



## Birth Rates in California

*By Hans P. Johnson with research support from Qian Li*

### Summary

Over the last two decades, most of California's population growth has been directly attributable to natural increase rather than migration, and this will remain the case for the foreseeable future. Births are the key component of natural increase and are determined by the number of women of childbearing ages and by fertility rates.

In this issue of *California Counts*, we examine trends in fertility rates in order to develop a deeper understanding of this important source of population change.

Fertility rates are higher in California than in any developed country in the world. This is partly due to the composition of the state's population, which includes large numbers of foreign-born women, who tend to have more children than U.S.-born women. Thus, in addition to its direct contribution to state growth, migration also plays an important indirect role in its effect on fertility rates. Among foreign-born Latinas, total fertility rates—a measure of completed family size—average 3.7 children per woman. In contrast, the state's lowest fertility rates are among U.S.-born Asians, who have an average of 1.4 children per woman. Overall, the state's total fertility rate has been fairly stable over the past 10 years and near the replacement level of 2.1 children per woman.

Later ages at marriage and improvements in educational and economic opportunities for women have led to later ages at childbearing and increases in childlessness. Birth rates of women in their early 40s have almost tripled over the past two decades. Remarkably, among U.S.-born Asians, fertility rates of women in their early 40s are now higher than fertility rates of teens. Still, these rates are relatively low, and 95 percent of women have completed their childbearing by age 40. For Asians and whites, birth rates now peak for women in their early 30s. Perhaps the same forces that have led to delayed childbearing have also led to substantial increases in childlessness. By 2006, almost one of every four California women in her early 40s was childless, a rate almost twice as high as in 1980 and probably the highest level in the state's history.

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Unlike many nations in the world, neither California nor the United States has explicit policy goals regarding fertility, with the important exception of teen fertility. The content of policies and programs to reduce teen pregnancy is the subject of some debate. Teen birth rates have fallen rapidly in the United States and even more dramatically in California. By 2005, the state's teen birth rates were at all-time lows, with especially large declines in rates for Latinas and African Americans.

Recent trends suggest that the state's overall fertility rate is fairly stable. The share of foreign-born women among all women of childbearing ages has leveled off at about one-third. For most ethnic groups, fertility rates are about the same or slightly lower than 10 years ago. Shifts in the declining share of whites, a low-fertility group, and increases in U.S.-born Latinos, a relatively high-fertility group, counteract the slight declines in ethnic-specific fertility rates. Thus, California Department of Finance projections of little change in fertility rates seem reasonable.

### Why Does Fertility Matter?

**F**ertility rates are one of the key drivers of California's strong rate of population growth. For the past 20 years, natural increase—the excess of births over deaths—has accounted for most of the state's population growth. In the current decade, the California Department of Finance estimates that the state's population has grown by 3.3 million people, with 3.2 million added due to births, 1.4 million lost to deaths, and 1.5 million gained through migration (California Department of Finance, 2007a, 2007b, 2007c). Population projections suggest that this will continue to be the case, with about two-thirds of the growth over the next 20 years due to natural increase (California Department of Finance, 2007a, 2007b, 2007c).

The number of births is determined by fertility rates and by the number of women of childbearing age. It is worth noting that the number of women of childbearing age itself is partly determined by fertility rates. For example, high fertility rates in the United States and California in the post-World War II era created the very large population cohorts that we refer to as baby boomers. As those large cohorts of baby boomers subsequently entered their reproductive ages (generally considered to be 15 to 44), the number of births

increased substantially. Even if baby boomers had low fertility rates, their sheer numbers would have led to increases in births.

Migration also affects the number of women of childbearing age and raises overall fertility rates, because immigrants tend to have more children than U.S.-born women. California has long been a magnet for young adults who are in prime reproductive ages. However, migration has declined in importance as a source of population growth in California. Prior to the 1990s, over half of the state's population increase could be directly attributed to migration. Since 1990, natural increase has dominated the state's growth. California's population growth increasingly depends on natural increase: Fertility rates will determine the number of children born in the state, the single most important source of population growth.

The intersection of public policy and fertility depends, at least partly, on the level of fertility. In many less-developed countries where fertility is high, policies designed to reduce fertility are often regarded as a key part of the development process. Governments, international bodies, and private agencies implement programs that are designed to reduce fertility rates through public health interventions, including the use of contraceptives, and by improving the status of women, including increasing educational opportunities.

**Prior to the 1990s, over half of the state's population increase could be directly attributed to migration. Since 1990, natural increase has dominated the state's growth.**

In much of the developed world, total fertility rates (the number of children a woman is expected to have in her lifetime) are at or near record lows and well below the replacement level of 2.1 children per woman.<sup>1</sup> In Europe, the total fertility rate is 1.4, and the continent is expected to lose almost 10 percent of its population between now and 2050 as natural decrease (more deaths than births) is not offset through immigration gains (Population Reference Bureau, 2006). Some of the lowest fertility rates in the world are in East Asia.

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Taiwan and South Korea both have total fertility rates of 1.1 children per woman; Japan, which has experienced below replacement-level fertility for decades, is expected to lose over 20 percent of its population by 2050. These low birth rates raise a number of serious concerns, including economic vitality and social support for an aging population as the size of the labor force shrinks and the number of older retired adults increases.

In contrast, California's fertility rates are slightly higher than those in the rest of the United States, and U.S. fertility rates are higher than those in most other developed countries. California's relatively high fertility rates, coupled with its relatively youthful population, have led to large numbers of births in the state, thereby contributing to robust population growth. In 2005, California's total fertility rate of 2.2 children per woman was slightly higher than the overall rate of 2.0 in the United States. California's fertility rate is higher than that of any developed country in the world.<sup>2</sup>

These rates have important implications for future population growth in the state, and thus have important implications for accommodating that growth. Because most children born in the state do not move away from California (only one in five 15-to-17-year-olds born in California moves to another state<sup>3</sup>), fertility patterns have immediate implications for programs

and policies focused on children, including, perhaps most importantly, the number of children in the state's K–12 school system.

Certain fertility rates and trends are also of direct policy concern. Most immediately, some public policies and programs are devoted to discouraging teen pregnancy and births. The state estimates that teen births cost taxpayers over \$1 billion per year in lost taxes and increased social services, and numerous statewide programs seek to reduce teen births (California Department of Health Services, 2006). Some of these programs are targeted to specific groups—for example, one focuses on high-risk teens, including those who have already had one child; another program is designed to reach males 12 to 24 years of age in counties with high teen birth rates; others are designed more generally, such as family planning services to reduce unintended pregnancies for all low-income teens and adults.

Finally, fertility also has implications for aging populations. Despite its relatively youthful population, California is aging along with the rest of the country, as the very large cohorts of baby boomers enter their retirement years and as life expectancies increase.<sup>4</sup> Family members, generally adult children, are a primary source of care for their older parents. With declines in fertility rates and increases in childlessness, fewer

## Measuring Fertility

In describing trends and patterns in fertility, we rely primarily on two related measures: the period total fertility rate (TFR) and age-specific birth rates (ASBR). 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 period TFR is the average number of children a woman would bear if today's age-specific rates of fertility prevailed throughout her lifetime. Thus, it is a hypothetical measure of completed fertility constructed from actual births occurring in a given calendar year. Age-specific fertility rates 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.

