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**Appendix C**

**POPULATION CHANGES AND PROSPECTS**

**Change in Population Outlook**

**Changes in Related Trends**

**Educational Trends and the Labor Force**

**Population Projections**

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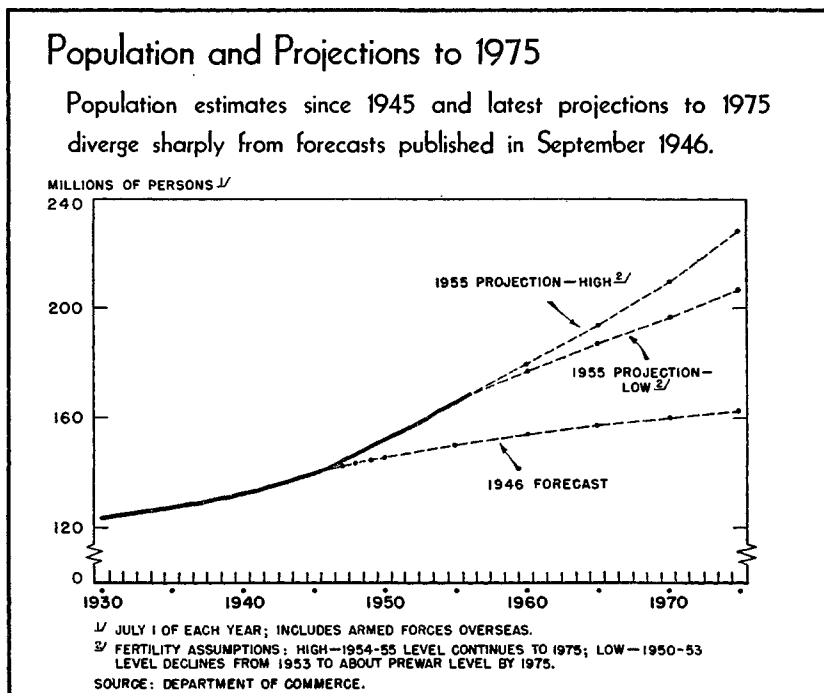
## Population Changes and Prospects

Notable changes under way in the size and composition of our population have important implications for the future which are not yet widely appreciated. A fuller understanding of their nature and meaning is essential for timely public and private action to promote and accommodate economic growth.

### CHANGE IN POPULATION OUTLOOK

By 1940 specialists had come to substantial agreement that our long period of vigorous population growth was over, that the United States was well advanced in a transition to a stationary or declining population, and that the number of children of school age would not increase. With minor modifications, this view was still widely held after World War II, when the wartime increases in marriages and births from the lows of the prewar decade were at first interpreted as temporary deviations from well-established trends. The forecast of September 1946 which then appeared reasonable pointed to a population of 153 million in 1960 (Chart C-1) and to an ultimate peak of 164.5 million about 1990.

CHART C-1



This prospect was gradually altered as postwar marriages, births, and migration kept diverging widely from their prewar trends. "Illustrative projections" released by the Census Bureau in August 1950 recognized that a population upsurge of substantial magnitude and indefinite duration was in progress. Subsequent revisions have strongly confirmed this generalization, and the actual population growth in 1950-56 has conformed most closely to the highest projections. By mid-1955 the population of the Continental United States, including armed forces overseas, had passed 165 million, and the 1960 total now bids fair to approach 180 million.

After the end of the war there was a great increase in marriages, and the wartime increase in births was followed by a much larger one. The total of 38.8 million live births during 1947-56 (Table C-1) was 10.5

TABLE C-1.—*Population change, 1946-56*

(Thousands of persons)

Year	Net increase <sup>1</sup>	Natural increase			Net civilian immigration
		Total	Births <sup>2</sup>	Deaths <sup>3</sup>	
1946.....	2, 145	2, 007	3, 411	1, 404	171
1947.....	2, 638	2, 366	3, 817	1, 451	275
1948.....	2, 530	2, 188	3, 637	1, 449	329
1949.....	2, 551	2, 201	3, 649	1, 448	354
1950.....	2, 525	2, 168	3, 632	1, 464	350
1951.....	2, 715	2, 326	3, 823	1, 497	379
1952.....	2, 645	2, 405	3, 913	1, 508	240
1953.....	2, 681	2, 438	3, 965	1, 527	239
1954.....	2, 841	2, 593	4, 078	1, 485	248
1955.....	2, 842	2, 560	4, 091	1, 531	286
1956 <sup>4</sup> .....	2, 946	2, 637	4, 207	1, 570	309
1947-56: average.....	2, 691	2, 388	3, 881	1, 493	301

<sup>1</sup> Includes changes due to admissions into and discharges from armed forces overseas, for which figures are not shown separately.

