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Population Estimates and Projections

1976 Population Estimates and 1975 and Revised 1974 Per Capita Income Estimates for Counties in Hawaii

This report is one of a series containing current estimates of the population and per capita money income for places in each State. The population estimate relate to July 1, 1976, and the estimates of per capita income (PCI) cover the 1975 and 1974 calendar years. The population estimates include revisions made during the review of the figures with local officials and, to the extent possible, also reflect changes made through the Office of Revenue Sharing challenge program. Population figures for earlier years comparable to the PCI estimates were published earlier in **Current Population Reports**, series P-25, Nos. 649 to 698, and are not repeated here. Revisions are being made to the 1975 population figures for approximately 400 places in the United States, to bring them in line with the 1976 figures shown here, however, and will be noted in subsequent reports. The entire 1974 series of income estimates is shown here due to major revisions in data and methodology that, to some degree, affect all areas.

Current estimates of population below the county level and per capita money income for all general-purpose governments were prompted by the State and Local Fiscal Assistance Act of 1972. The figures are used by a wide variety of Federal, State, and local governmental agencies for program planning and administrative purposes.

Areas included in this series of reports are all counties (or county equivalents such as census divisions in Alaska, parishes in Louisiana, and independent cities in Maryland, Missouri, Nevada, and Virginia) and incorporated places in the State, plus active minor civil divisions (MCD's), commonly towns in New England, New York, and Wisconsin, or townships in other parts of the United States.¹ These State reports appear in **Current Population Reports**, Series P-25, in

¹In certain midwestern States (Illinois, Kansas, Minnesota, Missouri, Nebraska, and the Dakotas) some counties have active minor civil divisions while others do not.

alphabetical sequence as report number 740 (Alabama) through number 789 (Wyoming). A list indicating the report number for each State is appended.

The detailed table for each State shows July 1, 1976 estimates of the population of each area, together with April 1, 1970 census population and numerical and percentage change between 1970 and 1976. The 1970 population and related per capita income figures reflect annexations since 1970 and include corrections to the 1970 census counts. In addition, the table presents per capita income estimates for the 1975 calendar year and revised figures for 1974, plus calendar year 1969 per capita money income derived from data collected in the 1970 census.

The estimates are presented in the table in county order, with all incorporated places in the county, listed in alphabetical order, followed by any functioning minor civil divisions also listed in alphabetical order. Minor civil divisions are always identified in the listing by the term "township," "town," or other MCD category. When incorporated places fall in more than one county, each county piece is marked "part," and totals for these places are presented at the end of the table.

POPULATION ESTIMATES METHODOLOGY

To estimate the population of each subcounty area, a component procedure (the Administrative Records method) was used, with each of the components of population change (births, deaths, net migration, and special populations) estimated separately. The estimates were derived in three stages, moving from 1970 as the base year to develop estimates for 1973, and in turn, moving from 1973 as the base year to derive estimates for 1975, and from 1975 as the base year for 1976.

Migration. Individual Federal income tax returns were used to measure migration by matching individual returns for

successive periods. The places of residence on tax returns filed in the base year and in the estimate year were noted for matched returns to determine in-migrants, out-migrants, and non-migrants for each area. A net migration rate was derived, based on the difference between the immigration and outmigration of taxpayers and dependents, and was applied to a base population to yield an estimate of net migration for all persons in the area.

Natural increase. Reported resident birth and death statistics were used, wherever available, to estimate natural increase. These data were collected from State health departments and supplemented, where necessary, by data prepared and published by the U.S. Department of Health, Education, and Welfare, National Center for Health Statistics. For subcounty areas where reported birth and death statistics were not available from either source, estimates were developed by applying fertility and mortality rates. These estimates were subsequently controlled to agree with birth and death statistics for the reported county areas.

Adjustment for special populations. In addition to the above components of population change, estimates of special populations were also taken into account. Special populations include immigrants from abroad, members of the Armed Forces living in barracks, residents of institutions (prisons and long-term health care facilities), and college students enrolled in full-time programs. These populations were treated separately because changes in these types of population groups are not always adequately reflected in the components of population change developed by standard measures, and the information can be collected for use as an independent series.

