White Deaths Exceed Births in a Majority of U.S. States

A Census data brief by the Applied Population Lab
written by Rogelio Sáenz and Kenneth M. Johnson

In 2016, more non-Hispanic whites died than were born in twenty-six states; more than at any time in U.S. history. Some 179 million residents or roughly 56 percent of the U.S. population, lived in these 26 states In contrast, non-Hispanic white (hereafter referred to as white) deaths exceeded births in just four states in 2004 and seventeen as recently as 2014. White deaths also exceeded white births in the nation as a whole for the first time in U.S. history in 2016, according to data from the National Center for Health Statistics. When births fail to keep pace with deaths, a region is said to have a "natural decrease" in population, which can only be offset by migration gains. In seventeen of the twenty-six states with white natural decreases, the white population diminished overall between 2015 and 2016. Our analysis of the demographic factors that cause white natural decrease suggests that more states are likely to experience it in the future.[i]

The growing incidence of this white natural decrease has important implications for the nation's demographic future. America is becoming more racially and ethnically diverse. Most scholarly research on diversity has focused on the influence that growing minority populations have played in fostering such diversity. For example, the substantial surplus of Latino births over deaths together with past immigration have contributed enormously to the growing diversity of the United States. But other demographic processes are also at work. These include the rising incidence of white natural decrease due to aging and below-replacement fertility among the 61 percent of the population who are white. As we shall see, the accelerating diversity of the U.S. population is a function of this white natural decrease as well as the growth of minority populations.

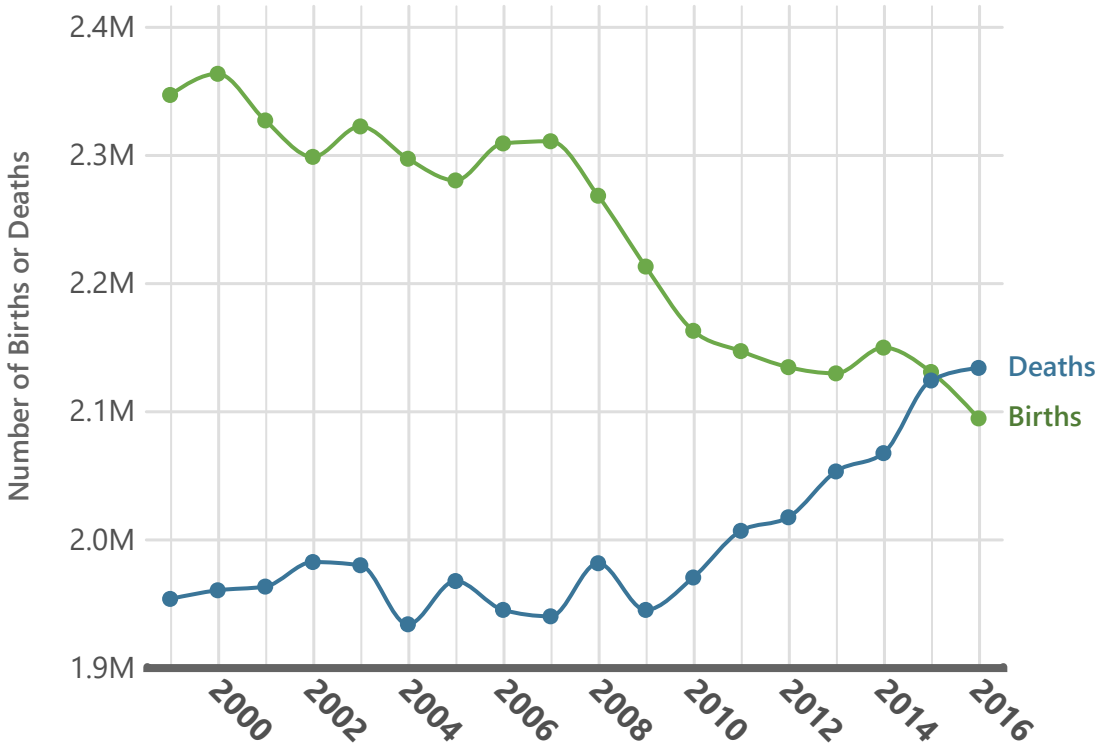
Over the last several decades, demographers have noted the growing incidence of natural decrease in the United States.[ii] More widespread natural decrease results from declining fertility due to the Great Recession, and the aging of the large baby-boom cohorts born between 1946 and 1964. This senior population is projected to expand from 15 percent of the total population in 2016 to nearly 24 percent in 2060.[iii] Much of this aging baby-boom population is white; so white mortality is growing. Together, growing white mortality and the diminishing number of white births increase the likelihood of more white natural decrease. In contrast, births exceed deaths by a considerable margin among the younger Latino population, and the combination of these very different demographic trends is increasing the diversity of the U.S. population.[iv]