Data for this report come primarily from five sources: the California Vital Statistics Birth Records, population estimates from the California Department of Finance, decennial census data, the Current Population Survey (CPS), and the American Community Survey (ACS). The birth records contain birth data for every birth in the state, and our analysis includes every year from 1982 to 2005. 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 or Pacific Islander (foreign-born or native), white (foreign-born or native), Latina (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 1994–2005 Current Population Surveys to develop estimates for 1980, 1990, and 1994–2005. 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. We choose to use California Department of Finance estimates rather than those of the U.S. Census Bureau. The California Department of Finance estimates are the official source used by state agencies and rely on driver's license data in addition to other population indicators also used by the Census Bureau. We use the American Community Survey to examine trends in marriage as well as to provide some indicators of fertility by socioeconomic status.

We also report data on childlessness and children ever born. These data are derived from questions asked in the 1960, 1970, 1980, and 1990 Censuses and the 2000, 2002, 2004, and 2006 June supplements of the Current Population Survey. We restrict these analyses to women ages 40 to 44, as they have largely completed their fertility and the June CPS supplements do not include questions for women older than 44 years of age. For most results with the June CPS, we combine the sample across years because of small sample sizes. The combined sample gives us 1,688 observations (women 40 to 44 years old) in California and 20,322 observations in the rest of the United States.

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family members will be available to care for older adults. This trend could lead to increased demands for public programs to support older adults, particularly among Asians and whites, groups with low fertility rates and high rates of childlessness. Moreover, the potential increase in demand for public programs due to aging will occur at a time when the share of the population that is of working age is relatively low.

### Trends and Patterns in Fertility Rates

**T**he decision to have children, and how many children to have, is a personal one and reflects the preferences of individuals and couples. However, those decisions are made within a larger economic and societal context that has a great influence on individual choices. Social norms and economic considerations play a large role in fertility decisions (Thomson and Goldman, 1987; Becker, 1981; Becker and Barro, 1988). Biological constraints also play a role, in some cases limiting fertility rates, and in others—the case of unintended pregnancies, for example—leading to higher fertility rates (Menken, 1985).

### Historical Trends

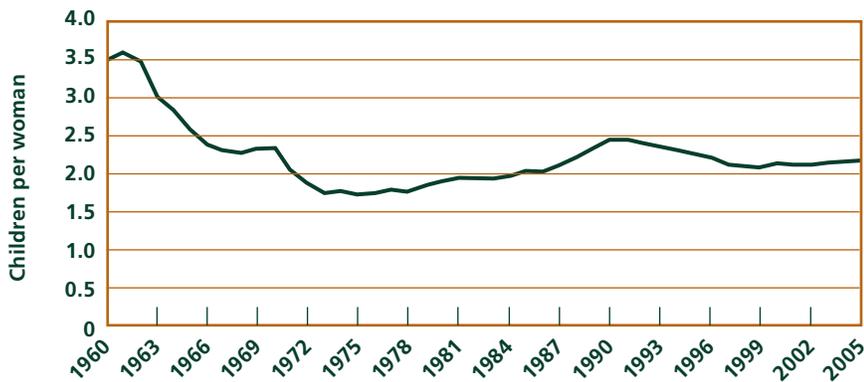
Over the past 50 years, California has experienced four distinct periods with respect to family size and

fertility. In chronological order, those periods are the baby boom, the baby bust, the echo of the baby boom, and the echo of the baby bust.

After World War II and continuing into the early 1960s was the baby boom, a period of high birth rates and tremendous population growth. The resolution of the war, including the return of hundreds of thousands of soldiers, strong economic growth, and optimism about the future, led to new, albeit impermanent, norms regarding family size. Fertility rates, which had fallen to low levels in the 1920s, 1930s, and during the war, rose dramatically. The baby boom was experienced throughout western Europe, Canada, and Australia, as well as in the United States. In California, total fertility rates reached 3.6 children per woman in 1961 (Figure 1).

Following the baby boom was the baby bust, a period of very low fertility rates and thus much smaller families. Numerous theories have been posited regarding the change in fertility rates from the baby boom era to the baby bust (Greenwood, Seshadri, and Vandenbroucke, 1995; Easterlin, 1962). Certainly the changing role of women in society, specifically their entry into the labor force in large numbers, was one catalyst. As opportunities for women opened up in the labor market, the cost of having children—in terms of lost income, time, and

**Figure 1. Total Fertility Rate, California, 1960–2005**



Sources: Author's estimates based on vital statistics data on births and California Department of Finance population estimates. Population estimates for 1960 are based on the decennial census. Estimates for 1961 through 1969 are author's calculations developed by aging the 1960 population to 1970 assuming the annual distribution of migrants from 1960 to 1970 in the overall population as estimated by the California Department of Finance (E-7 report) applies to women of childbearing age. Contact the author for details.

**Latina fertility rates are particularly important because Latinas make up a large and growing share of the state's women.**

expenditures for items such as childcare—rose. In California, total fertility rates reached their nadir in 1973 at 1.7 children per woman, well below the replacement level of 2.1.

In the 1980s, the number of births began to rise. Extending into the early 1990s, this period is known nationally as the echo of the baby boom, or the “baby boomlet.” The increase in births during this period was primarily due to an increase in the number of women of childbearing age as baby boomers entered their prime reproductive years. Increases in birth rates themselves played only a minor roll in the resurgence of births nationally, but a more important role in

California. In California, the total fertility rate rose to 2.5 children per woman by 1990.

Finally, in the most recent period, fertility rates have declined as those born during the baby bust have reached their prime reproductive years. We might term this echo of the baby bust the “baby bustlet.” Declines in births and fertility rates have been far less pronounced in this period as compared to the baby bust, but are still notable. California's overall fertility rate declined to 2.1 children per woman by 1997, and has remained fairly stable over the past 10 years at near this replacement level. By 2005, the state's total fertility rate stood at 2.2 children per woman.

Of course, these overall trends in fertility mask differences among California's many sub-populations. Fertility rates differ substantially by nativity (U.S.-born versus foreign-born), by ethnicity, and by education. Latina fertility rates are particularly important because Latinas make up a large and growing share of the state's women. In 2005, Latinas made up 38 percent of women ages 15 to 44, whites 40 percent, Asians 13 percent, and African Americans 6 percent. By 2020, the California Department of Finance projects that Latinas will make up almost half (47 percent) of women ages 15 to 44, and whites will fall to 32 percent.

### Foreign-born women in California (immigrants) tend to have much larger family sizes.

ity rate for Latinas in California was 2.9 children per woman, substantially higher than for Asians, African Americans, and whites, who all had fertility rates well below the replacement level of 2.1.

