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Population Estimates and Projections

Estimates of the Number of Households for States: 1977 and 1978

This report presents revised estimates of the total number of households and of husband-wife households (households maintained by a married couple) for States, for July 1, 1977, and provisional estimates for July 1, 1978. The 1978 figures are designated as provisional since they are based on 1978 provisional estimates of the population for States.

The number of households varies among the States approximately in the same way as the population of the States; for example, California, the most populous State, led all States in 1978 in the total number of households with an estimated 8.4 million, followed by New York with 6.4 million. Alaska had the smallest estimated number of households (119,000).

California had the largest numerical household increase between 1970 and 1978 (1.8 million). However, Nevada had the largest rate of household increase during this period (about 52 percent) and, therefore, had the largest average annual rate of change (5.1 percent).

METHOD OF ESTIMATION

The method of preparing the July 1977 and 1978 estimates of households for States shown in this report was generally as follows: Percentages of persons who were maintaining households ("householder proportions") and other relevant percentages were calculated from the 1970 census, by age, for each State. These percentages were applied to State population estimates for 1977 and 1978, by age, to obtain preliminary estimates of the number of households for each State within each age group. These preliminary 1977 and 1978 estimates were then adjusted proportionately to the number of households in the United States on July 1, 1977 and 1978 (estimated from Current Population Survey figures) to yield the final 1977 and 1978 estimates for the States.

The final data were adjusted to agree with the State population estimates and the independent United States estimates of the population by family status using the method of iterative sequential raking.

The specific steps involved are shown below:

1. Data for both sexes combined, by State, by age (under 14 years, 14 to 19 years, 20 to 24 years, 25 to 44 years, 45 to 64 years, and 65 years and over) for the following categories were obtained from the 1970 census:
 - (t) Total persons in age group
 - (a) Husbands in husband-wife families
 - (b) Family householders with no spouse present
 - (c) Primary individuals
 - (d) Other household members
 - (e) Persons not in households
2. The following householder proportions and other proportions were calculated by State, by age, from these data:

<u>(a)</u> ,	<u>(b)</u> ,	<u>(c)</u> ,	<u>(d)</u> ,	<u>(e)</u>
(t),	(t),	(t),	(t),	(t)
3. Previously available State population estimates for 1977 and 1978 by age (as above) were then recorded.
4. Preliminary estimates of the 1977 and 1978 population in each class, (a) to (e), by age, by State, were calculated (step 2 x step 3). (After the first cycle, proportions for step 2 were replaced with those proportions developed in step 9.)
5. The preliminary estimates (step 4) were summed over all States to United States totals, for each age and for each class, (a) to (e).
6. Estimates for the United States for 1977 and 1978, by age, for each class, (a) to (e), were recorded. These estimates were basically the statistics obtained from the Current Population Survey for March 1977 and March 1978 (with an allowance added to include resident Armed Forces in military barracks and the institutional population), converted to represent July data by a proportional adjustment on the basis of the change in

the resident population between March 1977 and July 1977 and between March 1978 and July 1978.

7. Adjustment factors by age, for each class, (a) to (e), were calculated (step 6 ÷ step 5).
8. The adjustment factors derived in step 7 were applied to the preliminary estimates of the 1977 and 1978 population in each class, (a) to (e), by age, by State (step 7 x step 4) to produce a revised set of estimates by State for each class, (a) to (e), and by summation for (t).
9. A new set of householder proportions and other relevant proportions (as in step 2) were calculated for each State, by age, from the revised estimates developed in step 8. These proportions were applied to the State population estimates recorded in step 3.
10. Steps 4 through 9 were carried through a number of cycles to produce the final State estimates for 1977 and 1978.

The data for 1970 used in the preparation of this report are from the Census of Population: 1970, Vol. 1, **Characteristics of the Population**, Parts 2 through 52, tables 138, 152, and 153. The 1977 and 1978 estimates of the population of States are consistent with **Current Population Reports**, Series P-25, No. 794. The 1977 and 1978 estimates of the number of households for the United States for March 1977 and 1978 are given in **Current Population Reports**, Series P-20, Nos. 326 and 327.

