Estimates and Implications of the U.S. Census Undercount of the Native-Born Population

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PRELIMINARY

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Abstract

The accuracy of the decennial United States Census has been a subject of concern since the first census was conducted. Awareness of the extent and patterns of error in census counts (commonly referred to as "undercount") not only has important implications for policymakers and Census enumerators, but also for researchers using the data to conduct demographic, social, and economic research. While the Census Bureau provides estimates of census undercount for the population using various methods, this paper focuses on calculating the undercount for the native-born using the technique of demographic analysis (DA), which estimates population using information on births, deaths, and migration. Restricting analysis to the native-born population allows for greater reliance on the more accurate birth and death records and less on unreliable measures of migration. I estimate undercount in the 1980, 1990, and 2000 Censuses using individual-level birth and death records from Vital Statistics for those born in the years 1968 and onward. My results find a larger undercount of the native-born population than Census finds for the entire population. I also compute undercount by state of birth, a statistic not reported by Census, finding that the rate of undercount varies widely across states. I show the implications this variation in undercount has for computing mortality rates by state of birth. I also explore how the large undercount of infants in 1990 varies by mother's age and education, finding undercount generally decreases with increasing age and education, although infants born to college-educated mothers are undercounted at a surprisingly high rate.

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1 Introduction

The decennial United States census of population, conducted since the country's founding, serves many functions vital to the performance of government. The allocation of political representation through determining the number of members of the House of Representatives assigned to each state, as mandated by the constitution, is based on census counts of population. The size and borders of Representative districts within each state are also reevaluated every ten years based on census population estimates. The allocation of funds for the provision of government services by federal, state, and local levels is also based on census data. In addition to functions related to the functioning of government, the census is also widely used in conducting demographic, social, and economic research on the population as a whole as well as smaller groups defined on relatively narrow criteria (i.e. same-sex couples or Native Americans outside of reservations). Whether census information is used for research, government, or some other purpose, the accuracy of conclusions drawn from its analysis depend on the accuracy and completeness of the data itself. This paper estimates undercount of the native-born population using demographic analysis (DA). I compute undercount both for the nation as a whole and by state of birth. I also show the implications this undercount has for the computation of mortality rates, and show how the undercount of young children varies with characteristics of the mother.

Whether the census is living up to its stated purpose and accurately measuring the size and composition of the United States has been a question posed since the very first census was conducted. The Census Bureau currently uses a combination of two methods to evaluate census accuracy. One is known as Dual System Estimation and is based on the Post-Enumeration Survey, a survey conducted after the decennial census for certain small geographic areas to evaluate the completeness of coverage in that area. Statistical modeling is then used to use the estimates of coverage rates in these areas to approximate

the coverage for the entire population.[1] The other method is demographic analysis, which involves estimating the population as a whole using records on births, deaths, and migration - data sources independent from the census. The two methods usually provide differing estimates of census coverage and therefore adjusting census estimates of population based on results from these methods has been controversial (Belin and Rolph, 1994; Mosbacher, 1991; Wachter, 1991).

The potential implications of census undercount have not gone unnoticed. Schirm (1991) conducts a thorough investigation into how adjusting the 1990 census for undercount would affect the apportionment of seats in the House of Representatives across states. He concludes that undercount adjustments would result in the reallocation of one to three seats across states, with the exact number depending on the assumptions made about the size of the undercount. Adjusting for undercount affects the apportionments of large states more than small ones, and those large states with relatively larger minority populations will gain seats. Two government reports have been done on the potential effect of undercount in the 2000 census on the allocation of federal funding across states. One found that adjusting for undercount would reallocate $4.2 million of $1.7 billion Social Services Block Grant funds, 0.25% of the total. Twenty-seven states and the District of Columbia would lose funds, and 23 states would gain funds, with the biggest gainer (DC) receiving 2% more, and the biggest loser (MN) losing 1.2% of its total allocation (Scire, 2007). A report prepared for Congress by PricewaterhouseCoopers looked at the funding of 8 major federal grant programs worth $145 billion in FY 2004 and found the 2000 census undercount cost 31 states and DC $4.1 billion in federal funds over the 2002-2012 period. In addition to looking at the effects of undercount on state funding, the report examined funding allocation at the county level. Metropolitan areas such as Chicago are particularly affected, with the undercount estimated to cost Cook County, IL $193 million in federal funds over the 2002-2012 period (Board, 2001). A study

[1]For descriptions of the Dual System Estimation method, see Mulry and Spencer (1993); Hogan (1993).

by Clogg et al. (1989) found significant effects of census undercount on the estimation of nationwide mortality rates, school enrollment rates, and the labor force participation of blacks. He and coauthors suggest the use of strategies to deal with measurement error from undercount when using census data.

