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POPULATION TRENDS AND PROFILES

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New Trends in Newborns

Fertility Rates and Patterns in California

By Hans P. Johnson, Laura Hill, and Mary Heim

Summary

Over 80 percent of California's population growth during the 1990s was the result of natural increase—an excess of births over deaths—rather than migration. Nonetheless, natural increase depends primarily on fertility rates and on the number of women of childbearing age, both of which are affected by migration. Fertility rates are determined by a number of social, cultural, and economic factors. This issue of *California Counts* focuses on two: race/ethnicity and nativity, or mother's place of birth. The effects of these two factors prefigure significant changes in California's population, not all of which are fully reflected in the state's current population projections.

Fertility rates in California vary widely along several dimensions. Hispanic immigrants have relatively high fertility rates, but U.S.-born Asians and Pacific Islanders have some of the lowest fertility rates in the world. Across all of California's major ethnic groups, U.S.-born residents have lower fertility rates than their immigrant predecessors. During the 1990s, when many first-generation immigrants settled in California, almost half of all births in the state were to foreign-born women. As the daughters and granddaughters of these immigrants become an increasing share of the women of childbearing ages, we expect declines in overall fertility rates in California. These declines in fertility could lead to less population growth than currently anticipated.

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U.S.-born residents have lower fertility rates than their immigrant predecessors.

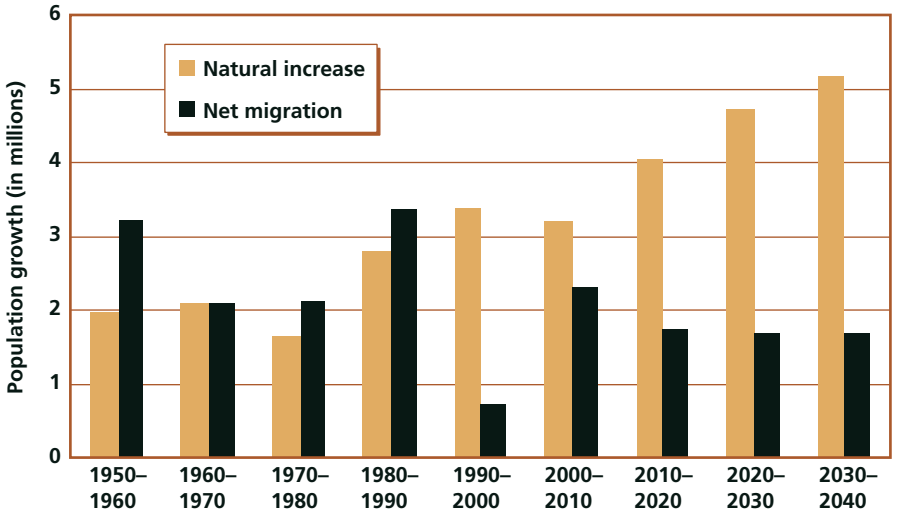
Context

Although migration to and from California has generated a great deal of public interest, most of California's recent population growth is attributable to natural increase—an excess of births over deaths—rather than migration. Over 80 percent of the state's population growth during the 1990s was the result of natural increase, and current projections indicate that it will account for the majority of the state's population growth for decades to come (see Figure 1).[1] Natural increase depends partly on fertility rates, which are higher in California than in the rest of the nation (see the text box, "Measuring Fertility").[2]

In this edition of *California Counts*, we seek to understand this increasingly important source of population growth. In particular, we investigate differences in fertility rates along two dimensions: race/ethnicity and nativity, or mother's place of birth. For analytical purposes, we consider California's four major racial and ethnic groups (whites, Hispanics, Asians and Pacific Islanders, and African Americans) and two nativity statuses (foreign born and U.S. born).[3] We use California vital statistics data, California Department of Finance race and ethnicity estimates, and our own estimates of nativity.

Fertility rates in California increased steadily from the mid-

Figure 1. Population Change for California



Source: Estimates for 1950–1980 and 2000–2040 projections are from the California Department of Finance; authors' estimates for 1980–2000 are based on Census Bureau data and Johnson (1996).

