VITAL and HEALTH STATISTICS

DATA FROM THE NATIONAL VITAL STATISTICS SYSTEM

Natality Statistics Analysis

United States - 1963

Analyzes factors affecting recent trends in fertility.
Compares the birth rates of the white and nonwhite
populations, States, metropolitan areas, Puerto Rico,
and the Virgin Islands. Also discusses the following
characteristics of live births: sex ratio, plurality,
attendant at birth, birth weight, period of gestation,
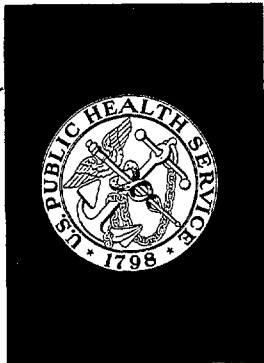season of birth, and legitimacy.

Washington, D.C.   March 1966

NATIONAL CENTER FOR HEALTH STATISTICS

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CONTENTS—Con.

NATALITY RATES AND RATIOS, 1963

TOTAL NUMBER OF LIVE BIRTHS—4,098,020

CRUDE BIRTH RATE 21.7
  (per 1,000 population)

CRUDE RATE OF NATURAL INCREASE.....12.1
  (persons per 1,000 population)

INTRINSIC RATE OF NATURAL INCREASE ...17.1
  (per 1,000 women aged 15-44 years)

GROSS REPRODUCTION RATE...........1,623

NET REPRODUCTION RATE 1,564

TOTAL FERTILITY RATE 3,330.6

GENERAL FERTILITY RATE............108.4
  (per 1,000 women aged 15-44 years)

CUMULATIVE BIRTH RATE BY AGE OF
  WOMEN, JANUARY 1, 1964
  (per 1,000 women)
  15 to 19 years 90
  20 to 24 years 928
  25 to 29 years 2,138
  30 to 34 years 2,776
  35 to 39 years 2,867
  40 to 44 years 2,794
  45 to 49 years 2,463
  50 to 54 years 2,304

PREMATURE BIRTHS (under 37 weeks gestation)...............................6.8
  (per 100 live births)

IMMATURE BIRTHS (2,500 grams or less)....8.2
  (per 100 live births)

MEDIAN WEIGHT AT BIRTH............3,290
  (in grams)

HOSPITAL DELIVERIES 97.4
  (per 100 live births)

PLURAL DELIVERIES.................19.8
  (per 1,000 live births)

SEX RATIO.......................1,053
  (males per 1,000 female live births)

ESTIMATED LEGITIMATE FERTILITY
  RATE...........................146.3
  (per 1,000 married women aged 15-44 years)

ESTIMATED ILLEGITIMATE FERTILITY
  RATE 22.5
  (per 1,000 unmarried women aged 15-44 years)

ESTIMATED PERCENT COMPLETENESS
  OF BIRTH REGISTRATION.............98.9

SYMBOLS

Data not available------------------------   ---

Category not applicable--------------------   ...

Quantity zero----------------------------   -

Quantity more than 0 but less than 0.05----   0.0

Figure does not meet standards of
  reliability or precision-------------------   *

NOTES TO TABLES

1. *Alaska and Hawaii.*—All tables showing time series include data for Alaska beginning 1959, Hawaii 1960.

2. *50-percent sample.*—All data for the years 1951-54 and 1956-64 are derived from 50-percent samples of birth records. Statistics for these years were obtained by multiplying the sample figures by 2.

3. *Not stated data.*—Age of mother, live-birth order, birth weight, and period of gestation data which were not stated in frequency tables, *Vital Statistics of the United States, 1963,* Volume I, were distributed in proportion to the frequency of known cases in the preparation of rate tables, percent distributions, and indexes for this report.

4. *Race and color not stated.*—Data on births by color are not available for New Jersey for 1962 because this State did not ask for the race of either parent on a revision of its birth certificate introduced at the beginning of 1962. The color item was restored in the latter part of 1962, but the certificates without this item were used for most of 1962 and 1963. Therefore, all tables showing data by color for 1962 and 1963 for the United States exclude data for residents of New Jersey.

5. *Adjustment for underregistration of births.*—Adjustment for failure to register births was discontinued in 1960, when it was estimated that 98.9 percent of all births were registered. However, table 2 makes allowance for both the underregistration of births and the underenumeration of the base population.

6. *Live-birth order.*—Live-birth order refers to the number of children born alive to mother.

7. *Attendant at birth.*—In the United States it is assumed that all births occurring in hospitals or institutions are attended by physicians; in Puerto Rico and the Virgin Islands, a large proportion of hospital births are attended by persons other than physicians.

8. *Illegitimate births.*—The number of illegitimate births for the United States as a whole is estimated from the numbers reported by 34 States and the District of Columbia.

9. *Population bases.*—Except as noted, birth rates shown in this report are based on populations present in the respective areas. The populations for the United States exclude the Armed Forces overseas and persons living abroad but include the Armed Forces stationed in each area. Rates for 1940, 1950, and 1960 are based on the population enumerated as of April 1; for all other years, estimated as of July 1.

10. *Urban.*—The urban population consists of inhabitants residing in incorporated cities of 2,500 inhabitants or more and in unincorporated areas of 25,000 or more inhabitants or in those of high density as specified in *Vital Statistics of the United States, 1963,* Volume I, p. 4-7.

11. *Standard metropolitan statistical areas.*—The standard metropolitan statistical areas (SMSA's) are those established by the Bureau of the Budget as of 1960 except in the New England States. In the other 44 States, an SMSA is a county or a group of contiguous counties which contains at least one city of 50,000 inhabitants or more or "twin cities" with a combined population of at least 50,000 in the 1960 census. In addition, contiguous counties are included in an SMSA if, according to specified criteria, they are essentially metropolitan in character and socially and economically integrated with the central city or cities. In the New England States, the metropolitan State economic area (MSEA) established by the Bureau of the Census, which is made up of county units, is used.

IN THIS REPORT statistics are presented for births in the United States in 1963 with an analysis of these data. The report makes use of information obtained from microfilm copies of the original certificate of live births from the 50 States and the District of Columbia.

In 1963 births exceeded the figure of 4 million for the tenth consecutive year in spite of a continuing decline in the birth rate for the sixth consecutive year since the last peak was reached in 1957. The rates are still well above those observed in the period immediately prior to World War II.

The current decline is due, in part, to the shift in the childbearing ages which occurred in the 1950's. Because the women who are now over 25 years of age had higher birth rates at younger ages, they are now having lower birth rates at the older ages. Current fertility declines at the younger childbearing ages (under 25 years) may be due to the postponement of marriage and childbearing to later ages or to a reduction in the number of children couples will have.

Other findings of the report include:

Women who had completed the childbearing period by 1964 (those 50 years of age) had 2.3 children per woman. Younger women will exceed this figure by a wide margin. By 1964, women aged 40 had already borne 2.8 children while those 30 years of age had borne 2.6 children.

There is a potential for a rise in the annual number of births in the near future due to the increasing size of the young childbearing population. In 1963, there were about 6.3 million women in the 20-24 year age group. By 1970, there will be approximately 8.5 million, or an increase of 35 percent.

Differences between white and nonwhite fertility have been fairly constant in recent years. Both groups reached peak fertility in 1957, and since then have shown declines in their birth rates.

Declines in the birth rate between 1962 and 1963 occurred in every geographic division and in almost every State.

Over 97 percent of all live births in the entire United States were delivered in hospitals. Ninety-nine percent of all white live births were delivered in hospitals; for nonwhites the figure was 88 percent. In several of the Southern States over 20 percent of the nonwhite births were not attended by doctors.

About 8 out of every 100 births were classified as immature, that is, weighing less than 2,500 grams (5 pounds, 8 ounces). The median birth weight for all live births was 3,290 grams (7 pounds, 4 ounces).

An estimated 6 percent of all births were illegitimate in 1963. Eighteen percent of the births to women under 20 years of age were illegitimate.

NATALITY STATISTICS ANALYSIS

Arthur A. Campbell, Alice Clague, Frank Godley, and Harry M. Rosenberg, *Division of Vital Statistics*

INTRODUCTION

The purpose of this report is to present and interpret important features of the 1963 birth statistics for the United States, which are shown in detail in Volume I of *Vital Statistics of the United States, 1963*, "Natality."

The contents of this publication are similar to those of its predecessor, *Natality Statistics Analysis United States, 1962* (Series 21, No. 1). However, the latter report deals with some topics not included in this report. Among these are a brief history of the birth registration system in this country, a description of the Standard Certificate of Live Birth, and an international comparison of birth rates. Readers interested in these subjects may wish to refer to the earlier report.

Birth statistics for 1963 are based on information reported on the birth certificates of 54 reporting areas in the United States, one in Puerto Rico, and one in the Virgin Islands. Registrars in these areas send copies of all birth certificates to the Division of Vital Statistics. Here, a 50-percent sample of the certificates is selected. All tabulations are based on this sample.

Data on births by color are not available for New Jersey in 1962 and 1963 because this State did not ask for the race of either parent on a revision of its birth certificate that was introduced at the beginning of 1962. The color item was restored in the latter part of 1962; however, certificates without this item were used for most of 1962 and 1963.

Most of the statistics presented here do not include an adjustment for the failure to register some births. This adjustment was discontinued in 1960, when it was estimated that 98.9 percent of all births were registered. However, the cohort fertility rates, which are cited in the description of recent trends in fertility, make allowances for both the underregistration of births and the underenumeration of the base population.

Additional details concerning technical aspects of birth statistics may be found in the Technical Appendix of Volume I, *Vital Statistics of the United States, 1963*, "Natality."

RECENT TRENDS IN FERTILITY

Fertility in the United States reached a postwar peak in 1957. In that year, there were 123 births per 1,000 women 15-44 years of age (table 1). Since then, the fertility rate has declined. In 1963 it was 108, and in 1964 the rate was 105. At the time of this writing, the provisional rate for the first 11 months of 1965 was 97. (This is seasonally adjusted and comparable to the annual rates cited above.) In this section, some of the factors behind the recent decline in fertility are described.

The Long-Range Perspective

Although the fertility rate of 108 for 1963 is low in relation to that of 123 in 1957, it is still well above the rates observed in the period immediately before World War II. From 1933 to 1939, the fertility rate varied between 76 and 79; and averaged 77.4. The rate for 1963 is 40 percent above this level. Even the rate of 97, observed in the first 11 months of 1965, is high in comparison with prewar levels (table 1).

Table 1. Live births, birth rates, and fertility rates: United States, 1909-65

(Notes to tables given on page VII)

Year	Live births	Birth rate[1]	Fertility rate
Registered births	Number	Rates per 1,000 population	Rates per 1,000 women aged 15-44 years
1965[2]	---	19.5	96.9
1964	4,027,490	21.0	104.8
1963	4,098,020	21.7	108.4
1962	4,167,362	22.4	112.1
1961	4,268,326	23.3	117.2
1960	4,257,850	23.7	118.0
1959	4,244,796	24.0	118.8
Births adjusted for underregistration[3]			
1959	4,295,000	24.3	120.2
1958	4,255,000	24.5	120.2
1957	4,308,000	25.3	122.9
1956	4,218,000	25.2	121.2
1955	4,104,000	25.0	118.5
1954	4,078,000	25.3	118.1
1953	3,965,000	25.1	115.2
1952	3,913,000	25.1	113.9
1951	3,823,000	24.9	111.5
1950	3,632,000	24.1	106.2
1949	3,649,000	24.5	107.1
1948	3,637,000	24.9	107.3
1947	3,817,000	26.6	113.3
1946	3,411,000	24.1	101.9
1945	2,858,000	20.4	85.9
1944	2,939,000	21.2	88.8
1943	3,104,000	22.7	94.3
1942	2,989,000	22.2	91.5
1941	2,703,000	20.3	83.4
1940	2,559,000	19.4	79.9
1939	2,466,000	18.8	77.6
1938	2,496,000	19.2	79.1
1937	2,413,000	18.7	77.1
1936	2,355,000	18.4	75.8
1935	2,377,000	18.7	77.2
1934	2,396,000	19.0	78.5
1933	2,307,000	18.4	76.3
1932	2,440,000	19.5	81.7
1931	2,506,000	20.2	84.6
1930	2,618,000	21.3	89.2
1929	2,582,000	21.2	89.3
1928	2,674,000	22.2	93.8
1927	2,802,000	23.5	99.8
1926	2,839,000	24.2	102.6
1925	2,909,000	25.1	106.6
1924	2,979,000	26.1	110.9
1923	2,910,000	26.0	110.5
1922	2,882,000	26.2	111.2
1921	3,055,000	28.1	119.8
1920	2,950,000	27.7	117.9
1919	2,740,000	26.1	111.2
1918	2,948,000	28.2	119.8
1917	2,944,000	28.5	121.0
1916	2,964,000	29.1	123.4
1915	2,965,000	29.5	125.0
1914	2,966,000	29.9	126.6
1913	2,869,000	29.5	124.7
1912	2,840,000	29.8	125.8
1911	2,809,000	29.9	126.3
1910	2,777,000	30.1	126.8
1909	2,718,000	30.0	126.8

[1]For 1917-19 and 1941-46, based on population including Armed Forces abroad.
[2]Seasonally adjusted provisional estimate for the first 11 months of 1965.
[3]For 1915-32, figures include adjustments for States not in the registration area. For years prior to 1915, estimates are based on the number of births registered in the 10 original registration States. Estimates for 1909-34 were prepared by P. K. Whelpton. See National Office of Vital Statistics: Births and birth rates in the entire United States, 1909 to 1948. Vital Statistics—Special Reports, Vol. 33, No. 8, 1950.

