



Recent Birth Trends in Los Angeles County

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Introduction

Over the past two decades, the number of births in Los Angeles County has been decreasing. In 2011, there were 130,312 births, a substantial decrease from 204,124 births in 1990. The number of children under the age of ten years residing in the County has also fallen nearly 17% since 2000.¹ This decline is projected to continue, and is much larger than the 4% decrease reported for California or for the United States, where the number increased by 2%.

Information on birth trends may be helpful in the planning of many public services. In the health sector for example, this information may be helpful for planning the administration of childhood vaccinations or for developing interventions directed at increasing the physical activity of children. Identifying changes in the birth trends of mothers of different race/ethnicities and age groups may also be useful for targeting preconception health interventions. Finally, as baby boomers begin to retire in larger numbers, with most reaching retirement age by 2030, birth trends may help inform the projected size of our future workforce and help in developing plans to best meet the needs of our retired seniors.

This health brief will describe the changing trends in births in Los Angeles County, identify factors that may be contributing to these changes, and discuss some potential public health impacts.

Recent Birth Trends

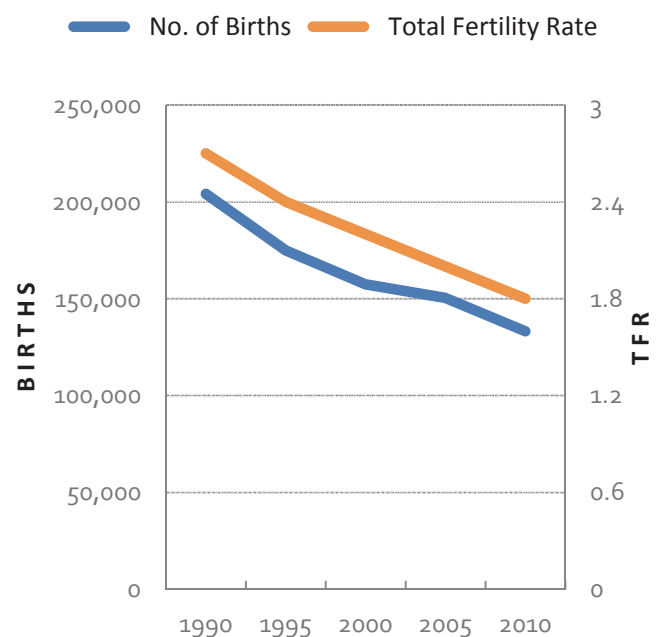
Birth rates for age, race/ethnicity, and nativity were calculated using data from the birth records of Los Angeles County residents from 1990 to 2010 (see Technical Appendix).

TOTAL FERTILITY RATE TRENDS

- The total fertility rate (TFR), the average number of children a woman would bear if today's age-specific rates of fertility prevailed throughout her lifetime, fell by one-third from 2.7 lifetime births per woman in 1990 to 1.8 in 2010 (Figure 1).
- In 1990, TFR was higher in Los Angeles County (2.7 per woman) compared to both California (2.5 per woman) and the U.S. (2.1 per woman). However, by 2010, TFR was lower for Los Angeles County with a rate of 1.8 as compared to California and the U.S. (both 1.9).

FIGURE 1

Number of Births and Total Fertility Rate (TFR)
 Los Angeles County, 1990 to 2010, Selected Years



BIRTH RATE TRENDS BY MOTHER’S AGE

- The steepest declines in birth rate have been in the youngest age groups. For girls and women ages 15-19 years and 20-24 years, age-specific birth rates (ASBR) have dropped by half or more over the period (Figure 2). This finding is consistent with U.S. teen birth rate trends, which reached a historic low in 2010.²
- Rates for 25- to 29-year-olds have fallen considerably as well. In 2010, the ASBR for this group was 90.5 births per 1,000 women, a 35% drop from the ASBR of 139.2 in 1990.
- While birth rates for 30- to 34-year-old women have changed little over the period, rates for women over 35 years of age have gradually and consistently increased. The ASBR increased by 11% for 35- to 39-year-olds and by 33% for 40- to 44-year-olds.
- In 1990, women ages 20-24 years had the highest birth rate compared to other women. In 2000, 25- to 29-year-olds had the highest rate whereas in 2010, 30- to 34-year-olds had the highest rate.