Measuring Fertility

In describing trends and patterns in fertility, we rely primarily on two related measures: period total fertility rates (TFR) and age-specific birth rates (ASBRs). An ASBR is the number of births in a calendar year to women of a specific age group. It is generally reported as births per thousand women of age x to age x + 5. The TFR is calculated as the sum of ASBRs for a calendar year times the number of years in the age group (typically five). The TFR is a hypothetical measure constructed from actual births occurring in a given calendar year. It is the average number of children a woman would bear if today's age-specific rates of fertility prevailed throughout her lifetime. ASBRs are used to construct the measure, which requires both information about the age of mothers giving birth and estimates of the size of population of women by age.

The resulting measure is useful for describing current birth patterns and is commonly used for population projections. However, the period TFR does not describe the lifetime experience of any cohort of women, as it is susceptible to short-term temporal shifts in childbearing that might not reflect any woman's actual lifetime experience. It is also vulnerable to errors in the estimates of the underlying population. At the time of this writing, 2000 Census data by age, nativity, and race/ethnicity were not available. When they are, we can improve and update these estimates.

Data for this report come primarily from four sources: the California Vital Statistics Birth Records, population estimates from the California Department of Finance, Census Bureau data on nativity, and the Current Population Survey (CPS). The birth records contain birth data for every birth in the state, and our analysis includes every year from 1982 to 1997. Birth records also include information on mother's nativity, race, Hispanic ethnicity, age, and marital status. We use the combination of the race/ethnicity data and the nativity data to classify mothers as Asian and Pacific Islander (foreign-born or native), white (foreign-born or native), Hispanic (foreign-born or native), and African American (foreign-born or native). Birth records record not only the year of birth of the child but also the age of the mother.

We develop age-specific birth rates and total fertility rates by combining the vital statistics data with estimates of the population by nativity and race/ethnicity. We disaggregate the California Department of Finance population estimates by race/ethnicity, gender, and age into two nativity groups: U.S. born and foreign born. We use proportions foreign born from the 1980 Census, 1990 Census, and 1994–2000 CPS to develop estimates for 1980, 1990, and 1994–2000. For intermediate years, we linearly interpolate.

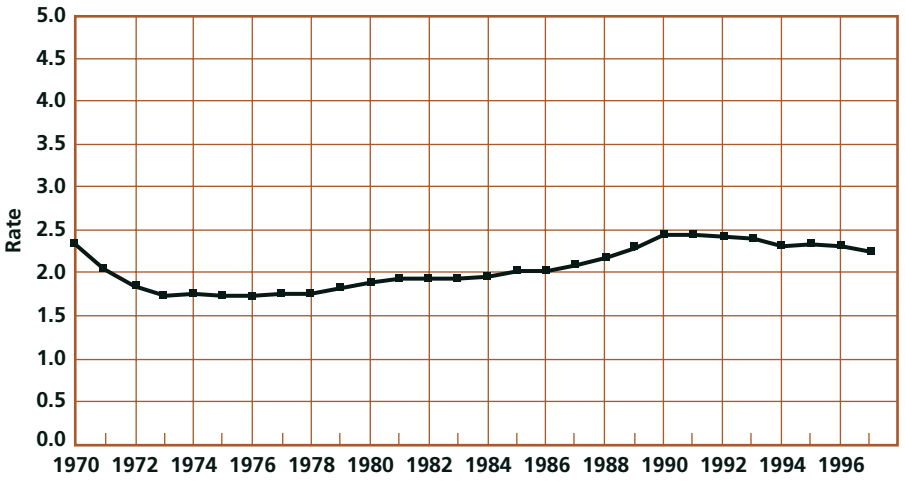
The CPS is a national survey of approximately 50,000 households collected monthly (5,000 in California). Since 1994, the CPS has collected information on nativity.

Fertility rates in California increased steadily from the mid-1970s through the early 1990s.

1970s through the early 1990s (see Figure 2). At the nadir of the baby bust in 1973, total fertility rates in California had declined to 1.7 children per woman, well below the replacement level of 2.1.[4] Between 1975 and 1991, total fertility rates in California increased to almost 2.5 children per woman, well above the replacement level. This dramatic increase contributed to a much stronger baby boom echo in California than in the rest of the United States. During the 1990s, however, fertility rates declined slightly—from 2.45 in 1990 to 2.25 seven years later. State projections assume that by 2008, the total fertility rate will climb slightly to 2.3 (California Department of Finance, 1999).