Though demographers have noted the growing incidence of natural decrease among the overall population, little attention has been given to its occurrence among racial sub-groups. To address this gap, we use data from the National Center for Health Statistics of the Centers for Disease Control to examine the annual volume of births and deaths among whites from 1999 to 2016 for each state and the District of Columbia.[v] We focus on whites because they represent the largest share of the U.S. population and because their demographic profile increases the likelihood of natural decrease. We find a significant rise in the number of states experiencing white natural decrease in the last few years. Comparing these states to others where white births exceed deaths helps us to understand what combination of demographic changes produce natural decrease. Though white natural decrease is clearly on the rise, only three states have more deaths than births in their total populations. This low incidence of overall natural decrease in U.S. states reflects the growing importance of minority natural increase to overall U.S. demographic trends. In fact, African Americans had natural decline in only one state (West Virginia, -131) in 2016 as did Asians and Pacific Islanders (Hawaii, -906), while Latino births exceeded deaths in every state.

As White Births Diminish, White Deaths Increase

Between 1999 and 2016, the number of white births fell by 10.8 percent to 2,094,000 and the number of white deaths rose by 9.2 percent to 2,133,000. Both these demographic changes contributed to waning levels of natural increase and the onset of white natural decrease (Figure 1). The pace of decline in white births intensified from 2007 to 2016, due in part to the Great Recession's significant impact on U.S. fertility.[vi] The recession, the greatest shock to the American economic system in nearly two generations, influenced both fertility and life-cycle decisions for many families.

Figure 1: Number of Births and Deaths Among Whites in the United States, 1999 to 2016