TABLE 1
Total Fertility Rate (TFR) by Mother’s Race/Ethnicity
 Los Angeles County, 1990 to 2010, Selected Years

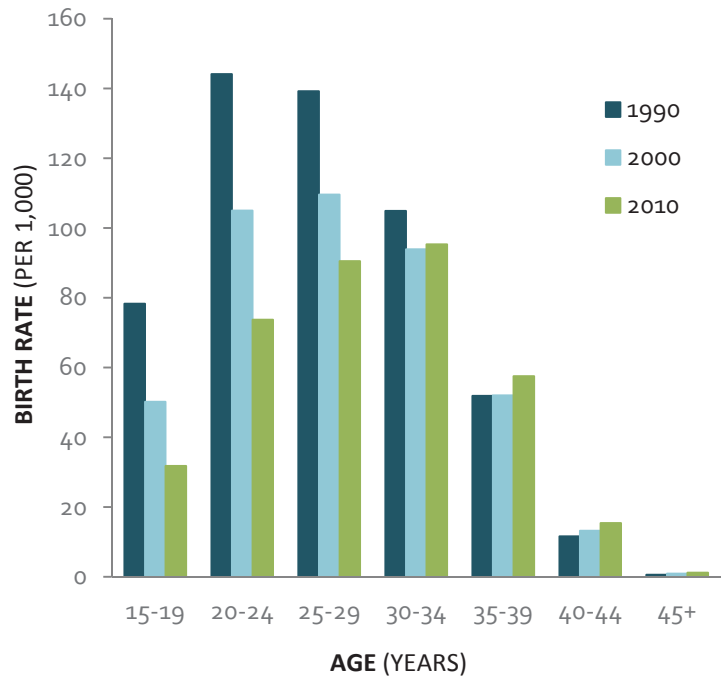
	1990	2000	2010
Race/Ethnicity			
White	1.8	1.4	1.3
Black	2.6	1.9	1.7
Latina	3.6	2.7	2.2
Asian/NHOPI [†]	1.9	1.6	1.4

[†]NHOPI = Native Hawaiian or other Pacific Islander

FIGURE 2

Age-Specific Birth Rates (ASBR)

Los Angeles County, 1990 to 2010, Selected Years



BIRTH RATE TRENDS BY MOTHER’S RACE/ETHNICITY

Birth rates have decreased for mothers of all racial/ethnic backgrounds, with some groups decreasing more steeply than others:

- Latina women have the highest birth rate but experienced the largest decline in TFR (-39%) from 3.6 in 1990 to 2.2 in 2010 (Table 1).
- Rates for black women have declined steadily as well, falling more than a third from 1990 (2.6 per woman) to 2010 (1.7 per woman).
- With comparatively lower birth rates to begin with, Asian/NHOPI (Native Hawaiian or other Pacific Islander) and white women both had smaller decreases in TFR between 1990 and 2010.

BIRTH RATE TRENDS BY U.S.-BORN VERSUS FOREIGN-BORN MOTHERS

- TFR decreased for both U.S.-born women (from 2.0 in 1990 to 1.5 in 2010) and foreign-born women (from 3.6 in 1990 to 2.3 in 2010), declining more steeply for the latter.
- Approximately three-quarters of Asian/NHOPI women and half of Latinas of childbearing age (15-49 years) were foreign born in 2010. On average, foreign-born Latinas are estimated to have one more child than U.S.-born Latinas over their lifetime (Figure 3).

Factors Associated with Changes in Birth Trends

DEMOGRAPHIC FACTORS

- Recent changes in overall migration have resulted in shrinking the number of women of childbearing age.³
- In-migration has been declining for the past 20 years and the recent recession has curtailed in-migration even further.³
- Out-migration has been especially high since 2001, far exceeding in-migration, with a net decrease of 620,000 persons in Los Angeles County between 2000 and 2010.⁴