Part of the rise in fertility rates since the late 1970s can be attributed to changes in the composition of women of childbearing age. The proportion of births to foreign-born women, for example, increased from 30 percent in 1982 to nearly 45 percent in 1997 (Tafoya, 2000). The influx of immigrants to California, particularly Hispanic women, also raised fertility rates substantially in the 1980s. Although much of California's predicted growth is based on the assumption of continuing high birth rates among the state's Hispanic population, other research indicates that fertility rates among second-generation Mexican Americans in the United States fall well below those of their parents' generation (Bean et al., 1998). In

Figure 2. Total Fertility Rates in California, 1970–1997



Source: California Department of Finance, unpublished table.

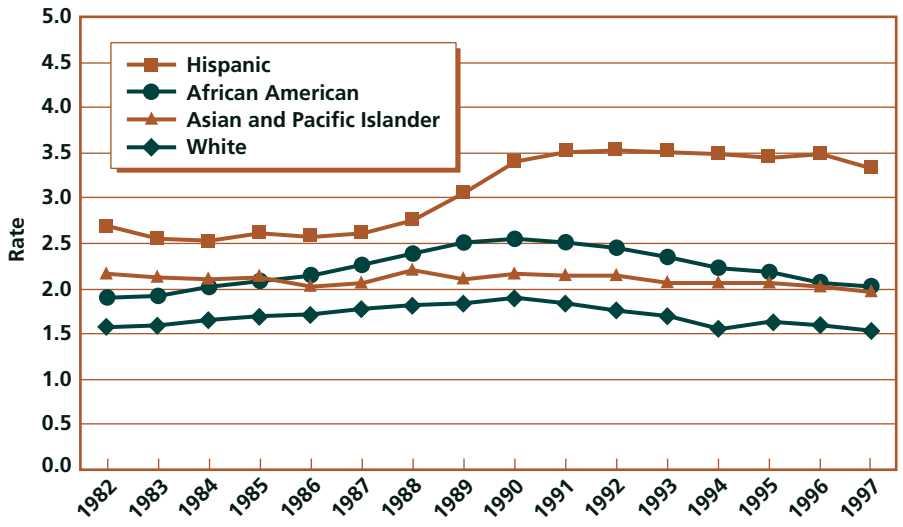
what follows, we consider race and ethnicity separately from nativity so that their effects can be differentiated.

Fertility Trends by Race and Ethnicity

As Figure 3 indicates, fertility rates in California vary substantially by race and ethnicity. Throughout the 1990s, total fertility rates for Hispanic women in California were near 3.5, well above the replacement level of 2.1 children per woman. By the late 1990s, African American and Asian and Pacific Islander women experienced fertility rates of just below the replacement level, and whites had total fertility rates well below the replacement level, averaging only 1.5 children per woman.

Trends for Hispanics also differ sharply from those of other racial and ethnic groups in California. During the late 1980s, total fertility rates for Hispanics rose considerably, from 2.6 children per woman in 1987 to 3.5 children per woman only four years later. (As we will see, this large increase was partly the result of increased immigration.) Although African Americans and whites experienced increasing birth rates from 1982 to 1990, the increases were small compared to those for Hispanics. During the 1990s, fertility rates declined for all racial and ethnic groups except Hispanics, whose fertility rates remained high and largely unchanged. Indeed, total fertility rates of Hispanics in California during this period exceeded those in Mexico.[5]

Figure 3. Total Fertility Rates in California, by Race/Ethnicity, 1982–1997



Source: Authors' estimates based on vital statistics data for California and California Department of Finance estimates of women of childbearing age.

Fertility Trends by Nativity

Nativity, or place of birth, is an important predictor of fertility rates. Foreign-born women in California have much higher birth rates than their U.S.-born counterparts (Figure 4). Although total fertility rates for U.S.-born Californians lag those in the rest of the United States, rates for foreign-born residents are substantially higher than the national average.