EVALUATION OF THE METHOD

The accuracy of the estimates depends upon the accuracy of the data on which they are based (that is, the 1970 census data for States, the postcensal national household estimates, and the postcensal State population estimates) and on the validity of the assumptions inherent in the method by which these data were combined to produce the estimates. The assumptions are (1) that the interstate differences in householder proportions persisted over the 1970-78 period; and (2) that changes in householder proportions for States occurred uniformly between 1970 and 1978, that is, changes in the householder proportions, by age, were the same for each State as for the United States.

A study was made of the success with which the number of households for States in 1970, as given by the census, could be estimated from the 1970 census population for States and the 1960 census householder proportions for States, using a method corresponding basically to the method described above. Note that postcensal population estimates were not used in this test, as was done in the current calculations. The 1960 householder proportions were applied to the 1970 census State population figures to obtain preliminary estimates of the number of households for States within each age group. These preliminary 1970 estimates were then adjusted proportionately so that they added to the total number of households for the United States (by age of householder) as given in the 1970 census. The final data were adjusted to agree with the State population figures and the

population by family status for the United States using the method of iterative sequential raking.

The adjusted 1970 estimates were then compared with the 1970 census figures on households for States. The results of this study are shown in table A. The differences between the adjusted 1970 estimates and the 1970 census figures were less than 4 percent in all but a few States. The average (mean) deviation disregarding sign was 1.5 percent over all States. These results suggest that, for most States, the assumptions inherent in the estimating method held reasonably true for the 1960-70 period.

Table A. Percent Deviation of 1970 Postcensal Estimates of Households from 1970 Census Counts of Households for States

Percent deviation of estimate from census figure ¹	Total households	Husband-wife households
Total, 50 States and the District of Columbia.....	51	51
0 to 1.9.....	37	43
2.0 to 3.9.....	13	5
4.0 to 5.9.....	1	2
6.0 to 7.9.....	-	1
8.0 and over.....	-	-
Mean deviation.....	1.5	1.0

- Represents zero.

¹Without regard to sign.

A direct check for the current time period was made by comparing the distribution of households by regions shown in the present "nonsurvey" estimates with figures based on the Current Population Survey. A distribution of households by regions was computed from Current Population Survey data for 1977 and 1978. This percentage distribution was then applied to the estimated total number of households for July 1, 1977 and 1978, and the resulting Current Population Survey estimates of households for regions were compared with the corresponding figures obtained from the nonsurvey household estimates for States. The results of this comparison are shown in table B. The distribution of households by regions is quite similar in the nonsurvey estimates and the Current Population Survey data. The comparison in table B is affected by errors in the nonsurvey population estimates for regions, the assumptions concerning changes in householder proportions, and sampling, response, and coverage errors in the Current Population Survey.

THE SURVEY OF INCOME AND EDUCATION (SIE)

Data on the number of households, by type, and the average number of persons per household for each State for May 1976, generated from the SIE were shown in Series P-25, No. 710.

Table C shows the results of a comparison between the number of total households and husband-wife households by State for 1976 as derived from the nonsurvey estimates

Table B. Distribution of Households by Regions in the Nonsurvey Estimates and in the Current Population Survey: 1977 and 1978

(Numbers in thousands)

Regions	1978		1977		Deviation of nonsurvey estimates from CPS			
	Nonsurvey estimates (provisional)	CPS ¹	Nonsurvey estimates	CPS ¹	1978		1977	
					Number	Percent	Number	Percent
United States..	76,473	76,473	74,588	74,588	-	-	-	-
Northeast.....	17,350	17,273	17,126	16,956	77	0.4	170	1.0
North Central.....	20,207	20,357	19,781	19,746	-150	-0.7	35	0.2
South.....	24,303	24,458	23,635	23,811	-155	-0.6	-176	-0.7
West.....	14,613	14,384	14,046	14,074	229	1.6	-28	-0.2

- Represents zero.

¹See the section, "Evaluation of the Method."

procedures (published in Series P-25, No. 725) and as generated from the SIE.