Thus far in this report, the fertility rate has been used rather than the birth rate (births per 1,000 total population), because the trend in the birth rate gives a different and misleading impression. In 1963, the birth rate was 21.7 per 1,000 population. This is only 16 percent above the average rate of 18.7 observed during 1933-39. This differential contrasts sharply with that for the fertility rate. As noted in the preceding paragraph, the fertility rate for 1963 is 40 percent above the 1933-39 level.

This means that the most popular measure of fertility, the birth rate, understates current fertility, relative to the prewar level, by a wide margin. If the ratio of the birth rate to the fertility rate had remained unchanged since 1933-39, the birth rate in 1963 would have been 26.2, rather than only 21.7.

The 1963 birth rate is markedly closer to prewar levels than is the fertility rate because the childbearing population (taken here as women 15-44 years of age) is a smaller proportion of the total population than it was before the war. In the middle of the 1933-39 period (1936), the childbearing population constituted 24 percent of the total population; in 1963, the comparable proportion was 20 percent. As a consequence, the higher fertility of women in 1963 was partially offset by a reduction in the proportion of people in the childbearing population. The net result is a relatively low birth rate for the total population.

The reduction in the relative size of the childbearing population is due in large part to the increase in the proportion of children in the population, which is due in turn to the higher fertility of the postwar period. In 1936, the proportion of persons under 15 years of age was 26.5 percent. In 1963, the comparable proportion was 31 percent.

This shows that a substantial and sustained rise in fertility eventually depresses the birth rate in relation to the fertility rate.[a]

Trends in Total Fertility

For the purposes of analyzing trends in fertility, the "total fertility rate" is more useful than the fertility rate (births per 1,000 women 15-44 years) referred to in the preceding discussion. The total fertility rate is the sum of the age-specific birth rates for single years of age for all ages in the reproductive span. (See footnote on table 2 for definition and qualifications.) It is an age-adjusted rate because it is based on the assumption that there are the same number of women at each single year of age.

An important conceptual advantage of the total fertility rate is that it states the number of births 1,000 women would have if they experienced a given set of age-specific birth rates throughout the reproductive age span. The rate of 3,331 for 1963, for example, means that if a hypothetical group of 1,000 women were to have the same birth rates at each single year of age that were observed in the entire childbearing population in 1963, they would have a total of 3,331 children by the time they reached the end of the reproductive period (taken here as age 50), assuming that all survive to that age.

This rate is useful because it can be compared with the projected childbearing of actual groups of women as they proceed through the reproductive period of life. Such comparisons give some idea of the extent to which fertility in a given year may be distorted by factors that may have only a temporary effect. For example, the total fertility rate for 1957 was 3,724. This was the highest rate observed in this country since the beginning of the series in 1917 (table 2). However, there was evidence from a 1955 interview survey of married women that no actual group of women then in the childbearing population expected to have as many as 3,700 children per 1,000 women by the end of the reproductive period.[b] This meant that the 1957 rate of 3,724 was "inflated"

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[a]The relationship between fertility and the birth rate is described in detail by A. J. Coale and M. Zelnik in ch. 6 of *New Estimates of Fertility and Population in the United States*, Princeton, Princeton University Press, 1963.

[b]See projected cumulative birth rates for ages 45-49 in table 10-7, *Family Planning, Sterility, and Population Growth*, by R. Freedman, P. K. Whelpton, and A. A. Campbell, New York, McGraw-Hill Book Co., 1959.

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Table 2. Total fertility rates: United States, 1917-63

Year	Rates per 1,000 women	Year	Rates per 1,000 women
1963	3,331	1939	2,154
1962	3,476	1938	2,200
1961	3,620	1937	2,147
1960	3,655	1936	2,119
1959	3,669	1935	2,163
1958	3,654	1934	2,205
1957	3,724	1933	2,149
1956	3,634	1932	2,288
1955	3,521	1931	2,376
1954	3,501	1930	2,509
1953	3,378	1929	2,524
1952	3,307	1928	2,656
1951	3,209	1927	2,826
1950	3,030	1926	2,910
1949	3,030	1925	3,027
1948	3,013	1924	3,144
1947	3,158	1923	3,116
1946	2,829	1922	3,125
1945	2,392	1921	3,349
1944	2,466	1920	3,273
1943	2,616	1919	3,078
1942	2,532	1918	3,313
1941	2,314	1917	3,332
1940	2,214		

NOTE: The total fertility rate is the sum of age-specific birth rates for single years of age for women 14-49 years of age. The birth rates for single years of age used to compute total fertility rates are based on births adjusted for underregistration for all years (including 1960-63) and on population estimates adjusted for underenumeration. Hence, they are not precisely comparable to the birth rates and fertility rates shown in table 1. For the method of adjusting the population bases, see the Methodological Appendix in National Office of Vital Statistics: Fertility tables for birth cohorts of American Women, pt. 1, by P. K. Whelpton and A. A. Campbell, Vital Statistics—Special Reports, Vol. 51, No. 1, 1960.

in the sense that such a high rate could not be maintained for a long time. The total fertility rate would soon have to descend to a level which would be more compatible with the experience of actual groups of women living through the childbearing period.

The recent decline of the total fertility rate to values in the range of 3,000-3,300 (the rate for 1963 was 3,331, but rates for 1964 and 1965 will be somewhat lower) represent, in part, an inevitable decline from the inflated levels of 3,500-3,700 observed throughout the period between 1954 and 1962. The total fertility rate had been distorted upward for at least 9 years, and could no longer remain at such high levels, given the average couple's desire for families of moderate size.

The Increase in Completed Fertility

Not all of the postwar rise in fertility can be properly interpreted as inflation, however. Most of the rise in the total fertility rate from the lows of 2,100-2,200 observed during 1933-39 to the postwar range of 3,000-3,700 was due to a real increase in the average number of children that couples had (sometimes called "average size of family"). This concept is best measured by the "completed fertility rate," which is the average number of births (per 1,000 women) that a group of women has by the end of the childbearing period (assumed to be age 50). The groups of women referred to are called "cohorts," and are identified by the year of their birth so that they always carry the same designation, regardless of their age.[c] Thus, it is possible to make statements about the 1920 cohort when its members were 30 years old in 1950 and when they were 40 years old in 1960—referring to the same group of women in both years.

The long-term decline in the completed fertility of cohorts, as well as the subsequent upturn, is shown in figure 1. The low was reached by the 1909 cohort, which averaged 2,230 births per 1,000 women. Later cohorts have had successively higher rates. The most recent cohort to reach age 50 by the end of 1963 (the 1914 cohort) had 2,334 births per 1,000 women.

Although later cohorts have not yet reached age 50, it can be predicted that their completed fertility will surpass that of the 1914 cohort because they have already borne more children by younger ages. In order to see how many births women have had before the end of the childbearing period, "cumulative fertility rates" are used. The cumulative fertility rate by age 40 for the 1924 cohort (which describes the number of births this cohort had by the end of 1963) was 2,835

births per 1,000 women. This exceeds by a wide margin the *completed* fertility of the 1914 cohort.

It is not yet known how high completed fertility will be for some of the cohorts still in the reproductive years of life, but projections based on women's expectations of their future childbearing indicate that the cohorts of 1931-35 will complete their families with 3,100-3,500 births per 1,000 women.[d] By the end of 1963, when they were 29-33 years old, the women in these cohorts had borne 2,700 children.

Projections for later cohorts are, of course, even more speculative. The Scripps Foundation projections show a range of 2,900-3,400 for the 1936-40 cohorts and 2,700-3,400 for the 1941-45 cohorts. The Census Bureau's projections for these groups are slightly higher, however, with estimates for the 1936-40 and 1941-45 cohorts being 3,200-3,500 and 3,000-3,500, respectively. The 1941-45 cohorts had reached the ages of 19-23 years by the end of 1963, and had borne slightly under 700 births per 1,000 women, so it is difficult to foresee how many children they will have altogether.

Although precise estimates cannot be made of the number of children young women will have by the end of the childbearing period, it does not now seem likely that their completed fertility rates will exceed 3,400. Therefore, any total fertility rates for calendar years that exceed this level may be considered inflated.

The Temporary Inflation of Total Fertility

What brought about the upward distortion of total fertility rates in the 1950's? The answer

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[c]The birth years by which cohorts are identified end on June 30. The cohort of 1920, for example, was born in the 12 months preceding June 30, 1920. This convention has been adopted for technical reasons stated on pages 106-108 in National Office for Vital Statistics, "Fertility Tables for Birth Cohorts of American Women," Pt. 1, by P. K. Whelpton and A. A. Campbell, *Vital Statistics—Special Reports*, Vol. 51, No. 1, Public Health Service, Washington, D.C., 1960.

[d]These projections were prepared by the Scripps Foundation for Research in Population Problems, Miami University, Oxford, Ohio. They are reported in *Fertility and Family Planning in the United States*, by P. K. Whelpton, A. A. Campbell, and J. E. Patterson, Princeton, Princeton University Press, 1966. The projections of the U.S. Bureau of the Census for these cohorts lie in the narrower range of 3,300 to 3,500; see "Projections of the Population of the United States, by Age and Sex, 1964 to 1985," by J. S. Siegel, M. Zitter, and D. S. Akers, *Current Population Reports*, Series P-25, No. 286, July 1964. The Scripps Foundation's projections are cited in the text of the present report because their wider range is somewhat more conservative.
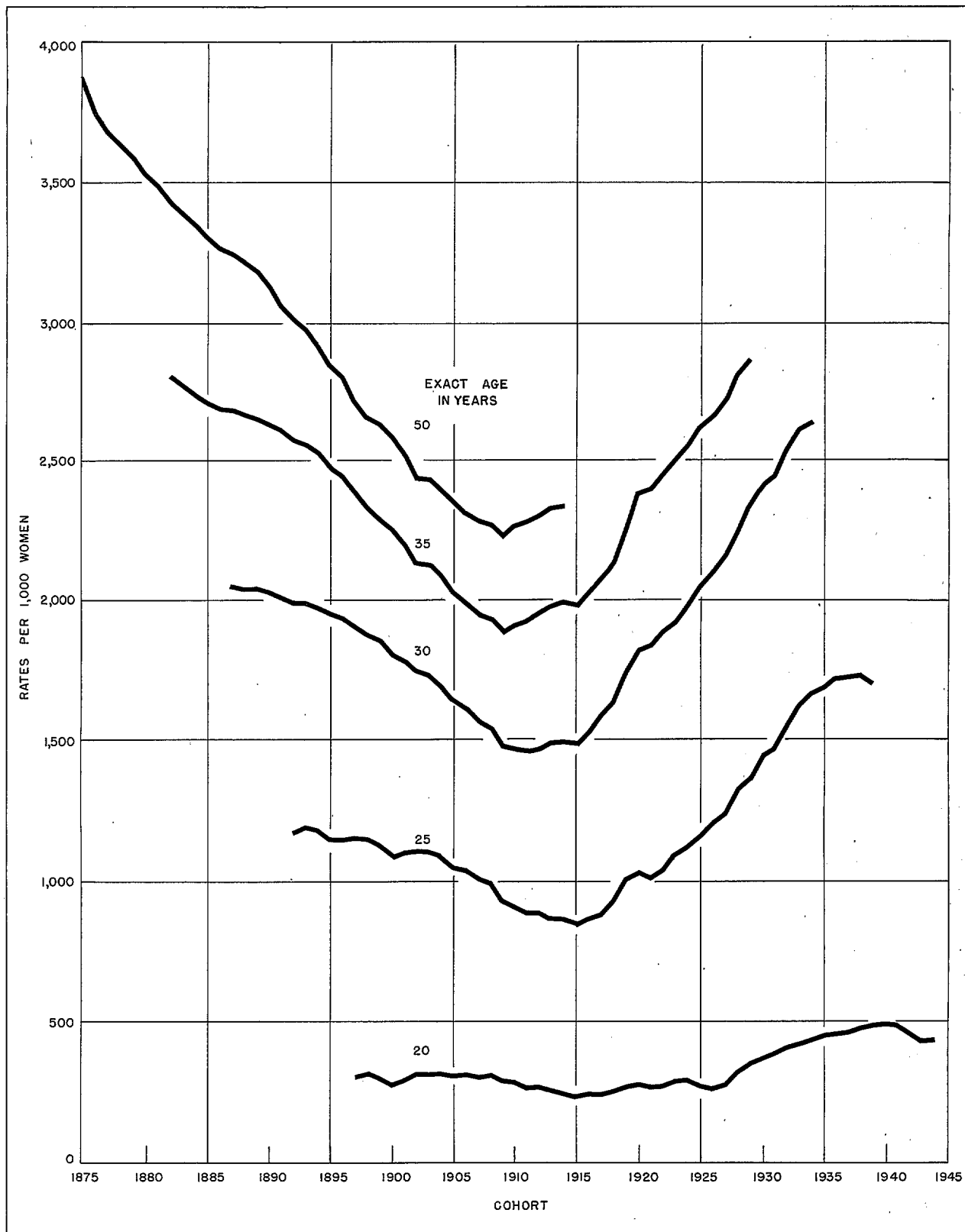
Figure 1.   Cumulative birth rates by exact ages, cohorts of 1875-1944.