For whites and African Americans, fertility rates for both immigrants and U.S. natives are relatively low, and differences between immigrants and natives are not great (Figure 5). By the late 1990s, U.S.-born and foreign-born African Americans had nearly identical total fertility rates of 2.0. U.S.-born whites experienced a total fertility rate of only 1.5 compared to 1.9 children per woman for foreign-born whites. All four groups—U.S.-born and foreign-born whites and African Americans—experienced slight gains in fertility during the 1980s. Much of that increase resulted from

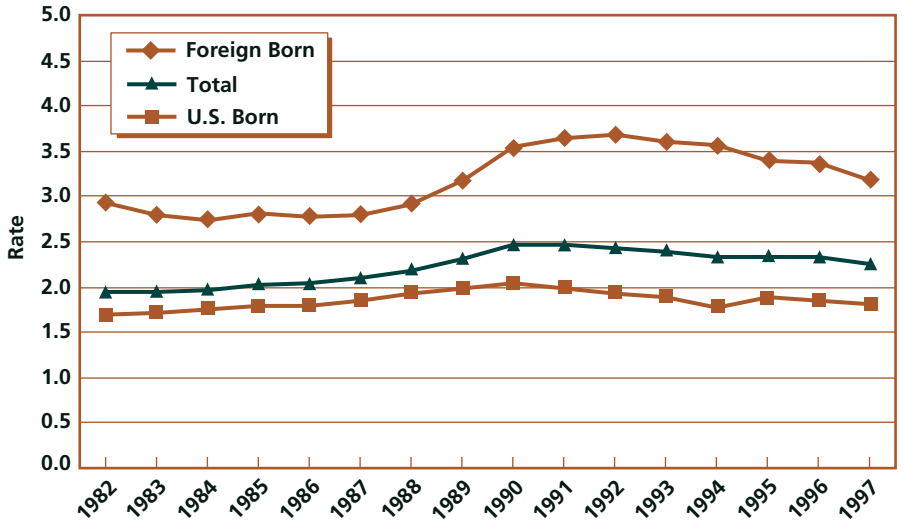
For Hispanics and Asians and Pacific Islanders, birth rates for immigrants were substantially higher than those for their U.S.-born counterparts.

changes in the way women timed their births. In particular, younger women delayed their childbearing, thereby depressing birth rates in the 1970s. These cohorts then bunched up their births in the late 1980s, causing slight increases in fertility rates.

For Hispanics and Asians and Pacific Islanders, birth rates for immigrants were substantially higher than those for their U.S.-born counterparts. Total fertility rates for foreign-born Asians and Pacific Islanders were about double those for native Asians and Pacific Islanders throughout the 1980s and 1990s. Asians and Pacific Islanders are, of course, a diverse group.[6] Native-born Asians and Pacific Islanders consist primarily of second- and third-generation Chinese, Filipinos, and Japanese. Immigrant Asians and Pacific Islanders consist primarily of Chinese, Filipinos, Southeast Asians, and Koreans. Socioeconomic characteristics of these immigrants vary tremendously, as do fertility rates in their countries of origin. In 1990, Korea had a total fertility rate of 1.6 whereas Laos had a total fertility rate of 6.4 (U.S. Bureau of the Census, 2001). Although fertility rates for foreign-born Asians and Pacific Islanders are much higher than those for their U.S.-born counterparts, the levels are not especially high. By 1997, the total fertility rate for immigrant Asians and Pacific Islanders was just slightly higher than the replacement level, at 2.3 children per woman. More remarkable are the very low levels of fertility among native Asians and Pacific Islanders, who consistently have the lowest total fertility rates of any group in California. In 1997, the total fertility rate of U.S.-born Asians and Pacific Islanders was only 1.2 children per woman. These are among the lowest recorded fertility rates of any population in the world. Internationally, only Bulgaria and the Czech Republic have lower total fertility rates at 1.1 children per woman (Population Reference Bureau, 2001).