The differences, for both total households and husband-wife households, between the two sets of estimates were less than 4 percent in all but a few States. It must be stated that the comparison in table C is affected by errors in the independent population estimates for States, the assumptions concerning changes in householder proportions, and sampling, response, and coverage errors in the SIE.

Table C. Percent Deviation of 1976 Nonsurvey Estimates from 1976 Estimates Based on the SIE

Percent deviation of nonsurvey estimate from survey estimate ¹	Total households	Husband-wife households
Total, 50 States and the District of Columbia.....	51	51
0 to 1.9.....	35	35
2.0 to 3.9.....	13	13
4.0 to 5.9.....	1	2
6.0 to 7.9.....	1	-
8.0 and over.....	1	1
Mean deviation.....	1.8	1.7

- Represents zero.

¹Without regard to sign.

RELATED REPORTS

Statistics on households in 1977 and 1978 for the United States based on current surveys are presented in **Current Population Reports**, Series P-20, Nos. 326 and 327. Addi-

tional statistics on households are shown in various **Current Housing Reports** based on the Annual Housing Survey. Population estimates for States for 1977 and 1978 are presented in **Current Population Reports**, Series P-25, No. 794.

DEFINITIONS AND EXPLANATIONS

Household. A household consists of all the persons who occupy a housing unit. A house, an apartment or other group of rooms, or a single room is regarded as a housing unit when it is occupied or intended for occupancy as separate living quarters; that is, when the occupants do not live and eat with any other persons in the structure and there is either (1) direct access from the outside or through a common hall or (2) a kitchen or cooking equipment for the exclusive use of the occupants.

A household includes the related family members and all the unrelated persons, if any, such as lodgers, foster children, wards, or employees who share the housing unit. A person living alone in a housing unit or a group of unrelated persons sharing a housing unit as partners is also counted as a household. The count of households excludes group quarters, such as a rooming houses, military barracks, and institutions.

A "husband-wife" household is a household which is maintained by a married couple.

ROUNDING OF ESTIMATES

Estimates presented in the tables of this report have been rounded to the nearest thousand without being adjusted to group totals which are independently rounded. Percentages are based on unrounded numbers.

Table 1. Estimates of the Number of Households in the United States, by States, July 1, 1977 and 1978, With Comparable Figures for April 1, 1970 and 1960