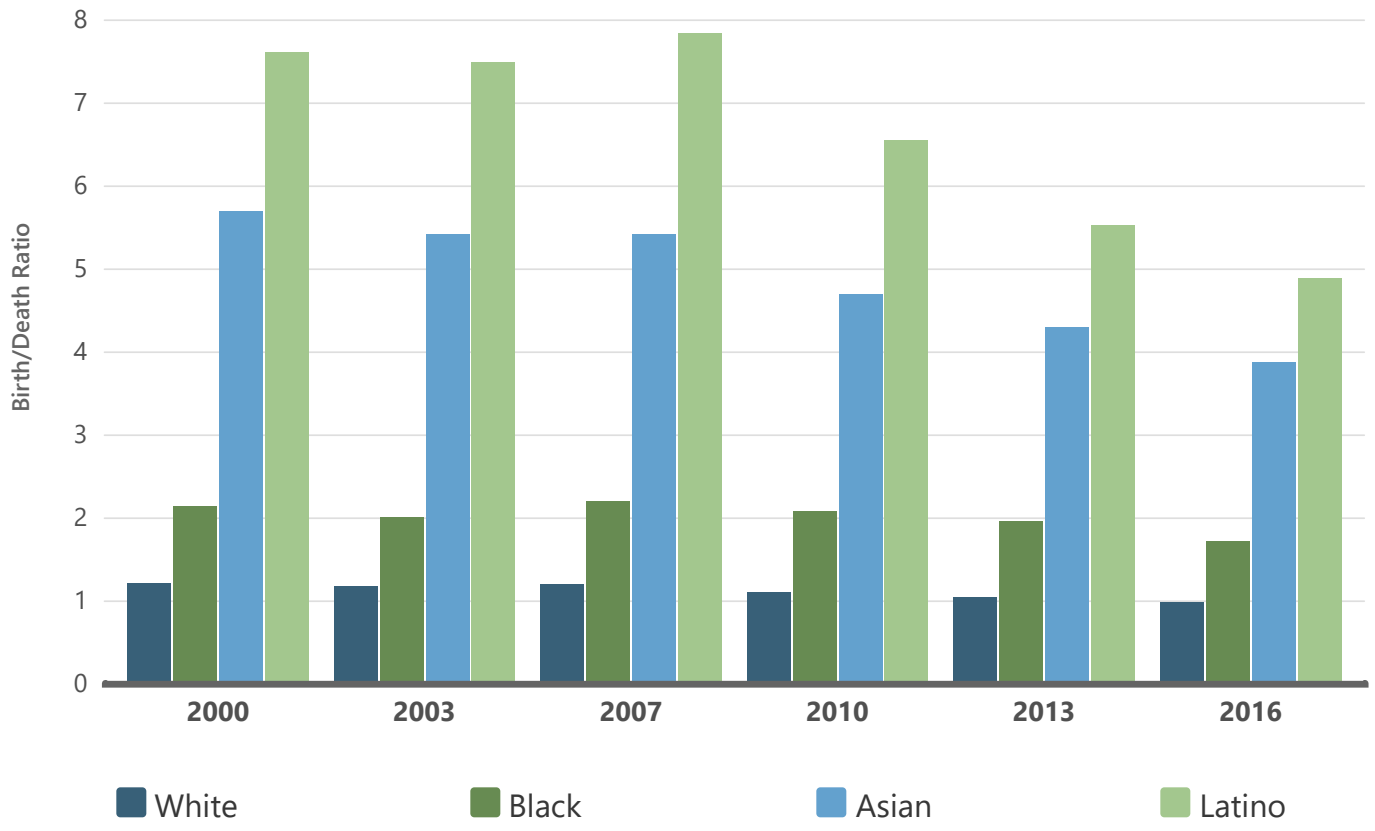


Source: National Center for Health Statistics, Centers for Disease Control

With significantly fewer white births and a rising number of deaths, natural increase (births minus deaths) actually ended in 2016. In that year, for the first time in U.S. history, data from the National Center for Health Statistics showed more white deaths than births in the United States. The white natural loss of 39,000 in 2016 compares to a natural gain of 393,000 in 1999. Both the growing number of deaths (up 180,000 between 1999 and 2016), and the declining number of births (down 252,000 between 1999 and 2016) contributed to the dwindling white natural increase and more recently to natural decrease. In 2016, whites accounted for 77.7 percent of all U.S. deaths, but just 53.1 percent of births.

Demographers use the birth-to-death ratio (BDR) to track the changing relationship between fertility and mortality in a population. For whites, the BDR fell from 1.21 in 2000 to just 0.98 in 2016 (Figure 2). Thus, the number of white births for each white death declined from 1.21 in 2000 to less than 1 in 2016. In contrast, even with recent fertility declines associated with the Great Recession there were 4.9 Latino birth for every Latino death, 3.9 Asian births for every Asian death and 1.7 African American birth for every African American death. This combination of high ratios of births to deaths for the minority population and fewer births than deaths among whites accelerated the diversity of the U.S. population.