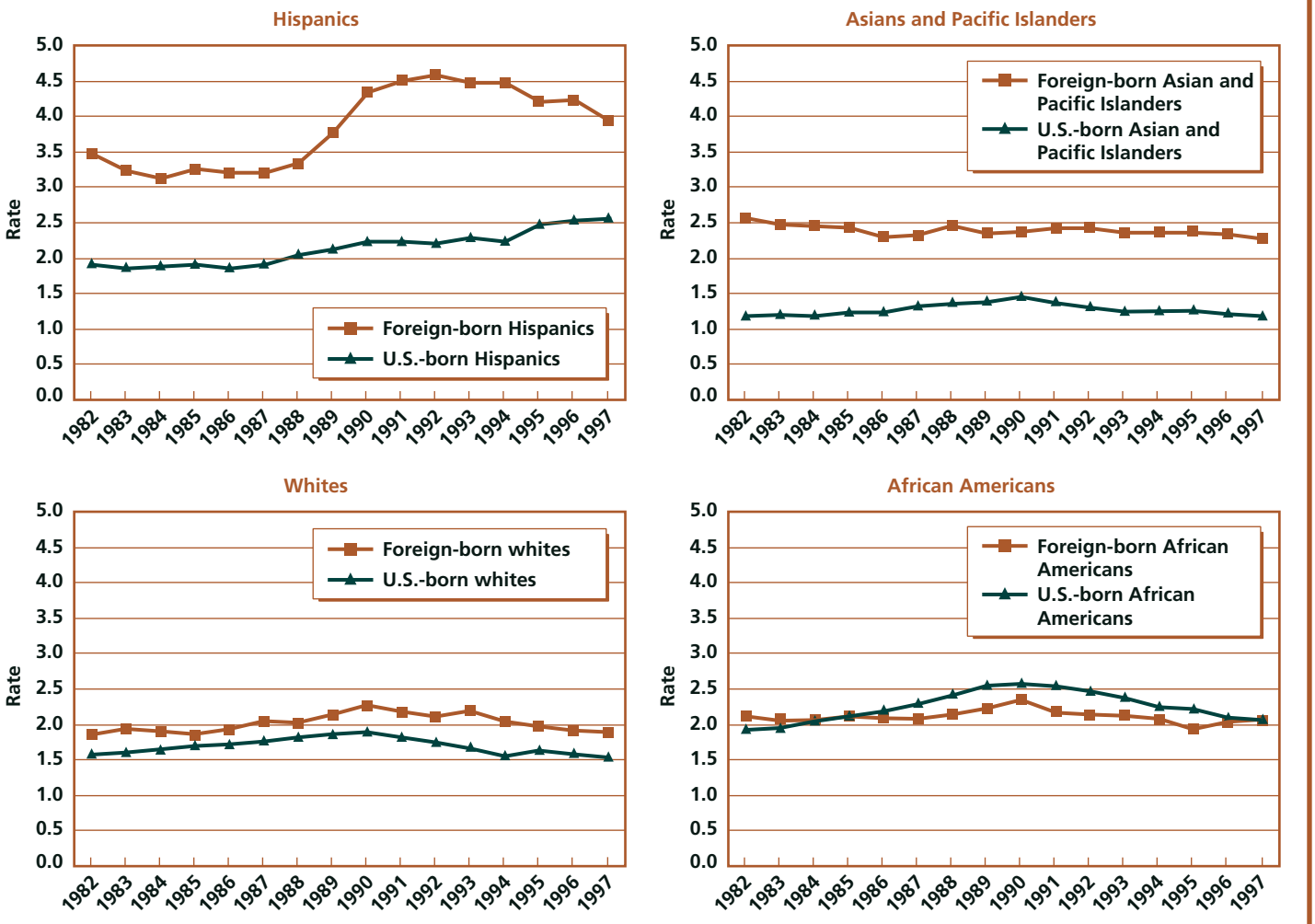
Fertility rates for Hispanics, especially the foreign born, are

Figure 4. Total Fertility Rates in California, by Nativity, 1982–1997



Source: Authors' estimates (see the text box, "Measuring Fertility," for details).

Figure 5. Total Fertility Rates in California, by Nativity and Race/Ethnicity, 1982–1997



Source: Authors' estimates (see the text box, "Measuring Fertility," for details).

relatively high. By the late 1990s, total fertility rates among U.S.-born Hispanics reached 2.5 children per woman. Between 1987 and 1991, total fertility rates for foreign-born Hispanics increased from 3.2 to 4.6. This dramatic rise was the primary force behind the overall increase in the state's total fertility rate during this period. Had it not been for the large increase in fertility among Hispanic immigrants, fertility rates in California would have increased very little between 1987 and 1991.