In generating estimates for counties by this procedure, the method was modified slightly to make the county estimates specific to the resident population under 65 years of age. The resident population 65 years old and over in counties was estimated separately by adding the change in Medicare enrollees between April 1, 1970 and July 1 of the estimate year to the April 1, 1970 population 65 years old and over in the county as enumerated in the 1970 census. These estimates of the population 65 years old and over were then added to estimates of the population under 65 years old to yield estimates of the total resident population in each county.

Annexations and new incorporations. The 1970 census counts shown in this report reflect all population "corrections" made to the figures after the initial tabulations. In addition, adjustments for annexations through December 31, 1976, are reflected in the estimates for areas where arrangements were made for determining the population in the annexed area in 1970.² For new incorporations occurring

after 1970, the 1970 population within the boundaries of the new areas are shown in the detailed table.

Other adjustments. For areas where special censuses were conducted at dates that approximate the estimate date, the census results were taken into account in developing the estimates.³ In several States, the subcounty estimates developed by the Administrative Records method were averaged with estimates for corresponding geographic areas which were prepared by State agencies participating in the Federal-State Cooperative Program for Local Population Estimates (FSCP). These States include California, Florida, Oregon, Washington, and Wisconsin.

The estimates for the subareas in each county were adjusted to independently derived county estimates. Since all of the data necessary to develop final estimates under the FSCP program are not available at the time subcounty estimates are prepared, only two of the methods relied upon in the standard FSCP program of estimates for counties (i.e., Component Method II and the Administrative Records method) were utilized. The 1976 estimates result from adding the average 1975-76 population change indicated by the two methods to the 1975 county population figures contained in **Current Population Reports**, Series P-25 and P-26.

The county estimates, in turn, were adjusted to be consistent with independent State estimates published by the Bureau of the Census in **Current Population Reports**, Series P-25, No. 727, in which the Administrative Records-based estimates were averaged with the estimates prepared using Component Method II and the Regression method.⁴

PER CAPITA INCOME ESTIMATES METHODOLOGY

The 1975 per capita income (PCI) figure is the estimated average amount per person of total money income received during calendar years 1975 for all persons residing in a given political jurisdiction. The 1975 estimates are based on the 1970 census and have been updated using rates of change developed from various administrative record sets and compilations, mainly from the Internal Revenue Service (IRS) and the Bureau of Economic Analysis (BEA).

The PCI estimates are based on a money income concept. Total money income is defined by the Bureau of the Census for statistical purposes as the sum of:

- Wage and salary income
- Net nonfarm self-employment income
- Net farm-self-employment income
- Social Security and railroad retirement income
- Public assistance income

³ Only special censuses conducted by the Bureau of the Census or by the California, Florida, Michigan, Oregon, or Washington State agencies participating in the Federal-State Cooperative Program for Local Population Estimates were used for this purpose. In addition, in a relatively small number of cases where special censuses were conducted by localities, where the procedures and definitions were essentially the same as those used by the Bureau of the Census, the results of these special censuses were also taken into account in preparing the estimates.

⁴ For further discussion of the methodologies used in preparing State estimates, see **Current Population Reports**, P-25, No. 640.

² In general, an annexation was included if the 1970 census count for the annexing area was 5,000 or more and the 1970 census count for the annexed area or areas exceeded 5 percent of the 1970 count for the annexing area. Adjustments were also made for a limited number of "unusual" annexations where the annexations for an area did not meet the minimum requirements but were accepted for inclusion in the population base.

All other income such as interest, dividends, veteran's payments, pensions, unemployment insurance, alimony, etc.

The total represents the amount of income received before deductions for personal income taxes, Social Security, bond purchases, union dues, Medicare deductions, etc.