Region, division, and State	Total households							Husband-wife households, 1978 (provisional)	Husband-wife households, 1977	
	July 1, 1978 (provisional)	July 1, 1977	April 1, 1970 (census)	April 1, 1960 (census)	Change 1970 to 1978		Average annual percent of change ¹			
					Number	Percent	1970 to 1978			1960 to 1970
United States.....	76,473,000	74,588,000	63,449,747	53,021,061	13,023,000	20.5	+2.3	+1.8	47,631,000	47,758,000
Regions:										
Northeast:										
Northeast.....	17,350,000	17,126,000	15,482,778	13,521,070	1,867,000	12.1	+1.4	+1.4	10,568,000	10,723,000
North Central.....	20,207,000	19,781,000	17,537,256	15,377,361	2,670,000	15.2	+1.7	+1.3	12,969,000	13,026,000
South.....	24,303,000	23,635,000	19,258,163	15,503,321	5,045,000	26.2	+2.8	+2.2	15,459,000	15,428,000
West.....	14,613,000	14,046,000	11,171,550	8,619,309	3,441,000	30.8	+3.3	+2.6	8,635,000	8,581,000
Northeast:										
New England.....	4,259,000	4,174,000	3,645,325	3,115,910	614,000	16.8	+1.9	+1.6	2,658,000	2,676,000
Middle Atlantic.....	13,091,000	12,952,000	11,837,453	10,405,160	1,254,000	10.6	+1.2	+1.3	7,910,000	8,047,000
North Central:										
East North Central.....	14,187,000	13,896,000	12,382,927	10,709,659	1,804,000	14.6	+1.6	+1.5	9,096,000	9,146,000
West North Central.....	6,020,000	5,885,000	5,154,329	4,667,702	866,000	16.8	+1.9	+1.0	3,873,000	3,880,000
South:										
South Atlantic.....	12,076,000	11,748,000	9,438,213	7,267,832	2,638,000	27.9	+3.0	+2.6	7,583,000	7,577,000
East South Central.....	4,690,000	4,576,000	3,867,689	3,307,354	822,000	21.3	+2.3	+1.6	3,067,000	3,062,000
West South Central.....	7,537,000	7,311,000	5,952,261	4,928,135	1,585,000	26.6	+2.9	+1.9	4,809,000	4,789,000
West:										
Mountain.....	3,522,000	3,382,000	2,518,324	1,975,581	1,004,000	39.9	+4.1	+2.4	2,246,000	2,220,000
Pacific.....	11,091,000	10,664,000	8,653,226	6,643,728	2,438,000	28.2	+3.0	+2.6	6,389,000	6,361,000
New England:										
Maine.....	371,000	363,000	320,923	280,355	68,000	22.5	+2.5	+0.8	242,000	243,000
New Hampshire.....	298,000	286,000	225,378	180,020	73,000	32.2	+3.4	+2.2	196,000	193,000
Vermont.....	164,000	160,000	132,098	110,732	32,000	24.2	+2.6	+1.8	106,000	106,000
Massachusetts.....	2,020,000	1,982,000	1,759,692	1,534,732	260,000	14.8	+1.7	+1.4	1,214,000	1,226,000
Rhode Island.....	326,000	321,000	291,965	257,335	34,000	11.7	+1.3	+1.3	203,000	205,000
Connecticut.....	1,080,000	1,062,000	933,269	752,736	147,000	15.7	+1.8	+2.2	697,000	703,000
Middle Atlantic:										
New York.....	6,441,000	6,389,000	5,913,861	5,248,261	527,000	8.9	+1.0	+1.2	3,689,000	3,779,000
New Jersey.....	2,520,000	2,483,000	2,218,182	1,806,295	302,000	13.6	+1.5	+2.1	1,623,000	1,639,000
Pennsylvania.....	4,130,000	4,080,000	3,705,410	3,350,604	425,000	11.5	+1.3	+1.0	2,598,000	2,629,000
East North Central:										
Ohio.....	3,709,000	3,632,000	3,289,432	2,852,321	420,000	12.8	+1.5	+1.4	2,404,000	2,413,000
Indiana.....	1,849,000	1,814,000	1,609,494	1,387,910	240,000	14.9	+1.7	+1.5	1,228,000	1,234,000
Illinois.....	3,929,000	3,860,000	3,502,138	3,084,738	427,000	12.2	+1.4	+1.3	2,405,000	2,432,000
Michigan.....	3,102,000	3,033,000	2,653,059	2,238,650	449,000	16.9	+1.9	+1.7	2,015,000	2,023,000
Wisconsin.....	1,598,000	1,557,000	1,328,804	1,146,040	269,000	20.3	+2.2	+1.5	1,044,000	1,044,000
West North Central:										
Minnesota.....	1,386,000	1,350,000	1,153,946	991,981	232,000	20.1	+2.2	+1.5	891,000	891,000