ECONOMIC FACTORS

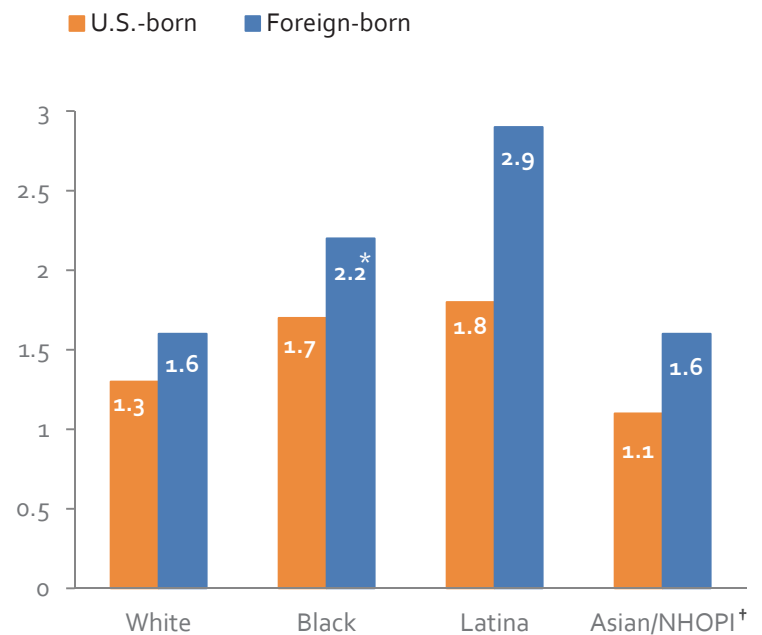
Potential impacts of the recession on recent birth trends in Los Angeles County include:

- Researchers have suggested that regions experiencing the largest economic declines during the recession (2007 to 2008) were most likely to experience relatively large fertility declines from 2008 to 2009, and vice versa.⁵ California and Los Angeles County were both hit hard by the recession and its aftermath.⁶
- From 2007 to 2010, unemployment increased from 6.3% to 12.4%.⁷ During this time period,

FIGURE 3

Total Fertility Rate (TFR) by Mother's Nativity

Los Angeles County, 2010



* Estimate may be statistically unstable

† NHOPI = Native Hawaiian or other Pacific Islander

births decreased from 151,813 to 133,160 births. TFR decreased from 2.0 in 2005 to 1.8 in 2010.

- For women 20-49 years of age with less than a high school education, the crude birth rate fell by more than half from 130.6 per 1,000 in 2006 to 64.0 in 2011, yet remained unchanged or slightly increased for mothers with higher levels of educational attainment. In California, 19% of workers in families headed by someone who had not graduated from high school were unemployed from 2008 to 2009, suggesting that these individuals may have been most adversely impacted by the recession.⁶

BEHAVIORAL FACTORS

Although the recent recession likely played a large role in declining birth rates, other societal and/or behavioral factors may have also been influential.

Changes in contraceptive methods in California and U.S.:

- Compared to 1995, there was a decline in the use of condoms (20% to 16%) which was more than offset by both an increased use of hormonal-based methods (4.3% to 7.2%) and a seven-fold increase in the use of intrauterine devices (IUD) (0.8% to 5.6%).⁸
- Among teenagers, there has been an increased use of contraception at first initiation of sex and the use of dual methods of contraception. Significantly larger proportions of teens have used “the pill,” condoms, and hormonal-based methods combined since 1988.⁹
- A new form of emergency contraception, often referred to as the “morning after pill,” has been used by 11% of sexually experienced women.¹⁰ The use of emergency contraception has significantly increased among teenagers from 8% in 2002 to 14% in 2006-2010.⁹

Increase in age at first marriage:

- In the U.S., the median age at first marriage for women increased from 23.9 years in 1990 to 27.4 years in 2013.^{11,12} In California, the median age at first marriage for women was 28.1 years in 2013, higher than the national average.¹²
- In 2012, 65% of women in California were married when they had their first birth, however only 23% of 20- to 24-year-olds were married.¹³

Rise in maternal age at first birth:

- For many women in California, childbearing has been delayed due to: getting married later; pursuit of higher education; and the desire to establish a career before having children.¹⁴
- For a woman in Los Angeles County in 2011, the mean age at first birth was at 27.1 years, a year and half older than the the U.S. average (25.6 years).

- Similar trends were observed for all racial/ethnic groups in Los Angeles County. In particular, white women in the County were on average five years older at their first birth than their national counterparts.