Procedures for State and county PCI estimates. As noted above, the 1975 State and county PCI estimates were based on the 1970 census.⁵ The updates for these areas were developed by carrying forward the aggregate amount (i.e., the sum of all individual incomes in the State or county) independently for each type of income identified in the census to reflect differential changes in these income sources between 1969 and the estimate date. Data from the 1969 and 1975 Federal tax returns provided by the Internal Revenue Service were used to estimate the change in wage and salary income at the State and county level. All other types of income for these governmental units were updated using rates of change based on estimates of aggregate money income provided by the Bureau of Economic Analysis.

At the county level, several modifications of these procedures were used to better control the estimates of income change. For example, the IRS data for sub-State jurisdictions were subject to nonreporting of address information on the tax return and to misassignment of geographic location for reported addresses. To minimize the impact on the estimates from such potential sources of error, per capita wage and salary income for counties was updated intact as a per capita figure using the percentage change in wage and salary income per exemption reported on IRS returns. In addition, because of differences in the definition of income, data collection techniques, and estimation procedures, 1969 income estimates from the census and BEA were not strictly comparable. These differences were especially evident at the county level for nonfarm and farm self-employment income. BEA estimates for these types of income tend to have considerably more year-to-year variation than estimates derived from surveys and censuses. To minimize the effects of these differences, constraints were imposed on the rate of change in income from these sources in developing the 1975 PCI updates.

As a final step to ensure a uniform series of estimates at the State and county levels, the updated county per capita figures were converted to a total aggregate income and were adjusted to agree with the State aggregate level before a final per capita income was calculated.

Procedures for subcounty per capita income estimates. The 1975 per capita income estimates for subcounty governmental units were developed using a methodology similar to that used to derive county-level figures. However, there are differences in the number of separate categories of income types used in the estimation procedure, and in the sources used to update the income components.

As in the case of the population estimates, a multi-step procedure was relied upon to update the income figures from their 1969 level to refer to 1975. Estimates for 1972 were prepared using the rate of change from 1969 to 1972. Estimates for 1974 were then developed based on the 1972 estimates, and were updated by an estimate of change from 1972 to 1974. The 1975 figures were then based upon the 1974 estimate. Also, as in the case of the population figures, the subcounty income data were uniformly adjusted to reflect major annexation and boundary changes which occurred since 1970.

1969 base estimates. The 1970 census PCI figures for small areas are subject to sizable sampling variability, causing them to lack sufficient statistical reliability for use in the estimation process. For this report, the 1969 PCI shown for areas with a 1970 census sample population estimate of less than 1,000 is a weighted average of the original 1970 census sample value and a regression estimate. Research has indicated that this procedure results in a considerable improvement in accuracy compared to the procedure relied upon in earlier estimates, which was to use the county PCI amount for various small governmental units. The resulting 1969 estimate for each of these areas is a base estimate for preparing 1972, 1974, and 1975 estimates and does not represent a change in the 1970 census value for these areas.

For subcounty updating, 1969 total money income was divided into two components: (1) taxable income which is approximately comparable to that portion of income included in IRS adjusted gross income, and (2) transfer income which, for the most part is not included in adjusted gross income. These 1969 subcounty estimates were adjusted to 1970 census totals for higher level government units. This was done using a two-way adjustment procedure controlling both to county totals and to several size class totals for the State.

1975 PCI updates. The taxable income portion of the 1969 money income was updated using the percent change in adjusted gross income (AGI) per exemption as computed from IRS tax return data. However, if the number of IRS tax returns for any area was very small, or if the ratios of exemptions to the population or the change in the ratios from 1969 to 1972, 1972 to 1974, and 1974 to 1975 were not within an acceptable range, the IRS data for the subcounty areas were not used in the update process. In such cases, the average percent change in AGI per exemption for similar governmental units in the county was used. Similarly, if the IRS data for a particular subcounty area passed the above conditions, but the percentage change in AGI per exemption was excessively large or small compared to that for similar units in the county, the change was constrained to a proportion of the average change of similar units.

The percentage change in per capita transfer income at the subcounty level was assumed to be the same as that implied by the BEA estimates at the county level.