This paper seeks to use demographic analysis to estimate errors in census enumeration of a specific population: those born within the 50 states and the District of Columbia (the "native-born"). Limiting analysis to this population has the advantage of an increased reliance on administrative records on births and deaths, believed to be relatively accurate compared to measures of migration, which are important components in evaluating the count of the foreign-born. Although some data on legal immigrants to the United States exist, practically none are available on illegal immigrants as well as all emigrants. These components must be estimated rather than measured, and are therefore subject to much uncertainty. The native-born population also makes up the majority of the population and is often the explicit focus of research using census data. I measure error in the census count of the foreign born using a similar metric as the Census Bureau: percent net undercount, the percentage difference between the demographic analysis estimate of population and the census count. I calculate undercount for males and females and two race groups: black and non-black, and by single year of age. Undercount estimates are computed for the 1980, 1990, and 2000 censuses by birth cohort, age, and state of birth for those born in 1968 and onward, the first year for which microdata on births and deaths is available. My results find a larger undercount of the native-born population than Census finds for the population as a whole. In addition to calculating overall undercount, I also compute undercount by state of birth, a statistic that has not yet been reported by Census, finding that the rate of undercount varies widely across states. I show the implications this variation in undercount has for computing mortality rates by state of birth. I also emphasize the very large undercount of children under age 1 in 1990, a discrepancy that has been corrected in the Census Bureau's area

population tabulations, but not in the Public Use Microdata Samples (PUMS), which I use to calculate my population counts. I explore how this undercount of infants in 1990 varies by age and education of the mother, finding undercount generally decreases with increasing age and education, although infants born to college-educated mothers are undercounted at a surprisingly high rate.

2 Demographic Analysis

Demographic analysis has been used to evaluate undercount in the United States Census since 1950. The process is based on the fundamental balancing equation of demography:

$$N_t = N_0 + B - D + I - E \tag{1}$$

N_t and N_0 are estimates of the population at times 0 and t, where $t > 0$, B and D are the number of births and deaths occurring between times 0 and t, and I and E are the numbers of in- and out-migrants between 0 and t. The balancing equation states that the population of an area can change over time through natural increase (births minus deaths) and/or net immigration (the difference between in-migrants and out-migrants). The process is used by the Census Bureau to estimate the national resident population by age, race, and sex. The balancing equation can only be fully used to estimate the population for which relatively complete birth and death records exist, which in the U.S. is back to 1935. Historically, estimating the population of birth cohorts prior to 1935 was done using indirect techniques involving life tables and previous census estimates. Starting in 1970, Medicare enrollment data were available to estimate the population over age 65 (Himes and Clogg, 1992). By Census 2000, the combination of birth and death records plus Medicare records, along with estimates of emigration and immigration (both legal and illegal), comprised all of the needed

data to compute demographic estimates of the population.[2]

The Census Bureau compares their estimates of population from demographic analysis with the estimates from the decennial census by computing net undercount u and the net undercount rate r as follows:

$$u = P - C \tag{2}$$

$$r = (u/P) * 100 \tag{3}$$

Where P is the DA estimate of population and C is the corresponding census count. The goal of the Census Bureau in performing their Demographic Analysis is to estimate the entire United States population, including all ages, the native- and foreign-born, and legal, temporary, and illegal residents. Historically, percent undercount has been calculated for the entire population, for two race groups (black and non-black), by sex, and for 5- or 10-year age groups. Estimates by Hispanic status have been calculated for more recent censuses. For ease of comparison between my results and those from Census, I also compute my undercount measures using the above formulas.

In contrast to the Census Bureau, I focus on calculating undercount for a specific, well-defined population: the native-born population for whom individual-level birth records are available (1968-2000).[3] Narrowing my analysis to this population allows me to make several simplifying assumptions and decreases the data and estimation requirements for calculating undercount. Consider again the fundamental balancing equation, this time indexed by group

[2]For an excellent summary of current and historical data sources used to estimate the components of demographic analysis, see Robinson (2010).