Figure 2: Birth to Death Ratio by Race and Latino Origin, 2000 to 2016



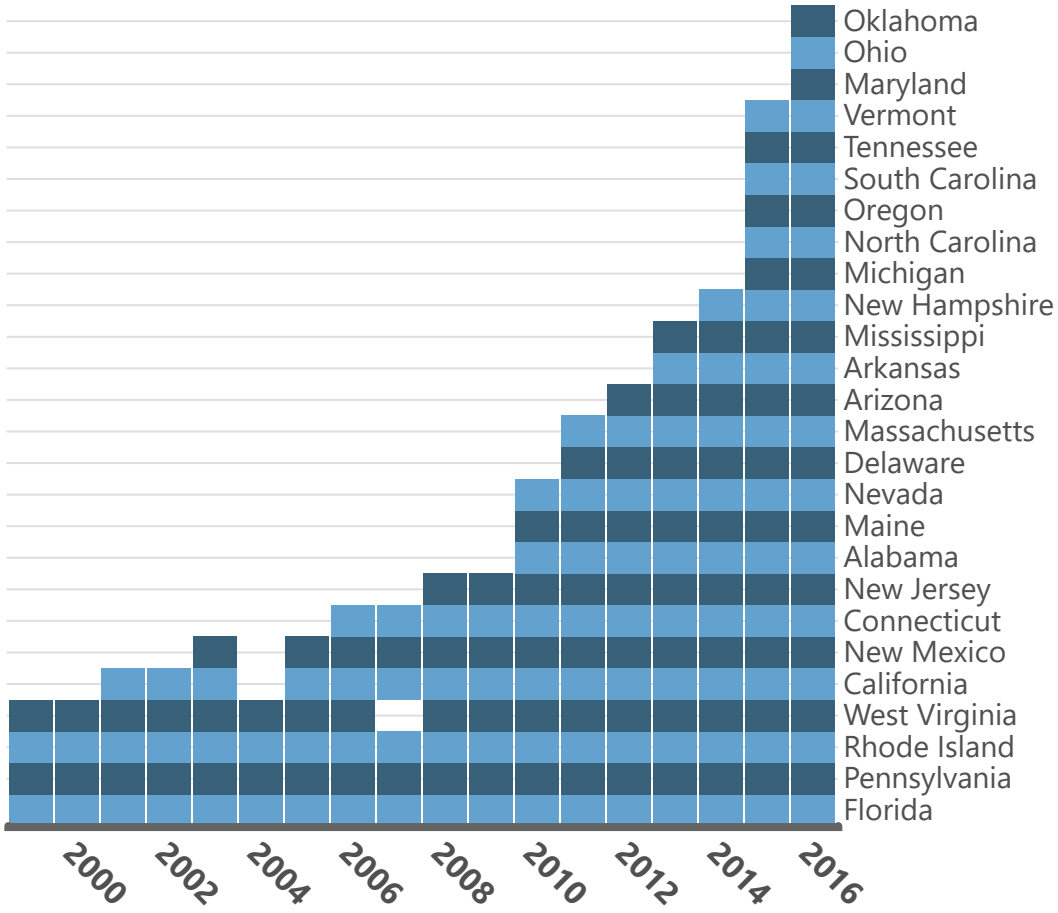
Source: NCHS-CDC

White Deaths Now Exceed Births Among States In Several Regions

The onset of overall white natural decrease in the U.S. in 2016 is reflected in the growing number of U.S. states with white natural decrease. Such natural decrease has only occurred recently in many states. In 1999, four states had white natural decrease; by 2016 more than half (26) of the states did. The steepest rise occurred after 2006, when the Great Recession began to exert a substantial impact on fertility (Figure 3).

Several states have protracted white natural decrease. It has been occurring for more than a decade in Florida, Pennsylvania, Rhode Island, West Virginia, California, New Mexico and Connecticut. Past research on natural decrease in U.S. counties noted that it was occurring mostly in rural areas.[vii] In contrast, state-level white natural decrease is occurring in populous states with diverse economies and numerous metropolitan areas such as California, Florida, Pennsylvania, New Jersey, Arizona, Massachusetts and more recently in Ohio and Michigan.

Figure 3: States with More Deaths than Births among the White Population, 1999 to 2016