The temporal pattern of change—increasing fertility rates during the 1980s peaking around 1990 before declining to this decade—is broadly similar across all groups, but the magnitude of the change is especially pronounced among Latinas. In the mid-1980s, fertility rates for Latinas were only slightly higher than for other ethnic groups, but the increase in fertility rates in the late 1980s was much more dramatic among Latinas, so that

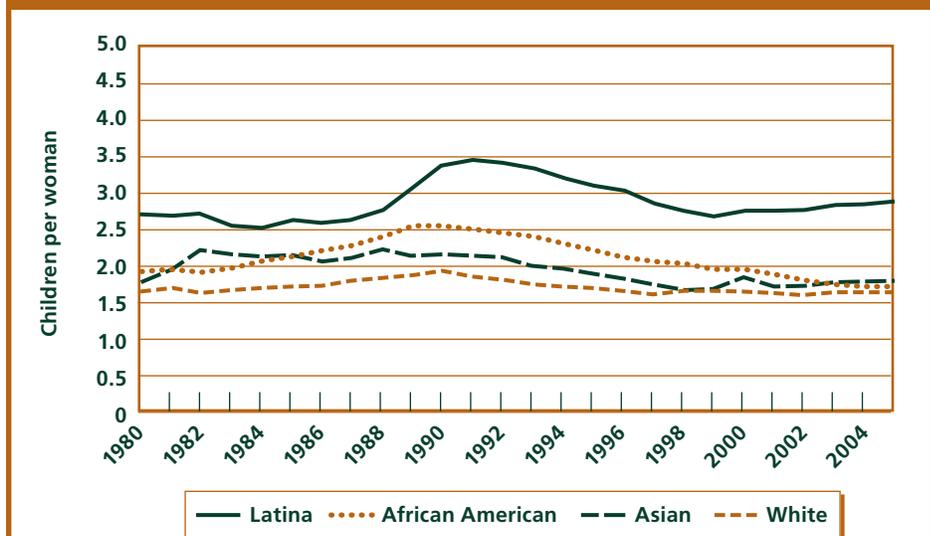
by 1991 the total fertility rate for Latinas had reached 3.5 children per woman. This increase can be largely attributed to a change in the composition of the Latino population in California, with a large increase in foreign-born Latinas arriving in the state in the late 1980s and early 1990s. In just a few years, the total fertility rate among foreign-born Latinas increased from 3.2 children per woman in 1987 to 4.4 by 1990 (Figure 3). This increase is likely associated with the Immigration Reform and Control Act of 1986, which allowed some formerly undocumented workers (mostly men) to gain legal residency in the United States and so changed the

### Patterns by Nativity and Ethnicity

Levels and trends in fertility rates differ substantially by ethnicity and nativity. To a large extent, these fertility differences reflect underlying differences in education and economic well-being, but they also reflect cultural differences in attitudes about family size. For example, women who migrate to the United States as young adults are likely to have developed their expectations about family size in their countries of origin rather than in the United States.

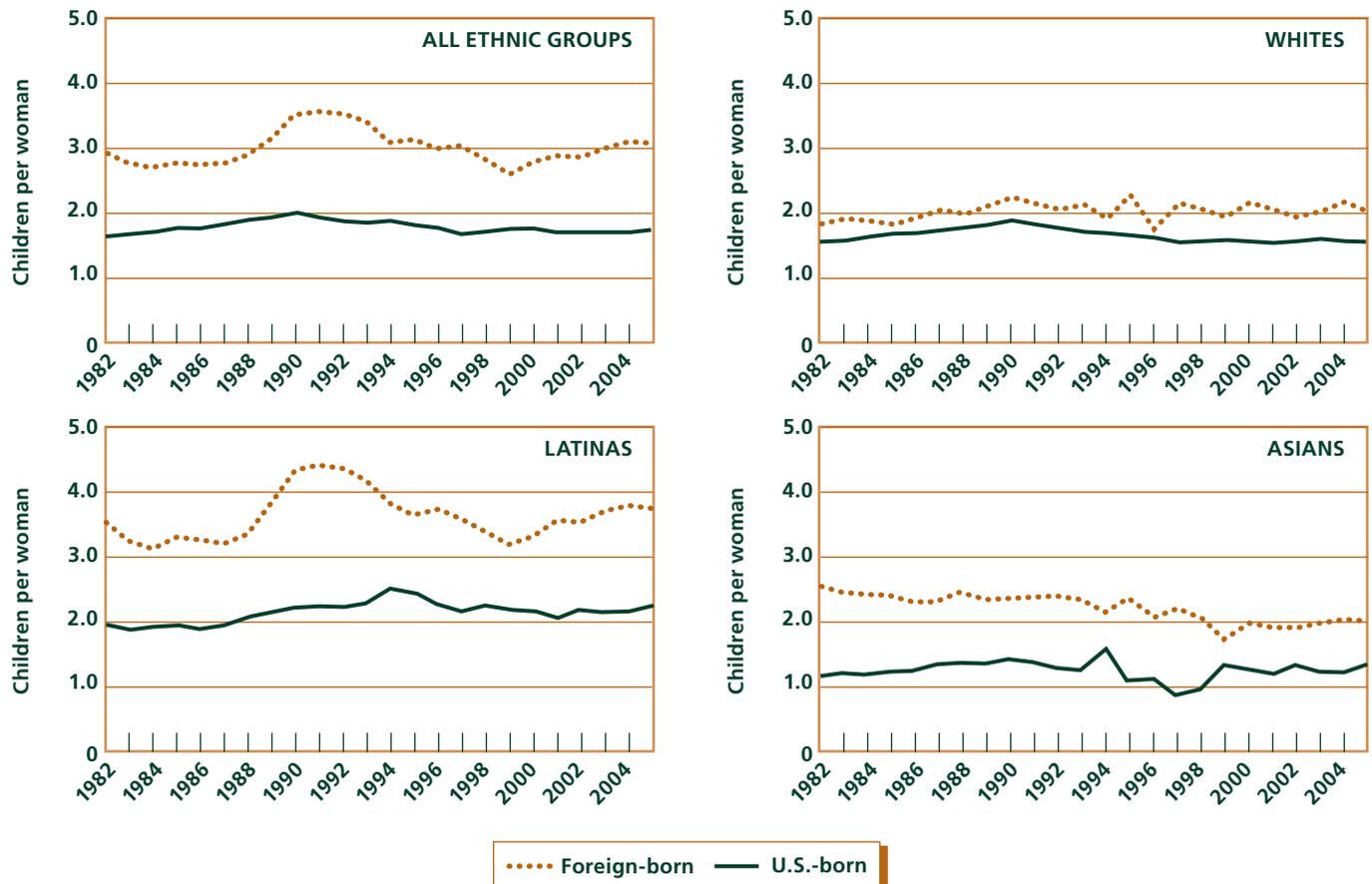
As shown in Figure 2, Latinas have much higher fertility rates than other ethnic groups in California. As of 2005, the total ferti-

Figure 2. Total Fertility Rate, California, 1980–2005



Sources: Author's estimates based on vital statistics data on births and California Department of Finance population estimates.