Why did total fertility rates increase so dramatically for Hispanic immigrants? First, the composition of the Hispanic immigrant population in California changed as a result of the Immigration Reform and Control Act (IRCA) of 1986. In California alone, 1.6 million unauthorized immigrants applied for amnesty (legal immigrant status) under this act. The vast majority of these

Among older women of childbearing age, fertility rates rose substantially throughout the 1980s and 1990s, especially for U.S.-born women.

applicants were young men, and many were agricultural workers who settled permanently in the United States. Previous research indicates that many of those granted amnesty were joined by spouses and relatives in the United States (Johnson, 1996). As a result, many young adult Hispanic women came to California during the late 1980s. We also know that unauthorized immigrants tend to have less education than other immigrants and that they are more likely to come from rural areas. Both characteristics are associated with high levels of fertility. As a result, changes in the composition of the Hispanic immigration population may have increased fertility rates.

Another possible reason is also related to IRCA. Because many of those granted amnesty and their spouses had been apart for some time, their reunion in California prompted a "catch-up" effect in the timing of births. This effect should dissipate over time; indeed, total fertility rates for foreign-born Hispanics declined from 4.5 in the early 1990s to 4.0 by 1997.

A third possibility is measurement error. We are confident about the number of births to Hispanic immigrants in California—births are nearly universally recorded, and there is no reason to expect U.S.-born mothers to report as foreign born—but the total number of Hispanic immigrants is less certain. If the Hispanic population had been undercounted during this time, birth rates for this population would have been overestimated. Although the 1990 Census provided the best data we have on immigrant populations, it undercounted Hispanics more than other groups, and we have not added that undercount to our base populations. It is also possible that some of these births were to Hispanic immigrants who were not residents (legal or otherwise) of California or the United States; as a result, they would not be included in estimates of the number of women of childbearing age in California. The extent of these measurement errors is uncertain.

Fertility Rates by Age Group

Age-specific birth rates also vary tremendously by ethnicity and nativity (Figure 6). Birth rates are particularly high for Hispanics, both immigrant and native, at younger age groups. Among Hispanic immigrants in California, one of four women age 20 to 24 had a baby in 1997 compared to fewer than one in ten women in most other racial, ethnic, and nativity groups. Birth rates peak for Hispanics and U.S.-born African Americans at relatively young ages (20 to 24 years old). U.S.-born Asians and Pacific Islanders have the oldest age profile among women giving birth, with fertility rates peaking for the group age 30 to 34.

Two trends of particular interest are birth rates at opposite ends of the childbearing years: teenagers and women age 40 to 44. Teen birth rates in California rose for every racial, ethnic, and nativity group from the early 1980s to the early 1990s but have fallen since then (see Figure 7). For whites, African Americans, and Asians and Pacific Islanders, teen birth rates in 1997 were the lowest in at least 15 years. Declines among Hispanic teenagers have been much less pronounced, and their birth rates are now higher than those of any other racial or ethnic group.[7]

Among older women of childbearing age, fertility rates rose substantially throughout the 1980s and 1990s, especially for U.S.-born women (see Figure 8). In fact, no other age group in California has experienced increasing birth rates since 1990. Increases have been especially large for U.S.-born whites as well as Asians and Pacific Islanders, almost

