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INTERIM REVISED PROJECTIONS OF THE POPULATION OF THE UNITED STATES,
BY AGE AND SEX: 1965 AND 1970

(A supplement to Current Population Reports, Series P-25, No. 187)

This report presents two series of revised projections of the United States by age and sex, for 1965 and 1970. It is intended to serve as a supplement to Current Population Reports, Series P-25, No. 187, "Illustrative Projections of the Population of the United States, by Age and Sex," the last Census Bureau report presenting population projections. The present report should be used and interpreted in conjunction with the former report. The two series given here differ from the corresponding series in P-25, No. 187, in including the population of Alaska and Hawaii, the two new States, and in taking account of the 1960 Census data on the age and sex composition of the population. The basic method and assumptions of the former projections have been retained. For this reason, the projections given here are considered interim projections; a more thorough consideration of the most appropriate methodology and assumptions which should be used to develop projections will be made at a later time. It is planned to publish a complete revision of the population projections after this review has been completed.

As noted in the earlier report, the figures are not offered as predictions of the future size of the population but indicate rather the future level and age-sex composition of our population under given assumptions as to future fertility, mortality, and net immigration. The projections are, therefore, speculative;

and the figures for some age groups, particularly young children, may differ substantially from the actual future population.

The sets of assumptions concerning fertility are only two of many which might have been included in preparing these projections. Specifically, these assumptions were chosen from among the four employed previously because these two most closely approximated the experience of the last several years. The projections are based on certain basic assumptions--that there will be no major war, epidemic, severe economic depression, or other catastrophe. In general, possible variations in mortality and net immigration from abroad are less important determinants of our national population size than are variations in fertility. Only one assumption was made concerning mortality and immigration. The two series of projections given here, therefore, differ only in the projections of persons born after July 1, 1960. The table in this report distinguishes projections of the population born before July 1, 1960, from projections of the population yet to be born during the period 1960 to 1970. Asterisks (*) are shown beside the latter figures.

The present set of projections is based on current provisional estimates of the population by age and sex for July 1, 1960. As compared with the previously published projections,

this revision involves not only a shift to the benchmark date of July 1, 1960, but also a change to the level of the 1960 Census. No changes have been made in projected fertility rates, mortality rates, and net immigration from abroad from those given in Series P-25, No. 187. A comparison of the revised projections of the total population and the earlier projections published in Series P-25, No. 187, is given in table A.

It may be noted that the estimates for 1960 and the new projections differ from corresponding figures from Series II and III by only a small amount--several hundred thousand in each case. About 769,000 civilians in Alaska and Hawaii are included in the 1960 current estimates whereas the former projections exclude this group. In addition, the July 1, 1960, estimate for the 48 States used as a base for the new projections is about 225,000 lower

than the original Series II projection for that date and 128,000 higher than the Series III projection. As a result, the current estimates for July 1, 1960, are 544,000 (0.3 percent) higher than the original Series II projection and 897,000 (0.5 percent) higher than the original Series III projection. The excess of the new projections over the earlier ones for 1965 and 1970 represent the net effect not only of the inclusion of Alaska and Hawaii and the introduction of the 1960 Census as a new benchmark, but also of the larger number of projected deaths in the revised figures resulting from the greater number of persons 65 years old and over than previously projected. The differences between the old and new figures tend to contract with time because the differences between the projections of deaths increase, and this increase in the number of deaths more than offsets the projected population growth of Alaska and Hawaii.

Table A.--COMPARISON BETWEEN REVISED AND PREVIOUS SERIES OF POPULATION PROJECTIONS:
1960, 1965, AND 1970

(In thousands. Estimates and revised projections include the civilian population of Alaska and Hawaii; Series P-25, No. 187, projections exclude this population)

Year (July 1)	Estimates and revised projections		Projections in P-25, No. 187			
	Series II	Series III	Series I	Series II	Series III	Series IV
1960 ¹	180,670		181,154	180,126	179,773	179,420
1965.....	196,218	194,455	198,950	195,747	193,643	191,517
1970.....	214,224	208,933	219,474	213,810	208,199	202,541

¹ An estimate of the population including Armed Forces abroad for July 1, 1961, is 183,650,000.