The estimates of taxable income and transfer income were adjusted separately to the county controls and were then

⁵ Income data from the 1970 census reflect income received in calendar year 1969.

combined to produce total money income. The PCI estimates were formed by dividing the total money income aggregates by the population estimates.

LIMITATIONS OF THE ESTIMATES

Population estimates. Tests of the accuracy of the methods used to develop State and county population estimates appearing in **Current Population Reports**, Series P-25 and P-26 have been documented elsewhere. The results of evaluations against the 1970 census at the State level are reported in Series P-25, No. 520, while similar 1970 tests for counties are presented in Series P-26, No. 21. In summary, the State estimates averaging Component Method II and the Regression method yielded average differences of approximately 1.9 percent when compared to the 1970 census. Subsequent modifications of the two procedures that have been incorporated in preparing estimates for the 1970's would have reduced the average difference in 1970 to 1.2 percent. For counties, the 1970 evaluations indicated an average difference of approximately 4.5 percent for the combination of procedures used. It should be noted that all of the evaluations against the results of the 1970 census concern estimates extending over the entire 10-year period of 1960 to 1970.

Since 1970, however, the Administrative Records method has been introduced with partial weight in the estimates for States and counties, and except for the few States in which local estimates are utilized, carries the full weight for estimates below the county level. The data series upon which the estimates procedure is based has been available as a comprehensive series for the entire United States only since 1967. Nonetheless, several studies have been undertaken evaluating the Administrative Records estimates from the

State to the local level. At the Statewide level, little direct testing can be performed due to the lack of special censuses covering entire States. Some sense of the general reasonableness of the Administrative Records estimates may be obtained, however, by reviewing the degree of correspondence between the results of the method against those of the "standard" methods tested in 1970 and already in use to produce State estimates during the 1970's. It must be recognized that the differences between the two sets of estimates may not be interpreted as errors in either set of figures, but may only be used as a partial guide indicating the degree of consistency between the newer Administrative Records system and the established methods.

Table A presents such a comparison for State estimates referring to July 1, 1976. A rather close agreement may be observed in the estimates for all States at only a 1.1 percent difference. The variation of the Administrative Records method from the average of the other methods does increase for smaller States in a regular pattern, but still reaches an average of only 1.5 percent for the smallest size category. The only consistent variations suggesting a potential for directional bias are indicated in the tendency for larger States to be estimated higher by the Administrative Records procedures than by the other techniques.

A similar comparison may be made at the county level (table B). Although the differences between the FSCP estimates and the Administrative Records results are larger at the county level than for States, the variations are well within the range that would be expected for areas of this population size, and the county pattern matches closely the findings for States. The overall differences for all counties is 2.5 percent, and ranges from 1.5 percent for the larger counties to 10.1 for the 26 small counties under 1,000

Table A. Percent Difference Between Administrative Records Estimates and the Average of Component Method II and Regression Estimates for States: 1976

(Base is the average of Method II and Regression estimates)

Item	All States	Population size in 1970		
		4 million and over	1.5 to 4 million	Less than 1.5 million
Average percent difference (disregarding sign).....	1.1	0.7	1.1	1.5
Number of States.....	51	16	18	17
With differences of:				
Less than 1 percent.....	25	11	10	4
1 to 2 percent.....	19	5	5	9
2 percent and over.....	7	-	3	4
Where Administrative Records was:				
Higher.....	28	11	9	8
Lower.....	23	5	9	9

- Represents zero.

population. In addition, the variations from other FSCP methods shown for the 1976 estimates indicate substantial reduction from 1975 levels. Corresponding differences for the 1975 estimates were 3.3 percent, 1.8 and 11.7 percent, respectively.