[3]Birth records were collected by NCHS back to 1931, but data prior to 1968 are only available as tabulations, not individual birth records. As I seek to calculate undercount for categories not necessarily included in these tabulations, I restrict my analysis to the 1968 cohort and later.

i, denoting a specific combination of sex and race:

$$N_{it} = N_{i0} + B_i - D_i + I_i - E_i \tag{4}$$

If we also index the above equation by birth cohort j, we have no need for N_{i0} if we have complete birth records, and therefore have:

$$N_{ijt} = B_{ij} - D_{ij} + I_{ij} - E_{ij} \tag{5}$$

Where B_{ij} is now the total births occurring in year j for group i, D_{ij} is the total number of deaths for cohort-group combination ij occurring between year j and Census year t, I_{ij} is the total in-migrants of group ij that immigrate between birth and year t, and E_{ij} is the net number of out-migrants of group ij between birth year and year t.[4] If we further define our population to be the native born, we have

$$N_{ijt} = B_{ij} - D_{ij} - E_{ij} \tag{6}$$

since $I_{ij} = 0$ by definition if we only consider the native-born population. As I restrict my analysis to cohorts with complete birth and death records, I have values for B_{ij} and D_{ij}. The only remaining component to estimate is E_{ij}, the net out-migration of the native born population from birth to census year t. The Census Bureau estimates E_{ij} using estimation based on census data from overseas countries supplemented by data from the Department of State, as well as information on military dependents and members living abroad from the Department of Defense. This component is generated completely from estimation, and is therefore subject to "much uncertainty" (Robinson, 2010). With no good data available

[4]Net out-migrants is the total number of individuals of group ij living outside of the country on Census day. This is defined as the difference between those of group ij who have ever left the country and those who returned before Census day. Note that this number by definition for the native-born can never be less than zero.

on this component, I make the (clearly incorrect) assumption that the U.S. population is closed to emigration and set $E_{ij} = 0$. Note that net emigration of the native-born is likely to be small, but is definitely not zero.[5] By not taking this component into account, my DA estimates of the native-born population are too large, meaning I will find a net undercount of the native-born population even if the Census is completely accurate. I discuss in more detail in a later section of this paper the implications this assumption has for my results.

I estimate undercount for the native-born population by single year of age, allowing identification of more subtle patterns in the undercount than what is visible in the 5-year age groups reported by Census. I calculate undercount for the entire native-born population as well as by state of birth. I follow Census and only estimate undercount separately for two race groups: Black and Non-Black. While calculating undercount for all races would be preferable, issues with the classification of race on birth and death certificates prevent further disaggregation, a topic I turn to in the next section.

3 Data

Data used in this project consist of birth and death records from National Center for Health Statistics' (NCHS) Vital Statistics System, and U.S. Census public-use microdata. Each are described in turn.

3.1 Births

Data on births come from the National Center for Health Statistics' (NCHS) Vital Statistics Natality Birth Data, downloaded from the National Bureau of Economic Research (NBER) website (National Center for Health Statistics, 2002). I use data from calendar years 1968

[5]Census estimated a total of 120,000 native-born emigrants left the country between 1990 and 2000, an extremely small fraction of the total native-born population. However, estimates of native-born emigration. However, as the U.S. government does not keep track of citizens who leave the country, the estimation of these emigrants has been a topic of debate throughout the years (Robinson, 2010).

(the first year the data is available) through 2000. The data consists of birth records for all births occurring in the United States in each calendar year. Each birth record contains information on the child (such as birthweight, sex, month of birth, location of birth, etc.) and the parents (such as age, race, education, place of residence, etc.).[6] I limit my sample to all births occurring to U.S. residents residing in the 50 states and the District of Columbia.[7]

The quality of birth records is extremely important for the accuracy of population estimation using demographic analysis, as births are the largest component of the calculation, especially for the young cohorts I focus on. It would be concerning if a substantial fraction of births were not registered and therefore would not show up in the vital statistics records. The last test of birth registration completeness was done in 1964-1968 and found a total registration rate of 99.2%, 99.4% for whites and 98.0% for blacks. This was an improvement over the previous test in 1950, which found a total registration rate of 97.9%. Extensive review by the Census Bureau conducted after Census 2000 led to adoption of the assumption that registration completeness continued to rise after 1968 until it reached 100% completeness in 1985.[8] Registration was assumed to be complete in this year as it was the first year that natality statistics were reported electronically from all states, and by this time a birth certificate was required by law for many essential functions, including establishing citizenship and enrolling in school. However, there have not been any other studies of birth registration since 1968 to confirm these assumptions (McDevitt et al., 2001; Robinson, 2010).