Table B presents a comparison between the previous projections by age, and the current estimates for 1960 and the revised projections for 1970. Differences between the current estimates for July 1, 1960, and the previously published projections for this date, considered largely in terms of 10-year age groups, are all under 2 percent, except in the age group 65 to 74 years old. A number of the differences in the age groups below 65 are under 1 percent. The differences imply small deficits in the projections at some ages and small excesses at other ages. The old projection for the group under 5 years fell below the current estimate by 1.6 percent. For the group 65 and over as a whole, the projection for July 1, 1960, fell below the current estimate by 866,000, or 5.5 percent of the estimate.

This difference is about the same as that between the census count of the resident population 65 and over on April 1, 1960, and the postcensal estimate for this date based on the 1950 Census. (The estimate and the census count differed by 914,000, or 5.5 percent of the census count.) The basis of the large difference in 1960 between the expected number and the census count 65 and over is not fully understood. Research now in progress at the Bureau of the Census may contribute an explanation of the difference. By 1970 the discrepancy between the earlier and revised projections at ages 65 and over is reduced to 2.5 percent because of the attrition of the cohorts which had large discrepancies in 1960 (ages 65 and over) and the entry of cohorts which had small discrepancies in 1960 (ages 55 to 64).

Table B.--COMPARISON OF CURRENT ESTIMATES AND PROJECTIONS WITH PROJECTIONS PUBLISHED IN SERIES P-25, No. 187, FOR SERIES II: JULY 1, 1960 AND 1970

(Numbers in thousands. Minus sign (-) indicates that the estimates or revised projections exceed the previous projections)

Age	1960				1970			
	Estimates ¹	Projections (P-25, No. 187) ²	Difference		Projections		Difference	
			Number	Percent	Revised	Previous (P-25, No. 187) ²	Number	Percent
All ages.....	180,670	180,126	-544	-0.3	214,222	213,810	-412	-0.2
Under 5 years.....	20,303	19,991	-312	-1.5	25,135	24,190	-945	-3.8
5 to 14 years.....	35,778	36,376	+598	+1.7	42,615	42,982	+367	+0.9
15 to 24 years.....	24,546	24,717	+171	+0.7	36,004	36,605	+601	+1.7
25 to 34 years.....	22,952	22,824	-128	-0.6	25,048	25,222	+174	+0.7
35 to 44 years.....	24,226	23,983	-243	-1.0	23,118	22,990	-128	-0.6
45 to 54 years.....	20,586	20,846	+260	+1.3	23,541	23,306	-235	-1.0
55 to 64 years.....	15,634	15,610	-24	-0.2	18,724	18,966	+242	+1.3
65 to 74 years.....	11,044	10,260	-784	-7.1	12,296	12,276	-20	-0.2
75 years and over.....	5,601	5,519	-82	-1.5	7,739	7,273	-466	-6.0
65 years and over.....	16,645	15,779	-866	-5.2	20,035	19,549	-486	-2.4

¹ 1960 Census counts adjusted to allow for population change between April 1, 1960, and July 1, 1960, and to include Armed Forces abroad.

² These figures include Armed Forces abroad but exclude the civilian population of Alaska and Hawaii.

INDICATED CHANGES

Primarily because of the uncertainty as to the future course of fertility, projections of the cohorts representing survivors of future births are subject to a wide margin of error. The indicated changes in these groups (under 5 in 1965 and under 10 in 1970) are direct consequences of the underlying assump-

tions. On the other hand, the future size of the population 5 and over in 1965 and 10 and over in 1970 can be projected with a relatively high degree of accuracy because projections of births are not involved. Children born after 1960 are only about one-fifth of the projected population in 1970 and therefore do not affect projections of the total population for the next decade markedly.

Table C.--POPULATION CHANGE, BY AGE: 1950 TO 1960 AND 1960 TO 1970

(Numbers in thousands. Figures are for 50-State area and include Armed Forces abroad. Figures preceded by an asterisk (*) depend, in whole or part, on projections of births. See text for explanation of Series II and III)