(Rates based on births adjusted for underregistration for all years, including 1960-63, and on popula-
tion estimates adjusted for underenumeration)

lies in certain shifts in the timing of births. Two broad changes were underway.

First, the cohorts of 1916-25 (approximately) had higher birth rates at the older childbearing ages than the cohorts preceding them. The members of these cohorts reached the early ages of childbearing during the 1930's and early 1940's, when economic conditions and war may have made it advisable or necessary to postpone marriage and childbearing. By 1950, the women in these cohorts were 25-34 years old, and they were having children at the highest rates observed since the cohorts of the 1890's. By 1960, they were 35-44 years old, and the inflationary effect of their higher fertility on the total fertility rate had virtually run its course.

A second and more important shift in the timing of births was the trend toward younger marriage and younger childbearing by the cohorts of 1926-35 (approximately). The women in these groups were 15-24 years old in 1950, their marriage rates were high, and their birth rates at these ages were higher than any previously observed in this country in a series going back to 1917. Their higher fertility at the younger ages kept annual birth rates high throughout the 1950's. The effects of this shift toward earlier childbearing had begun to diminish in the early 1960's.

In brief, the inflationary effects of two shifts in timing patterns overlapped, and birth rates were high in the 1950's at all ages of childbearing, both young and old (table 3).

The fact that fertility is declining at the older ages of childbearing (ages 25 and over, approximately) was a foreseeable consequence of the concentration of births into the early years of the childbearing period. The following prediction was published in 1959:

When all the postponed births are made up, and the tendency to marry and have the first birth at progressively younger ages stops, age-specific birth rates will decline and the crest of the wave will have passed. This may occur even though the average size of completed families becomes substantially larger than it is now.[1]

The decline in birth rates was projected for the early 1960's. This expectation has since been fully confirmed.

The Changing Parity Distribution

The effect of younger childbearing is to increase the proportion of women who have all the children they want by a given age. This is illustrated by figure 2, which shows the proportion of women who have had various numbers of children by the age of 30. The proportion who have had three or more children has doubled in 20 years (three is chosen because it is close to the average number of children that married couples want and expect). This shift toward more children has greatly reduced the proportion of childless and one-child women, and since 1955 has also brought down the proportion of women with only two children.

Between January 1, 1957, and January 1, 1964, the proportion of 30-year-old women with three or more children rose from 36 to 49 percent. This means that the proportion with fewer than three children by the same age dropped from 64 to 51 percent. Because most of the women who want additional births are among those with fewer than three children, the reduction in this proportion has also brought about a reduction in birth rates after the age of 30.

A report prepared by the Population Studies Center of the University of Michigan supports this explanation.[2] By comparing the past and expected future childbearing of white women interviewed in surveys between 1955 and 1963, this study shows that the proportion of total expected children already born by ages 25-29 had risen from 62 percent in 1955 to 72 percent in 1963. This means that the proportion of children yet to be borne by women in this age group declined from 38 percent in 1955 to 28 percent in 1963. At ages 30-34, the proportion of children to be born in the future dropped from 22 percent in 1955 to 13 percent in 1963; at ages 35-39, the comparable proportion dropped from 11 to 3 percent. These data describe the essential reasons for the recent decline in fertility at the older childbearing ages.

Table 3. Birth rates by age of mother: United States, 1940-63

(Notes to tables given on page VII)

Year	Age of mother							
	10-14 years	15-19 years	20-24 years	25-29 years	30-34 years	35-39 years	40-44 years	45-49 years[1]
Registered births	Rates per 1,000 women							
1963---------------------	0.9	76.5	231.3	185.4	105.9	51.2	14.2	0.9
1962---------------------	0.8	81.3	243.8	191.3	108.7	52.6	14.8	0.9
1961---------------------	0.9	88.0	253.6	197.8	113.3	55.6	15.6	0.9
1960---------------------	0.8	89.1	258.1	197.4	112.7	56.2	15.5	0.9
1959---------------------	0.9	89.1	257.5	198.6	114.4	57.3	15.3	0.9
Births adjusted for underregistration								
1959---------------------	0.9	90.4	260.1	200.5	115.6	58.2	15.5	1.1
1958---------------------	0.9	91.4	258.2	198.3	116.2	58.3	15.7	0.9
1957---------------------	1.0	96.3	260.6	199.4	118.9	59.9	16.3	1.1
1956---------------------	1.0	94.6	253.7	194.7	117.3	59.3	16.3	1.0
1955---------------------	0.9	90.5	242.0	190.5	116.2	58.7	16.1	1.0
1954---------------------	0.9	90.6	236.2	188.4	116.9	57.9	16.2	1.0
1953---------------------	1.0	88.2	224.6	184.1	113.4	56.6	15.8	1.0
1952---------------------	0.9	86.1	217.6	182.0	112.6	55.8	15.5	1.3
1951---------------------	0.9	87.6	211.6	175.3	107.9	54.1	15.4	1.1
1950---------------------	1.0	81.6	196.6	166.1	103.7	52.9	15.1	1.2
1949---------------------	1.0	83.4	200.1	165.4	102.1	53.5	15.3	1.3
1948---------------------	1.0	81.8	200.3	163.4	103.7	54.5	15.7	1.3
1947---------------------	0.9	79.3	209.7	176.0	111.9	58.9	16.6	1.4
1946---------------------	0.7	59.3	181.8	161.2	108.9	58.7	16.5	1.5
1945---------------------	0.8	51.1	138.9	132.2	100.2	56.9	16.6	1.6
1944---------------------	0.8	54.3	151.8	136.5	98.1	54.6	16.1	1.4
1943---------------------	0.8	61.7	164.0	147.8	99.5	52.8	15.7	1.5
1942---------------------	0.7	61.1	165.1	142.7	91.8	47.9	14.7	1.6
1941---------------------	0.7	56.9	145.4	128.7	85.3	46.1	15.0	1.7
1940---------------------	0.7	54.1	135.6	122.8	83.4	46.3	15.6	1.9

[1]Rates computed by relating births to mothers aged 45 years and over to women aged 45-49 years.

Trends in Childbearing at the Younger Ages

The explanation offered in the preceding sections accounts only for the decline in fertility at the older childbearing ages. Fertility had also fallen at the younger childbearing ages (under 25 years of age) between 1957 and 1963, as is shown by the age-specific birth rates in figure 3. One or both of two tendencies could account for this trend.

1. *The postponement of births to later ages.—* Perhaps today's young couples are shifting their childbearing to somewhat later ages than the cohorts immediately preceding
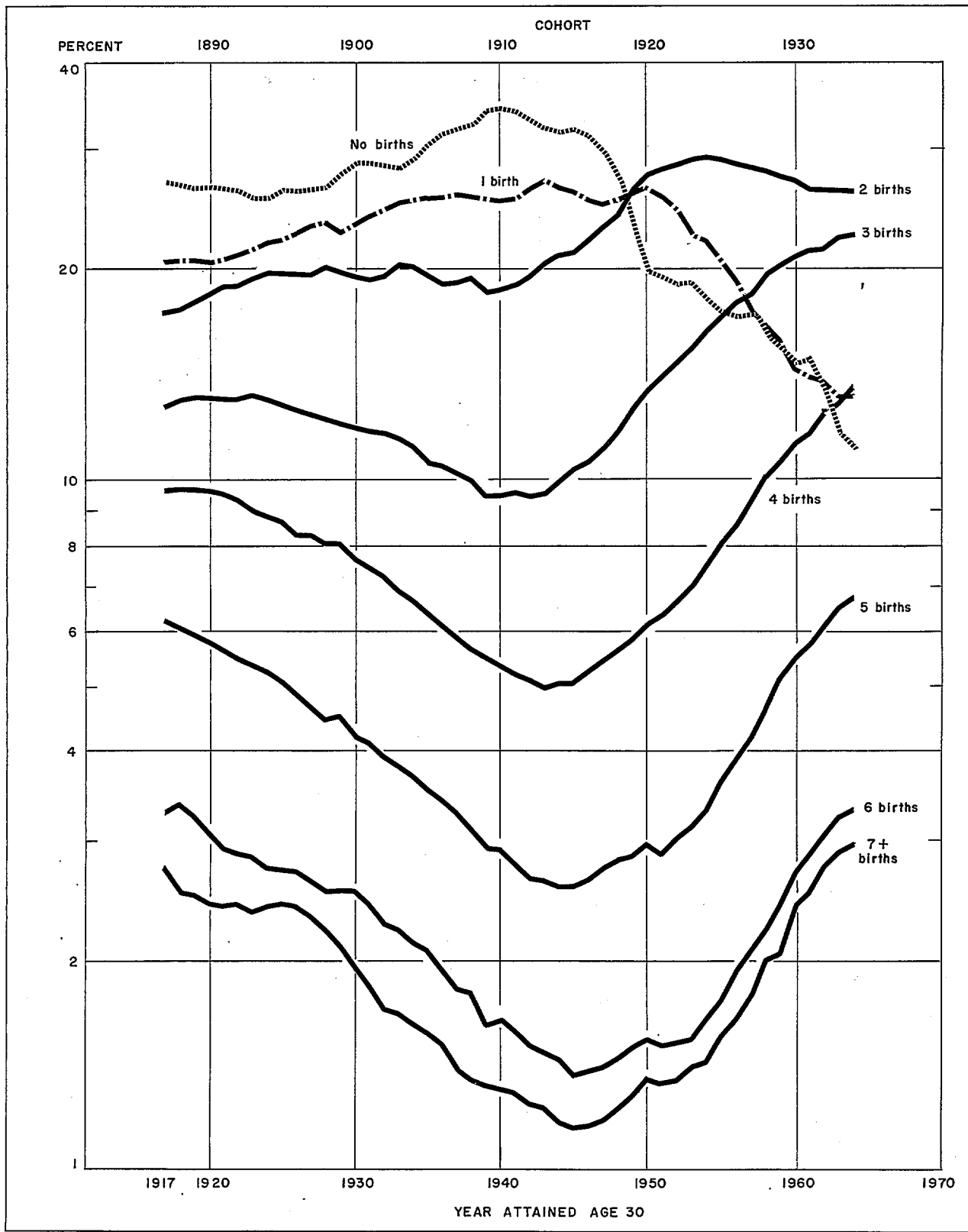
Figure 2.   Percent of women with specified number of births by exact age 30, January 1, 1917-64.

