempts to assure that certain population groups are not missed or double counted and are counted at the appropriate geographic location. For example, this would include persons who were not at their usual residence on Census Day. According to the Bureau, if delays are significant, results from the search/match may be excluded from the apportionment counts that will be provided to the President.

They also said that delays may occur in the keying and coding of certain population characteristic data and thus delay the publication of these data. This is similar to what happened in the 1980 census when, because of budget shortfalls, the Bureau reduced the number of staff who coded population characteristic

data from questionnaires, contributing to a 1-year delay in the publication of some of these data.

Unanticipated Cost Increases  
Result in Reduced Follow-up Procedures

In our March 1989 testimony we said that as the Bureau moves to contain costs, it would simultaneously face additional financial pressures.<sup>1</sup> This has in fact now happened. The Bureau has had to adjust its fiscal year 1990 spending plans to shift resources to accommodate unanticipated cost increases and to fund new program priorities.

Some examples of the unanticipated cost increases include a \$6 million increase in estimated mileage reimbursement costs and about \$9.3 million to fund 1990 federal pay raises. New funding priorities include the addition of a \$4.2 million coverage improvement program that will count parolees and probationers and \$5.2 million in additional funding for the post enumeration survey.

To fund cost increases and to accommodate the \$7.7 million 1990 budget sequestration, the Bureau decided to reduce edit follow-up procedures for mail-out short-form questionnaires by \$36 million. Initially, the Bureau planned to have all mail-out short-form questionnaires edited. Questionnaires with inconsistent or

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<sup>1</sup>Status of Plans for the 1990 Decennial Census: An Update,  
(GAO/T-GGD-89-15, Mar. 23, 1989).



missing population characteristic data would have been resolved either by telephone or a personal visit by a census enumerator.

Rather than do follow-up work on the entire inventory of short-form questionnaires that have inconsistent or missing population characteristic data--for example, age, race, and sex data--the Bureau now plans to do follow-up work on 10 percent of these questionnaires. The Bureau will use an automated statistical technique known as imputation to assign responses to those questionnaires that have missing or inconsistent population characteristic data. These responses are assigned using questionnaire data from a geographically proximate housing unit.

According to Bureau officials, the reduction in follow-up may pose some risk to data quality; however, the Bureau has not quantified that risk. In addition, as we said in testimony before this Subcommittee in January 1990, reduced follow-up will decrease the amount of data collected from households, may make the post enumeration survey matching more difficult and time-consuming and potentially impair the precision of data that could be used to adjust census counts.<sup>2</sup>

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<sup>2</sup>Critical Issues for Census Adjustment: Completing Post Enumeration Survey on Time While Protecting Data Quality, (GAO/T-GGD-90-15, Jan. 30, 1990).

Impact of Reduced Questionnaire Edit  
Follow-up Should be Evaluated

We are concerned that the Bureau decided to reduce short-form questionnaire edit follow-up without having thoroughly studied its impact on data quality. As part of the Bureau's 1990 research and experimental program, the Bureau plans to estimate the errors that imputation introduces into census data. According to Bureau officials, this study will incorporate some analysis of the impact of reduced edit follow-up on data quality. We encourage the Bureau and the Department of Commerce to follow through on the Bureau's evaluation plans because of the implications not only for data quality for the 1990 census but also for planning for future decennial censuses.

ADDITIONAL FACTORS THAT MAY  
CONTRIBUTE TO HIGHER CENSUS COSTS

The Bureau's ability to recruit and retain a sufficient number of temporary workers to take the census and the level of voluntary public cooperation in completing and returning census questionnaires represent significant unknowns, with major cost implications.

Recruitment

In prior decennial censuses, the Bureau experienced problems recruiting and retaining employees. Meeting recruiting goals is

important not only to ensuring that a sufficient number of staff are available for hiring but also for providing managers with flexibility to release employees that are not meeting production requirements. Meeting production goals also is important to completing operations in a timely manner and thereby remaining within budget. Even minor deviations from productivity goals could cause census costs to escalate dramatically. For example, the Bureau estimates that for each across-the-board percentage decrease in productivity, costs increase by \$6.3 million.

During the 1990 precensus activities, the Bureau experienced staffing difficulties, most recently in 1989 when the Bureau developed its urban address list. About 47 percent of the Bureau's district offices did not meet recruiting goals by the time this field activity began. Staff shortages in 15 of its 109 district offices were severe enough to contribute to delays and increased costs in completing field activities in most of these offices.

The Bureau has taken some important steps to better position itself for the recruitment challenges it faces during 1990. For example, the Bureau implemented a geographic pay system that should enable it to better compete for employees needed for census positions. Also, at the Bureau's request, the Department of Health and Human Services decided to allow states to request waivers from provisions that would require Aid to Families with

Dependent Children recipients to have their benefits reduced if they work on the census. In addition, last year's legislation, sponsored by this Subcommittee, enabling federal retirees to work on the census without reductions to their annuities or salaries should also increase the potential number of applicants for census employment.

Despite these efforts, the Bureau faces a considerable challenge in recruiting and retaining the 390,000 temporary workers it will need this year. Uncertainty about the competitiveness of its geographic pay rates is a major concern. These pay rates were not based on local market analyses and were not tested under census-like conditions. The geographic pay plan contains seven different wage rates, ranging from \$5.00 to \$8.00 per hour for enumerators. The maximum pay rate was based on the results of the pay increase the Bureau used to attract enumerator staff to complete the 1988 suburban and rural address list development activities in six East Coast areas. The \$8.00 rate was established arbitrarily in 1988, according to the Bureau, but appears to have assisted in attracting applicants.

The real test of the effectiveness of the geographic pay rate will come when the Bureau begins hiring for peak activities, which are scheduled to run from April to June. However, the Bureau's early 1990 recruiting performance indicates difficulties in meeting recruiting goals. For example, 92 percent of the

district offices had not met the Bureau's March 9 recruiting milestone of 70 percent of the 1990 recruiting goal. Nationally, the Bureau has met 39 percent of its goal.

Level of public cooperation

Another significant determinant of census costs is the overall mail response rate. As I discussed earlier, the Bureau has budgeted for a 70 percent mail response rate and hopes that it may be higher. However, in the event the response rate is lower, follow-up costs will be higher than anticipated. The Bureau estimates that for each percentage decrease in the mail response rate, follow-up costs increase by \$10 million. If the mail response rate falls significantly below the planned level, the Bureau faces the potential of substantial cost increases. Under this scenario, the Bureau may be forced to request additional supplemental funding or further reduce or delay census operations, which could result in additional adverse effects on data quality.

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That concludes my prepared statement, Mr. Chairman. My colleagues and I would be pleased to respond to questions.