Age	Population			Population change			
	July 1, 1950	July 1, 1960	July 1, 1970	July 1, 1950 to 1960		July 1, 1960 to 1970	
				Number	Percent	Number	Percent
SERIES II							
All ages.....	152,265	180,670	*214,222	+28,405	+18.7	+33,552	+18.6
Under 5 years.....	16,399	20,303	*25,135	+3,903	+23.8	+4,833	+23.8
5 to 13 years.....	22,386	33,041	*38,637	+10,655	+47.6	+5,596	+16.9
SERIES III							
All ages.....	152,265	180,670	*208,931	+28,405	+18.7	+28,261	+15.6
Under 5 years.....	16,399	20,303	*21,600	+3,903	+23.8	+1,297	+6.4
5 to 13 years.....	22,386	33,041	*36,881	+10,655	+47.6	+3,841	+11.6
SERIES II AND III							
14 to 17 years.....	8,482	11,193	15,667	+2,711	+32.0	+4,474	+40.0
18 to 24 years.....	16,082	16,091	24,316	+9	+0.1	+8,225	+51.1
25 to 34 years.....	24,032	22,952	25,048	-1,080	-4.5	+2,097	+9.1
35 to 44 years.....	21,650	24,226	23,118	+2,576	+11.9	-1,108	-4.6
45 to 54 years.....	17,467	20,586	23,541	+3,119	+17.9	+2,955	+14.4
55 to 64 years.....	13,456	15,634	18,724	+2,178	+16.2	+3,091	+19.8
65 years and over.....	12,312	16,645	20,035	+4,333	+35.2	+3,390	+20.4

Principally because of past changes in the annual numbers of births, rates of growth in the next decade will vary considerably from one age group to another (see table C above). The group 18 to 24 years is expected to show the greatest growth--about 51 percent. This group includes college-age persons and provides the bulk of new recruits into the labor force. It is also the age range within which most families are formed, since most couples marry and have their first child during this period of life. The high-school age group (14 to 17 years) is expected to grow nearly as rapidly--about 41 percent. The population of elementary school age, on the other hand, will show a much more moderate growth rate--13 to 18 percent--unless fertility in the period 1965 to 1970 is much higher or lower than the level projected here. The group 25 to 44 years old will remain virtually unchanged during the next decade, with 47.2 million in 1960 and 48.2 million in 1970. The older population of working age--45 to 64--will show only a moderate growth, from 36.2 million in 1960 to 42.2 million in 1970, or a gain of about 6 million, or 17 percent, over 1960. The rise in the number of persons 65 and over is expected to continue. The projected increase is 3.4 million, or about 20 percent.

DESCRIPTION OF METHOD

In general, the method and assumptions underlying the population projections presented in Series P-25, No. 187, have not been materially modified in the current revision. Again, a "component" method was used to develop the projections. This method involves the combination of separate projections of each of the components of population change (i.e., births, deaths, and net migration) with estimates of the current population. More specifically, a "cohort-survival" procedure was used to carry forward the population, age by age, by 5-year time periods to future dates. This procedure yields population projections for the desired projection dates, by 5-year age groups and sex.

The projections were based on current provisional estimates of the population including Armed Forces abroad, by age and sex, for July 1, 1960. These estimates were based on the 1960 Census counts on the age and sex distribution of the population, adjusted to allow for reported population changes between

April 1, 1960, and July 1, 1960. To simplify the computations, the allowance for prospective changes by age through mortality and net migration was accomplished by applying the "migration-survival" rates for 1960-65 and 1965-70 implied by the projections in Series P-25, No. 187, to the estimates of the population for July 1, 1960, and to projections of births for 1960-65 and 1965-70. These "migration-survival" rates represent the combined effect of both mortality and net migration from abroad and were derived by computing the ratios of the population in a given age group in 1965 or 1970 to the population 5 years younger 5 years earlier, from the data in Series P-25, No. 187. Deviations of the projected numbers of deaths and net immigrants from the estimated numbers for the period July 1, 1957, to July 1, 1960, were small enough to permit the retention of the assumptions employed in the previous report.

As previously mentioned, only two of the four projection series previously published have been included in this revision--Series II and III. Actual fertility rates stood at nearly the level of Series II (1955-57 average fertility) in 1960-61 and have approximated the level of Series II in each year since the preparation of the original projections.

Projection of births.--As mentioned above, two of the four series of projections of fertility employed in Series P-25, No. 187, were adopted for the present report. The fertility levels assumed for each future 5-year period were expressed in terms of the gross reproduction rate (GRR), a summary measure of annual fertility which is independent of the age composition of the population and which is derived from specified levels of age-specific fertility rates (annual births per 1,000 females of childbearing age in a given 5-year age group at the middle of the year). The number of projected births was first derived from the same set of age-specific fertility rates (in this instance, rates for 1955) for both fertility series in both quinquennial projection periods. The number of births so obtained for each period was then inflated or deflated, as required, by the appropriate factor based on the assumed GRR for the projection period and the GRR in the base period (1955), in order to arrive at a projection of births consistent with the projected number of women by age and the assumed GRR.