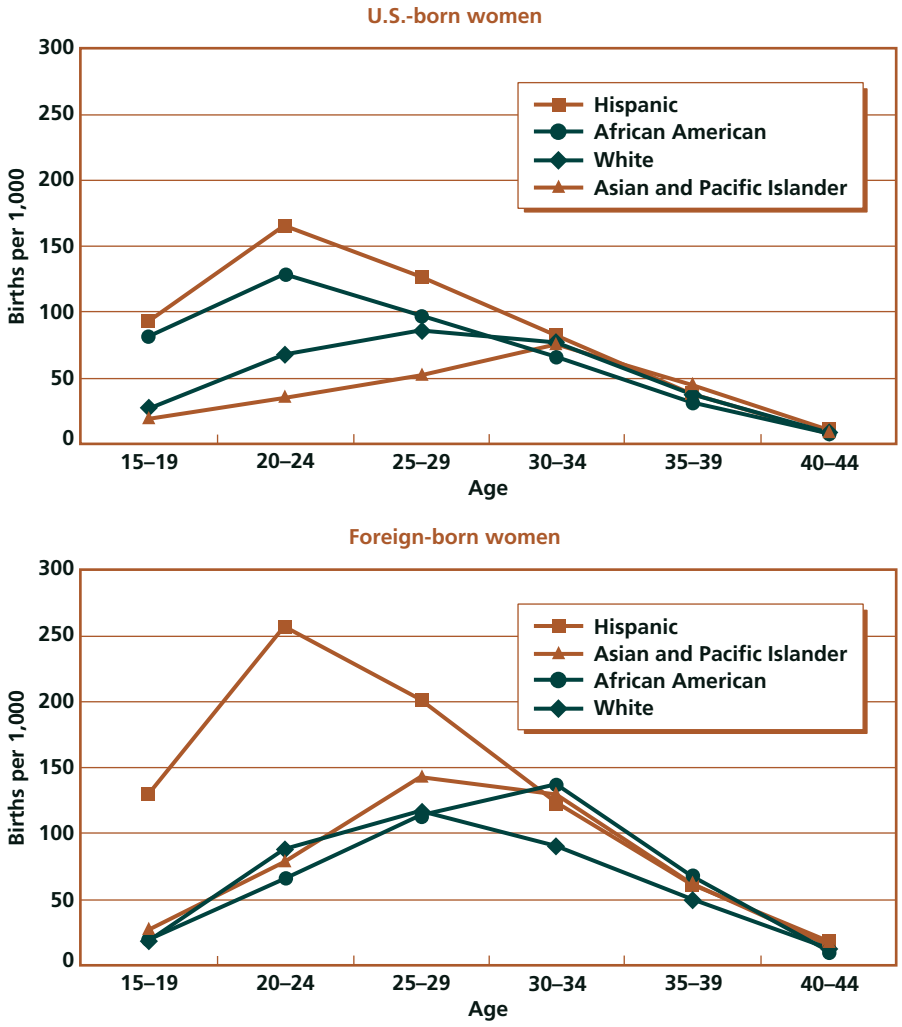
tripling for the former group and more than tripling for the latter. Delayed age at marriage and the increasing use and effectiveness of fertility treatments undoubtedly account for at least some of this rise. However, births are fairly uncommon to these older women, with only 9 out of every 1,000 women age 40 to 44 giving birth in 1997.

Implications for Future Fertility and Projected State Growth

The Population Dynamics Group at the University of Southern California projects that the share of recent immigrants in California's population will decline over the next 20 years (Myers and Pitkin, 2001). In that case, California's population of childbearing age will include more children of immigrants, whose fertility rates lag those of their parents. If the fertility rates and patterns observed in this report hold for the future, we expect greater declines in the state's overall fertility levels than those projected by the state. These state projections do not consider nativity and assume little change in the state's total fertility rate.

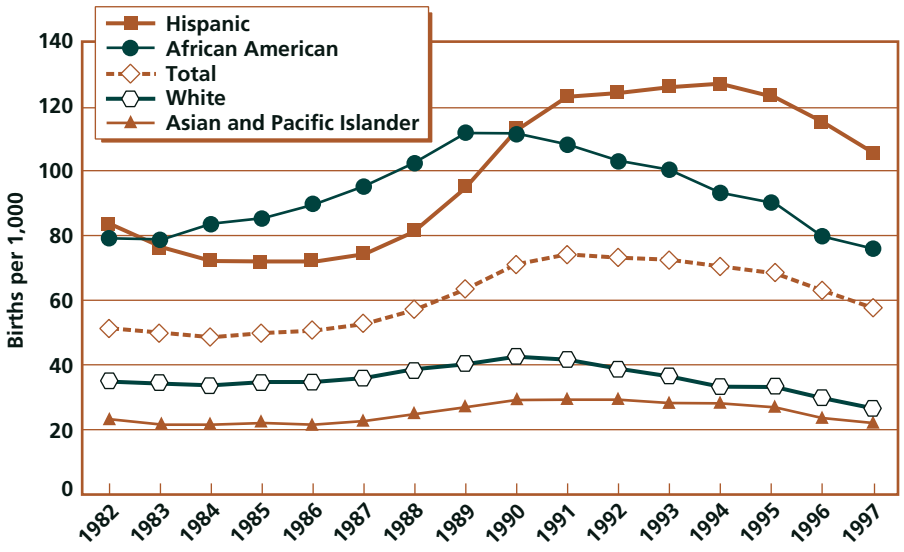
The potential effects of lowered fertility levels could be sub-