Along with the completeness of birth registration, demographic analysis also relies on the accuracy of reported information on the birth records, especially race. The few studies analyzing the accuracy of race reporting on the birth certificate find high accuracy for

[6]The exact variables available on the birth certificate vary slightly across years, due to changes in the standard birth certificate and NCHS data collection policies.

[7]The birth records do not distinguish foreign residents from U.S. residents prior to 1970. In 1970, births to foreign residents accounted for 0.17% of all births in the U.S., so I can assume I overestimate all births in 1968 and 1969 by a similar amount.

[8]I adjust for underregistration of births in the years prior to 1985 following Census procedures. See the Methods section.

whites and blacks, and lower accuracy for other races, especially Native Americans. For example, Baumeister et al. (2000) find that the birth certificate had the same race value as that reported by the mother in a postpartum survey 94% of the time for Black, European, Asian/Pacific, and Latina (Hispanic) races/ethnicities except for Native American, where the values matched on only 54% of records.[9] The one study I found that analyzed the accuracy of sex reporting on the birth certificate found an accuracy of 98% (Piper et al., 1993).

3.2 Deaths

I use death data from the NCHS Vital Statistics Multiple Cause-of-Death Mortality Data, also downloaded from the NBER website. Although available back to 1959, I use data from calendar years 1968-2000 to correspond with the available birth data. The data contain individual records for all deaths occurring in the United States in each calendar year. Data is based on death certificates filed in each state and the District of Columbia. Information on the decedent includes date of death, place of death, state of birth, age, residence, sex, race, and cause of death. Some information is available only for certain years and/or certain states. For example, state of birth is not available on the death records for the years 1968-1978. Again, I limit my sample to all deaths occurring to U.S. residents residing in the 50 states and the District of Columbia.

There is unfortunately not much information on the underregistration of deaths in the Vital Statistics records. The Vital Statistics technical appendix states "All states have adopted laws requiring the registration of births and deaths. It is believed that more than 99 percent of the births and deaths occurring in this country are registered" (Statistics, 1999). However, there is little quantitative evidence on the size of underregistration. In the Census

[9]Baumeister et al. (2000) used a sample of California birth certificates matched to surveys conducted with mothers in-hospital in 16 hospitals in 1994-1995. Other studies use similar methods, matching birth certificate records to hospital medical records or other administrative records in Tennessee (Piper et al., 1993), New Jersey (Reichman and Hade, 2001), and Indiana (Zollinger et al., 2006). All of these studies find results similar to those in Baumeister et al. (2000).

DA, no adjustment is made for death underregistration except for infant deaths before 1960. Therefore, I assume that the death certificate records contain all deaths occurring in the United States.

More evidence exists on the misclassification of race on the death certificate, which is significantly worse than that on the birth certificate. Nurses and birth recorders almost always have the mother to refer to if there is a question about the race of the child, however, the individual filling out the death certificate (usually a funeral director) often does not have a next of kin to ask about the race of the decedent, and must rely on observation alone to assign race. A study by Arias et al. (2008) found close to 100% record-level agreement for race of blacks and whites between survey responses and the death certificate over the periods 1979-1989 and 1990-1998 using the National Longitudinal Mortality Study (NLMS). However, the agreement for Native Americans was only 55% for both periods and was 84% and 90% for Asians and Pacific Islanders in the earlier and later periods, respectively. Those Native Americans and Asians who were misclassified on the death certificate were almost always classified as white.[10]

Due to the poor concordance of race classification on surveys like the census and death certificates of races other than black and white, and the tendency of other races to be misclassified as White, the Census Bureau has chosen to calculate undercount by only two race categories: black and non-black. While Census has expressed interest in calculating undercount using finer race categories (Passel, 2001), I choose to follow Census and calculate undercount for only these two categories in order to provide better comparison between my calculations and theirs.

[10]Other studies of race classification on the death certificate use similar methods, matching death certificate records to survey responses. All find similar results to Arias et al. (2008). Examples of these studies include Hambright (1969); Hahn et al. (1996); Rosenberg et al. (1999). The latter also includes an excellent summary of previous research.

3.3 Census

Census estimates of population come from individual-level data available from IPUMS-USA (Ruggles et al., 2010). I use the 5% sample for each of the 1980, 1990, and 2000 censuses. I use information on race, sex, age, and state of birth. Population estimates are formed using the weights (inflation factors) provided by Census. I calculate Census estimates of population for each group by age on Census day.