(Logarithmic scale)

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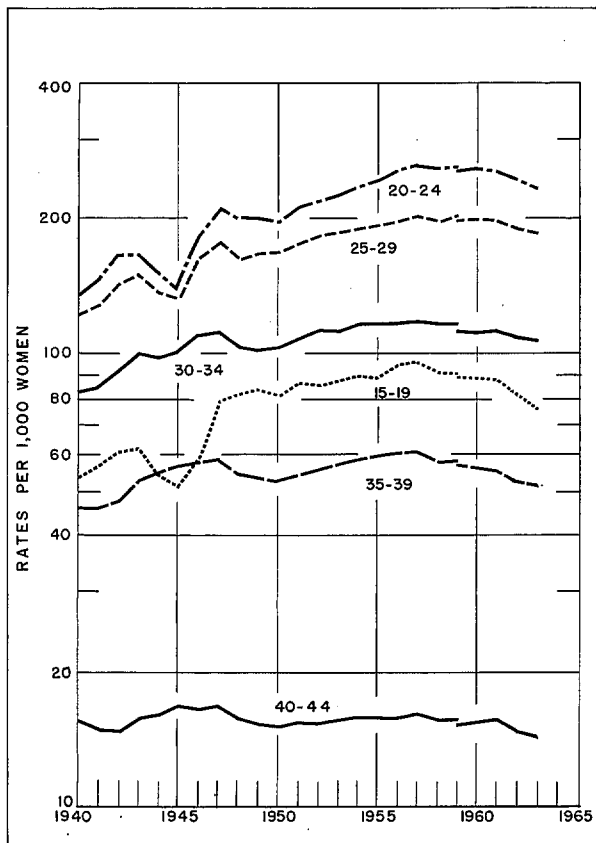
Figure 3. Birth rates by age of mother, 1940-63.
(Beginning in 1959 trend lines are based on registered live births; trend lines for 1940-59 are based on live births adjusted for underregistration. Logarithmic scale)

them. This would amount to a reversal of the trend toward earlier childbearing.

2. *Smaller families.*—Perhaps young couples will have fewer children altogether than the couples who began their families earlier in the postwar period.

At the present time, there is no reason for preferring either explanation to the exclusion of the other. Both are probably correct to a limited extent.

We can be reasonably certain that young couples now are delaying births to a greater extent than formerly because much of the 1957-63 decline in birth rates under 25 years of age was for first births. Between 1957 and 1963, the portion of the total fertility rate occurring at ages

under 25 dropped from 1,780 to 1,553, or by 227 births per 1,000 women. (These rates are sums of single-year age-specific rates at ages 14-24. They are additive components of the total fertility rates, which were 3,724 and 3,331 for 1957 and 1963, respectively.) More than half of this decline is a drop in the rate for first births. Assuming that couples will wish to avoid childlessness in the future, as they have in the recent past, most of these "deficit" births will be made up at later ages.

Whether young couples will have fewer children altogether than the cohorts preceding them in childbearing is less certain. By the end of 1963, the 1940-44 cohorts (who were then 20-24 years of age) had borne 928 children per 1,000 women, so they have most of their childbearing still ahead of them. It is possible that they will exceed the completed fertility rates of the cohorts of the 1930's, which are expected to be between 2,900 and 3,400. So far, the 1940-44 cohorts have had more births by ages 20-24 than the 1930-34 cohorts had by the same ages, but slightly fewer than the 1935-39 cohorts.

Cumulative rates for the cohorts of 1910 and later, by single years of age up to age 24, are shown in figure 4. This detailed picture clearly shows the recent downward trend in the number of children borne by young women, but it also shows that cumulative rates at these ages are still high, relative to rates observed for the cohorts of 1910-29.

Although the final outcome of the family-building process in cohorts who are now young is not certain, some information on the childbearing expectations of young couples is available. The report by the Population Studies Center of the University of Michigan, referred to in the preceding section, shows a small decline in the total number of children expected by the cohorts of 1931-35, in comparison with the cohorts of 1934-38.[e] There is no definite trend in the final number of births expected by later cohorts, however.

[e]Based on a comparison of an average of 3.4 births expected by married women who were 25-29 years old in 1960 (1931-35 cohorts) with an average of 3.2 expected for married women of the same age in 1963 (1934-38 cohorts) shown in table 3 of "Current Fertility Expectations of Married Couples in the United States, 1963," by R. Freedman, D. Goldberg, and L. Bumpass, *Popul. Index*, Vol. 31, No. 1, Jan. 1965.
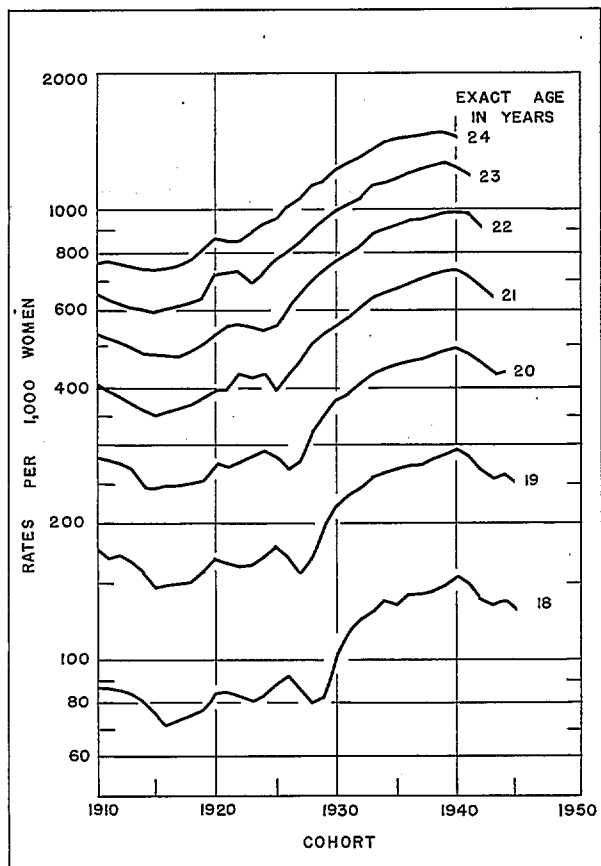
Figure 4. Cumulative birth rates by exact ages
18-24 years, cohorts of 1910-46.

(Rates based on births adjusted for underregis-
tration for all years, including 1960-63, and
on population estimates adjusted for underenum-
eration. Logarithmic scale)

This research into childbearing expectations
revealed a significant trend in the timing of births:
the more recent cohorts expect to have their
births at later ages than did earlier cohorts. This
finding is, of course, consistent with the inter-
pretation of recent cohort fertility rates offered
earlier in this section. However, it does not rule
out the possibility that completed fertility will
fall. In fact, the authors state,

It is possible that postponement of births may
be a first step toward revising expectations
downward. We have some evidence that ex-
pectations are revised downward rather
quickly as time lapses without a pregnancy.

Only future experience will tell whether the
cohorts now apparently postponing births will
make them up later or will revise their ex-
pectations and fertility downward.[3]

In summary, it appears that the reduction of
birth rates at ages under 25 years is due in part
to the postponement of births to later ages. This
trend may also foreshadow a decline in completed
fertility.

The future course of fertility in the United
States depends largely upon whether completed
fertility remains constant or falls. At the present
time, there is no evidence that any cohorts now
in the younger childbearing ages will begin a
trend toward higher completed fertility. If com-
pleted fertility stays close to 3,000 births per
1,000 women, then the declines that are now going
on at the younger ages will eventually be made
up at the older ages. However, if completed fer-
tility falls 10 to 20 percent below this level, age-
specific birth rates will continue to fall for
several more years.

The Role of the Contraceptive Pill

There has been some speculation that the
current decline in fertility has been brought about
by the increasing use of highly effective contra-
ceptive pills. It is impossible to tell with any
degree of certainty what effect the "pill" has had,
but there are certain considerations that must be
taken into account in arriving at an informed
opinion concerning its impact on the birth rate.

The pill was not permitted to be used as a
contraceptive until June 1960, and probably did
not come into wide use until a year or more
later. This means that if it has had any major
influence on the birth rate, it would not be de-
tectable until 1962, at the earliest, when children
conceived in 1961 were born. The decline in fer-
tility, however, started in 1958, so it was not
possible for the pill to have initiated the down-
ward trend or to have contributed to its early
progress.

The number of women using the pill is not
accurately known. The following estimates are
based on pharmaceutical company records:[4]

1961 ----------------------- 500,000
1962 ----------------------- 1,370,000
1963 ----------------------- 2,280,000

Informed guesses for later years have varied between 3 and 4 million.[f] At present, it is impossible to verify any of these estimates with data from a sample of women of reproductive age.

The estimate of 2.3 million for 1963 represents 6 percent of all women in the reproductive period of life (taken here as 15-44 years of age). It is more appropriate, however, to relate the number of "pill users" to the population most subject to the risk of childbearing. For present purposes, this may be approximately defined as married women 18 to 39 years of age, living with their husbands (or with husband temporarily absent in the Armed Forces), who are capable of conceiving and bearing children. The number of such women in 1963 is estimated to have been 13 million.[g] If it is assumed that all of the 2.3 million pill users are in this group, which is probably an exaggeration, then 17 percent of the women in the high-risk group were using the pill in 1963. If 3.5 million women were using the pill in 1964, the comparable proportion would be 26 percent.

If a further assumption is made that the pill users ordinarily contribute approximately 20 percent of the annual number of births, then a 10-percent reduction in their fertility, due solely to the use of the pill, would account for a 2.0-percent reduction in total births. In other words, any reduction in fertility brought about by the use of the pill would have to be multiplied by a relatively small factor (it would be 0.2 in the example given) in order to estimate the effect on total births. Even if the factor of 0.2, used in this example, were a gross understatement, the decline in the fertility of pill users would have to be modified by a considerable amount to estimate the effect on all births. If a factor of 0.3 were more accurate, then a 10-percent reduction among pill users would affect all births by only 3 percent.

Between 1957 and 1963, the total fertility rate dropped by 11 percent. By 1964, the cumulative decline from the 1957 peak was about 14 percent, and by 1965 it was about 20 percent. Even if a generous allowance were made for the amount of the overall decline that might be attributed solely to the use of the pill, it would probably not exceed half of the decline that has taken place.

Another consideration is the fact that fertility is still high, relative to levels prevailing during the period 1933-39. With the methods of control then in use, couples were able to maintain the total fertility rate within the narrow range between 2,100 and 2,200. The comparable rate for 1963 is 3,331. In other words, couples could have achieved levels of fertility observed recently without using methods of control that were more effective than those available 30 years ago. Therefore, it would be difficult, and perhaps impossible, to prove that the increased use of the pill has caused a substantial reduction in fertility that would not otherwise have taken place.

However, there is a plausible reason for believing that the pill has had some independent effect. The incidence of unintended pregnancies may be regarded as a function of three variables: the strength of couples' desire to prevent pregnancy, the effectiveness of the methods they use, and the convenience (or acceptability) of the methods. The pill is more effective than other methods in common use, and is generally regarded as more convenient. Therefore, the substitution of the pill for other methods of family limitation would reduce the incidence of unintended conceptions without any necessary increase in the strength of the couples' motivation to prevent pregnancy.

Inasmuch as many unintended conceptions are simply conceptions that occur somewhat sooner than they are wanted, we may also specu-

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[f]3,000,000 (*Time*, Mar. 31, 1964, p. 39) More than 3,000,000 by the end of 1964 (*Chemical Week*, Apr. 4, 1964, p. 22) 3,500,000 (*Newsweek*, July 6, 1964, p. 55) Nearly 4,000,000 (*Chicago Tribune*, June 27, 1965, sec. 1-A, p. 1)

[g]Based on data reported in ch. 4 of *Fertility and Family Planning in the United States*, by P. K. Whelpton, A. A. Campbell, and J. E. Patterson, Princeton, Princeton University Press, 1966.

late that one of the pill's major effects may be to help couples delay births for longer periods of time. If so, part of the recent shift toward later childbearing may be aided by widespread use of the pill.

In addition, the pill is undoubtedly helping some couples avoid unwanted conceptions—that is, conceptions that occur when the couple does not want to have any more children. Whether or not this has much effect on the total fertility rate is impossible to determine at the present time.

In summary, one can be certain that the recent decline in fertility was not initiated by the introduction of the contraceptive pill. To a considerable extent, the decline is the expected result of certain shifts in the ages at which women bear children. The recent tendency for couples to have their children somewhat later in life and, possibly, to have fewer children altogether, may have been aided by the use of the pill, but there is no evidence that these changes would not have occurred without the pill.

Without careful research into the childbearing plans and contraceptive practices of a representative sample of couples, it will be impossible to estimate the contraceptive pill's independent effect on recent trends in fertility.

The Changing Childbearing Population

The only factor influencing future births about which one can be reasonably certain is the size of the childbearing population, which will continue to grow for many years. A significant portion of this rise will occur between 1965 and 1970, when the number of women in the prime reproductive ages of 20-24 years will rise from 6.8 to 8.5 million.

The growth of the childbearing population will have no effect on birth *rates* at each age, but it will influence the number of children born annually and the birth rate of the total population.