Figure 3. Total Fertility Rates by Nativity and Ethnicity, California, 1982–2005



Sources: Author’s estimates based on vital statistics data on births and California Department of Finance population estimates adjusted for nativity.

composition of the Latino population in California. One consequence was that many women from Mexico migrated to the United States to join their spouses or partners who had been granted legal residency (see Johnson, Hill, and Heim, 2001, for a more complete discussion). Fertility rates increased partly from a “catch up”

effect—couples who had been apart were able to reunite—and partly because the new migrants tended to come from rural areas of Mexico where family sizes and fertility expectations tend to be relatively high.

In California, fertility rates vary more by nativity than by ethnicity (Figure 3). Foreign-born women

in California (immigrants) tend to have much larger family sizes. Total fertility rates in 2005 were almost twice as high for foreign-born women (3.1 children per woman) compared to U.S.-born women (1.7 children per woman). Moreover, most of the temporal variation in the state’s total fertility rate over the past two decades has been due to

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changes in fertility levels of foreign-born women.

For each of the three ethnic groups in the state with substantial immigrant populations (Latinas, Asians, and whites), foreign-born women have higher fertility rates than U.S.-born women. To a certain extent, these differences reflect socioeconomic attributes of the immigrant women and their households. Most immigrants come to the United States as young adults, with their education already completed, and their higher fertility is largely a consequence of lower levels of education as well as higher marriage rates (Hill and Johnson, 2002; Blau, 1992; Kahn, 1994).

These differences in fertility by nativity are particularly dramatic among Latinas. Foreign-born Latinas in California had a total fertility rate of 3.7 children per woman in 2005.<sup>5</sup> This rate is substantially higher than rates in any Latin American country except Guatemala (4.4 children per woman), Honduras (3.9 children per woman), and Bolivia (3.8 children per woman). With the exception of Guatemala, none of these countries account for much of California's immigrant population, and even Guatemala makes up only 4 percent of the state's immigrants from Latin America. Mexico is by far the most important origin country for immigrants in California, accounting for 31 percent of all the state's immigrants and 69 percent of those from Latin America (based on the author's tabulations of the 2005 American Community Survey). Yet the total fertility rate of immigrants from Mexico in California is far higher than the overall fertility rate in Mexico, which stands at only 2.4 children per woman (Population Reference Bureau, 2006). Mexico has had one of the most dramatic declines in fertility rates among developing countries, with a total fertility rate at 7.2 children per woman as recently as the early 1960s.<sup>6</sup> The higher rate among Mexican immigrants in California today is at least partly, if not wholly, due to the origins of immigrants within

Mexico. Most immigrants to California from Mexico come from rural areas and small towns, areas where educational attainment levels are low and fertility rates are much higher than the national levels. For example, in the mid- to late 1990s, the total fertility rate of women from small towns and rural areas in Mexico was 3.5 children per woman, and the rate for women with no schooling was 4.7 children (Tuiran et al., 2002).

The dramatic decline in fertility rates among Latinos from the immigrant generation to subsequent generations is one sign of integration into U.S. society. U.S.-born Latinas have far lower birth rates than the immigrant generation, with a total fertility rate among the U.S.-born at about the replacement level of 2.1. This level has been stable for the past 10 years. Previous research has shown that the decline is strongly associated with increases in educational attainment from the first to the second and subsequent generations. Furthermore, there is no evidence that remaining in a largely Latino neighborhood leads to higher fertility among U.S.-born Latinas (Hill and Johnson, 2002).

Foreign-born Asians also have substantially higher fertility than U.S.-born Asians in California, although both groups currently have fertility rates below the replacement level. The difference was particularly notable in the early 1980s, when foreign-born

Asians had fertility rates that were twice as high as U.S.-born Asians. That very large difference can be partly attributed to the composition of the Asian immigrant population, which included substantial numbers of women who had arrived as refugees from Southeast Asia. Fertility rates for Laotians and Hmong were particularly high. As the flow of refugees from Southeast Asia has nearly ceased, fertility rates of foreign-born Asians have fallen as increasing shares of Asian immigrants arrive from Korea and China, countries with relatively low fertility rates, and as educated immigrants with low fertility rates arrive from India. U.S.-born Asians have among the lowest fertility rates in the world, with only 1.4 children per woman in 2005. High levels of education characterize this population, and these are associated with low fertility rates.<sup>7</sup>

Among non-Hispanic whites, the differences are less pronounced. A substantial share of white immigrants are from the Middle East (western Asia) and North Africa, where fertility rates tend to be higher than in the United States. Fertility rates in Europe, however, are substantially lower than those in the United States. In 2005, fertility rates were below the replacement level for both U.S.-born and foreign-born whites. For many decades, fertility rates among U.S.-born whites have been at or near record lows, with

the 2005 rate at only 1.6 children per woman. These low rates contribute to the very slow population growth among whites in California.

### Age Pattern of Childbearing

Birth rates are highest for women in their 20s and early 30s, although the pattern varies by nativity and ethnicity (Figure 4). For both U.S.-born and foreign-born Latinas, higher overall fertility rates are the result of much higher birth rates at younger ages than for other ethnic groups. Birth rates are especially high for foreign-born Latinas ages 20 to 24; in 2005, one of every five (200 per 1,000) foreign-born Latinas had a child. In contrast, Latinas in their 30s and 40s have birth rates similar to those of whites and Asians.

For both Asians and whites, birth rates peak for women in their early 30s. Childbearing for both those groups takes place primarily among married women. Relatively high education levels and older ages at marriage lead to delayed childbearing. African Americans have a unique age pattern of fertility, with relatively high birth rates at young ages and very low rates at older ages.

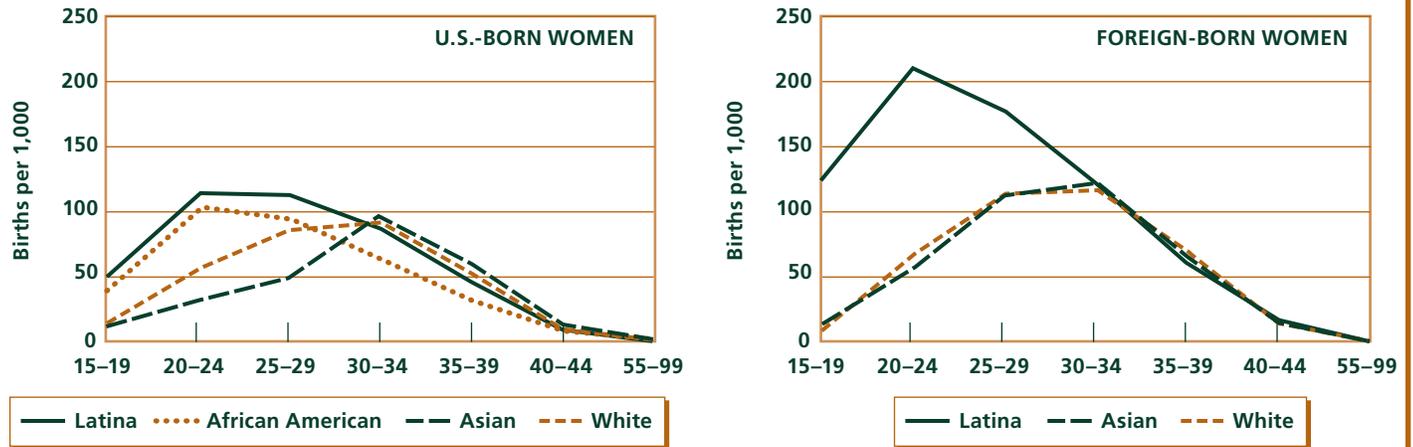
One of the most striking changes in fertility rates has occurred among U.S.-born women of childbearing age. For this group, fertility rates have been declining at younger ages and increasing at older ages. For example, fertility rates for U.S.-born women ages 40 to 44 have increased almost threefold

