

DISCUSSION
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First, the authors of these papers should be congratulated for a very interesting analysis of these coverage improvement programs carried out in the 1980 Census. The first five papers presented at this session describe coverage improvement programs included in the 1980 Census. The net effect of these programs and others carried out by the Bureau of the Census (such as the "outreach program") is that it is estimated that the 1980 Census achieved a very high degree of coverage. The latest estimates of demographic analysis estimate the coverage of the 1980 Census to be 99.5%. The question still remains about the differential coverage of specific subgroups of the population, such as the Black, the Hispanic population - or the population living in central cities.

Figure I reproduces selected cost and coverage improvement numbers given in the papers. The objective of presenting these numbers is to be able to focus on the costs and effects of these various programs, and also to consider whether these programs might be used to improve coverage in the 1990 Census.

One must also keep in mind that the coverage improvement programs carried out in the 1980 Census might or might not be appropriate for 1990 depending on the type of Census to be carried out in 1990. There are still many planning decisions which have not been taken and depending on the final design of the 1990 Census, one must adapt the coverage improvement programs.

The postal checks discussed in the paper by Kathryn Thomas and David Whitford describe the various ways in which the Post Office reviewed address lists in order to improve them. The cost figures given in the paper say that about \$7.0 million was spent and 7.9 million address cards were added to the 1980 Census in the APOC (see Figure I). However, it is estimated that about 40% of these address cards resulted in coverage improvement. Therefore, each address corrected by the Census Bureau cost \$1.42. Other post office checks cost about \$2 per address corrected. At present a test is being carried out by the Bureau of the Census where the Post Office is being asked to develop an address list (as opposed to being asked to correct an existing mailing list). In this period of developing and testing the 1990 Census a broader role is being considered for the Post Office.

The second paper prepared by Milton Fan, Martha Sutt, and John Thompson describes the prec canvass operation.

was carried out to improve the coverage of the mailing lists which were first compiled based on commercial lists bought by the Census Bureau and later updated by the post office. It is estimated that the cost of the prec canvass was about \$12 million and that 2.3 million addresses were added. The average cost per address is about \$5. However, Table 1 of the Fan, Sutt, and Thompson paper states that about 1.9 million addresses were added in which the prec canvass and the Post Office checks are given a joint responsibility for certain added addresses. It is important to keep in mind that these various coverage improvement operations are not completely independent.

The third paper prepared by George Sledge, Tom Harahush and Robert O'Brien discusses misclassified/occupied coverage operations. The cost of this 1980 Census operation was \$31.2 million. Since this operation added about 1.7 million persons to the 1980 Census, the cost per person added was about \$19. This program followed up 100% of the housing units initially reported as vacant in the Census. (In 1979 a similar program followed up a sample of about 15,000 vacant housing units). The high cost of this 1980 program could be reduced if the follow-up were restricted to a sample of the vacant households. This suggestion needs to be seriously considered in planning for the 1990 Census. This program did yield a larger proportion of Blacks and Hispanics than those found in the general population.

This paper also discusses the H4 edit. This operation compared the number of units in the housing unit reported by respondents to the number of units reported in the census. A sample was studied and 93,000 units were added to the 1980 Census with this operation. The cost of this program was approximately \$7.5 million. Therefore, the cost per unit added was \$81.

The fourth paper prepared by Catherine Keeley and John Thompson reports the 1980 Census Nonhousehold Sources Program. The cost of this program is reported as \$6.3 million and 127 thousand persons were added. Based on these estimates, the average cost of adding one person is \$50. Please note that for centralized census areas (those areas considered hard-to-enumerate), the cost of adding one person is \$36, while in decentralized areas the cost of adding one person is \$72. The program did serve to add minority population, but the cost was high and the program was difficult to implement. As the plans for the 1990 Census are developed, we need to consider

what lists might be most productive, how to select the areas in which the program should be carried out, the scope of the program and the many other operational aspects which could make the program more effective.

The fifth paper discusses two issues: (a) the prelist recanvass prepared by Marjorie Lueck and Tom Harahush, and (b) the Local Review prepared by George Sledge. The prelist recanvass reviewed the address list in selected areas where the list was prepared by enumerators. This program cost about \$10 million and added about 115 thousand addresses. The cost per added housing unit was \$59. The analysis showed that this operation did not pick up minority groups at a higher rate than the racial composition of the Census area. In looking towards 1990 it may be that areas where the address register is developed by enumerator prelisting may expand. If so, it may be necessary to test alternative ways for the prelist recanvass operation to be carried out in order to improve its effectiveness.