The influence of changes in the childbearing population on the annual number of births up to 1985 has been computed by the U.S. Bureau of the Census. Their investigators multiplied average age-specific birth rates for 1960-63 by the projected age distribution of women for each year

from 1963 to 1985.[h] These calculations show that if fertility rates were to remain constant, the annual number of births would rise by about 3 percent a year until 1975, and by about 2 percent a year thereafter.

If age-specific birth rates remain constant between 1965 and 1970, the annual number of births will rise by about 16 percent. However, if age-specific birth rates fall by an average of 14 percent in this period, which would be sufficient to overcome the influence of greater numbers of women, the annual number of births will remain approximately stable. If age-specific birth rates fall by more than 14 percent in this period, then the annual number of births will also fall.

Inasmuch as the projections of the Bureau of the Census show that with constant fertility the annual number of births will rise more rapidly than the total population, it also shows that the birth rate for the total population will rise if fertility does not fall. The upward influence on the birth rate, however, amounts to only 1.4 percent per year between 1965 and 1970, or 7 percent over the entire 5-year period.

In summary, there is a potential for a rise in the annual number of births and the birth rate in the near future. Declining age-specific birth rates, however, could counterbalance the influence of rising numbers of women in the childbearing period. The annual number of births or the birth rate may begin to rise in the latter half of the 1960's; however this is by no means certain.

THE FERTILITY OF MAJOR POPULATION GROUPS

The foregoing discussion deals with fertility trends in the United States as a whole. Obviously the same description does not necessarily apply to all components of the population. Certain groups have higher fertility than others while

[h]The figures referred to are the Series Y projections shown in table C-1 in U.S. Bureau of the Census, "Projections of the Population of the United States, by Age and Sex, 1964 to 1985," by J. S. Siegel, M. Zitter, and D. S. Akers, *Current Population Reports,* Series P-25, No. 286, July 1964.

some are experiencing greater declines in fertility than others. In this section of the report, attention will be directed toward the fertility of certain major population groups.

The kinds of groups available for comparative analysis are necessarily limited by the information collected on birth certificates. Consequently, analysis of the fertility of certain important groups in our society cannot be made. For example, it is impossible to discover from birth registration data whether fertility is declining more rapidly among low-income families than among moderate- and high-income families. Nor is it possible to investigate trends in fertility among women classified by educational attainment. It would be highly desirable, for many purposes, to present such analyses, but the birth certificates of most registration areas do not ask for the information needed to make this possible. However, Puerto Rico has requested information pertaining to the educational attainment of the mother and father on its birth certificate since 1962. Minnesota also instituted this practice on the 1965 revised form of its birth certificate.

At present, the only major population groups whose fertility can be studied on the basis of information collected on birth certificates are those identified by race and residence. The next section will compare fertility in the white and nonwhite populations; the succeeding section will present data for States, geographic divisions, and certain metropolitan areas.

Fertility by Color

Although fertility rates for the nonwhite population were about 40 percent higher than those for the white population in 1963, they have followed the tendencies of the white population rates since 1950 (fig. 5). Both groups reached peak fertility in the same year, 1957, and since then both have shown declines in their birth rates.

Although recent trends in the fertility of the white and nonwhite populations have been similar, this has not always been the case. In the early postwar period, fertility rose more rapidly for nonwhite persons so that the relative excess of their fertility rates over those of the white pop-

ulation has grown. Between 1954 and 1963, the difference between white and nonwhite fertility was greater than it had been during the 1920's and 1930's.

Color differences in fertility vary with the age of the mother. Although birth rates for nonwhite women exceed those for white women at all ages, the relative differences are least among those age groups where birth rates are highest, that is, among women aged 20-24 and 25-29 years (table 4). For these age groups, nonwhite fertility exceeded white fertility by 24 percent and 17 percent, respectively, in 1963. The differences were greater among both younger and older women, tracing a U-shaped pattern over age. In 1963, the birth rates of nonwhite women aged 15-19 years were about twice those of white women; while among women aged 40-44 years, they were approximately 60 percent higher.

The relative excess of nonwhite over white rates also varies with the order of birth. It is least for the lower birth orders and greatest for the higher, although there are some irregularities among the lower orders (table 4). Age-specific rates for fifth and higher order births (combined) are almost three times as high for nonwhite as for white women.

Comparisons of certain characteristics of white and nonwhite births (such as sex ratio, plurality, and period of gestation) are presented in later sections of this report.

Fertility by States and Geographic Divisions

The continuing decline of the birth rate in the United States was reflected in every geographic division and in all but three States between 1962 and 1963. Only Connecticut, Maryland, and Nevada failed to have lower birth rates in 1963 than in 1962. By geographic division, the largest decline in the birth rate (6 percent) occurred in the Mountain Division, which also had the highest rate in 1963 (23.6 births per 1,000 population). The birth rate diminished least, by 2 percent, where it was lowest (19.9), in the Middle Atlantic Division.

As a consequence of this pattern of change over a period of years, birth rates among the States have tended to converge. The convergence
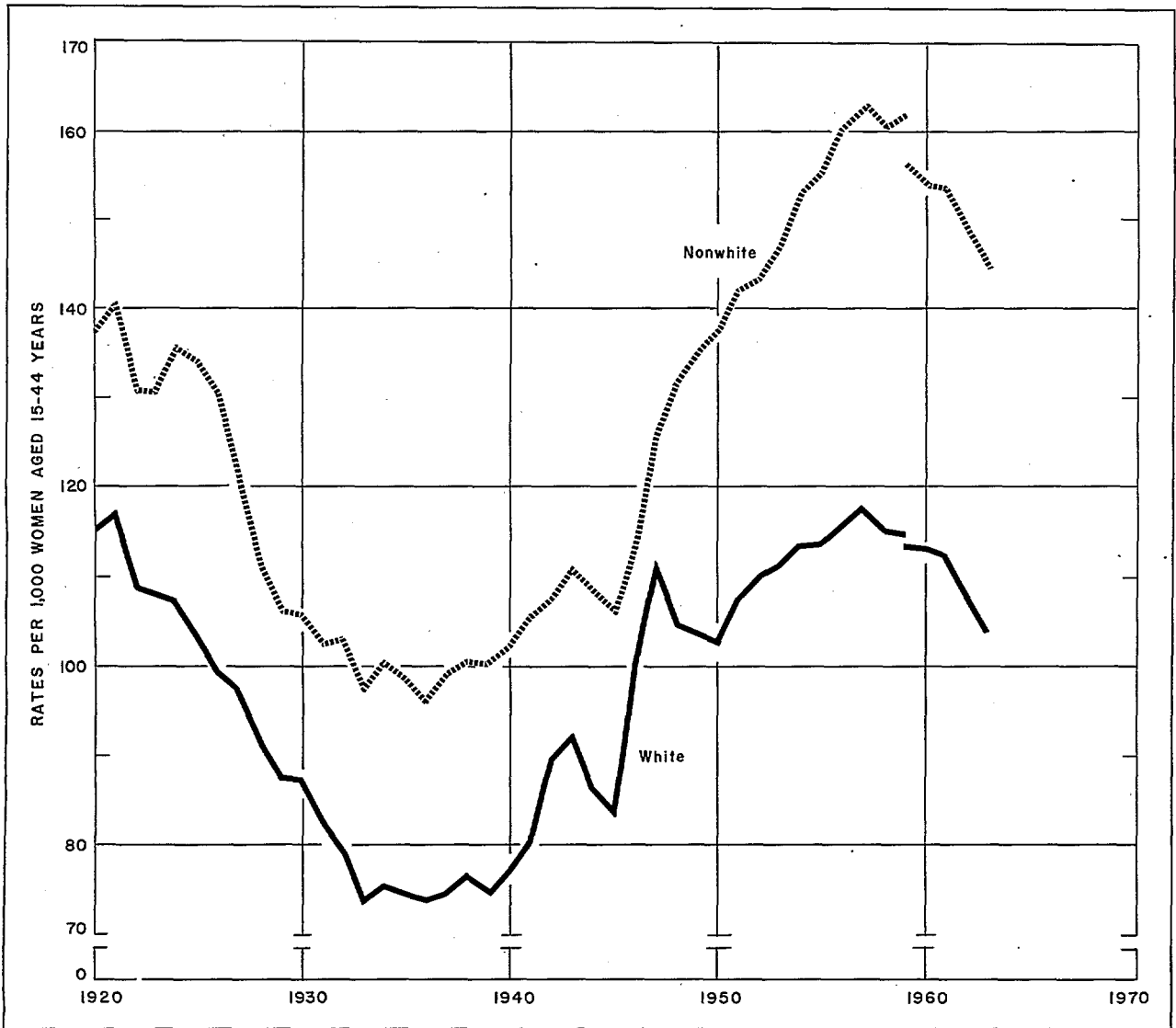
Figure 5. Fertility rates by color, 1920-63.

(Rates per 1,000 women aged 15-44 years. Beginning in 1959 trend lines are based on registered live births; trend lines for 1920-59 are based on live births adjusted for underregistration)

can be measured by the "coefficient of variation"—the standard deviation of the States' birth rates from the mean as a percentage of the mean. In 1963, the coefficient of variation of State birth rates was 9.5 percent compared with 15.6 percent in 1940. For 1960, 1961, and 1962, the coefficients were 10.1, 9.8, and 9.3 percent, respectively.

Because the birth rate is affected by changes in the age and sex composition of the population, as discussed earlier, it is not possible to determine whether the converging rates among the States are due to "real" changes in fertility, as measured by the total fertility rate, or whether they merely reflect changes in the composition of the population associated with migration.

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Table 4. Birth rates by age of mother, color, and live-birth order: United States, 1963

(Notes to tables given on page VII)

Color and live-birth orders	15-44 years[1]	Age of mother							
		10-14 years	15-19 years	20-24 years	25-29 years	30-34 years	35-39 years	40-44 years	45-49 years[2]
				Rates per 1,000 women					
Total----------	108.4	0.9	76.5	231.3	185.4	105.9	51.2	14.2	0.9
First child----------	29.9	0.8	53.7	82.0	24.3	7.2	2.6	0.6	0.0
Second child---------	26.1	0.0	17.7	77.5	43.7	14.5	5.1	1.1	0.1
Third child----------	19.9	0.0	4.2	43.1	46.7	22.2	8.2	1.8	0.1
Fourth child--------	13.1	0.0	0.8	18.5	32.7	21.0	9.0	2.1	0.1
Fifth child----------	7.8	-	0.1	6.9	18.7	15.1	7.6	2.0	0.1
Sixth & seventh child-	7.3	-	0.0	3.0	15.1	16.3	9.6	2.8	0.2
Eighth child & over--	4.3	-	0.0	0.3	4.1	9.6	9.0	3.8	0.3
White------------	103.7	0.4	68.2	224.9	181.2	102.3	48.8	13.4	0.8
First child----------	29.4	0.3	50.0	83.9	24.8	7.2	2.6	0.6	0.0
Second child---------	25.9	0.0	14.8	78.1	45.4	14.8	5.1	1.1	0.1
Third child----------	19.6	0.0	2.9	40.9	48.4	23.0	8.5	1.8	0.1
Fourth child--------	12.6	0.0	0.4	15.5	32.5	21.7	9.3	2.1	0.1
Fifth child----------	7.1	-	0.0	4.8	16.8	15.0	7.7	2.0	0.1
Sixth & seventh child-	6.1	-	0.0	1.6	11.2	14.5	9.1	2.8	0.2
Eighth child & over--	2.9	-	0.0	0.1	2.0	6.2	6.6	3.0	0.3
Nonwhite---------	144.8	4.0	139.9	278.1	211.2	128.9	68.9	21.0	1.5
First child----------	33.8	3.8	82.9	64.7	18.5	6.2	2.5	0.5	0.1
Second child---------	27.6	0.2	39.3	72.9	28.3	11.2	4.3	0.9	0.0
Third child----------	21.8	0.0	13.5	61.1	33.8	14.5	5.7	1.2	0.1
Fourth child--------	16.9	0.0	3.4	41.4	34.8	16.0	6.6	1.7	0.1
Fifth child----------	13.1	-	0.7	22.9	32.8	16.3	7.2	1.9	0.1
Sixth & seventh child-	16.6	-	0.1	13.5	43.8	29.8	14.0	3.7	0.3
Eighth child & over--	15.1	-	0.0	1.6	19.1	34.9	28.7	11.1	0.9

[1]Rates computed by relating total births, regardless of age of mother, to women aged 15-44 years.
[2]Rates computed by relating births to mothers aged 45 years and over to women aged 45-49 years.

Fertility by Metropolitan Residence

Births to residents of metropolitan counties accounted for about 64 percent of the total births occurring in the United States during 1963. Metropolitan counties are those defined by the U.S. Bureau of the Census in 1960 as being in standard metropolitan statistical areas (SMSA's).