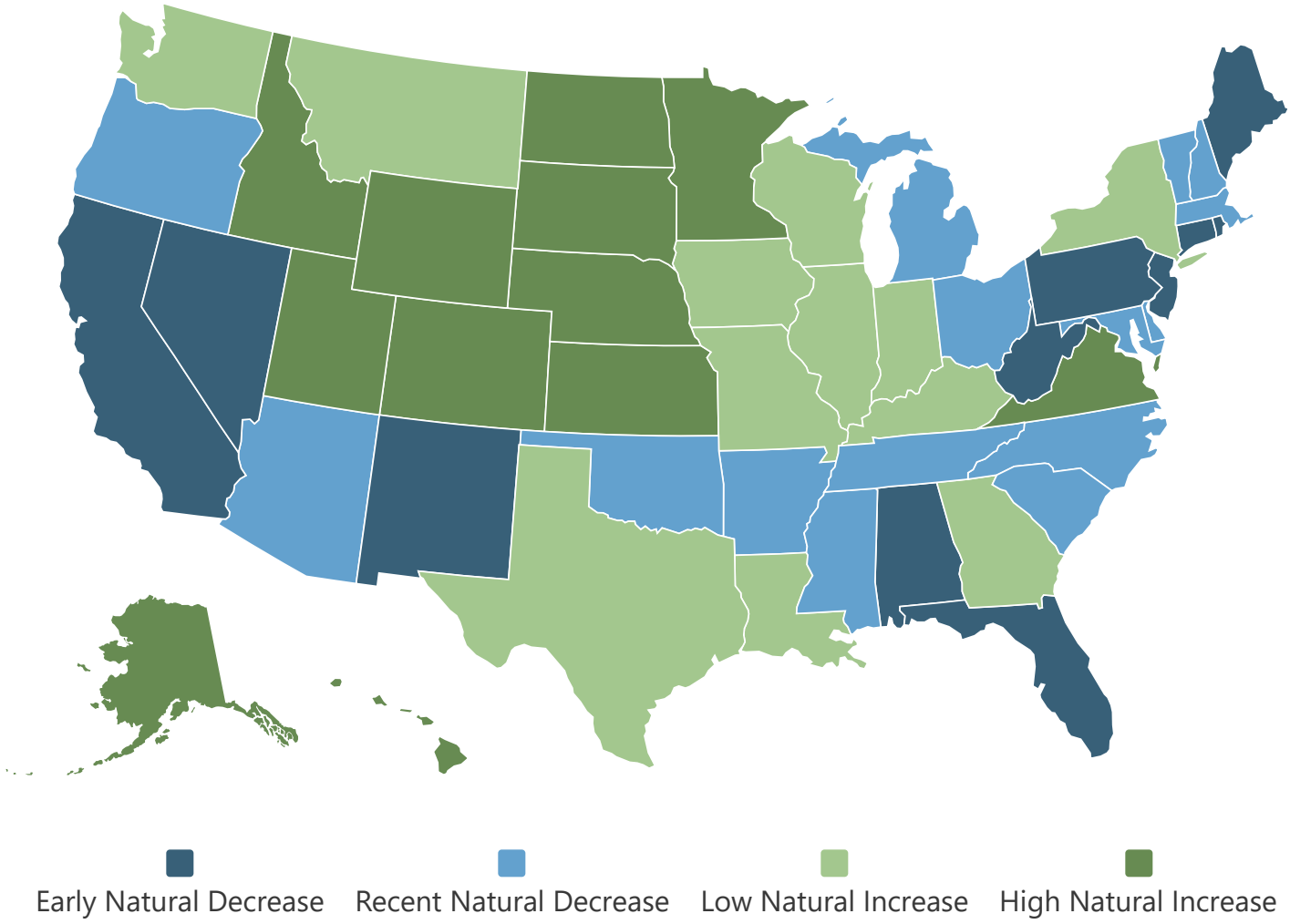


Source: Authors' compilation of data from the National Center for Health Statistics, Centers for Disease Control

A finding from previous research on natural decrease, which is consistent with our findings, is that once an area begins to experience natural decrease, the trend is likely to continue.[viii] Only California, New Mexico, and West Virginia have experienced natural increase after the initial onset of decrease, and in each case it was only for a year. It is entirely possible that some of these states that had white natural decrease in 2016 may experience intermittent natural increase and decrease in the next few years. But past research suggests a high likelihood of future natural decrease among these twenty-six states. More states are likely to be added to those experiencing white natural decrease in the near future. In 2016, white births exceeded deaths by just 1,000 (0.09 percent) in New York and by less than 1,000 (0.12 percent) in Illinois.

There is considerable spatial variation in the level of white natural increase or decrease among the states. Figure 4 divides the fifty states and the District of Columbia into four categories based on their history of white natural decrease or increase. The "Early Natural Decrease" group includes eleven states that began to experience white natural decrease by 2010. The fifteen "Recent Natural Decrease" states first experienced natural decrease between 2011 and 2016. The "Low Natural Increase" group includes the twelve states where births modestly exceeded deaths (BDR between 1.00 and 1.15); and the thirteen "High Natural Increase" states had a greater excess of births over deaths (BDR of 1.16 or higher).

Figure 4: States by History of White Natural Increase or Decrease, 2016



Source: National Center for Health Statistics, Centers for Disease Control

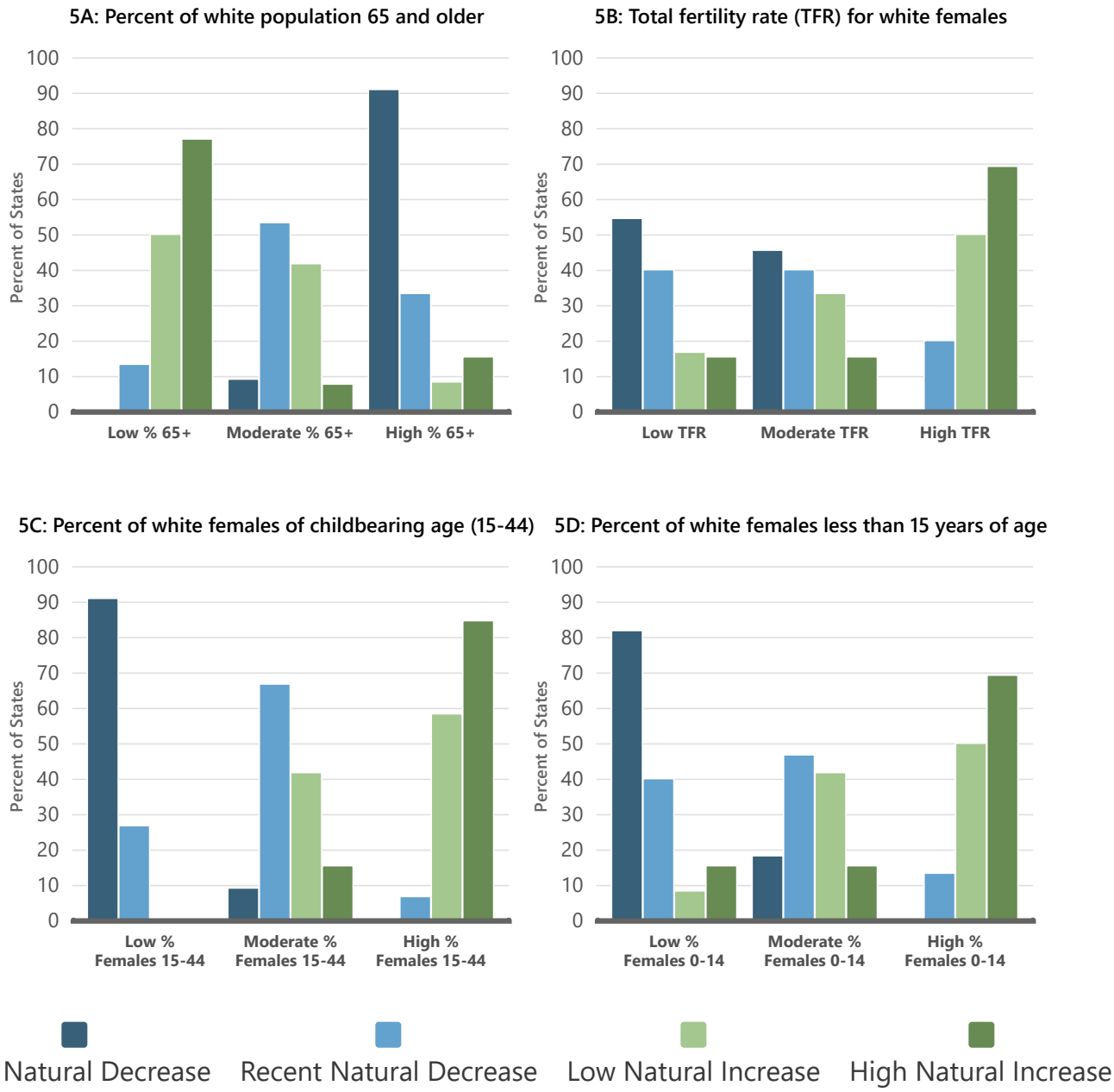
White natural decrease states are clustered in the South, West, and Northeast regions. In fact, the entire Northeast has natural decrease, with the exception of New York, which has minimal natural increase. White natural decrease is also widespread in the Southeast. States with low white natural increase are also widely distributed, though they are often in close proximity to the natural decrease states. In contrast, states with high natural increase are concentrated in the Mountain West and the West North Central regions but also include the District of Columbia and Virginia.