Increase in childlessness:

- According to the PPIC (Public Policy Institute of California), 22% of Californian women ages 40-44 years were childless in 2000, slightly higher than the rest of the nation (20%) and nearly doubling since 1980 (12%).¹⁴

Public Health Impacts of Birth Trends

Health outcomes have improved as teen births have decreased:

- The average annual cost to tax payers for a child born to a teen mother is \$1,682 per year from the child’s birth to age 15 years.^{15,16}
- Teens who are less likely to seek prenatal care are more likely to have premature births and babies with low birth weight. In 2012, 22% of births to teens under the age of 15 years and 10% of births to teens ages 15-19 years in the U.S. were to teens receiving late or no prenatal care.¹⁷

Increasing birth rates among older women may increase negative health impacts to both mother and baby:

- For mothers ages 30 years and older, the percent of babies born prematurely (less than 37 weeks) or at low birth weight (less than 2,500 grams) starts to increase (Figures 4 and 5).
- 12% and 9% of women ages 35-44 years had premature births and babies with low birth weight, respectively, as compared to 9% and 7% of women ages 25-34 years.
- Although small numerically, with 416 births in 2010, the number of births born to women ages 45-54 years has increased three-fold since 1990.

In recent years, 27% of births to mothers ages 45 years and older were premature and 22% had low birth weights.

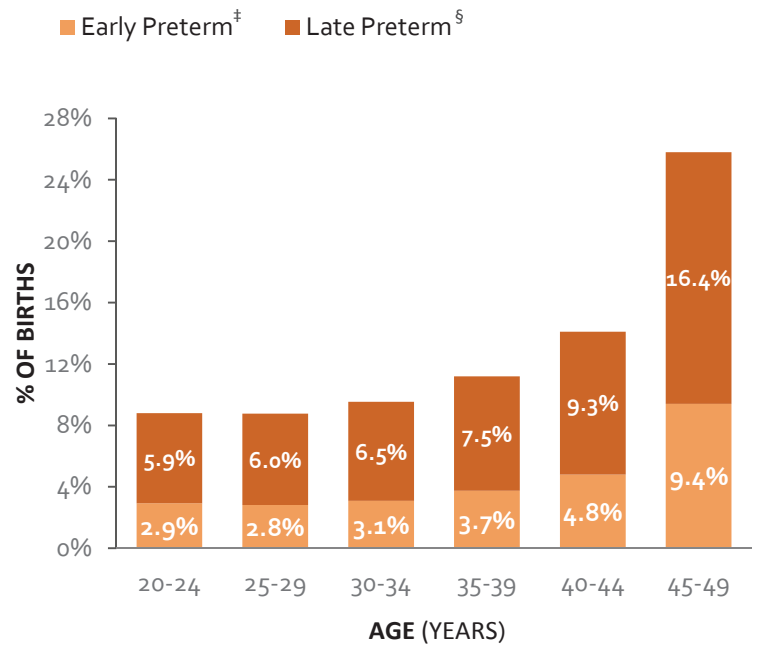
- Congenital anomalies, such as Down syndrome, also increase with maternal age.¹⁸
- Our analysis of birth records for 2007 to 2012 revealed that 2.2% of mothers ages 25-29 years developed gestational diabetes compared to 4.8% of 35- to 39-year-olds.
- Preeclampsia can lead to eclampsia, a life-threatening condition in pregnancy, if untreated. Preeclampsia increased from 2.0% for 25- to 29-year-old mothers to 2.6% among 35- to 39-year-old mothers.
- Maternal age over 35 years is associated with both a four- to eight-fold greater risk of ectopic pregnancy than for younger women, and a two- to four-fold greater incidence of hypertension.¹⁹
- For 40- to 44-year-old mothers, the percentage of women developing these adverse maternal conditions increases even more steeply.¹⁹
- Maternal age over 40 years compared to younger women is associated with a three- to six-fold higher incidence of preexisting and gestational diabetes, as well as a 5% to 10% rate of pre-eclampsia – as compared 3% to 4% in the general obstetric population.¹⁹

Future Trends and Policy Considerations

There will likely be long term fiscal constraints resulting from the shrinking number of working-age adults and growing number of baby boomer retirees. These include:

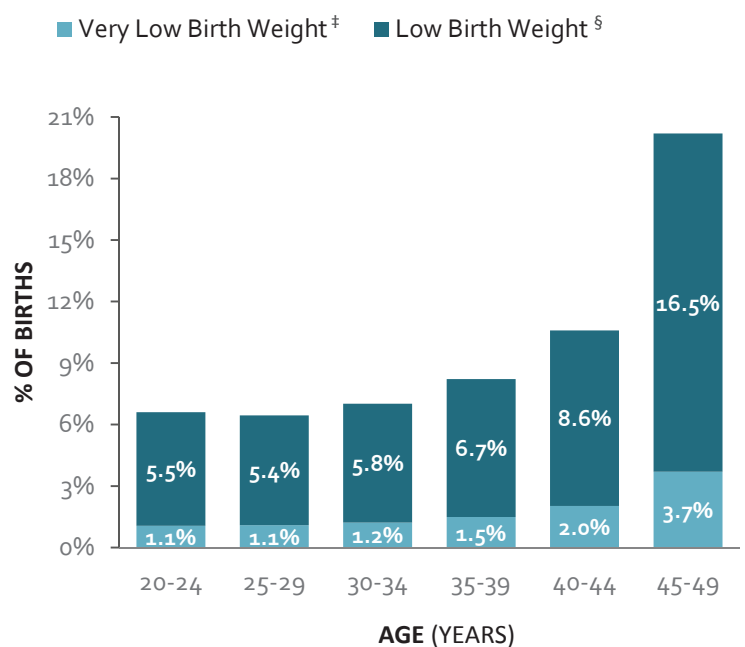
- A potential deficit of working age adults in the future to support the growing number of seniors projected to retire between 2010 and 2030, if trends towards less births and smaller inflow of migrants continue.

FIGURE 4
Premature Births by Mother’s Age
Los Angeles County, 2007 to 2012



[‡] Less than 34 weeks [§] 34 weeks to 36 weeks and 6 days

FIGURE 5
Low Weight Births by Mother’s Age
Los Angeles County, 2007 to 2012



[‡] Less than 1,500 grams [§] 1,500 to 2,499 grams

- Nationally, higher levels of taxation will likely be required to meet the revenue needs to support retiring seniors. The Social Security system is projected to experience a declining worker-to-beneficiary ratio, falling from 3.3 in 2005 to 2.1 in 2040.²⁰ Similarly, the Social Security Administration projects that payroll taxes will need to increase from the 2005 rate of 11.1% to 16.7% in 2030.²¹

To address some of the potentially negative impacts of the birth trends occurring in Los Angeles County, there are several types of policies that can be considered. As delayed childbearing may continue to play an important role in the number of low weight births and other adverse outcomes to mothers and babies, it will be important to focus on improvements in prenatal care, nutrition programs and health education tailored to older pregnant women – who have up to this point received less attention than teenage mothers.²²

Policies that help young persons through important life transitions and enable them to become successful young parents may reduce delays in childbearing. High housing costs, the pursuit of higher education and the consequential repayment of student loans, as well as the lack of secure, well-paying jobs, all contribute to stalling life course transitions that then lead to older childbearing.²³

Initiatives that fall under the term “intergenerational equity,” promote policies that support the economic mobility of young adults by making critical investments in both post-secondary and K-12 education, work force development initiatives and reducing mass incarceration.²⁴ These investments can be implemented through proposed reforms to Social Security, Medicare, and the tax code, to reduce debt.²⁵

Additional strategies have focused on providing federal funding for high quality pre-school programs for three- and four-year-olds as well as supporting

young families at all income levels by providing 12 weeks of paid parental leave.²⁶

In light of California’s limited resources, including a severe drought in recent years, promoting pro-natalist policies are likely premature. However, if total fertility rates continue to fall, these may merit future consideration. Such policies – which include providing monetary allowances for newborns and practices that embrace working parents including flexible work schedules, high-quality subsidized child care, and extended maternity/paternity leaves – have been and continue to be employed in most European countries and Canada, which have total fertility rates below that of the U.S.²³

While 70 countries currently provide paid paternity leave, the United States, along with Oman and Papua New Guinea, are the only countries out of 185 surveyed by the United Nations that do not have a national policy mandating paid maternity leave from employment.²⁷ Los Angeles County residents, however, benefit from residing in one of five states that mandate paid family leave, typically lasting between 6-12 weeks. For the rest of the nation, the only benefit beyond those provided by some private sector companies, comes from the Family and Medical Leave Act of 1993, which mandates a maximum of 12 weeks of unpaid leave to mothers attending to a newborn or a newly adopted child.

Finally, to prepare for the retirement of baby boomers and the anticipated resulting budgetary crunch, policies geared toward saving more, consuming less, and retiring later are interventions that are recommended and already to some extent being practiced.²⁸ Additionally, preparing today’s youth with high-quality educational opportunities so they can match the requirements of tomorrow’s innovative workforce, should be helpful in yielding the highest possible revenue (through taxes or private transfers) to best support retirees.