SMSA's of 1 million or more population in 1963 accounted for about one-third of the births occurring in the United States during 1963, and SMSA's of 2 million or more, for about one-fourth. Table 5 shows that birth rates in the largest SMSA's vary according to the geographic region in which these areas are situated. Within all but the North Central Region, birth rates for SMSA's with a population of 1 million or more tend to fall below birth rates in the balance of these regions.

Comparisons of birth rates among the SMSA's may reflect differences in actual reproductive behavior, but may also be influenced by the differences in age and sex composition of the population in these areas.

CHARACTERISTICS OF BIRTHS

The following sections deal with certain characteristics of births for which all or most registration areas provide information. The characteristics for which data can be presented are necessarily limited by the information collected on the birth certificate; there are certain important characteristics, especially those relating to the health of the newborn child and its mother, for which there is little or no useful information at present.

Sex Ratio

The sex ratio in 1963 turned upward again to 1,053 males per 1,000 female births. This is the same as it was 11 years ago. The nonwhite ratio (1,030) is the highest it has been since 1942 (1,033). The white ratio of 1,057 is the highest since 1953.

A comparison of the sex ratio for single and for plural live births shows a higher proportion of males in single than in plural deliveries. This is due primarily to a difference in the sex

Table 5. Birth rates for standard metropolitan statistical areas with populations of 1,000,000 or more by geographic region: United States, 1963

(Notes to tables given on page VII)

Region and SMSA	Birth rates per 1,000 population
Northeast-----------	20.3
SMSA's------------	19.9
Boston-Lowell-Lawrence, Mass-	21.3
Buffalo, N.Y-----------	20.7
Newark, N.J-----------	19.7
New York, N.Y-----------	19.9
Paterson-Clifton-Passaic, N.J-	18.8
Philadelphia, Pa.-N.J--------	20.9
Pittsburgh, Pa-----------	18.7
Balance of region--------	20.7
North Central----------	21.8
SMSA's------------	22.3
Chicago, Ill-----------	22.5
Gincinnati, Ohio-Ky---------	23.0
Cleveland, Ohio-----------	20.8
Detroit, Mich-----------	21.3
Kansas City, Mo.-Kans--------	22.2
Milwaukee, Wis-----------	22.8
Minneapolis-St. Paul, Minn---	24.9
St. Louis, Mo.-Ill----------	22.2
Balance of region--------	21.5
South-----------	22.7
SMSA's------------	23.0
Atlanta, Ga-----------	23.9
Baltimore, Md-----------	22.3
Dallas, Tex-----------	23.4
Houston, Tex-----------	23.9
Miami, Fla-----------	18.3
Washington, D.C.-Md.-Va------	24.7
Balance of region--------	25.6
West-----------	22.0
SMSA's------------	21.3
Denver, Colo-----------	22.9
Los Angeles-Long Beach, Calif-	21.3
San Diego, Calif-----------	23.2
San Francisco-Oakland, Calif-	20.3
Seattle, Wash-----------	21.1
Balance of region-------	22.4

ratios for the white group between single and plural births (table 6).

As in the past, the sex ratio for 1963 decreases with the age of the mother and live-birth order; however, this relationship does not usually hold true for a cross-classification of any single-birth order with any 5-year age-of-mother group, as shown in table 7.

Plural Births

Over the past 20 years there has been no noticeable trend in the rate of occurrence of plural births (table 8). Ninety-eight percent of the births still occur in single deliveries. Little change can be seen in the relationship between the age of the mother and the occurrence of plural births. The incidence of plural births increases with the age of the mother through age 39 and decreases slightly over age 40 (table 9).

The incidence of plural births differs among the races. In contrast to the proportion of 1 plural birth out of 50 for all races combined, the incidence among white births is 1 out of 54 and among nonwhite births 1 out of 38. A much higher twinning rate occurs among Negroes than among whites, while the oriental group has the lowest rate.

Attendant at Birth

In the past 20 years, the proportion of births occurring in hospitals has increased for both color groups so that in 1963, 99.1 percent of the white births and 87.9 percent of the nonwhite births were in hospitals. For births outside hospitals, the percentage of both "physicians not in hospitals" and "nonmedical deliveries" remained constant for white and decreased for nonwhite births. Almost 10 percent of the nonwhite births are still delivered by midwives or other persons who are not doctors.

For the United States as a whole, 98.2 percent of the births are medically attended: 99.6 percent of white births and 90.3 percent of nonwhite births. Only in the South Atlantic and the East and West South Central Regions are the percentages of medically attended births noticeably lower for white and nonwhite births, as

Table 6. Live births by sex and sex ratio at birth, by color and plurality: United States, 1963

(Notes to tables given on page VII)

Color and plurality	Male	Female	Ratio
	Number		Males per 1,000 females
Total------------------------------------	2,101,632	1,996,388	1,053
Single-----------------------------------	2,060,532	1,956,330	1,053
Plural------------------------------------	41,100	40,058	1,026
White------------------------------------	1,709,174	1,617,170	1,057
Single-----------------------------------	1,677,834	1,586,662	1,057
Plural------------------------------------	31,340	30,508	1,027
Nonwhite--------------------------------	324,206	314,722	1,030
Single-----------------------------------	315,766	306,512	1,030
Plural------------------------------------	8,440	8,210	1,028

Table 7. Sex ratio at birth, by live-birth order, color, and age of mother: United States, 1963

(Notes to tables given on page VII)

Color and age of mother	Live-birth order						
	Total	First	Second	Third	Fourth	Fifth	Sixth and over
Total	Males per 1,000 females						
All ages-	1,053	1,064	1,052	1,058	1,048	1,034	1,034
15-19 years----	1,064	1,070	1,057	1,028	1,032	966	1,143
20-24 years----	1,052	1,058	1,048	1,057	1,032	1,049	1,044
25-29 years----	1,057	1,070	1,057	1,062	1,063	1,042	1,032
30-34 years----	1,042	1,075	1,055	1,052	1,047	1,020	1,025
35-39 years----	1,046	1,057	1,054	1,070	1,040	1,027	1,044
40-44 years----	1,043	1,053	1,005	1,061	1,103	1,036	1,044
White							
All ages-	1,057	1,071	1,052	1,061	1,051	1,033	1,045
15-19 years----	1,072	1,078	1,064	1,037	992	795	1,313
20-24 years----	1,055	1,062	1,049	1,059	1,042	1,050	1,070
25-29 years----	1,061	1,081	1,055	1,066	1,065	1,043	1,047
30-34 years----	1,045	1,078	1,054	1,057	1,045	1,020	1,032
35-39 years----	1,049	1,067	1,048	1,071	1,044	1,028	1,051
40-44 years----	1,050	1,091	991	1,050	1,051	1,032	1,065
Nonwhite							
All ages-	1,030	1,034	1,041	1,034	1,032	1,027	1,014
15-19 years----	1,041	1,045	1,039	1,025	1,051	1,066	1,097
20-24 years----	1,033	1,031	1,038	1,044	1,009	1,048	1,018
25-29 years----	1,028	1,008	1,060	1,028	1,050	1,030	1,009
30-34 years----	1,018	1,018	1,017	1,014	1,060	1,003	1,012
35-39 years----	1,024	987	1,039	1,031	1,014	1,001	1,029
40-44 years----	996	698	1,067	1,061	1,044	990	992

can be seen in table 10. The highest infant and neonatal mortality rates are also recorded in the South.[1]

The only States in which fewer than 99 percent of the white children were born in hospitals are North Dakota, Virginia, West Virginia, Kentucky, Alabama, Arkansas, Texas, Colorado, New Mexico, and Arizona. However, only in 14 States are more than 99 percent of the nonwhite births delivered in hospitals. These include all of the New England States and Ohio, Minnesota, Iowa, Nebraska, the District of Columbia, Idaho, Wyoming, and Hawaii.

Over the past 13 years the increase in the percentage of nonwhite births delivered in hos-

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[1]Details for each State are shown in National Center for Health Statistics, *Vital Statistics of the United States, 1963,* Vol. II, Pt. A, Public Health Service, Washington, U.S. Government Printing Office, 1965.

Table 8. Number of live births in plural deliveries and ratio of plural live births to total live births: United States, 1944, 1950, and 1956-63

(Notes to tables given on page VII)

Year	Number of live births in plural deliveries	Ratio per 1,000 live births
1963------	81,158	19.8
1962------	81,306	19.5
1961------	86,100	20.2
1960------	86,684	20.4
1959------	87,654	20.6
1958------	86,610	20.6
1957------	87,158	20.5
1956------	88,816	21.3
1950------	74,456	20.9
1944------	56,362	20.2

Table 9. Ratio of plural live births to total live births, by age of mother and color: United States, 1963

(Notes to tables given on page VII)

Age of mother	Total	White	Nonwhite
	Ratio of plural live births per 1,000 total live births		
Total, 15-44 years------	19.8	18.6	26.2
15-19 years-----	12.0	11.4	14.0
20-24 years-----	16.6	15.4	23.3
25-29 years-----	21.6	20.2	30.5
30-34 years-----	26.4	24.7	36.3
35-39 years-----	29.4	27.8	38.7
40-44 years-----	23.8	22.7	30.6

pitals has been very dramatic in the regions where only a small proportion of the births were hospital deliveries in 1950 (fig. 6).
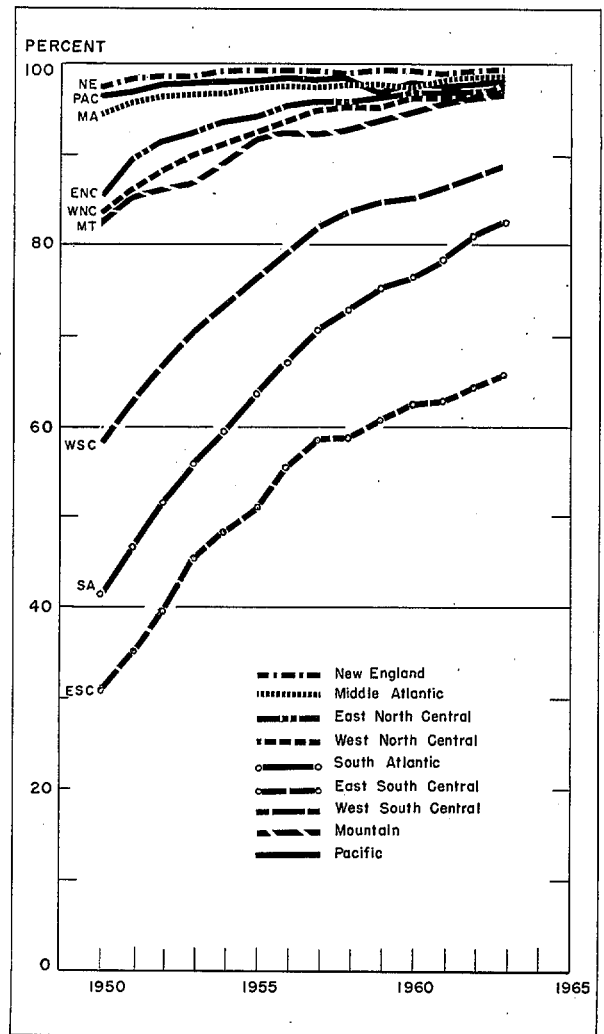
Figure 6. Percent of nonwhite live births occurring in hospitals, by geographic division, 1950-63.