4 Methods

In this section I describe in detail the process of calculating the components of my demographic analysis: births, deaths, and the resulting DA estimate of population, and estimates of population in the census. As mentioned previously, I calculate my DA estimates using births and deaths from calendar years 1968-2000. I estimate the population for two race groups (black and non-black) and by sex. The main methods descriptions are for the national calculation by age, the initial analysis. I also calculate undercount by state of birth, and differences between that analysis and the main analysis are described in a later section.

4.1 Births

4.1.1 Sample Definition

Birth totals for each cohort are calculated using Vital Statistics birth records for the years 1968-2000, as described in Section 3. Before 1972, all states submitted only 50% of all birth records each year to Vital Statistics. Between 1972 and 1984, some states reported 50% of records and others reported 100%. In 1985 and later years, all states reported 100% of records. The sample of reported births is random according to Vital Statistics, and births from states reporting 50% of records are assigned an inflation factor of 2.

I keep only those births to mothers who are reported to be U.S. residents and are residing

within the 50 States and the District of Columbia, as these children are more likely to remain within the U.S. and be included in the census. However, the years 1968 and 1969 do not distinguish births to U.S. residents and foreign visitors, and therefore I slightly overestimate births in these years. This is likely a negligible overestimate, as the percentage of all births in the U.S. that are recorded to occur to foreign mothers in 1970 is 0.17%.[11] See Table A.1 for the percentage of all births that occur to foreign mothers in 1970-2000.

4.1.2 Race Assignment

The assignment of race to each birth is slightly complicated, especially for those births where the recorded race of the mother and father differs. I follow the Census Bureau and assign race based on the race of the father, as previous work has shown the race reported on the Census corresponds most closely with father's race (Robinson et al., 1993). However, a significant number of births are missing the race of the father (7-16%). For these births, I assign the mother's race to the child.

A small percentage of births are missing both the mother's and father's race (0.1-0.5%). Vital Statistics imputed the race of these children in one of two ways. Before 1989, the race of the child was also reported on the birth certificate, which was assigned based on reported mother's and father's race using the NCHS "minority rule".[12] For those births missing both mother's and father's race, Vital Statistics assigned race as follows: for births in 1968, if the birth record preceding the record missing race was white, that record was assigned white, if the preceding record was not white, it was assigned black. Beginning in 1969, the missing record was assigned the race of the preceding record. After 1989, Vital Statistics

[11] Note that Census also drops these births in their DA, see Devine et al. (2012).

[12] The minority rule works as follows: "If the parents are of different races or national origins, the following rules are used to assign race or national origin to the newborn child. When only one parent is white, the child is assigned the other parent's race or national origin. When neither parent is white, the child is assigned the father's race or national origin with one exception; if the mother is Hawaiian or part-Hawaiian, the child is assigned to Hawaiian. If race is missing for one parent, the child is assigned the race of the parent for whom race is given." (Statistics, 1982)

only reported the race of the parents and did not assign a race to the child. During these years, Vital Statistics imputed mother's race as follows: if mother's race was not reported but father's race was, the mother was assigned the race of the father. For those cases where both mother's and father's race was missing, the mother was assigned the race of the mother on the preceding birth record for which mother's race was not missing. For those cases missing both mother's and father's race, I assign the birth the imputed child's race prior to 1989, and the mother's imputed race in 1989 and later. A table showing the percentage of births missing mother's and mother's and father's races can be found in Appendix Table A.2.

After assigning the race of the child, I define the birth to belong to the black race category if race is specifically coded as "Negro" (in earlier years) or "Black". All other races I assign to the non-black category.

4.1.3 Final Births Dataset

After assigning race to each birth, I collapse the individual birth dataset to a dataset containing the number of births occurring in Census year in each combination of sex and race (male and female and black and non-black). The Census year is defined as April 1-March 31, as the Census measures the population on April 1.

I also adjust for underregistration of births prior to 1985 by linearly extrapolating the increase in the registration rate from the value computed in the 1964-1968 study for 1968 to 100 in 1985.[13] I use these percentages to form weights for births in these years to correct for underregistration. These percentages and weights are found in Appendix Table A.3. Note that the 1964-1968 study computed these birth registration weights for white and nonwhite, while I do my calculations using black and non-black categories. I assign the nonwhite weight to the black category, and I calculate the non-black weight using a weighted average of the linear extrapolations of the white and nonwhite weights, weighted by the percent white in

[13]Census uses a similar method for accounting for underregistration of births, see Devine et al. (2012).

the non-black category in each year. These values can also be found in Appendix Table A.3.