Technical Appendix

The two measures that are used in this analysis are: the age-specific birth rate (ASBR) and the total fertility rate (TFR).

ASBR is the number of births in a calendar year to women of a specific age group divided by the number of females in that age group and presented for 1,000 women.

TFR is the sum of the five-year interval ASBR for females ages 10 to 54 years and multiplied by five. Although sometimes reported per 1,000 women, in this analysis TFR is presented as an average number of births per woman. TFR is the average number of children that would be born per woman if all women lived to end of their childbearing years and bore children according to a given fertility rate at each age. Although the TFR is subject to short-term temporal shifts in childbearing, it is the best measure to compare fertility between different groups and across time periods.

Data for this report come from a variety of sources. Most rates in the section on birth trends are derived using Birth Statistical Master File records for Los Angeles County residents using the National Center for Health Statistics (NCHS) bridged population estimates as denominators.^{29,30} Various data files from the U.S. Census Bureau were used as well, including: the Public Use Microdata Sample (PUMS), the American Community Survey (ACS) and the 2012 Fertility Supplement from the Current Population Survey.^{7,13,31} Records for every birth to Los Angeles County residents for various years between 1990 and 2011 were included. These records included information on mother's nativity, race, Hispanic ethnicity, age, educational attainment, and medical outcomes to mothers and babies at delivery and during pregnancy.

We developed ASBR and TFR by combining the vital statistics data with estimates of the population by nativity and race/ethnicity. We used the NCHS

bridged estimates for years 1990, 1995, 2000, 2005, and 2010 to get estimates of population by race/ethnicity, age, and gender. Because bridged estimates did not provide detail by nativity (e.g. U.S.-born and foreign-born) and educational attainment, we used PUMS data to get population estimates detailed at this level.

Rates were produced by race/ethnicity for the following four groups: Hispanic/Latina, white, black, and Asian/Native Hawaiian or other Pacific Islander (all non-Hispanic populations). We used bridged estimates as they were the only estimate available with unchanging race and ethnicity categories throughout our study interval, 1990 to 2010. Additionally, the dimension of nativity was added to the calculation of TFR by replacing the NCHS bridged estimates with PUMS estimates (in the denominators).

In addition to presenting ASBR and TFR, additional measures were calculated using birth data. Specifically, for birth rates by educational attainment, first-order births to mothers between the ages of 20-49 years for different educational attainment level were divided by estimates of females of the same age and educational attainment levels from PUMS one-year estimates. We also calculated "mean age at first birth" for the total population and by race/ethnicity using birth data for 2011.

Lastly, for the section on public health impacts, we aggregated birth data for 2007 to 2012 (n=834,345) and examined obstetric estimates of gestation (in weeks) and baby's birth weight to estimate the percentage of births that were premature or low weight by mother age. Early preterm birth was defined as 34 completed weeks, while late preterm birth was defined as 34 to 36.9 completed weeks of gestation. Very low birth weight was defined as less than 1,500 grams, and low birth weight was defined as 1,500-2,499 grams.