Birth Weight and Period of Gestation

In Natality Statistics Analysis 1962, thorough treatment was given to the data on birth weight and period of gestation showing trends since 1950, when data on birth weight were first collected. There has been almost no change in the distribution of live births by weight between 1962 and 1963. The median birth weight for all live births was 3,290 grams (7 pounds, 4 ounces), the same as in 1962. There is a slightly larger percentage of immature births—those weighing

Table 10. Percent distribution of live births, by attendant according to geographic division and color: United States, 1963

(Notes to tables given on page VII)

Geographic division and color	Attendant			
	Physician in hospital	Physician not in hospital	Midwife	Other and not specified
	Percent distribution			
United States---------------------------	97.4	0.8	1.7	0.2
White-----------------------------------	99.1	0.5	0.3	0.1
Nonwhite--------------------------------	87.9	2.4	9.1	0.6
Geographic divisions				
New England-----------------------------	99.7	0.3	0.0	0.0
White-----------------------------------	99.7	0.3	-	0.0
Nonwhite--------------------------------	99.5	0.4	0.0	0.1
Middle Atlantic-------------------------	99.3	0.6	0.0	0.1
White-----------------------------------	99.4	0.5	0.0	0.1
Nonwhite--------------------------------	98.3	1.3	0.0	0.4
East North Central---------------------	99.2	0.7	0.0	0.1
White-----------------------------------	99.5	0.5	0.0	0.1
Nonwhite--------------------------------	97.1	2.2	0.1	0.6
West North Central---------------------	99.3	0.5	0.1	0.1
White-----------------------------------	99.4	0.5	0.0	0.1
Nonwhite--------------------------------	97.2	1.2	1.3	0.3
South Atlantic--------------------------	94.3	1.3	4.1	0.2
White-----------------------------------	99.3	0.4	0.2	0.1
Nonwhite--------------------------------	82.4	3.5	13.5	0.6
East South Central--------------------	88.6	1.7	9.4	0.3
White-----------------------------------	98.1	0.8	1.0	0.1
Nonwhite--------------------------------	65.4	4.1	29.7	0.8
West South Central--------------------	95.3	0.8	3.5	0.3
White-----------------------------------	97.2	0.6	2.0	0.2
Nonwhite--------------------------------	88.5	1.6	9.2	0.6
Mountain--------------------------------	98.5	0.7	0.5	0.4
White-----------------------------------	98.6	0.7	0.4	0.2
Nonwhite--------------------------------	96.6	0.9	0.8	1.7
Pacific---------------------------------	99.2	0.6	0.1	0.2
White-----------------------------------	99.3	0.6	0.0	0.1
Nonwhite--------------------------------	98.2	0.8	0.4	0.6

Table 11. Median birth weight and immature live births as percent of total live births, by plurality and color: United States, 1962 and 1963

(Notes to tables given on page VII)

Plurality and color	Median weight		Immature live births	
	1963	1962	1963	1962
	Weight in grams		Percent of total live births	
Total-------------------	3,290	3,290	8.2	8.0
White-----------------------------	3,320	3,320	7.1	7.0
Nonwhite--------------------------	3,140	3,140	13.6	13.1
Single--------------------	3,300	3,300	7.2	7.1
White-----------------------------	3,330	3,330	6.2	6.2
Nonwhite--------------------------	3,150	3,150	12.3	11.8
Plural--------------------	2,410	2,420	55.6	55.1
White----------------------------	2,450	2,450	53.5	53.0
Nonwhite-------------------------	2,290	2,300	63.1	62.8

NOTE: An immature birth is one weighing 2,500 grams or less.

Table 12. Immature live births, as percent of total live births, by color and urban-rural residence, for metropolitan and nonmetropolitan counties: United States, 1963

(Notes to tables given on page VII)

Color and urban-rural residence	Total	Metropolitan counties	Nonmetropolitan counties
	Percent of live births in each group		
Total-----------------------------------	8.2	8.4	7.7
Urban-----------------------------------	8.6	8.8	8.0
Rural-----------------------------------	7.4	7.2	7.5
White----------------------------------	7.1	7.2	7.0
Urban-----------------------------------	7.3	7.4	7.2
Rural-----------------------------------	6.8	6.8	6.8
Nonwhite--------------------------------	13.6	14.4	12.1
Urban-----------------------------------	14.4	14.6	13.4
Rural-----------------------------------	11.8	12.7	11.5

NOTE: An immature birth is one weighing 2,500 grams or less.

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2,500 grams or 5 pounds, 8 ounces, or less—8.2 percent, as compared with 8.0 percent in 1962. This reflects a greater increase in the proportion of immature infants among nonwhite than among white births, as can be seen in table 11.

Single births have a higher average birth weight than do births in plural deliveries. Much of this difference is due to the large proportion of plural deliveries that are premature, in terms of length of gestation. Over half of the plural births are immature and therefore subject to a much higher risk of death than children of mature weight.

The incidence of immature births is greater among children born to mothers residing in metropolitan areas, as can be seen in table 12.

The regional variation of birth weight continues to follow the same pattern as in 1962. The highest median birth weight for white births in 1963 was in the West North Central States and the highest for nonwhite births was in the Mountain States. (Most of the nonwhite persons in these States are Indians.) The Mountain States show the smallest difference between median birth weights for white and nonwhite births (3,240 grams for white and 3,180 grams for nonwhite births).

Since the weight of an infant at birth is determined primarily by the length of gestation, it is very important that accurate data on this subject be collected. The best method so far

developed to estimate length of pregnancy is to measure it from the date of the first day of the mother's last menstrual period. At present, only 4 out of 54 birth registration areas in the United States ask for this date on birth certificates: Baltimore, California, the District of Columbia, and New York City. Table 13 shows median birth weight for periods of gestation of 28 weeks and over for white and Negro single live births in three of these areas (Baltimore is excluded because of tabulating problems).

The length of the period of gestation is also used to define prematurity. A premature birth is one with a period of gestation of fewer than 37 weeks. In most areas of the country (other than those mentioned in the preceding paragraph), the length of this period is estimated by the person giving information for the medical portion of the birth certificate (usually the doctor in attendance at birth). Because these reports are often inaccurate, they are not an ideal basis for statistics on prematurity. The proportion of infants reported to have been born after fewer than 37 weeks of gestation are as follows:

	Percent premature
Total --------------------	6.8
White --------------------	6.0
Nonwhite ------------------	11.0

Table 13. Median birth weight, by period of gestation, for white and Negro single live births: District of Columbia, California, and New York City, 1963

(Notes to tables given on page VII)

Period of gestation	District of Columbia		California		New York City	
	White	Negro	White	Negro	White	Negro
	Weight in grams					
28-31 weeks--------------------	1,970	2,390	1,720	1,900	2,060	1,960
32-35 weeks--------------------	2,740	2,770	2,650	2,680	2,740	2,690
36 weeks--------------------	2,960	2,870	2,910	2,870	2,890	2,840
37-39 weeks--------------------	3,220	3,090	3,240	3,130	3,170	3,080
40 weeks--------------------	3,360	3,230	3,400	3,280	3,320	3,220
41-42 weeks--------------------	3,460	3,260	3,510	3,350	3,400	3,270
43+ weeks--------------------	3,500	3,280	3,500	3,280	3,380	3,220

The proportion of 6.8 percent premature for the country as a whole is of the same order of magnitude as the proportion of 8.2 percent immature, but the latter figure is based on more precise data (birth weight), and probably gives a more accurate impression of the proportion of infants who face severe health risks in the first month of life.

Season of Birth

The number of births by month has exhibited a relatively stable seasonal pattern over a period of years.[5] For 1954-63, there was an average seasonal difference of about 13 percent in the number of births from the lowest to the highest month, from about 328,000 in April and May to 377,000 in September. (Births have been adjusted for the varying number of days in each month.) The average monthly numbers of births in this 10-year period are as follows:

January ----------------------	335,000
February---------------------	343,000
March -----------------------	340,000
April ------------------------	328,000
May -------------------------	328,000
June -------------------------	341,000
July -------------------------	361,000
August ----------------------	371,000
September--------------------	377,000
October ----------------------	358,000
November --------------------	346,000
December --------------------	345,000

While the bimodal shape of the seasonal distribution prevails throughout the United States, there are marked variations in the amplitude of the seasonal curve by color and geographic region. These variations are shown below for 1963 in terms of standard deviations from an index representing the average monthly number of births per year for each group.

Geographic region and color	Standard deviation of monthly indexes
United States----	4.0
White-----------------	3.8
Nonwhite--------------	6.6
Northeast----------	3.3
White-----------------	3.3
Nonwhite--------------	4.0
North Central------	3.5
White-----------------	3.5
Nonwhite--------------	4.0
South--------------	7.2
White-----------------	6.7
Nonwhite--------------	9.5
West--------------	3.4
White-----------------	3.3
Nonwhite--------------	4.4

For the total United States during 1963, the standard deviation of the seasonal pattern was 4.0. This means that two-thirds of the monthly variation was within 4 percent of the average birth rate for the year. For the period 1954-63, the standard deviation was 4.2; for 1948-54, it was 4.6; and for the 1933-40 period, 3.4.

The distribution of nonwhite births by month shows greater variation than that of white births; the standard deviations in 1963 were, respectively, 6.6 and 3.8. This difference prevailed for all of the geographic divisions of the United States. In the South the seasonal pattern exhibited the greatest amplitude; in the Northeast, the least.

Removal of the large month-to-month fluctuations in the number of births facilitates observation of the underlying trend in the birth rate on a monthly basis. This has been accomplished by seasonally adjusting the time series,
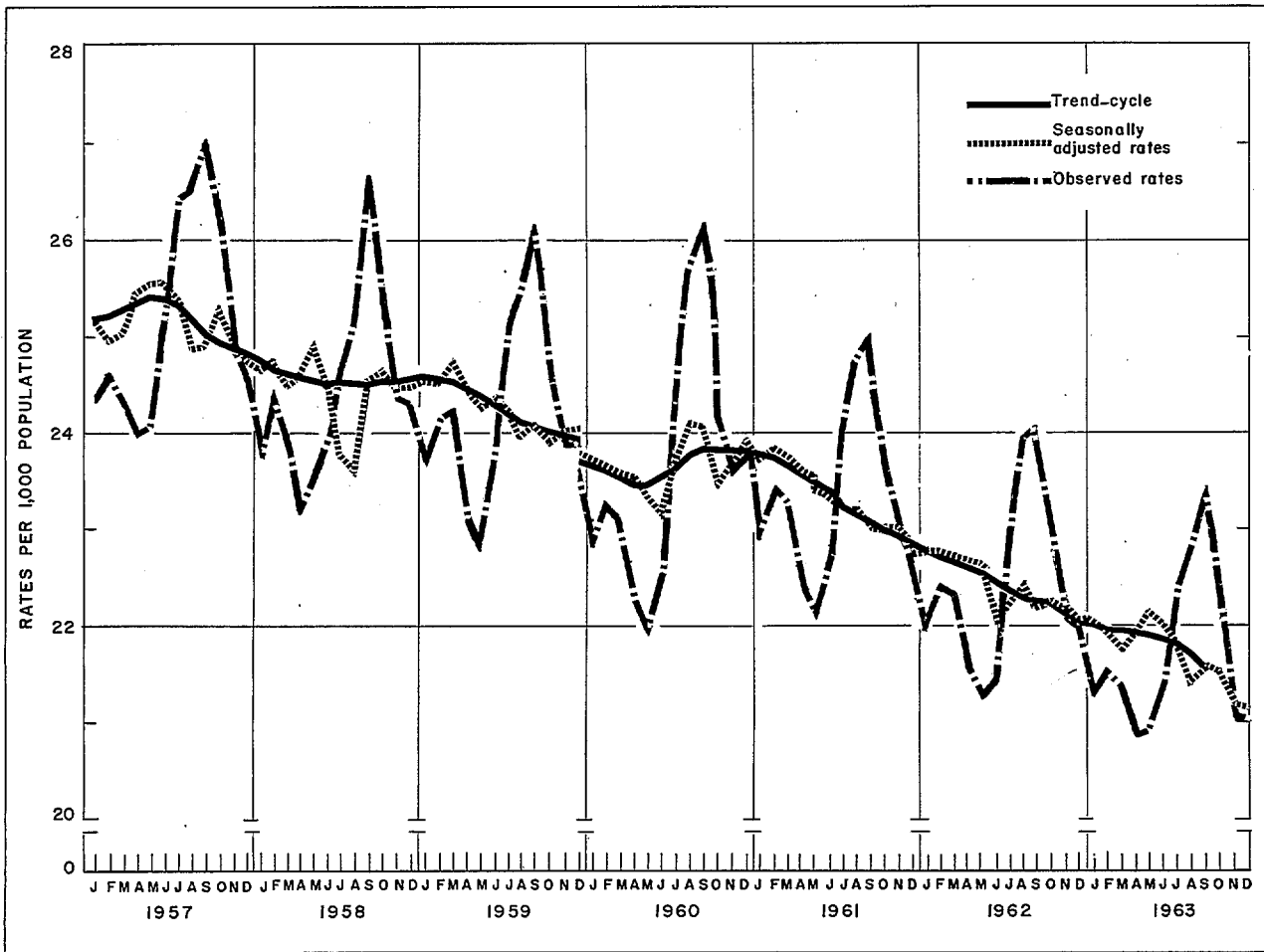
Figure 7. Birth rates by month: observed rates, seasonally adjusted rates, and trend-cycle, 1957-63.

(Rates are on an annual basis per 1,000 population for specified month. Beginning in 1959 trend lines are based on registered live births; trend lines for 1957-59 are based on live births adjusted for underregistration)

using an adaptation of the standard ratio-to-moving-average method.[6] Figure 7 shows monthly birth rates for 1957-63 from which seasonal fluctuations have been removed. This represents the underlying trend and random movements in the time series. Elimination of the random movements from seasonally adjusted data delineates even more sharply the underlying trend, in a series called the "trend-cycle."