Three tests of the Administrative Records population estimates against census counts also have been undertaken. First, a limited evaluation involving 24 large areas (16 counties and 8 cities) was conducted on estimates for the 1968-70 period.⁶ Although the test shows the estimates to

⁶Meyer Zitter and David L. Word, U.S. Bureau of the Census, "Use of Administrative Records for Small Area Population Estimates," unpublished paper prepared for presentation at the annual meeting of the Population Association of America, New Orleans, Louisiana, April 27, 1973.

be quite accurate (1.8 percent difference), the areas may not be assumed to be representative of the 39,000 units of government covered by the Administrative Records estimating system, and the time segment evaluated refers only to a 2-year period.

A more representative group of special censuses in 86 areas selected particularly for evaluation purposes was conducted in 1973. The areas were randomly chosen nationwide to be typical of areas with populations below 20,000 persons. Table C summarizes the average percent difference between the estimates from the Administrative Records method and counts from the 86 special censuses. Overall, the estimates differed from the special census counts by 5.9 percent, with the largest differences occurring in the smallest areas. Areas of between 1,000 and 20,000 popula-

Table B. Percent Difference Between Administrative Records Estimates and the Provisional FSCP Estimates for Counties: 1976

(Base is the provisional FSCP estimates for counties)

Item	All counties	Counties with 1,000 or more 1970 population					Counties with less than 1,000 1970 population
		Total	50,000 or more	25,000 to 50,000	10,000 to 25,000	1,000 to 10,000	
Average percent difference (disregarding sign).....	2.5	2.4	1.5	2.1	2.5	3.5	10.1
Number of counties or equivalentents.....	3,143	3,117	679	567	1,017	854	26
With differences of:							
Less than 1 percent.....	906	904	286	184	268	166	2
1 to 3 percent.....	1,338	1,331	314	264	437	316	7
3 to 5 percent.....	504	505	59	76	206	162	1
5 to 10 percent.....	327	322	19	40	92	171	5
10 percent and over.....	68	57	1	3	14	39	11

Table C. Percent Difference Between Administrative Records Estimates (Unrevised) and 86 Special Censuses: 1973

(Base is special census)

Area	Average percent difference ¹	Number of areas with differences of:			
		Under 3 percent	3 to 5 percent	5 to 10 percent	10 percent and over
All areas (86) ²	5.9	32	18	20	16
1,000 to 20,000 (59).....	4.6	26	13	14	6
Under 1,000 population (27).....	8.6	6	5	6	10

¹Disregarding sign.

²All areas have population under 20,000 persons.

tion differed by 4.6 percent, while the average difference for the 27 areas below 1,000 population was 8.6 percent. There was a slight positive directional bias, with about 60 percent of the estimates exceeding the census counts. Again, the impact of population size on the expected level of accuracy may be noted. Even though all of the areas in this study are relatively small—less than 20,000 population—the larger ones demonstrate much lower variation from census figures than the smaller ones.

The third evaluation involving census comparisons is currently underway, and is based upon the approximately 2,000 special censuses that have been conducted since 1970 at the request of localities throughout the United States. Such areas constitute a fairly stringent test for any method in that they are generally very small areas, often are experiencing rapid population growth, and frequently are found to have had a vigorous program of annexation since the last census. This evaluation study has not been completed for use here, but will be included in detail as a part of the comprehensive methodology description in **Current Population Reports**, Series P-26, No. 699.

As a final caution, it must be noted that for convenience in presentation, the estimates contained in table 1 are shown in unrounded form. It is not intended, however, that the figures be considered accurate to the last digit. The nature of estimates prompts the rounding of figures in related Bureau reports and must be kept in mind during the application of the estimates contained here.

Per capita income estimates. Similar types of analyses and evaluation are not available for the updated estimates of PCI. Income data and PCI for 1972 are available for the 86 areas in which special censuses were conducted for testing purposes. As noted, however, the areas in which the censuses were taken are relatively small. The PCI estimates are based upon data from the 1970 census, which are subject to

sampling variability due to the size of the areas. Consequently, PCI did not change enough in the 1970-72 period in most instances to move outside of the relatively large range of sampling variability associated with the 1970 census results on income for small areas. Thus, it is not possible to obtain a reliable reading or even rough approximations on the accuracy of the change in PCI using the 86 areas as standards. The estimates were made available to persons working with economic statistics in each State for review prior to publication. Comments from this "local" review helped identify problem areas and input data errors.