<sup>2</sup> Adjusted for underregistration.

<sup>3</sup> Adjusted for underregistration of infant deaths; includes estimate of deaths in armed forces overseas.

<sup>4</sup> Provisional estimates.

Sources: Department of Commerce and Department of Health, Education, and Welfare.

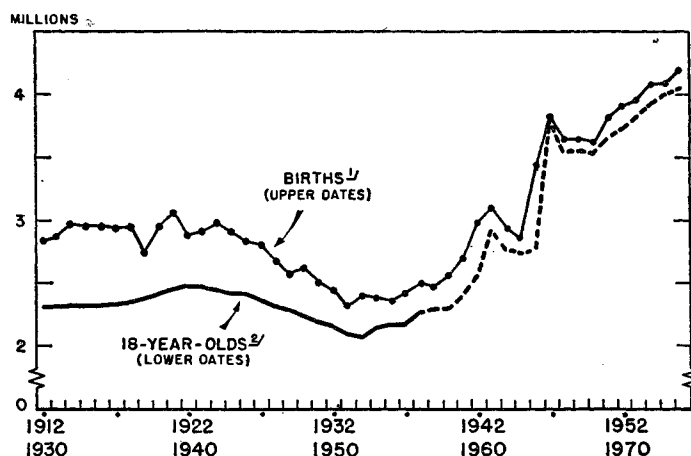
million above the prewar 10-year high of 1915-24; and the rise of births in the 1950's is in striking contrast to the decline in the decade following 1924 (Chart C-2). The annual number of deaths has continued to rise very slowly, as widespread improvement in health has steadily raised average life expectancy at birth to the present 70 years (Table C-2). The excess of births over deaths, which had fallen below 1 million in the mid-1930's, has been above 2 million every year since 1946 and averaged 2.5 million a year in 1951-56, when successive high figures for births were recorded annually. Net civilian immigration—including those technically termed immigrants, other aliens, and American citizens from Puerto Rico and elsewhere—added an average of nearly 200,000 a year in the 1940's and about 300,000 a year in 1947-56.

As a result of these developments, the population increased in the past decade at an average rate of 1.7 percent per year. Although this rate is

CHART C-2

## Births Through 1956 and the Number of 18-Year-Olds to 1974

Reversal of the interwar downtrend of births and lowered mortality rates promise large increases in the number reaching college age.



<sup>1/</sup> ADJUSTED FOR UNDER-REGISTRATION; CALENDAR YEAR TOTALS.

<sup>2/</sup> DATA FOR JULY 1. PROJECTIONS BEGINNING 1957.

SOURCES: DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE AND DEPARTMENT OF COMMERCE.

far below the average of about 3 percent maintained in 1790–1860, it is extremely high in comparison with expectations and more than double the rate in the prewar decade.

The radical changes sketched above have led to great efforts to enlarge and improve the basis for assessing present and future needs for jobs, schools, hospitals, homes, highways, and other public and private facilities. Examination of the abundant information now available reveals marked altera-

TABLE C-2.—Average future lifetime expected at birth, selected years, 1900–54

[Years]

Year	Total	White	Non-white <sup>1</sup>	Period	White		Nonwhite <sup>1</sup>	
					Female	Male	Female	Male
1904 <sup>2</sup>	47.6	48.0	30.8	1900-02 <sup>2</sup>	51.08	48.23	35.04	32.54
1914 <sup>2</sup>	54.2	54.9	38.9	1909-11 <sup>2</sup>	53.62	50.23	37.67	34.05
1924 <sup>2</sup>	59.7	61.4	46.6	1919-21 <sup>2</sup>	58.53	56.34	46.92	47.14
1934	61.1	62.4	51.8	1929-31	62.67	59.12	49.51	47.55
1944	65.2	66.2	56.6	1939-41	67.29	62.81	55.51	52.33
1954	69.6	70.3	63.1	1949-51	72.03	66.31	62.70	58.91

<sup>1</sup> Prior to 1939-41, based on data only for Negroes, who comprised at least 95 percent of the nonwhite population.