Low Fertility, Fewer Mothers And An Aging Population Drive White Natural Decrease

Powerful demographic forces have combined to raise the incidence of white natural decrease. Here we consider four demographic factors that have been identified as important in accounting for natural decrease in both the United States and Europe.[ix]

First, the percentage of the white population that is 65 and older in 2016 reflects the age structure of the state.[x] Generally, an older population increases the likelihood of natural decrease due to higher mortality. Second, the percentage of white women who are in their childbearing years (15–44) in 2016 signifies the relative share of women who are capable of giving birth.[xi] A larger proportion of women in their childbearing years is likely to increase the number of births. Third, the white total fertility rate in 2016 represents the average number of births per woman in each state.[xii] High fertility rates diminish the likelihood of natural decrease by increasing the number of births. Fourth, the percentage of white females less than 15 years of age represents the future cohorts who will enter their childbearing years in the near future.[xiii] This reflects the potential of the next generation of women to produce future children. For each of these demographic variables, we divided states into roughly thirds to reflect low, moderate, and high levels of each variable across states.

Figure 5: Selected Demographic Characteristics for States by Natural Increase or Decrease



This graphic was updated 6/29/2018 to correct a minor error. The original graphic was erroneously labeled "Percent of Counties". The correct label is "Percent of States".

The narrowing gap between white births and deaths and the eventual crossover to natural decrease reflects the influence of the first three of these demographic forces. As expected, the likelihood of white natural decrease is greatest in states with a large concentration of older whites (Figure 5A). The white population is aging rapidly, as reflected in a rise in the median age for whites from 39 in 2000 to 43 in 2016. During the same period, the percentage of persons 65 and older increased from 15 percent of the white population in 2000 to 19 percent in 2016. Because older populations face higher mortality risks, population aging increases the number of white deaths. Approximately 91 percent of the early natural decrease states had a high percentage of their populations in the 65-and-over category, compared to 15 percent of the states with a relatively high white birth-to-death ratio. In general, populations grow older because of aging in place, but in retirement destination states such as Florida and Arizona there is a significant inflow of older migrants as well.

Another important factor is the proportional share of white women of childbearing age. Previous research suggests that natural decrease is more likely when there are fewer women of childbearing age. Overall, the number of white women of childbearing age (15–44) declined by 5.1 million between 2000 and 2016, or 12.5 percent. Approximately 91 percent of the early natural-decrease states had relatively few white women of childbearing age (Figure 5B). In contrast, nearly 85 percent of the high natural-increase states had a high percentage of women of childbearing age. The proportion of women in their childbearing years is influenced by the age structure of the state, historical fertility rates and by age-specific migration patterns. For example, Utah has a large proportion of women in their childbearing years because the population is young due to past and present high fertility rates and a net migration gain of young adults.