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since 1982 (Figure 5). Birth rates have also increased for women in their 30s, but have declined for teens and women in their 20s. For many women, childbearing has been pushed to older ages because of later ages at marriage, pursuit of higher education, and the desire to establish a career before having children (Bloom and Trussell, 1984; Martin, 2000). In California, the mean age at first marriage has increased from 20 in 1960 to 27 in 2005.<sup>8</sup>

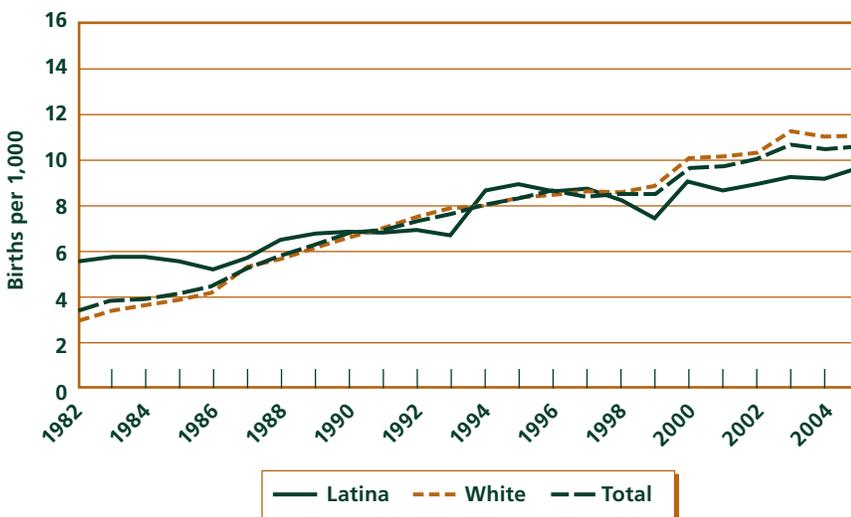
Medical interventions have allowed some older women to have children. One consequence of these interventions has been an increase in multiple births (twins,

**Figure 4. Age-Specific Birth Rates, California, 2005**



Sources: Author's estimates based on vital statistics data on births and California Department of Finance population estimates, adjusted for nativity.

**Figure 5. Birth Rates of U.S.-Born Women Ages 40 to 44, by Ethnicity, California, 1982–2005**



Sources: Author's estimates based on vital statistics data on births and California Department of Finance population estimates.

triplets, and higher-order births). The rate of multiple births among young mothers in California has not changed appreciably since 1990 and remains at less than 2 percent of all births. For older mothers, those 40 and over, the rate of twin births has increased almost threefold, from 2.5 percent of all births to 7.4 percent. Rates are particularly high for older white women, increasing to 11.1 percent from 3.1 percent over the past 15 years. Although very few women ages 45 to 49 give birth—only 1,200 did so in 2005—the rates of multiple births are also particularly high for this group: one in four overall and almost one in three for whites in 2005 (compared to only 3 percent both overall and for whites in 1990).

### Parity

One of the notable changes with respect to fertility has been the increasing preference for two children. In the United States, societal norms and other considerations lead many women and couples to desire two children.<sup>9</sup> Fertility outcomes reflect this desire. The share of women in their early 40s who have had exactly two children has risen from 24 percent in 1970 to 33 percent by 1990 and has remained at that level since that time (Figure 6). Among women ages 40 to 44 who have children, about half have two children (about 20 percent have one, and another 20 percent have three). This preference is especially evident among the U.S.-born and among married women. Both the

preference for two children and childlessness also increase with education. Among U.S.-born women ages 40 to 44 with children, two-thirds of those with graduate degrees have two children, compared to only one-third of high school dropouts.

### Childlessness

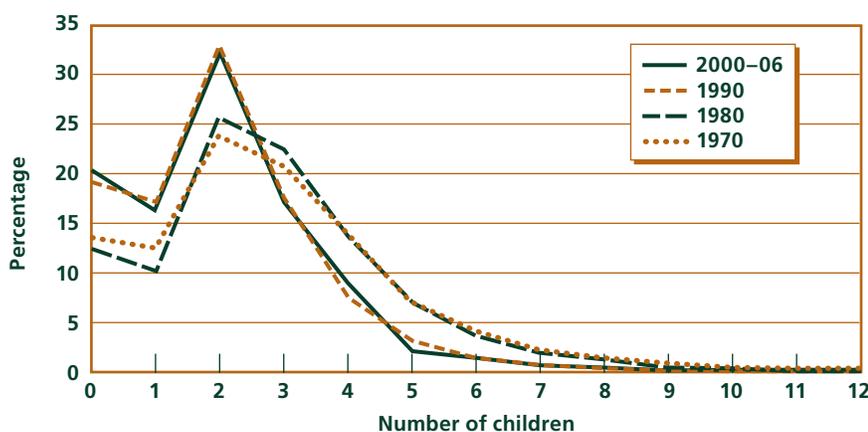
Although fertility rates are relatively high in California, rates of childlessness have almost doubled since 1980 and are slightly higher than in the rest of the nation (Figure 7). Research suggests that the increase in childlessness is partly voluntary and partly involuntary (Rovi, 1994). Later ages at marriage and increasing rates of never marrying have prevented some women from achieving their child-

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bearing goals. At the same time, increasing economic opportunities and costs of raising a child, as well as other societal changes, have led some to opt out of marriage and/or childbearing.