<sup>2</sup> Based on data for death-registration States only.

Source: Department of Health, Education, and Welfare.

tions in many underlying trends and significant relationships that had seemed firmly established. Some of the outstanding changes are summarized in the following sections.

### CHANGES IN RELATED TRENDS

1. Married persons now comprise a much larger proportion of our population than before World War II (Table C-3). The 1940's saw not only a pronounced rise in the percentages of married persons in the various age groups, but also declines in median ages at first marriage. Smaller changes, mostly in the same direction, have taken place in the 1950's.

TABLE C-3.—*Distribution of the female population aged 14 and over, by marital status, selected years, 1890-1956*

Period	Percent of total female population <sup>1</sup>			
	Single	Married	Widowed	Divorced
1890: June.....	27.8	57.7	14.0	0.4
1900: June.....	28.4	57.1	13.9	0.5
1910: April.....	27.8	58.5	12.9	0.6
1920: January.....	27.4	58.9	12.8	0.8
1930: April.....	26.9	59.7	12.0	1.3
1940: April.....	27.6	59.5	11.3	1.6
1950: March.....	22.5	64.8	10.6	2.1
1956: March.....	21.4	66.3	9.9	2.4

<sup>1</sup> Adjusted for age with age distribution of the total female population in 1940 used as a standard. Figures show percentage distributions with effects of change in age distribution removed.

NOTE.—Detail will not necessarily add to totals because of rounding.

Source: Department of Commerce.

2. The marked downtrend during the 1940's in the percentage of married women with no children, and the rise in the number of children ever born per 1,000 women in the 15-49 age group, have continued in the 1950's. Declining proportions of couples have only one child and increasing proportions have two and three children, and there has been a marked increase in the annual rate of third, fourth, and fifth births.

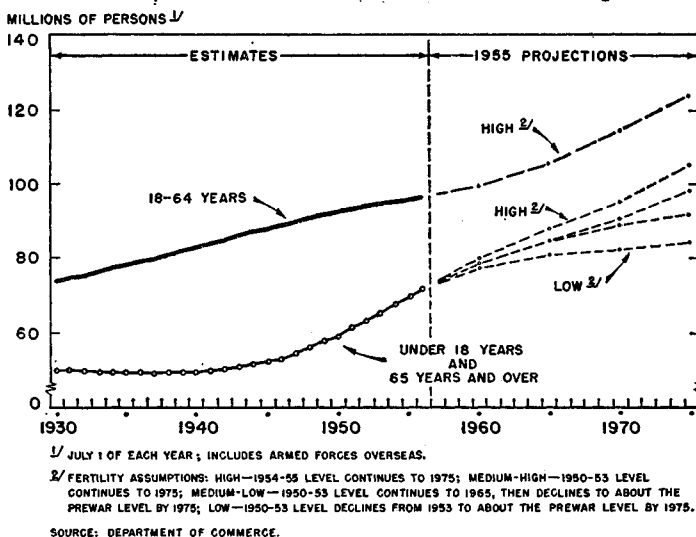
3. A rise in the number of children under 5 years of age in relation to the number of women of childbearing age has been in progress for nearly two decades, in contrast to the decline that had been evident since early in the nineteenth century. Live births per 1,000 white women aged 15-44 have risen from an unprecedentedly low number in the mid-1930's to the level of the early 1920's; the increase has been even greater for nonwhite women. Because of the large increase in births and significant reductions in infant and child mortality, the rising postwar generation is much larger than that of the 1930's. Similar increases in higher age groups are in prospect as today's children grow older.

4. The number of persons aged 18-64, from whom the labor force is largely drawn, has risen steadily in recent decades (Chart C-3). By contrast, there has been a striking change in the trend of additions to the group under age 18. Until the early 1940's, the total number of persons in the two

CHART C-3

## Population in Special Age Groups, 1930-75

The number of persons in age groups under 18 and 65-and-over has reversed its prewar decline in relation to the number aged 18-64.



age groups, under 18 and 65 and over, had changed little for well over a decade; as a percentage of the total population, this total was at an historic low in 1942. Since then, however, the total has increased substantially, and the percentage has recently risen above the level of 1910.

5. Between 1900 and 1950, when the population doubled, the number of persons aged 65 and over quadrupled, and the percentage of the population in this age group rose from 4.1 to 8.1. The total number in the group continues to mount, but the rate of increase is now declining, partly because of reduced immigration since 1913 and partly because of declining rates of increase in births in the nineteenth century.