The exact assumptions used in this report regarding the age-adjusted fertility levels for future years are as follows:

Series II.--Fertility will remain constant at the 1955-57 level (about the same as the 1958-60 level) throughout the projection period (GRR of 179).

Series III.--Fertility will decline from the 1955-57 level to the 1949-51 level by 1965-70 (ultimate GRR of 154). In effect, the fertility level assumed for 1960-65 corresponds to a GRR of about 164.

Table D shows the annual levels of fertility (in terms of the gross reproduction rate) from 1955 to date and projected levels for groups of years to 1970.

Table D.--GROSS REPRODUCTION RATES: 1955 TO 1970

Year or period	GRR
1955-57 average.....	179
1955.....	174
1956.....	179
1957.....	183
1958-60 average.....	180
1958.....	180
1959.....	180
1960.....	179
1960-65 ¹	
Series II.....	179
Series III.....	164
1965-70	
Series II.....	179
Series III.....	154

¹ Projected GRR for 1961, based on estimates of births through August, is 179.

Because the difference between the original and revised projections of the number of women of childbearing age was quite small, as was the difference between actual fertility rates for 1958-60 and the projected rates according to Series II and III for this period, no basic revision in the original projections of births was made. The numbers of births were revised only to include an allowance for Alaska and Hawaii. The two series assume the total numbers of future births and the crude birth rates for future years given in table E. For an analysis of the implications of these assumptions in terms of completed fertility rates of women, reference should be made to pages 9-11 of the previous report.

Table E.--PROJECTED BIRTHS AND CRUDE BIRTH RATES
(Numbers in thousands)

Period	Births		Average annual rate per 1,000 of mid-period population	
	Series II	Series III	Series II	Series III
July 1, 1950 to 1955 ¹ .	19,746		24.8	
July 1, 1955 to 1960 ¹ .	21,359		24.6	
July 1, 1960 to 1965..	22,617	20,813	24.0	22.2
July 1, 1965 to 1970..	25,588	21,978	24.9	21.8

¹ Registered births corrected for underregistration.

Projections of deaths and net immigration.--In effect, one series of age-sex specific mortality rates was used for both series of population projections. These are the same as those used in the previous report. The projected numbers of deaths and crude death rates implied by these rates in combination with the revised population projections shown in this report are shown in table F.

Table F.--PROJECTED DEATHS AND CRUDE DEATH RATES
(Numbers in thousands)

Period	Deaths		Average annual rate per 1,000 of mid-period population	
	Series II	Series III	Series II	Series III
July 1, 1950 to 1955..	7,517		9.5	
July 1, 1955 to 1960..	8,184		9.4	
July 1, 1960 to 1965..	8,569	8,528	9.1	9.1
July 1, 1965 to 1970..	9,082	9,000	8.9	8.9

As in the earlier report, only one series of allowances for future net immigration, by age and sex, was used for both series of population projections. An arbitrary allowance of 300,000 per year (or 1.5 million per quinquennium) for the decade 1960 to 1970 was used here.

As previously stated, in the actual computations deaths and net migration were estimated in combination, by the use of so-called migration-survival ratios, representing the

ratio of the number of persons in a given 5-year age in 1965 or 1970 to the number in a group 5-years younger 5-years earlier (that is, in 1960 or 1965). These migration-survival ratios were derived from the previous projections. Because of the differences between the earlier population projections for 1960 and the census counts, particularly at ages 65 and over, and between the earlier and revised population projections for 1965, the projections of deaths and immigrants in the present series differ from those prepared earlier to some extent.

LIMITATIONS

The two series of population projections given here offer the user a choice of assumptions as to the course of population changes during the present decade. It is still possible, particularly for a part of the projection period, that future population growth will be greater than that implied by Series II or smaller than that implied by Series III. The population itself may fall outside the range defined. In view of the many uncertainties in predicting future fertility, the Bureau of the Census does not recommend either series as the better series.

RELATED REPORTS

The census counts of the population of the United States by age and sex, as of April 1,

1960, used as bases for making these projections are published in 1960 Census of Population, General Population Characteristics, PC (1)-1B. The projections in this report replace those for 1965 and 1970 previously published in Current Population Reports, Series P-25, No. 187. It is planned to prepare a more comprehensive revision of these projections later, after a thorough reconsideration of the methodology and assumptions underlying the projections has been made.

The latest projections of the population of States were published in August 1957 in Current Population Reports, Series P-25, No. 160. These projections are now out of date. It is planned to publish revised projections of State population, taking account of the 1960 Census results, in the next year or so.