Iowa.....	1,027,000	1,009,000	896,311	841,357	131,000	14.6	+1.6	+0.6	678,000	682,000
Missouri.....	1,748,000	1,709,000	1,520,567	1,359,826	227,000	15.0	+1.7	+1.1	1,093,000	1,095,000
North Dakota.....	217,000	214,000	181,613	173,362	35,000	19.5	+2.2	+0.5	145,000	146,000
South Dakota.....	235,000	231,000	200,807	194,821	34,000	17.0	+1.9	+0.3	155,000	155,000
Nebraska.....	556,000	543,000	473,721	433,448	82,000	17.4	+1.9	+0.9	357,000	358,000
Kansas.....	851,000	829,000	727,364	672,907	124,000	17.0	+1.9	+0.8	554,000	553,000
South Atlantic:										
Delaware.....	199,000	195,000	164,804	128,582	34,000	20.7	+2.3	+2.5	127,000	128,000
Maryland.....	1,416,000	1,385,000	1,175,073	863,003	241,000	20.5	+2.3	+3.1	895,000	902,000
District of Columbia.....	275,000	272,000	262,538	252,066	12,000	4.7	+0.6	+0.4	93,000	97,000
Virginia.....	1,749,000	1,699,000	1,390,636	1,074,442	358,000	25.8	+2.8	+2.6	1,122,000	1,121,000
West Virginia.....	643,000	634,000	547,214	521,142	96,000	17.5	+2.0	+0.5	425,000	427,000
North Carolina.....	1,877,000	1,827,000	1,509,564	1,204,715	367,000	24.3	+2.6	+2.3	1,240,000	1,236,000
South Carolina.....	944,000	915,000	734,373	603,551	210,000	28.5	+3.0	+2.0	606,000	603,000
Georgia.....	1,698,000	1,656,000	1,369,225	1,070,287	329,000	24.0	+2.6	+2.5	1,069,000	1,073,000
Florida.....	3,275,000	3,165,000	2,284,786	1,550,044	990,000	43.3	+4.4	+3.9	2,006,000	1,990,000
East South Central:										
Kentucky.....	1,179,000	1,154,000	983,665	851,867	195,000	19.9	+2.2	+1.4	785,000	786,000
Tennessee.....	1,494,000	1,454,000	1,213,187	1,003,301	281,000	23.1	+2.5	+1.9	980,000	977,000
Alabama.....	1,252,000	1,218,000	1,034,113	884,116	218,000	21.1	+2.3	+1.6	817,000	812,000
Mississippi.....	765,000	750,000	636,724	568,070	128,000	20.1	+2.2	+1.1	485,000	487,000
West South Central:										
Arkansas.....	765,000	744,000	615,424	523,552	150,000	24.3	+2.6	+1.6	502,000	499,000
Louisiana.....	1,288,000	1,257,000	1,052,038	892,344	236,000	22.4	+2.5	+1.6	800,000	802,000
Oklahoma.....	1,051,000	1,015,000	850,803	734,593	200,000	23.5	+2.6	+1.5	667,000	660,000
Texas.....	4,433,000	4,295,000	3,433,996	2,777,646	999,000	29.1	+3.1	+2.1	2,820,000	2,828,000
Mountain:										
Montana.....	278,000	266,000	217,304	202,240	61,000	27.9	+3.0	+0.7	176,000	173,000
Idaho.....	293,000	283,000	218,960	193,839	74,000	33.8	+3.5	+1.2	200,000	197,000
Wyoming.....	147,000	138,000	104,600	99,187	42,000	40.5	+4.1	+0.5	98,000	94,000
Colorado.....	955,000	920,000	690,928	529,424	264,000	38.2	+3.9	+2.7	588,000	585,000
New Mexico.....	397,000	384,000	289,389	251,209	108,000	37.2	+3.8	+1.4	254,000	253,000
Arizona.....	813,000	780,000	539,157	366,630	274,000	50.8	+5.0	+3.9	517,000	511,000
Utah.....	396,000	382,000	297,934	241,532	98,000	32.9	+3.4	+2.1	272,000	269,000
Nevada.....	243,000	229,000	160,052	91,520	83,000	51.8	+5.1	+5.6	141,000	138,000
Pacific:										
Washington.....	1,392,000	1,332,000	1,105,587	894,168	286,000	25.9	+2.8	+2.1	853,000	841,000
Oregon.....	907,000	871,000	691,631	558,222	215,000	31.1	+3.3	+2.1	569,000	562,000
California.....	8,401,000	8,077,000	6,573,861	4,981,024	1,827,000	27.8	+3.0	+2.8	4,715,000	4,702,000
Alaska.....	119,000	119,000	79,059	57,250	40,000	50.5	+5.0	+3.2	79,000	82,000
Hawaii.....	272,000	265,000	203,088	153,064	69,000	33.9	+3.5	+2.8	173,000	174,000

¹Computed by the formula for continuous compounding.