In the local review program 39,000 local government jurisdictions received a preliminary count of housing units in their area. About one-third of these governmental units responded. The cost of this operation was \$4.4 million. It seems that this operation needs to be improved for 1990 in order to achieve a greater participation of local areas.

The last paper presented in this session on relative coverage of the 1980 Census in Puerto Rico was prepared by Robert O'Brien. This study was a match of the Puerto Rico labor force survey into the Census. The objective was to evaluate and measure the relative coverage of the Puerto Rico 1980 Census. The 1980 Census in Puerto Rico was a conventional census. One result of this study is the lower match rate achieved for the district offices of San Juan and Caguas (see Table 3 of the paper). A recommendation given in the paper is the need to consider the use of the mail in the high-density urban area of Puerto Rico. The specific procedures to be used (update - list - leave or prelist/precanvass) should be tested to determine the most effective procedure.

In concluding, all the authors of these papers should be thanked for having documented thoroughly very interesting aspects of the coverage improvement operations of the 1980 Census. It is these operations (and some others not covered at this session) that are responsible for the low degree of the estimated undercount of the 1980 Census. At present the official undercount estimate is 0.5% overall, 5.3% for the Black population and an 0.2% overcount for the White and other races. A paper given by Passel and Robinson reports that these estimates may be slightly revised upward based on some refinements they have been able to identify.

Topic 8 of Figure I lists the 1980 costs of programs discussed in the first five papers. The estimated cost of these six programs is \$91 million. Other programs not listed, such as the outreach program, would need to be included to consider the total cost of the 1980 coverage improvement programs. I have not included a sum of the number of persons or housing units added by these programs because some of these programs are not independent. The total cost of the 1980 Census was about 1 billion dollars and the order of magnitude of the coverage improvement programs was about \$100 million dollars. Therefore, approximately 10% of the decennial budget was used for coverage improvement programs.

The question which must be examined now in looking ahead towards the 1990 decennial census is to determine which coverage improvement programs will be effective in achieving a very high degree of coverage, reducing the differential coverage for the various subgroups of the population, and be cost effective. The programs described here need to be reevaluated before 1990 to determine how they can be carried out most effectively in the context of the 1990 census operation. Between now and 1990 we may test new coverage improvement operations, as well as revised versions of the 1980 coverage improvement programs, to select the programs which will provide a cost effective way to achieve a high degree of coverage in 1990.

FIGURE I

RESULTS OF EVALUATIONS OF 1980 CENSUS COVERAGE IMPROVEMENT PROGRAMS

1. Postal Checks:

	APOC	Casing of questionnaire, Time of delivery, PEPOC
Cost to USPS	\$4,559,000	\$6,150,000
Cost to census staff	2,188,000	3,441,000
Other costs	224,000	3,025,000
TOTAL COST	\$6,971,000	\$12,616,000
Address cards added/changed	7,903,000	9,485,000
Cost: average per card	\$0.88	\$1.33
Cost: average per address corrected	\$1.42	\$2.02

2. Precanvass:

Cost	\$11.80 million
Addresses added	2.30 million
Cost per addresses added	\$5.12 average

3. Misclassified/Occupied: (Proportions of Blacks/Hispanics higher in this group than in general population.)

	<u>Total</u>	<u>Centralized</u>	<u>Decentralized</u>
Cost	\$31.2 million	\$5.9 million	\$25.3 million
Persons Added	1,724,000	318,000	1,406,000
Cost/Person	\$19	\$22	\$18

4. H4 edit for 1980 census was done on a sample basis:

Cost	\$7.5 million
HU added	93,000
Cost per unit added	\$81

5. Nonhousehold Sources Program: (Program did add minority populations.)

	<u>Total</u>	<u>Centralized</u>	<u>Decentralized</u>
Cost	\$6.3 million	\$2.8 million	\$3.5 million
Persons Added	126,848	78,011	48,837
Cost/Person	\$50	\$36	\$72

6. Prelist Recanvass: (Program did not pick up minority groups at a higher rate than the racial composition of the given Census area.)

Cost	\$10.29 million
Housing Units Added	115,305
Cost per unit added	\$59

7. Local Review: (Response rate was 32% of the 39,000 government jurisdiction responded.)

Cost	\$4.4 million
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8. Overall cost of coverage improvement operations listed in the first five papers presented:

	Million
Postal check	\$19.6
Precanvass	11.8
Misclassified/Occupied	31.2
H4 edit	7.5
Nonhousehold Sources	6.3
Prelist Recanvass	10.3
Local Review	4.4
TOTAL	\$91.1