References

1. University of Southern California, Sol Price School of Public Policy. California's Diminishing Resource: Children. January 2013.
2. Hamilton BE, Ventura SJ. Birth rates for U.S. teenagers reach historic lows for all age and ethnic groups. NCHS data brief, no 89. Hyattsville, MD: National Center for Health Statistics. 2012.
3. Myers D, Pitkin J. The Generational Future of Los Angeles: Projections to 2030 and Comparisons to Recent Decades. Produced by the Population Dynamics research Group, Sol Price School of Public Policy; University of Southern California. 2013
4. State of California, Department of Finance, Revised County Population Estimates and Components of Change by County, July 1, 2000-2010. Sacramento, California, December 2011.
5. Taylor P, Livingston G, Motel S. In a Down Economy, Fewer Births. Pew Research Center. October 2011.
6. Bohn S, Schiff E. The Great Recession and Distribution of Income in California. Public Policy Institute of California. 2011.
7. U.S. Census Bureau; American Community Survey, 2007 - 2010 American Community Survey 1-Year Estimates.
8. Jones J, Mosher W, Daniels K. Current contraceptive use in the United States, 2006-2010, and changes in patterns of use since 1995. National health statistics reports; no 60. Hyattsville, MD: National Center for Health Statistics. 2012.
9. Martinez G, Copen C, Abma JC. Teenagers in the United States: Sexual Activity, Contraceptive Use, and Childbearing, 2006-2010. National Survey of Family Growth. Vital and Health Statistics, Series 23, Number 31. Hyattsville, MD: National Center of Health Statistics. October 2011.
10. Daniels K, Mosher WD, Jones J. Contraceptive methods women have ever used: United States, 1982-2010. National health statistics reports; no 62. Hyattsville, MD: National Center for Health Statistics. 2013.
11. U.S. Census Bureau, Current Population Survey, March and Annual Social and Economic Supplements, 2011 and earlier. Table MS-2. Estimated Median Age at First Marriage, by Sex: 1980 to the Present.
12. Population Reference Bureau. Median Age at First Marriage for Women (1-Year ACS). Available at www.prb.org/DataFinder/Topic/. Accessed February 24, 2015.
13. Calculations based on Current Population Survey, June 2012: Fertility Supplement/conducted by the Bureau of the Census for the Bureau of Labor Statistics. Washington: U.S. Census Bureau, 2012.
14. Johnson HP. Birth Rates in California. Public Policy Institute of California. November 2007.
15. National Campaign to Prevent Teen and Unplanned Pregnancy. Counting it up – the public cost of teen childbearing. December 2013.
16. Ventura SJ, Brady EH, Mathews TJ. National and state patterns of teens births in the United States, 1940-2013. National vital statistics report, vol 63, no 4. Hyattsville, MD: National Center for Health Statistics. 2014.
17. Child Trends Databank. Late or No Prenatal Care – Indicators on Children and Youth. July 2014.
18. Centers for Disease Control and Prevention. Birth Defects- Facts about Down Syndrome. Available at www.cdc.gov/ncbddd/birthdefects/downsyndrome.html. Accessed on January 13, 2015.
19. Johnson JA, Tough S. SOGC Committee Opinion – Delayed Childbearing. J Obstet Gynaecol Can 2012; 34(1): 80-93.
20. Reznik GL, Shoffner D, Weaver DA. Coping with the Demographic Challenge: Fewer Children and Living Longer. Social Security Bulletin; vol 66, no 4, 2005/2006.
21. Board of Trustees, Federal Old-Age and Survivors Insurance and Disability Insurance Trust Funds. The 2005 Annual Report. 2005.
22. Yang Q, Greenland S, Flanders WD. Associations of Maternal Age- and Parity-Related Factors with Trends in Low-Birthweight Rates: United States, 1980 through 2000. American Journal of Public Health: May 2006, Vol. 96, No. 5, pp. 856-861.
23. Health Canada. Changing Fertility Patterns: Trends and Implications. Health Policy Research Bulletin, Issue 10. Ottawa, Canada: Health Canada. 2005.
24. Common Sense Action. The Agenda for Generational Equity: The Framework. 2013.
25. Sawhill I, Monea E. Old News. Democracy Journal. Summer 2008.
26. Isaacs, JB. Supporting Young Children and Families-An Investment Strategy that Pays. Washington, D.C.: Brookings Institution.
27. International Labour Organizations. Maternity and paternity at work – Law and practice across the world. 2014.
28. National Research Council. (2012). Aging and the Macroeconomy. Long-Term Implications of an Older Population. Committee on the Long-Run Macroeconomic Effects of the Aging U.S. Population. Board on Mathematical Sciences and their Applications, Division on Engineering and Physical Sciences, and Committee on Population, Division of Behavioral and Social Sciences and Education. Washington, D.C.: National Academy Press.
29. State of California, Department of Public Health, Birth Statistical Master File for Los Angeles County Residents, 2007-2012.
30. Centers for Disease Control and Prevention (CDC), National Center for Health Statistics (NCHS), Bridged-Race Population Estimates, United States July 1st resident population by state, county, age, sex, bridged-race, and Hispanic origin. 1990: icenAi_1 (released 07/26/2004). 2000: icen2000_09_y00 (released 10/26/2012). 2010: pcen_v2012_y10_jul (released 06/13/2013).
31. American Community Survey, 2006, 2010, 2011 California: Public Use Microdata Sample. United States Department of Commerce. Bureau of the Census.

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