6. Despite continued growth in the number of persons aged 65 and over, the median age of the population—which had been rising ever since 1810 and had been expected to continue rising for decades to come—has begun to decline from the high plateau of 30.2 years reached in 1950-53 (Table C-4). In this sense we are no longer an “aging” population.

7. Whereas before 1950 males had outnumbered females in the total population, females have now become a majority, both in the total and in all age groups above 20-24 years. This reversal is attributable chiefly to the fact that the life expectancy of women has continued to improve more than that of men. Reduction in immigration since 1924 has been an additional factor, since among immigrants the number of males has tended to

TABLE C-4.—Median ages of the population and the labor force, selected years, 1820-1955

Year	Median age (years)							
	Total population <sup>1</sup>					Labor force <sup>2</sup>		
	Total	By race		By sex		Total	Male	Female
		White	Non-white	Male	Female			
1820-----	16.7	16.5	17.2	16.6	16.7	-----	-----	-----
1890-----	22.0	22.5	18.5	22.3	21.6	32.2	33.5	24.7
1920-----	25.3	25.6	22.4	25.8	24.7	34.3	35.9	28.6
1930-----	26.5	26.9	23.5	26.7	26.2	35.5	37.2	30.2
1940-----	29.0	29.5	25.2	29.1	29.0	36.0	37.7	31.9
1945-----	30.0	30.5	26.0	29.8	30.2	36.0	37.2	33.3
1950-----	30.2	30.7	26.0	29.8	30.6	38.1	38.7	36.7
1955-----	30.0	30.7	24.7	29.3	30.7	39.1	39.1	39.0

<sup>1</sup> As of census dates 1820-1940, and July 1, 1945-55; figures for 1945-55 include armed forces overseas.

<sup>2</sup> Data relate to the April level for each year. Data for 1890, 1920, and 1930 have been adjusted for comparability with current levels of measurement from the Current Population Survey.

Source: Department of Commerce.

exceed the number of females. While the number of widows has increased, the percentages of widows in the various age groups, and in the total female population aged 14 and over, have been declining since 1890 (Table C-3).

8. The percentage of nonwhite persons in the total population has been rising, after having declined for many decades. It fell from 12.5 percent in 1890 to a low of 10.2 percent in 1930 and 1940, and then rose to 10.9 percent in mid-1956. Between April 1, 1940 and July 1, 1956, the white population increased by 26 percent, the nonwhite by 35 percent. This more rapid growth of the nonwhite population was due chiefly to much higher birth rates, only partially offset by higher death rates. More than 40 percent of the nonwhite population today are under 18 years of age.

9. Notable shifts in the geographical distribution of our people occurred in the period 1940-56. Florida and most of the Western and Southwestern States experienced rapid growth; most of the Northeastern and Southeastern States grew by less than the national average of 27 percent; and three States (Arkansas, Mississippi, and Oklahoma) lost population. Suburban and outlying rural sections of the standard metropolitan areas grew rapidly, while central cities gained very little and the rural-farm population declined greatly.

#### EDUCATIONAL TRENDS AND THE LABOR FORCE

The population changes discussed in the preceding sections have contributed to significant changes in still other trends and relationships, a few of which should be mentioned here.

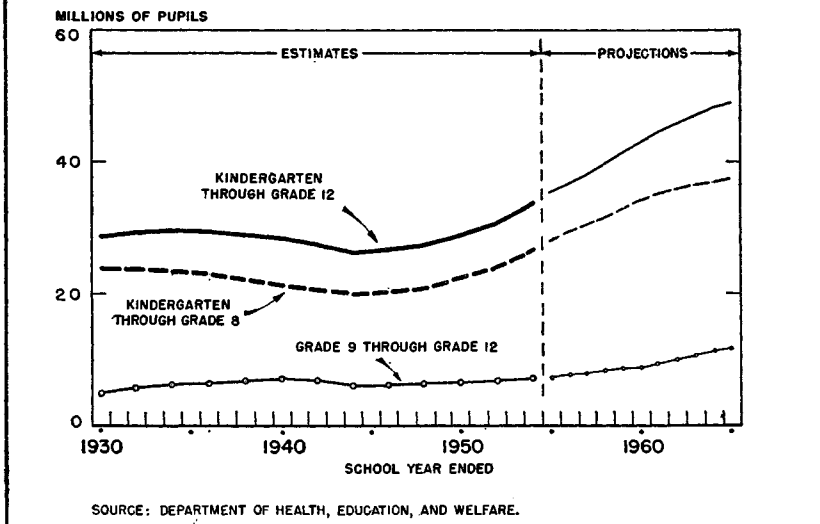
1. The decline in births after 1924 led to a fall in school enrollments in kindergarten through grade 8 in 1930-44 (Chart C-4 and Table C-5). Enrollments began to increase, however, late in World War II, in response