White natural decrease is also more common in states that have low white fertility rates. Nearly 55 percent of the early natural-decrease states are in the lowest fertility category, compared to just 15 percent of the states with high levels of natural increase (Figure 5C). However, the differences here are less pronounced than those for the proportion 65 and older as well as for the proportion of women in their childbearing years. Some recent natural decrease states have moderate or relatively high fertility levels.

The demographic factors examined so far help to explain why some states currently have white natural decrease and others do not. The percentage of the female population less than 15 years old gives us a glimpse of the future. States with smaller proportions of white females under 15 have less potential for future white births than states with larger portions of young females. Most early natural-decrease states have relatively small cohorts of young white females, thus the risk of continued natural decrease is high for them (Figure 5D). In contrast, states that currently have a large excess of white births over deaths also have a larger percentage of young white females able to produce the next generation. For example, just 11.9 percent of New Mexico's white females are under the age of 15, compared to 23.2 percent of those in Utah.

In sum, the likelihood of white natural decrease is greatest in states that have a larger proportion of older adults, a smaller proportion of women of childbearing age, and a lower fertility rate.

White Natural Decrease Is Common, Overall Natural Decrease Is Not

Though more than half of the U.S. states had more white deaths than white births in 2016, only three states—West Virginia, Vermont and Maine—had more deaths than births in their overall populations. West Virginia has had natural decrease in its total population in fourteen of the last eighteen years; Maine has experienced it in each of the last six years (2011–2016) and Vermont in each of the last two. New Hampshire, a state with white natural decrease and with few persons of color, may also face overall natural decline relatively soon. The other states with white natural decrease are still experiencing overall natural increase because other racial/ethnic

populations, especially Latinos, produced a great enough surplus of births over deaths to offset the white natural decrease.

The Latino population is considerably younger (median age of 29 in 2016) and has moderately higher fertility rates than the white population, so Latino births exceeded deaths by a substantial margin in all fifty states and the District of Columbia. In seventeen of the twenty-six states with more white deaths than births in 2016, Latino natural increase alone was sufficient to offset the natural decline of whites. In California, for example, the Latino natural increase of 179,400 was far greater than the 25,300 natural decrease of whites. However, in the other nine states, the natural decline of whites was greater than the Latino natural increase. In Florida, for example, the Latino natural increase was 40,700, compared to a natural decrease of 47,100 among whites. Gains among other minorities in Florida and five other states supplemented the Latino natural gain to produce an overall natural increase. In Maine, Vermont and West Virginia, the three states with overall natural decline, there were few Latinos or members of other minority groups to offset the white natural decrease.

Conclusion

We find overall white natural decrease in the U.S. for the first time in 2016 according to NCHS data. We also find that twenty-six states are currently experiencing it and that its occurrence has accelerated significantly in the past two years from seventeen states in 2014 to twenty-six states in 2016.[xiv] Some 56 percent of the U.S. population reside in the 26 white natural decrease states and many of them are among the nation's most populous and urbanized.

In addition to the long-term demographic forces we identified, two recent trends are accelerating the incidence of white natural decrease. The first is the significant decline in U.S. fertility fostered by the Great Recession. Some 500,000 fewer babies are being born annually now than had pre-recession fertility rates been sustained. And, nearly 2.1 million more women of prime childbearing age are childless than would be expected.[xv] A significant share of those 500,000 annual births that are not occurring would have been white. A critical question now is whether these births have been delayed or whether they will be foregone entirely.

A second factor with significant implications for white natural decrease is the increasing rate of mortality among 30-59 year old whites from what have been called "deaths of despair".[xvi] Such deaths include drug-induced deaths, intentional suicide, accidental drug overdose and alcohol deaths. Such deaths have increased sharply in recent years among whites. This has contributed to the rising incidence of white natural decrease. In fact, such deaths of despair were the difference between natural increase and natural decrease in eight of the twenty-six states with white natural decrease in 2016.[xvii] These deaths of despair are likely to accelerate the transition from natural increase to natural decrease in many other states in the near future.