Childlessness is strongly associated with marital status and education. Although the proportion of children born to unmarried mothers has increased over the past few decades, the connection between marriage and childbearing remains strong. The large majority of children are born to married couples (70 percent), and the vast majority of women who marry have children, whereas most women who do not marry remain childless.<sup>10</sup> Almost 9 of every 10 married women in California ages 40 to 44 have given birth to at least one

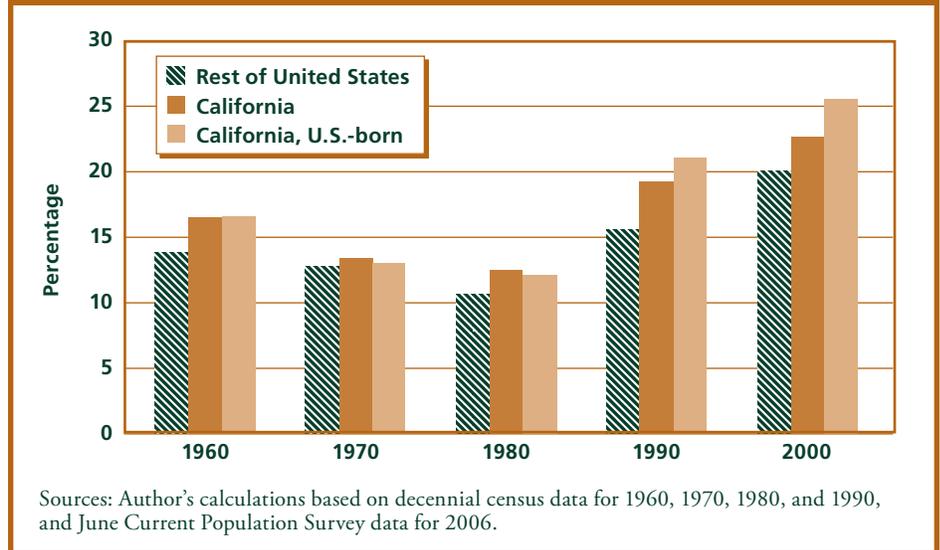
**Figure 6. Percentage Distribution of Women Ages 40 to 44, by Children Ever Born, California, Selected Years**



Sources: Author's calculations based on decennial census data for 1970, 1980, and 1990, and June Current Population Survey data for 2000, 2002, 2004, and 2006.

**Women with higher levels of education are more likely to remain childless.**

**Figure 7. Percentage of Women, Ages 40 to 44, that are Childless**



child. In contrast, among never-married women, 62 percent are childless. The connection between marriage and childbearing varies across ethnic groups. Nationwide, about two of every three never-married African American women ages 40 to 44 have had a child, compared to slightly less than half of Latinas and only one in four Asians and whites. Of course, most women have married by these ages; in California, only 12 percent of women in their early 40s have never been married.

Women with higher levels of education are more likely to remain childless. Using survey data from 2000 to 2006 and controlling for other differences, we find that California women ages 40 to 44 with a college degree

were twice as likely to be childless as women who had no more than a high school degree.<sup>11</sup> The relationship between education and childlessness, and fertility in general, is a complex one. Some women are able to pursue higher levels of education because they have not had children, and thus we would say that remaining childless leads to higher education. For other women, higher levels of education lead to more opportunities, including better careers and higher wages, and the decision to remain childless is a consequence of such opportunities afforded by their education. For those women, we would say that education leads to more childlessness. However, it is unlikely that causality is unidirectional. Decisions about

fertility, education, marriage, and employment are made jointly and interdependently, and can change across time as any one of those characteristics changes or as other factors change.<sup>12</sup>

## Teen Fertility

Teenage pregnancy and birth are regarded as serious social problems in the United States. Despite recent declines, teen birth rates remain substantially higher in the United States than in many other developed countries. Considerable efforts are devoted to reducing teen pregnancy and childbearing. Public policies to reduce teen pregnancies and births are often controversial, with debates focusing on

abstinence-only programs versus comprehensive sex education. Large declines in teen fertility in the 1990s have been cited as proof that programs to reduce teen pregnancy are working, although there is an absence of strong evidence on the efficacy of such programs (DiCenso, 2002).

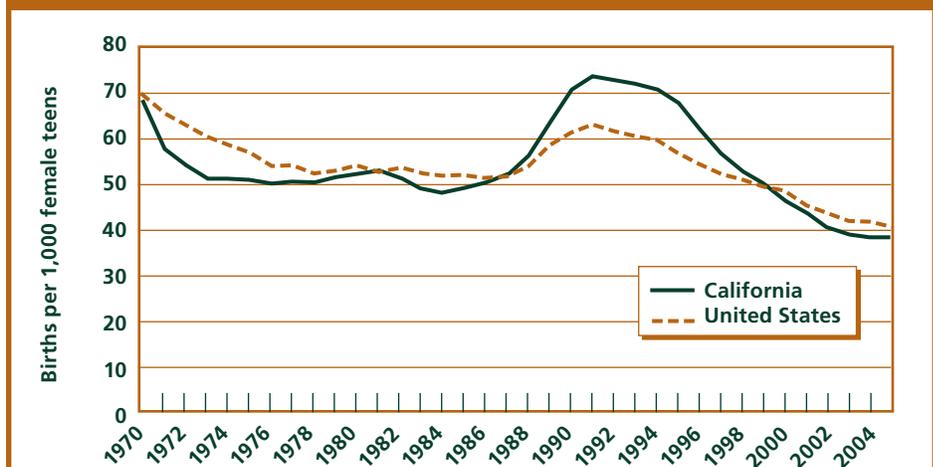
Teen births are discouraged primarily because of the effect of the birth on the future well-being of the mother and a concern that the mother will be unable to meet the financial and emotional needs of her baby. The majority of teen pregnancies and births are unintended.<sup>13</sup> Among researchers and others concerned with teen pregnancy and childbearing, the conventional wisdom has long been that teen childbearing leads to poor life outcomes for mother and child. Studies that show poor outcomes for teen mothers suggest that such mothers are less likely to finish school and more likely to have higher poverty rates and greater dependence on public assistance—outcomes that are at least partly attributable to becoming pregnant and giving birth. Recent studies, however, have questioned whether teen mothers really are worse off than they would have been without becoming pregnant and giving birth, arguing instead that those teens who do bear children would have been likely to drop out of school and be in poverty even if they had not had a child as a teen.<sup>14</sup>

The research is more consistent in suggesting that there are significant adverse consequences of being raised by a teen mother. Controlling for differences in the backgrounds of the mothers, researchers find that children of teen mothers are less healthy, more likely to be abused, and more likely to be placed in foster care than other children. As adults, these children are less educated, more impoverished, and are more likely to engage in criminal activity (Maynard, 1997).