CHART C-4

## School Enrollments and Projections to 1965

Increasing births since 1940 are responsible for rising enrollments, which by 1965 may be nearly twice as large as in 1944.



to the rise in births and to continued reductions in infant and child mortality. The increase became strong in the 1950's as the large numbers born after the war reached school age. Fall enrollment through grade 8 in October 1956 was 30.5 percent greater than in October 1950 (Table C-6).

TABLE C-5.—Enrollments in elementary and secondary schools, selected years, 1930-54, with projections to 1965<sup>1</sup>

[Thousands of pupils]

School year ended	Kindergarten through grade 12			Kindergarten through grade 8			Grade 9 through grade 12		
	Total	Public	Non-public	Total	Public	Non-public	Total	Public	Non-public
1930.....	28,552	25,854	2,698	23,740	21,423	2,317	4,812	4,431	381
1934.....	29,381	26,618	2,763	23,279	20,897	2,382	6,102	5,721	381
1940.....	28,257	25,597	2,660	21,127	18,955	2,172	7,130	6,642	488
1944.....	25,950	23,416	2,534	19,912	17,824	2,088	6,038	5,592	446
1952.....	30,554	26,707	3,848	23,958	20,789	3,169	6,596	5,917	679
1954.....	33,388	28,905	4,393	26,280	22,665	3,615	7,108	6,330	778
Projections:									
1955.....	35,182	30,458	4,724	27,865	23,964	3,901	7,317	6,494	823
1960.....	42,812	36,670	6,142	34,068	28,958	5,110	8,744	7,712	1,032
1965.....	48,927	41,702	7,225	37,347	31,521	5,826	11,580	10,181	1,399

<sup>1</sup> The school year ended in the spring of 1954 is the latest for which the comprehensive data shown in this table and Chart C-4 are available; the projections therefore begin with the following year. Enrollment data are reported by each State; hence pupils who move from one State to another within the school year are counted more than once.

Source: Department of Health, Education, and Welfare.

TABLE C-6.—*Fall school enrollment of the civilian noninstitutional population 5 to 34 years old, 1950-56*<sup>1</sup>

October	Total	Kindergarten and elementary	High school	College or professional school
Thousands of persons				
1950.....	30,276	21,406	6,656	2,214
1951.....	30,865	22,223	6,773	1,869
1952.....	32,465	23,377	7,108	1,980
1953.....	34,450	24,808	7,266	2,377
1954.....	36,083	25,936	7,733	2,414
1955.....	37,426	27,086	7,961	2,379
1956.....	39,353	27,927	8,543	2,883
Net increase, 1950-56.....	9,077	6,521	1,887	669
Percentage increase, 1950-56.....	30.0	30.5	28.4	30.2

<sup>1</sup> Based on sample surveys.

Source: Department of Commerce.

2. The great expansion of high-school enrollments in the 1920's and 1930's was reversed during World War II, chiefly because many children of high-school age were drawn into remunerative jobs. Since the war, these enrollments have increased as the numbers of those aged 14-17 have risen and there has been a resumption of the prewar trend for rising proportions of this age group to remain in school. Fall enrollment in these grades increased by 28.4 percent between October 1950 and October 1956, and the percentage of those in the 14-17 age group who were enrolled in school rose from 83.3 to 88.2.