The growing natural decline among whites in U.S. states contributes to the larger racial/ethnic shifts occurring in the U.S. population. As white natural increase has diminished, the share of the U.S. population that is white has declined from 79.6 percent in 1980 to 61.3 percent in 2016. Census Bureau projections suggest that the white population will begin to decline in absolute numbers between 2030 and 2040, and that by 2050 whites will constitute less than half (47 percent) of the U.S. population.[xviii]

In contrast, the high birth-to-death ratio among younger minority populations has fueled much of the nation's recent population increase. For example, the Latino population is now responsible for the majority of all U.S. population increase and is expected to contribute even more in the future.[xix] The share of the nation's population that is Latino rose from 6.4 percent in 1980 to 17.9 percent in 2016, and it is projected to reach 29 percent by 2060.[xx]

Though much attention focuses on immigration, Latino natural increase has been a significant contributor to overall U.S. natural increase over the past several decades. However, it diminished as a result of the Recession, with natural increase declining from 927,000 in 2007 to 730,000 in 2016. Factors contributing to this decline include a significant drop in immigration from Mexico[xxi] and a substantial reduction in births.[xxii] Latina births fell by 14 percent between 2007 and 2016, nearly 1.5 times as great as the decline in white births (9 percent).[xxiii] Further reductions in fertility as well as reduced immigration for Latinos diminish the likelihood that Latino natural increase will be sufficient to offset white natural decline in some states in the near future.

The demographic trends underlying the current natural decline of whites and the increasing shift to a more racially/ethnically diverse U.S. population have major policy implications. First, the largely white older population will grow rapidly as baby-boom cohorts continue to age. As they do, demands on the health care and retirement system will dramatically increase. Second, the youth population—increasingly a population of color—will require major investments in education and training if the United States is to maintain a productive workforce in an increasingly competitive technological and global labor market. With an aging white population and a youthful population increasingly of color, each with competing demands on government budgets, there is considerable potential for conflicts concerning funding priorities. However, these new generations of color also provide a potential demographic lifeline to America's aging white population by reinvigorating local commerce and labor markets and by fostering economic development that will contribute to meeting the growing demands on the nation's health care and retirement programs.[xxiv]

Natural decrease is the ultimate demographic consequence of population aging, low fertility, and a diminishing childbearing-age population. The rapid rise in the number of U.S. states experiencing white natural decrease reflects the demographic changes underway. Our analysis suggests that more states are likely to experience white natural decrease in the near future. However, there is a low probability of natural decrease in the overall population in most states in the foreseeable future due to the substantial natural increase among Latinos, African Americans, Asians, and native peoples.

Many developed nations already face far more widespread natural decrease than the United States.[xxv] In Europe, overall deaths exceed births in seventeen countries.[xxvi] Compared to the United States, European fertility rates are lower, the population is considerably older, and there are fewer women of childbearing age. Thus, the immediate challenges European nations face in dealing with widespread natural decrease may provide important lessons to U.S. policy makers as they prepare to address this issue in the future.

Data

Birth and death data in this brief are from the National Center for Health Statistics (NCHS) of the Centers for Disease Control's WONDER database for each year between 1999 and 2016.[xxvii] Data on the percentage of elderly, the percentage of women of childbearing age, and the percentage of females who are less than 15 years of age are from the U.S. Census Bureau's Annual Estimates of the Resident Population by Sex, Age, Race, and Hispanic Origin for the United States and States for July 1, 2016.[xxviii] The data used to compute the total fertility rate are derived from age-specific births from the WONDER database for 2016 and from U.S. Census population estimates of women by age group for 2016.

The classification of births and deaths by race in the NCHS data used here differs from the procedures used by the Census Bureau. Thus, there are differences in the number of births and deaths classified in a specific category by race/Hispanic origin between the two agencies. NCHS data do not allow for classification of multiple-race births or deaths—so all births are classified into one race category, that of the infant's mother; the race and Hispanic origin of the infant's father are not considered. In contrast, Census Bureau estimates allow inclusion of births and deaths of two or more races. NCHS data consistently show more non-Hispanic white births and fewer Hispanic births than Census data at the national level. Thus, our calculations likely underestimate white natural decrease compared to similar estimates using Census Bureau data. Only NCHS data are available for race/Hispanic origin of births and deaths for states.

Endnotes

i This brief updates and expands on our previous research on white natural decrease in Rogelio Sáenz and Kenneth M. Johnson, "White Deaths Exceed Births in One-Third of U.S. States," National Issue Brief #110 (Durham, NH: Carsey School of Public Policy, 2016), accessed at https://scholars.unh.edu/cgi/viewcontent.cgi?article=1288&context=carsey on May 10, 2018.

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xi U.S. Census Bureau (2018a).
xii The total fertility rate (TFR) represents the number of births that a woman would have if she went through her childbearing years (15 to 44) conforming to the current age-specific fertility rates. We use age-specific birth data from the WONDER database for 2016 and Census Bureau population estimates for women by age group for 2016 to compute Age-Specific Fertility Rates (ASFRs) to generate the TFRs.
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xiv Sáenz and Johnson (2016).
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