By 2006, teen birth rates in California were the lowest ever recorded for the state. Teen birth rates have fallen dramatically in California and the nation over the past 15 years (Figure 8). Declines have been especially rapid in

**By 2006, teen birth rates in California were the lowest ever recorded for the state.**

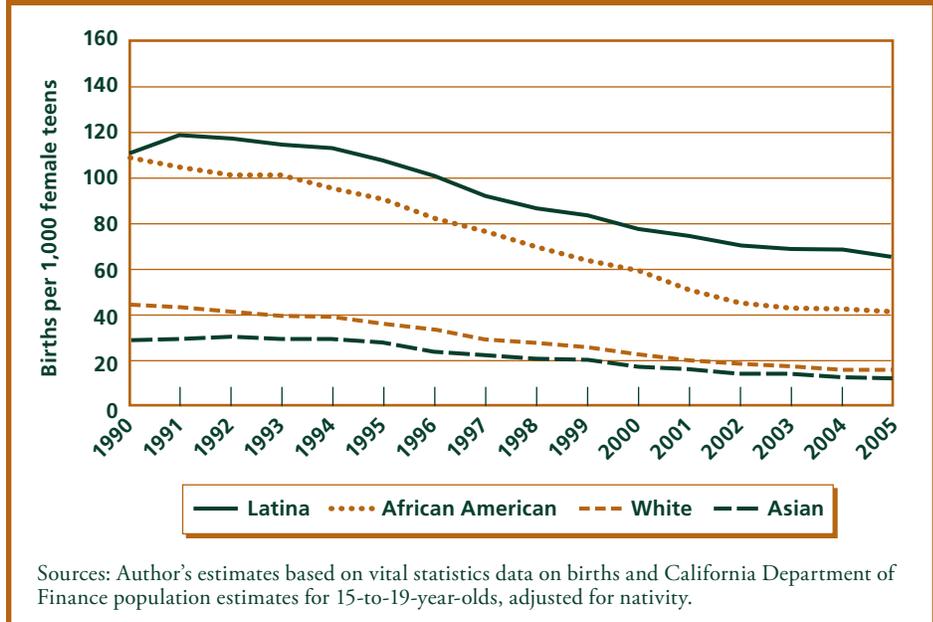
**Figure 8. Teen Birth Rates, 1970–2005**



Sources: Author's estimates based on vital statistics data on births and California Department of Finance population estimates for 15-to-19-year-olds, adjusted for nativity.

**Since the early 1990s, teen birth rates have been reduced by almost half among Latinas and have declined by almost two-thirds among African Americans.**

**Figure 9. Teen Birth Rates by Ethnicity, California, 1990–2005**



Sources: Author's estimates based on vital statistics data on births and California Department of Finance population estimates for 15-to-19-year-olds, adjusted for nativity.

California, such that the state now has teen birth rates that are lower than those in the rest of the United States. Declines in teen birth rates across the nation in the 1990s have been attributed to increased rates of contraceptive use rather than a decline in sexual activity (Darroch and Singh, 1998). California's large increase in teen birth rates prior to 1991 and the decline after 1991 are at least partly related to the effects of the Immigration Reform and Control Act, as discussed earlier.

In California, declines in teen births are most remarkable for Latinas and African Americans (Figure 9). Since the early 1990s,

teen birth rates have been reduced by almost half among Latinas and have declined by almost two-thirds among African Americans. Declines in teen birth rates have also been notable for whites and Asians, though the absolute magnitudes have been far lower. Remarkably, teen birth rates among U.S.-born Asians are now lower than birth rates of 40-to-44-year-olds of the same ethnic group.

Teen birth rates vary tremendously across California's counties (See Table 1 on next page and maps online at [http://www.ppic.org/content/pubs/cacounts/CC\\_1107HJMapsCC.pdf](http://www.ppic.org/content/pubs/cacounts/CC_1107HJMapsCC.pdf)). Rates are highest in some of the state's

agricultural areas, particularly the San Joaquin Valley. Kings County has the distinction of having the highest teen birth rates in the state, with one of every 14 teenagers giving birth in 2005. In several San Joaquin Valley counties (Kings, Kern, Tulare, and Madera) and in Imperial and Yuba counties, teen birth rates are higher than in Texas, the state with the highest teen birth rates (Martin et al., 2006).

To a certain extent, the variation in teen birth rates across counties reflects differences in demographic composition and economic conditions. Because Latinas tend to have high teen birth rates, counties with large

**Table 1. Teen Birth Rates (Births per 1,000 Female Teens) in California Counties, 2005**

Region/County	All Groups	Latina	White	Asian and Pacific Islander	African American	2000–2005 Change for All Groups
Alameda	27.6	68.5	7.9	7.5	43.6	-10.1
Alpine	(a)	(a)	(a)	(a)	(a)	
Amador	25.4	(a)	20.3	(a)	(a)	-0.3
Butte	28.0	48.4	22.1	57.0	(a)	-0.2
Calaveras	21.8	(a)	22.5	(a)	(a)	-8.6
Colusa	54.1	82.0	19.8	(a)	(a)	-16.3
Contra Costa	24.2	59.2	8.8	8.2	38.2	-6.6
Del Norte	44.8	(a)	46.6	(a)	(a)	-16.6
El Dorado	20.4	59.0	15.4	(a)	(a)	-3.2
Fresno	57.1	80.1	22.5	49.5	65.0	-13.3
Glenn	54.1	67.7	43.6	(a)	(a)	3.3
Humboldt	28.7	48.1	23.1	(a)	(a)	-2.8
Imperial	65.7	74.9	15.1	(a)	(a)	-7.8
Inyo	37.4	(a)	25.1	(a)	(a)	-8.8
Kern	65.4	90.4	38.7	30.0	76.6	-8.6
Kings	73.6	97.3	47.2	(a)	65.9	-4.7
Lake	38.0	36.4	38.9	(a)	(a)	-14.5
Lassen	29.2	(a)	26.5	(a)	(a)	-2.8
Los Angeles	38.3	58.7	8.1	6.8	36.7	-11.9
Madera	63.7	89.4	30.9	(a)	(a)	-8.1
Marin	12.9	80.5	3.0	2.9	(a)	-1.6
Mariposa	26.0	(a)	26.8	(a)	(a)	-18.3
Mendocino	36.2	63.9	26.3	(a)	(a)	-11.1
Merced	56.0	72.7	36.5	44.5	31.1	-10.2
Modoc	28.2	(a)	21.7	(a)	(a)	-15.7
Mono	33.1	(a)	9.2	(a)	(a)	-15.2
Monterey	58.4	89.5	14.7	9.4	18.4	-1.2
Napa	30.3	70.1	11.1	22.9	(a)	-1.3
Nevada	18.5	78.9	13.5	(a)	(a)	-3.7
Orange	30.2	67.1	7.5	4.9	22.5	-8.4
Placer	18.1	54.8	13.1	12.0	(a)	-2.6
Plumas	25.0	(a)	27.6	(a)	(a)	-0.1
Riverside	45.5	73.4	19.9	12.9	32.6	-9.8
Sacramento	37.8	76.9	20.5	35.5	52.3	-7.1