Figure 6. Age-Specific Birth Rates in California, by Race/Ethnicity and Nativity, 1997



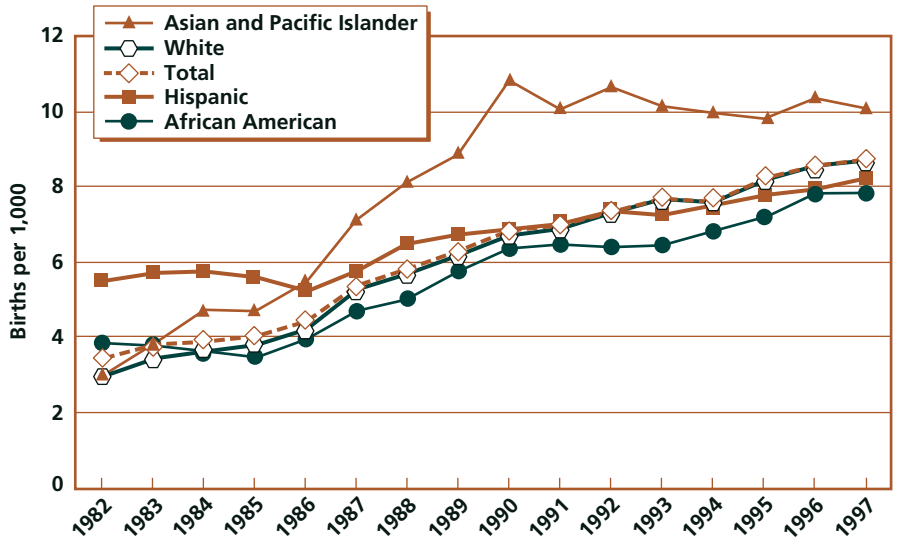
Source: Authors' estimates (see the text box, "Measuring Fertility," for details).

Figure 7. Birth Rates of Teens Age 15–19, by Race/Ethnicity, 1982–1997



Source: Authors' estimates (see the text box,"Measuring Fertility," for details).

Figure 8. Birth Rates of U.S.-Born Women Age 40–44, by Race/Ethnicity



Source: Authors' estimates (see the text box,"Measuring Fertility," for details).

stantial. They would first be felt in the state's child population, which is especially important to state government because of its effects on education spending. If total fertility rates decline to 1.9 children per woman by 2009, thereby maintaining the pace of decline experienced in the 1990s, the number of births in California that year would be 100,000 lower than currently projected. In that case, California's child population could actually decline rather than increase.

These scenarios are tentative at best. Forthcoming research from the Public Policy Institute of California will provide a more comprehensive evaluation of the determinants of immigrant and native fertility rates. Likewise, researchers at the Demographic Research Unit at the California Department of Finance will continue to monitor and reevaluate their population projections as new research is completed and as new data become available. ◆

Notes

[1] During the 1990s, California's population increased by 4.1 million people. Natural increase accounted for 3.4 million of the increase, and net migration accounted for 0.7 million. Net immigration to California was about 2.5 million, and net domestic out-migration from California was about 1.8 million.

[2] In 1997, fertility rates in California were about 13 percent higher than in the rest of

the nation. California's fertility rates were 6th highest among states, with Utah experiencing the highest levels of fertility of any state (National Center for Health Statistics, 1999).

[3] Our racial and ethnic groups are mutually exclusive. We use the terms white, Asian and Pacific Islander, and African American to refer to non-Hispanic whites, non-Hispanic Asians and Pacific Islanders, and non-Hispanic African Americans. Because of small sample sizes, we do not present data for Native Americans. Women born in U.S. outlying areas are considered U.S. born.

[4] The replacement level is the total fertility rate necessary for births to equal deaths over the long run in a population with no migration. The baby bust period lasted from 1965 to the late 1970s.

[5] Mexico's TFR declined from 3.4 in 1990 to 2.9 in 1997 (U.S. Bureau of the Census, 2001).

[6] Because of small sample sizes, we cannot disaggregate our estimates for Asian subgroups.

[7] 2000 Census data will allow us to reevaluate these rates and trends. It is possible that the number of Hispanic females age 15 to 19 was much higher than currently estimated. If so, age-specific birth rates would be lower than those reported here.

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