3. For a century or more, and especially after 1900, the average length of terms in public schools was increased; the percentage of those in age groups 5-17 who were enrolled in public schools rose; and the average daily attendance improved (Table C-7). The war interrupted these trends; and the recovery in the postwar years has been slow and incomplete, partly because

TABLE C-7.—*Indicators of extension of public elementary and secondary schooling, selected years, 1920-54*

School year ended	Percent of population 5-17 years of age enrolled		Percent of enrolled pupils in average daily attendance		Average number of days					
					Attended per pupil enrolled		In school term		Attended per person in ages 5-17	
	Total	Negro <sup>1</sup>	Total	Negro <sup>1</sup>	Total	Negro <sup>1</sup>	Total	Negro <sup>1</sup>	Total	Negro <sup>1</sup>
1920.....	77.8	72.6	74.8	67.3	121	80	162	119	94	58
1930.....	81.3	78.6	82.8	72.1	143	97	173	132	116	75
1940.....	85.3	85.9	86.7	80.4	152	126	175	156	130	108
1944.....	80.4	( <sup>2</sup> )	84.3	81.4	148	133	176	164	119	( <sup>2</sup> )
1950.....	81.6	<sup>3</sup> 85.4	88.7	85.3	158	148	178	173	131	126
1952.....	84.7	( <sup>2</sup> )	87.6	85.0	156	150	178	176	132	( <sup>2</sup> )
1954.....	83.5	( <sup>2</sup> )	88.9	85.1	159	151	179	177	133	( <sup>2</sup> )

<sup>1</sup> In Negro public elementary and secondary schools in 17 Southern States and the District of Columbia.

<sup>2</sup> Not available except for census years.

<sup>3</sup> Based on statistics for nonwhite population, of which Negroes constituted 98.8 percent in these areas.

Sources: Department of Health, Education, and Welfare and Council of Economic Advisers.

of the lag in expanding public-school facilities and qualified staffs and of increasing enrollments in nonpublic schools.

4. Before World War II the growth of enrollments in schools of higher education was much slower than in secondary schools, and war service interrupted college and graduate work for many students. A marked bulge occurred after the war under the stimulus of veterans' educational benefits; and in the present decade, participation in higher education has been growing rapidly. Some 7 million persons in today's adult population have spent four years in college; this is twice the number in 1940. Between October 1950 and October 1956, fall enrollments in colleges and professional schools increased by more than 30 percent. A similar increase was shown for all levels of schooling for those in the 18-34 age group, although the total number of persons in this group changed little.

5. The labor force increased by 9.4 million between 1946 and 1956 in spite of the fact that the number of boys and girls aged 18—a common age of entrance into full-time jobs—was lower in the postwar decade than in the 1930's and early 1940's and slightly lower in mid-1956 than in mid-1946. There has been an extraordinary increase in the number of women—especially the number of married women—who have taken jobs; and the increase since the war has been especially pronounced for older women. Accordingly, the median age of women in the labor force rose from 33.3 years in 1945 to 39.0 years in 1955, while the median age of male workers rose by less than two years, from 37.2 to 39.1 (Table C-4). Within a few years, as young entrants into the labor force increase, the median age of the labor force is expected to begin an extended fall, for the first time in our history.

#### POPULATION PROJECTIONS

The postwar upset of apparently well-grounded expectations and the radical changes in long-established trends warn of the serious risks in forecasting total population and many related magnitudes for even 10-20 years ahead. Certain basic projections, however, can be made and used with a high degree of confidence on the assumption that we experience no extreme disaster.

Although future births defy prediction, the course of actual births in past years has forecasting value for successive waves of various significant age groups. Birth registration had been made compulsory in all States by 1930, underregistration has been gradually reduced, and reasonable allowances can be made for unregistered births. Also, infant, child, and youth mortality has been reduced to low levels. For all the younger age groups, uncertainties about the future course of deaths and net civilian immigration have relatively small influence.

Projections of the numbers who will reach significant "threshold" ages can therefore be made with only a small margin of error for as many years in the future as involve no forecast of births (Table C-8). Similarly, the

TABLE C-8.—*Projections of the population of the United States in selected ages, 1955-75*<sup>1</sup>

[Thousands of persons]

Age and year	Total	Male	Female
5 years:			
1955.....	3, 516	1, 797	1, 719
1960.....	4, 011	2, 049	1, 962
6 years:			
1955.....	3, 538	1, 807	1, 731
1960.....	3, 924	2, 004	1, 920
12 years:			
1955.....	2, 914	1, 483	1, 431
1960.....	3, 540	1, 808	1, 732
1965.....	3, 828	1, 954	1, 874
14 years:			
1955.....	2, 393	1, 214	1, 178
1960.....	2, 764	1, 411	1, 353
1965.....	3, 659	1, 865	1, 794
18 years:			
1955.....	2, 171	1, 098	1, 073
1960.....	2, 561	1, 299	1, 262
1965.....	3, 816	1, 948	1, 868
1970.....	3, 733	1, 904	1, 829
20 years:			
1955.....	2, 159	1, 087	1, 071
1960.....	2, 310	1, 167	1, 143
1965.....	2, 757	1, 394	1, 363
1970.....	3, 546	1, 798	1, 748
1975.....	4, 037	2, 046	1, 991
65 years:			
1955.....	1, 180	572	607
1960.....	1, 262	591	671
1965.....	1, 331	608	723
1970.....	1, 433	645	788
1975.....	1, 887	702	885

<sup>1</sup> Includes armed forces overseas.