Projections of school and college enrollment to 1980 for the United States have been published in Series P-25, No. 232. These figures were prepared on the basis of earlier population projections which did not take account of the results of the 1960 Census relating to the age and sex distribution of the population. Inasmuch as the census data and the earlier projections of population for the school ages were rather close, enrollment projections computed at this time would not differ much from those published in Series P-25, No. 232.

Table 1.--ESTIMATES AND PROJECTIONS OF THE POPULATION OF THE UNITED STATES INCLUDING ARMED FORCES ABROAD, BY AGE AND SEX: 1960, 1965, AND 1970

(In thousands. Figures are for 50-State area and relate to July 1. Series II and III imply the following assumptions as to fertility: II--continues to 1960-65 and 1965-70 at 1955-57 level (roughly same as 1958-60 level); III--declines from 1955-57 level to 1949-51 level by 1965-70. Figures preceded by an asterisk (*) represent, in whole or part, survivors of births projected for years after 1960. See text for detailed explanation)

Age	1960			1965			1970		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
SERIES II									
All ages.....	180,670	89,340	91,330	*196,217	*96,815	*99,402	*214,222	*105,592	*108,630
Under 5 years.....	20,303	10,320	9,983	*22,170	*11,328	*10,842	*25,135	*12,846	*12,289
5 to 9 years.....	18,809	9,566	9,243	20,346	10,336	10,009	*22,215	*11,345	*10,870
SERIES III									
All ages.....	180,670	89,340	91,330	*194,454	*95,914	*98,540	*208,931	*102,888	*106,043
Under 5 years.....	20,303	10,320	9,983	*20,408	*10,427	*9,981	*21,600	*11,040	*10,560
5 to 9 years.....	18,809	9,566	9,243	20,346	10,336	10,009	*20,459	*10,448	*10,011
SERIES II AND III-- 10 YEARS AND OVER									
10 to 14 years.....	16,969	8,627	8,342	18,865	9,590	9,275	20,400	10,359	10,042
15 to 19 years.....	13,446	6,806	6,640	17,019	8,635	8,384	18,910	9,595	9,316
20 to 24 years.....	11,100	5,553	5,547	13,543	6,810	6,732	17,094	8,623	8,471
25 to 29 years.....	10,959	5,433	5,526	11,246	5,585	5,661	13,681	6,835	6,846
30 to 34 years.....	11,993	5,914	6,079	11,081	5,477	5,604	11,367	5,629	5,738
35 to 39 years.....	12,557	6,147	6,410	12,029	5,926	6,104	11,131	5,496	5,635
40 to 44 years.....	11,669	5,731	5,938	12,496	6,105	6,391	11,987	5,893	6,094
45 to 49 years.....	10,924	5,385	5,539	11,507	5,623	5,884	12,335	5,998	6,337
50 to 54 years.....	9,662	4,763	4,899	10,618	5,180	5,437	11,206	5,421	5,785
55 to 59 years.....	8,465	4,144	4,321	9,211	4,461	4,750	10,151	4,869	5,282
60 to 64 years.....	7,169	3,420	3,749	7,843	3,735	4,109	8,573	4,040	4,533
65 to 69 years.....	6,288	2,941	3,347	6,333	2,897	3,436	6,972	3,184	3,788
70 to 74 years.....	4,757	2,191	2,566	5,234	2,324	2,910	5,324	2,312	3,012
75 to 79 years.....	3,069	1,364	1,705	3,610	1,562	2,048	4,027	1,679	2,348
80 to 84 years.....	1,600	672	929	1,960	816	1,144	2,341	948	1,393
85 years and over.....	931	363	568	1,106	424	681	1,371	520	850
SELECTED AGES									
5 to 17 years:									
Series II.....	44,234	22,481	21,753	49,701	25,251	24,450	*54,304	*27,630	*26,674
Series III.....	44,234	22,481	21,753	49,701	25,251	24,450	*52,548	*26,733	*25,815
18 to 21 years.....	9,531	4,798	4,733	12,090	6,112	5,978	14,244	7,213	7,032
14 years and over.....	127,327	62,216	65,111	138,362	67,355	71,007	150,450	73,061	77,388
18 years and over.....	116,134	56,540	59,594	124,345	60,236	64,109	134,783	65,115	69,667
21 years and over.....	108,877	52,883	55,994	115,043	55,528	59,516	124,059	59,679	64,380
65 years and over.....	16,645	7,530	9,115	18,243	8,024	10,218	20,035	8,643	11,392