Work has been initiated to evaluate 1975 State and county PCI estimates using income data from the Survey of Income and Education (SIE). While this work can indicate major sources of error in the PCI estimates, an indepth evaluation will have to await the 1980 census results.

RELATED REPORTS

The population estimates shown in this series of reports update those found in **Current Population Reports**, Series P-25, Nos. 649 through 698 for 1975. The population estimates contained here for States are consistent with Series P-25, No. 727. The county estimates for 1976 are superior to the provisional 1976 figures published earlier in Series P-25 and P-26 due to the addition of a second method, but will not be reported elsewhere in **Current Population Reports**. The county population estimates are being replaced by subsequent final 1976 figures developed through the Federal-State Cooperative Program for Local Population Estimates.

DETAILED TABLE SYMBOLS

In the detailed table entries, a dash "--" represents zero or rounds to zero. Three dots "... " mean not applicable.

Table 1. July 1, 1976 Population and Calendar Year 1975 Per Capita Income Estimates for the State, Counties, and Subcounty Areas

(FOR SUBCOUNTY AREAS WITH A 1970 CENSUS SAMPLE POPULATION LESS THAN 1,000, THE 1969 PER CAPITA INCOME FIGURE IS AN ESTIMATE AND NOT THE 1970 CENSUS FIGURE. FOR DETAILS, SEE TEXT. FOR MEANING OF SYMBOLS, SEE TEXT.)

AREA	POPULATION				ESTIMATED PER CAPITA MONEY INCOME (DOLLARS)			
	JULY 1, 1976	APRIL 1, 1970 (CENSUS)	CHANGE, 1970 TO 1976		1975	1974 (REVISED)	1969	PERCENT CHANGE, 1969 TO 1975
			NUMBER	PERCENT				
STATE OF HAWAII.....	883 523	769 913	113 610	14.8	5 259	4 943	3 373	55.9
HAWAII COUNTY.....	77 222	63 468	13 754	21.7	4 977	4 690	2 932	69.7
HONOLULU COUNTY.....	714 598	630 528	84 070	13.3	5 329	5 011	3 479	53.2
KAUAI COUNTY.....	33 974	29 761	4 213	14.2	4 885	4 498	2 830	72.6
MAUI COUNTY.....	57 729	46 156	11 573	25.1	4 988	4 671	2 880	73.2

1976 Population and 1975 Per Capita Income Estimates for Counties,
Incorporated Places, and Selected Minor Civil Divisions

(Reports may not be published in numerical order)

No. 740 Alabama	No. 765 Montana
No. 741 Alaska	No. 766 Nebraska
No. 742 Arizona	No. 767 Nevada
No. 743 Arkansas	No. 768 New Hampshire
No. 744 California	No. 769 New Jersey
No. 745 Colorado	No. 770 New Mexico
No. 746 Connecticut	No. 771 New York
No. 747 Delaware	No. 772 North Carolina
No. 748 Florida	No. 773 North Dakota
No. 749 Georgia	No. 774 Ohio
No. 750 Hawaii	No. 775 Oklahoma
No. 751 Idaho	No. 776 Oregon
No. 752 Illinois	No. 777 Pennsylvania
No. 753 Indiana	No. 778 Rhode Island
No. 754 Iowa	No. 779 South Carolina
No. 755 Kansas	No. 780 South Dakota
No. 756 Kentucky	No. 781 Tennessee
No. 757 Louisiana	No. 782 Texas
No. 758 Maine	No. 783 Utah
No. 759 Maryland	No. 784 Vermont
No. 760 Massachusetts	No. 785 Virginia
No. 761 Michigan	No. 786 Washington
No. 762 Minnesota	No. 787 West Virginia
No. 763 Mississippi	No. 788 Wisconsin
No. 764 Missouri	No. 789 Wyoming