Source: Department of Commerce.

size of many significant age groups can be projected with considerable assurance for several years into the future, as long as only future survivors of those already born are included. Barring catastrophe, it can thus be confidently stated that by 1961 the number of children aged 5 will be about twice the number in the two or three very low years before World War II, and that by 1968 the number aged 12 will be roughly double what it was in the late 1940's.

The changing number of 18-year-olds has special significance because at this age young people typically complete high school and enter college or the labor force, except that some young men are drawn into military service. A series, actual through 1956 and projected through 1974, is shown for this age group on Chart C-2, along with the series of births 18 years earlier. The narrowing gap between the two curves reflects the marked reduction in mortality up to age 18 during the past 40 years. Largely because of this reduction, the 1940-52 decline in the number of 18-year-olds was much less than the fall in the number of births in 1922-34, and the prospective increase in the number of 18-year-olds in 1958-74 exceeds the actual increase in births between 1940 and 1956.

The college-age population (ages 18-24) declined from a 1943-44 peak of about 16.9 million to about 15.1 million in mid-1955, the lowest point in 25 years. According to recent Census Bureau projections, small gains during the next few years will be followed by larger gains in 1960-64 and by

still sharper increases from 1964 through 1973, when the number will be roughly 75 percent larger than in 1955. Though by no means all of those aged 18-24 will continue their schooling, the enrollment in institutions of higher education in 1973 seems likely to be more than double the 1955 figure if faculties and facilities are enlarged to meet the demands.

Projections of the number of women aged 20 may give some clue to the future course of first marriages, since 20.1 years has recently been the median age at first marriage and a slight fall appears more likely than a rise. After declining for several years, the number of women aged 20 has recently begun to increase, broadly following the series for 18-year-olds, and by 1975 the number is expected to be nearly double the low figure of 1954.

The number of women aged 20-34 is of special importance for population forecasts, since this is the group in which the number of births is greatest. The number of women in this age group has been high in the postwar decade, although it has declined since 1950. It is expected to rise moderately in the early 1960's, and sharply from 1967 to beyond 1975. The projected number for 1975 is 38 percent above the high figure for 1950. While this series gives no solid basis for forecasting births, as experience in the postwar decade has shown, it can be said that the age distribution of women after 1962 will be increasingly favorable to a new increase of births.

Reliable projections of the younger age groups provide a basis for estimating future high-school and college enrollments, additions to the labor force, and the number of families and households. But such derived estimates have a wide margin of error when made years in advance because they are necessarily based upon rough assumptions as to the choices that individuals and groups will make.

While the numbers that may be in the upper age groups 20 years in the future are not influenced by future births, they are subject to changes in health conditions, which are unpredictable. Moreover, inaccuracies in age reporting affect the reliability of present figures for age groups 60 and over. Undue reliance should therefore not be placed on the projections that the number reaching age 65 will rise from 1.2 million in 1955 to 1.6 million in 1975, and that the numbers aged 65 and over will increase from 14.1 million in 1955 to 20.7 million in 1975. The implied increase in the proportion of these older people in the total population, from 8.5 percent to 9-10 percent, is even more provisional because the total population cannot be safely forecast.

The latest illustrative projections of the total population (published in October 1955) point to a range of 206.9-228.5 million in 1975. These projections incorporate the very conservative assumption that there will be no improvement in mortality experience after 1960. Only a guess can be made about such improvement, however, chiefly because future progress in medical research cannot be predicted. Furthermore, special conditions and legislative changes may affect the volume of net civilian immigration.

Finally, the actual course of births may differ widely from any assumed course, as has been true during and since the war. For such reasons, projections of the total population, though embodying a combination of expert knowledge and careful judgment, require frequent revision as additional evidence becomes available. They can serve many useful purposes, however, if their limitations are clearly recognized.