Figure 7 indicates that the trend of the birth rate reached a postwar peak in July 1957, from which it declined, with an interruption in late 1960, through 1963.

Illegitimacy

The number of illegitimate births in the United States is estimated from numbers reported in 34 States and the District of Columbia. In 1963, the number of illegitimate births continued to increase, with 183,440 such births occurring in the reporting areas and an estimated 75,960 taking place in the other areas, bringing the estimated total for the United States to 259,400, or 63.3 illegitimate births per 1,000 live births. For white births the illegitimacy ratio was 30.7 and for nonwhite births the ratio

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was 235.9 illegitimate births per 1,000 live births.

In making estimates of the number of illegitimate births occurring in the country as a whole, the States are grouped into nine geographic divisions. The ratio of illegitimate to total live births for the reporting States in each division is then applied to all live births occurring to residents of that division. The sum of the estimates for the nine divisions is the estimate for the United States. These estimates are prepared for white and nonwhite births separately.

The trend in the illegitimacy ratio since 1940 can be seen in figure 8. For the early years of this period the patterns for white and nonwhite
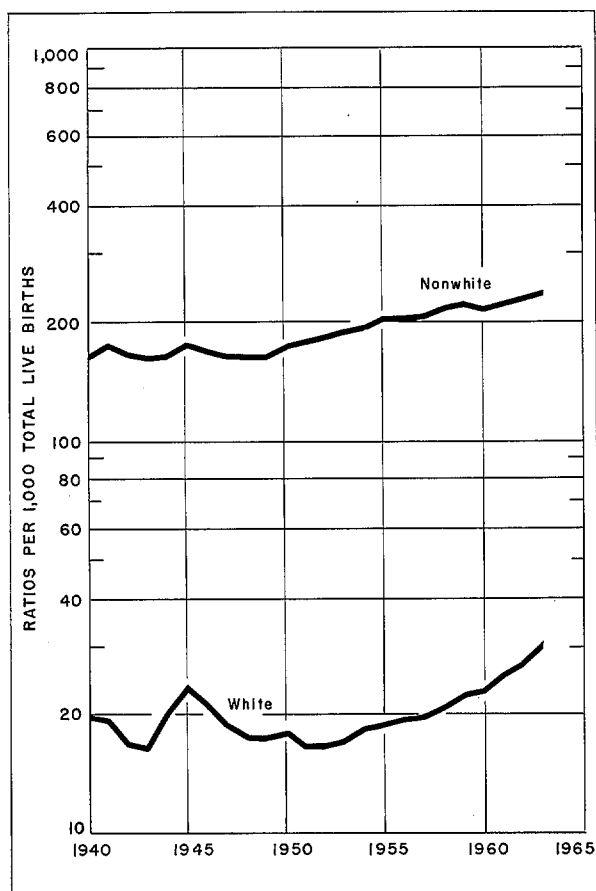
births are quite similar. Starting in 1958, however, the illegitimacy ratio for white births, which had been fairly steady for several years, began to increase more rapidly and has continued to do so through 1963. The ratio for nonwhite births, on the other hand, has continued a rather slow upward trend. Between 1962 and 1963 the illegitimacy ratio for white births increased by 11.6 percent; the ratio for nonwhite births increased by only 2.6 percent.

The differentials by age of mother are essentially the same in 1963 as in former years. Women under 15 years of age have the highest illegitimacy ratios, while there is a decrease in the ratios by age through the thirties and a slight upturn among women over 40 (table 14).

In order to measure the trend in illegitimacy more adequately, a rate of illegitimate births per 1,000 unmarried women 15-44 years of age (the population at risk) is used. This rate has varied only slightly over the past 4 years:

1963 ------------------------------ 22.5
1962 ------------------------------ 21.5
1961 ------------------------------ 22.6
1960 ------------------------------ 21.8

A more adequate description of trends could be made with the use of illegitimacy rates by age of mother and color. Estimates of such rates are being prepared and will be included in a report on illegitimacy to be published in the near future.

The general pattern of an increase in the occurrence of illegitimate births is shown by the illegitimacy ratios for each of the States that report the legitimacy status of child on the birth certificate.[j] Over the 4-year period, 1960-63, the illegitimacy ratio for white births has increased consistently in 19 States and the District of Columbia, and has shown a general, but not continuous, increase in the remaining 15 States of the reporting area. For nonwhite births there were continuous increases in only 13 States, in North Dakota and Rhode Island there were continuous declines in the ratios, and in the other States the trend, although predominantly upward, was not continuous.

Figure 8. Illegitimacy ratios, by color, 1940-63.

(Logarithmic scale)

[j]The data are presented in table 1-29 of National Center for Health Statistics, *Vital Statistics of the United States, 1963*, Vol. I, Public Health Service, Washington, U.S. Government Printing Office, 1964.

Table 14. Estimated number and ratio of illegitimate live births, by age of mother and color: United States, 1963

(Notes to tables given on page VII)

Age of mother	Total	White	Nonwhite	Total	White	Nonwhite
	Number of illegitimate live births			Ratio per 1,000 total live births		
Total------------------	259,400	102,200	150,700	63.3	30.7	235.9
Under 15 years----------------	5,400	1,200	4,000	711.1	464.4	830.9
15-19 years-------------------	101,800	39,800	59,300	173.6	89.8	454.4
15-17 years-----------------	51,100	17,900	31,800	283.0	146.6	579.8
18 and 19 years------------	50,700	21,900	27,500	124.9	68.2	363.5
20-24 years-------------------	82,600	35,900	44,400	56.8	29.8	213.8
25-29 years-------------------	35,400	12,800	21,800	34.6	15.2	152.7
30-34 years-------------------	19,800	6,900	12,600	32.4	13.9	140.3
35-39 years-------------------	10,900	4,100	6,600	33.8	15.7	135.4
40+ years--------------------	3,500	1,500	2,000	37.3	19.7	137.5

BIRTHS IN PUERTO RICO AND THE VIRGIN ISLANDS

Levels and Trends

In 1963, as in the past, birth rates in Puerto Rico and the Virgin Islands were higher than that of the United States (table 15). Puerto Rico's birth rate of 30.6 per 1,000 population was 41 percent higher than the rate of 21.7 for the United States, and the Virgin Islands' rate of 38.1 was 76 percent above that for the United States. Only one State, Alaska, had a higher birth rate than Puerto Rico (31.0, compared with 30.6), and no State had a higher rate than the Virgin Islands.

Assuming that the 1963 birth and death rates were to prevail indefinitely and that the respective areas were closed to in- and out-migration, the population of the United States would double in 46 years, Puerto Rico in 33 years, and the Virgin Islands in 26 years. Such rates, although hypothetical, emphasize the different potentials for population growth offered by current birth and death rates in these areas.

Birth rates in the United States are below those in Puerto Rico, in part, because of differences in the age-sex compositions of the respective populations. Adjusting for these differ-

ences, using the 1963 age distribution of women in the United States as a standard, yields an age-sex-standardized birth rate for Puerto Rico that is only 22 percent above the birth rate of the United States.[k] In other words, about half of the 41-percent difference between the unadjusted birth rates of Puerto Rico and the United States is due to differences in age-sex composition. The remainder of the difference is due to higher age-specific birth rates in Puerto Rico.

Trends in the birth rate, which are shown in table 15, have not been the same for Puerto Rico and the Virgin Islands as for the United States. In Puerto Rico, the birth rate reached a postwar peak of 42.2 in 1947 and has declined fairly steadily since then. In the Virgin Islands, however, the 1962 birth rate of 39.4 was the highest observed in the postwar period. The lowest postwar rate, 30.7, was recorded in 1948. In general, there has been an upward trend in the birth rate in the Virgin Islands, but it has been

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[k]Based on female age-specific birth-rate estimates prepared by the Puerto Rico Department of Health, Division of Demographic Registry and Vital Statistics, and shown in table 11 of *Annual Vital Statistics Report, 1963*. The 1963 age-sex adjusted rate for Puerto Rico is 26.4 births per 1,000 population.

Table 15. Live births and birth rates: Puerto Rico and Virgin Islands, 1940-63

(Notes to tables given on page VII)

Year	Puerto Rico		Virgin Islands	
	Number	Rate	Number	Rate
1963[1]----	77,440	30.6	1,513	38.1
1962[1]----	76,596	31.1	1,375	39.4
1961[1]----	75,418	31.3	1,193	33.8
1960[1]----	76,314	32.5	1,180	36.8
1959[1]----	75,104	32.3	1,107	35.7
1958[1]----	76,298	33.2	1,129	37.6
1957[1]----	76,058	33.7	1,038	35.3
1956[1]----	78,284	34.8	977	34.4
1955-----	77,830	34.6	913	33.1
1954[1]----	77,832	35.2	879	32.3
1953[1]----	77,754	35.3	871	32.4
1952[1]----	80,438	36.1	862	30.9
1951[1]----	84,076	37.6	953	34.4
1950-----	86,038	38.9	894	33.5
1949-----	85,625	39.0	886	33.2
1948-----	87,809	40.2	826	30.7
1947-----	91,305	42.2	876	32.2
1946[2]----	88,421	41.6	917	34.0
1945[2]----	86,680	41.9	984	37.4
1944[2]----	82,534	40.6	1,059	40.4
1943[2]----	77,304	38.7	931	37.4
1942[2]----	---	---	889	35.8
1941[2]----	---	---	829	32.6
1940-----	---	---	756	30.4

[1]For Puerto Rico, based on a 50-percent sample of births.
[2]Rates based on civilian population in each area.

irregular. Part of this irregularity may be due to random variations associated with small numbers of births (800 to 1,500 in the postwar period).

Health Characteristics of the Newborn Infant

Health indexes of the newborn infant in Puerto Rico and the Virgin Islands were at measureably lower levels in 1963 than in the United States. The percentage of births delivered in hospitals was 84.9 in Puerto Rico and 87.7 in the Virgin Islands compared with 97.4 in the United States.

Since hospitals are concentrated in urban areas, the percent of in-hospital births is associated with the degree to which a population is urbanized, which is also highest in the United States. The percentages of in-hospital births to residents of metropolitan areas in Puerto Rico and to urban residents in the Virgin Islands are closer to those of comparable populations in the United States as shown below.

Residence	United States	Puerto Rico	Virgin Islands
	Percent of births in hospitals		
Total-	97.4	84.9	87.7
SMSA------	98.9	91.5	---
Urban-----	98.4	---	[1]98.9

[1]Includes only the city of Charlotte Amalie (St. Thomas Island), Virgin Islands.

Puerto Rico and the Virgin Islands show higher percentages of immature births than does the United States. The percent of live births weighing 2,500 grams or less was 8.2 in the United States, 8.9 in the Virgin Islands, and 9.8 in Puerto Rico in 1963.

There is some evidence that immaturity is more frequent in the lower socioeconomic classes of Puerto Rico. This is shown by the percentage of immature births in 1962, according to the education of the father. (This tabulation is not available for 1963.)

Highest grade completed	Percent immature (2,500 grams or less)
No schooling---------------	12.1
1-4 years------------------	9.9
5-8 years------------------	10.2
9-11 years-----------------	9.4
12 years-------------------	7.5
13+ years------------------	6.2

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Series 10. Data From the Health Interview Survey.—Statistics on illness, accidental injuries, disability, use of hospital, medical, dental, and other services, and other health-related topics, based on data collected in a continuing national household interview survey.

Reports number 1-27

Series 11. Data From the Health Examination Survey.—Statistics based on the direct examination, testing, and measurement of national samples of the population, including the medically defined prevalence of specific diseases, and distributions of the population with respect to various physical and physiological measurements.

Reports number 1-12

Series 12. Data From the Health Records Survey.—Statistics from records of hospital discharges and statistics relating to the health characteristics of persons in institutions, and on hospital, medical, nursing, and personal care received, based on national samples of establishments providing these services and samples of the residents or patients.

Reports number 1-4

Series 20. Data on mortality.—Various statistics on mortality other than as included in annual or monthly reports—special analyses by cause of death, age, and other demographic variables, also geographic and time series analyses.

Reports number 1

Series 21. Data on natality, marriage, and divorce.—Various statistics on natality, marriage, and divorce other than as included in annual or monthly reports—special analyses by demographic variables, also geographic and time series analyses, studies of fertility.

Reports number 1-8

Series 22. Data From the National Natality and Mortality Surveys.—Statistics on characteristics of births and deaths not available from the vital records, based on sample surveys stemming from these records, including such topics as mortality by socioeconomic class, medical experience in the last year of life, characteristics of pregnancy, etc.

Reports number 1