Table 1. continued

Region/County	All Groups	Latina	White	Asian and Pacific Islander	African American	2000–2005 Change for All Groups
San Benito	35.7	58.0	10.6	(a)	(a)	–6.2
San Bernardino	48.0	67.3	26.0	17.3	50.4	–9.0
San Diego	32.9	67.0	11.5	12.1	34.8	–10.3
San Francisco	21.4	65.1	6.3	4.8	43.9	–6.6
San Joaquin	48.5	78.8	22.5	44.4	53.8	–12.6
San Luis Obispo	18.5	52.2	10.2	7.9	(a)	–6.6
San Mateo	21.3	55.2	5.2	7.3	33.8	–9.6
Santa Barbara	38.7	83.8	8.2	21.3	21.3	–1.8
Santa Clara	25.3	66.8	6.8	4.5	22.3	–9.6
Santa Cruz	30.0	82.6	4.8	4.2	(a)	–3.5
Shasta	38.0	57.8	35.2	(a)	(a)	2.3
Sierra	(a)	(a)	(a)	(a)	(a)	
Siskiyou	35.7	45.0	34.0	(a)	(a)	3.7
Solano	30.4	64.7	20.1	14.2	32.0	–12.5
Sonoma	23.4	68.9	8.7	12.5	6.3	–5.7
Stanislaus	45.3	71.7	27.4	21.3	30.7	–9.6
Sutter	47.4	87.8	33.9	3.0	(a)	1.8
Tehama	49.3	67.3	44.1	(a)	(a)	–14.3
Trinity	25.6	(a)	31.6	(a)	(a)	–0.8
Tulare	65.2	82.9	34.3	62.5	36.3	–13.3
Tuolumne	20.1	19.5	21.1	(a)	(a)	–5.8
Ventura	32.5	69.9	6.9	6.4	10.8	–9.8
Yolo	19.3	50.3	9.9	3.2	7.3	–4.4
Yuba	64.4	82.1	66.2	61.4	(a)	–9.8

Sources: Author's estimates based on vital statistics data on births and California Department of Finance population estimates for 15-to-19-year-olds, adjusted for nativity.

(a) = insufficient number of births.

Latina populations are more likely to have high rates. However, many agricultural and rural counties have high teen birth rates for every ethnic group, and teen birth rates vary quite a bit even within an ethnic group. For example, Kings County had the highest teen birth rate for Latinas, and had the second-highest teen birth rates among whites (after Yuba County). Higher rates of poverty and unemployment as well as high dropout rates in these counties undoubtedly play a role.

In contrast, teen birth rates are quite low in some of the state's wealthier suburban counties, including Marin and Placer counties. Rates in those counties were lower than the state that has the lowest teen birth rates in the United States, New Hampshire, but still higher than the rates of Japan and many nations in Europe. Japan, Italy, France, Germany, and Spain all have teen birth rates of less than 10 births per 1,000 female teens, suggesting that there is room for improvement even in Marin County (which has a teen birth rate of 13 per 1,000).

From 2000 to 2005, teen birth rates fell in almost every county in California (Table 1, right column). Declines were especially impressive in some of the state's more rural counties that had (and still do have, despite the declines) very high teen birth rates.

## Conclusion

Unlike many countries, neither the United States nor California has explicit policy goals for fertility outcomes or policies to encourage larger or smaller families. Perhaps this is partly because U.S. fertility rates are near the replacement level, neither so high that they lead to tremendous population growth nor so low that they lead to population decline. In California, public policy concerns about fertility revolve primarily around teen birth rates. Here, the news is mostly good. Teen birth rates in California are at an all-time low. Still, there is room for improvement, as rates remain very high in some counties and among some groups, and are substantially higher statewide than in many other developed countries. Overall, fertility rates in California are relatively high compared to other developed regions of the world.

Fertility rates in the state have been at or near the replacement level of 2.1 children per woman for the last 10 years. This overall stability has been produced by countervailing trends. Birth rates for women in their 30s and 40s have increased, whereas rates for women in their teens and 20s have declined. In light of these trends, California Department of Finance projections of relative stability in fertility rates are reasonable.

**Changes in the number of births in the near future will occur primarily as a result of changes in the number of women of childbearing age, rather than dramatic changes in fertility.**

Changes in the number of births in the near future will occur primarily as a result of changes in the number of women of childbearing age, rather than dramatic changes in fertility. As the baby boomlet enters young adulthood and the baby bust cohort exits its prime childbearing ages, the number of births in the state will increase. Eventually, these increases in births will lead to increasing population growth in the state, and in particular an expansion in the school-age population. ♦

## Notes

<sup>1</sup> The period total fertility rate used in this report is the average number of children a woman will have in her lifetime if current age-specific fertility rates prevail throughout her reproductive years. See the text box, *Measuring Fertility*, for a description of the data sources and methods used in this research.

<sup>2</sup> Among developed countries, Iceland has the highest total fertility rate, at 2.1 children per woman.

<sup>3</sup> Author's calculations based on 2005 American Community Survey data on state of birth and residence for children 15 to 17 years of age.

<sup>4</sup> Currently, about 11 percent of the state's population is age 65 and over. By 2030, this figure is projected to jump to 18 percent as the baby boom fully enters these older ages. After that time, the share of adults 65 and over is projected to increase only slowly, reaching 19 percent by 2050 (California Department of Finance, 2007c).

<sup>5</sup> Census-based population estimates give a slightly lower rate of 3.5 children per woman. See the text box for a discussion of our methods and data.

<sup>6</sup> See Tuiran et al. (2002) for a complete discussion of this remarkable transition.

<sup>7</sup> According to the author's estimates, based on data from the 2005 American Community Survey, the total fertility rate for women in California with a graduate degree was 1.8, compared to 2.9 for women who had not graduated from high school. Other research, including Hill and Johnson (2002), has shown that much of the generational difference in fertility among Mexicans and Central Americans is eliminated once educational attainment is taken into account.

<sup>8</sup> Author's estimates based on decennial census data and the 2005 American Community Survey.

<sup>9</sup> For example, a 2007 Gallup poll reports that over half of all Americans state that two children is the ideal family size (Carroll, 2007).

<sup>10</sup> Based on the author's calculations from the June 2006 Current Population Survey, 70 percent of women who had a birth in the previous year were married at the time of the survey.

<sup>11</sup> Author's estimates based on a logistic regression using 2000, 2002, 2004, and 2006 June Current Population Survey data. Independent control variables include single year of age within the 40-to-44-year-old age group, ethnicity, marital status, education, nativity, and ethnicity interacted with nativity. The sample was restricted to women ages 40 to 44. The dependent variable is whether or not

the woman has had a child in her lifetime. Additional and separate models were run by marital status. Among never-married women, the association between education and childlessness was especially strong, with college-educated women almost five times as likely to be childless as women who had no more than a high school degree. Among currently married women, by far the largest group in terms of population, those with a college degree were 1.5 times more likely to be childless.

<sup>12</sup> McNown (2003) uses the term "rampant endogeneity" to describe the set of variables commonly used in fertility models.

<sup>13</sup> Nationwide in 1994, among 15-to-19-year-olds, 78 percent of pregnancies and 66 percent of births were unintended. (A birth is said to be unintended if the pregnancy that led to the birth was unintended. Some unintended pregnancies end in abortion or miscarriage.) These percentages are much higher than for pregnant women of other ages. Among women 20 years old or older, 44 percent of pregnancies and 26 percent of births were unintended (Henshaw, 1998).

<sup>14</sup> For example, Hotz, McElroy, and Sanders (1999) find that pregnant teens that give birth are no worse off than pregnant teens who involuntarily miscarry, indicating that the poor outcomes observed in other studies are not necessarily the result of having given birth as a teen, but rather that other preconditions or factors lead to the poor outcomes.

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