4.2 Deaths

4.2.1 Sample Definition

I calculate total deaths for each Census year birth cohort using Vital Statistics multiple cause-of-deaths records for the years 1968-2000, described in Section 3. Note that in 1972 Vital Statistics processed only a 50% sample of all death records - I assume the sampling to be random and apply an inflation factor of 2 to all deaths occurring in this year. In all other years, all death records are in the data. I drop all deaths of foreign residents, as I am only interested in the native-born population. I keep only those deaths of individuals aged such that they were born in 1968 or later.

4.2.2 Race Assignment

Vital Statistics imputed race for decedents with missing race in a manner analogous to the imputation of missing race for births. Prior to 1992, a decedent with race not stated was coded as white if the preceding record was white, and if the record was nonwhite, the missing race was imputed as black. In 1992 and later years, decedents with missing race were assigned the race of the preceding record (Statistics, 1999). Due to this imputation procedure, no decedent in the data has a missing value for race.[14] I therefore simply place deaths into black and non-black categories based on whether the record was coded as black or some other race.

[14] A very small percentage of deaths are missing the race variable. This value was 0.3% in 1975 and 0.1% in 1995.

4.2.3 Assigning Year of Birth

The death records only contain age at death and month of death, and not month of birth. Therefore, I do not know for certain which Census year a decedent was born in. For example, an individual who died at age 9 in June 1989 could either have been born in 1980 (and her birthday would fall after her date of death) or in 1981 (and her birthday would fall before her date of death). I make some headway on the problem with the help of a few simplifying assumptions. If I assume that the probability of birth and death is uniformly distributed across the year, I can assign the above individual a $\frac{5}{24}$ probability of being born in 1981 (the probability of her being born in April or May plus the probability of being born in June and dying after her birthday), and a probability of $\frac{19}{24}$ that she was born in 1980 (the probability of her birthday falling in July through March plus the probability of being born in June and dying prior to her birthday). I follow the same procedure to assign deaths to each possible cohort by month of death.

This procedure relies on two very strong assumptions: the uniformity of births and deaths across the year. These assumptions are of course incorrect, as the seasonality of births and deaths has been well-documented (Udry and Morris, 1967; Rojansky et al., 1992; Bobak and Gjonca, 2001). However, due to the limited information on the Vital Statistics death records, it is the best I can do.[15]

I assign birth cohort to deaths by age and month of death using the above procedure for individuals who die at age 1 and above. The uniformity assumption, while plausible for deaths at older ages, is less so for those less than 1 year in age. The seasonality of births, while not extreme, is apparent in my data, as shown in Table A.4. The distribution of births by quarter is shown for selected years. Births are most likely to occur in the second quarter (July-September) and least likely to occur in the last (January-March). Complicating this

[15]Note that I am also making the assumption that each month has an equal number of days, which is also quite false, but unlikely to change the calculated probabilities by a significant amount.

seasonality is the rapidly declining mortality risk after birth as well as any seasonality in infant death probability. Fortunately, I can approximate this variation in births and deaths over the year using matched infant birth-death records, which Vital Statistics also produces.

The death records report age at death in months for infants who die before their first birthday. Using Vital Statistics Birth Cohort Linked Birth/Infant Death data, downloaded from the NBER website, I calculate the distribution of deaths across birth cohort and quarter of birth by age in months, sex, race, and month of death. This allows me to control for the seasonality of births and deaths in assigning birth cohort to deaths occurring before the decedent's first birthday.

To calculate this distribution, I use the matched cohort birth/infant death records for cohorts 1989 and 1990.[16] I keep only those deaths occurring during Census year 1990 as I wish to calculate the seasonality over one Census year. I drop those infants recorded as non-U.S. residents at either birth or death.[17] I assign race using the same "father rule" that I use for births.

The death records report infant ages in months, but the matched birth/infant death records report age only in days. I assign age in months using age in days as follows: the months comprising ages 0 and 1 are composed of 28 days. The month of age 2 is 30 days long, and the remaining 9 months contain 31 days each. I use this rule because medically one month of age is defined as 28 days (4 weeks), infant ages are less likely to be measured in weeks as the child ages (meaning having a child's age measured 28 day/4 week months is more plausible at young ages), and the 12 months needed to add up to 365 total days.

After assigning age at death in months, I create a dataset containing the total number of deaths by age in months, month of death, cohort (1989 or 1990), race (black or non-black), and sex. I then calculate the fraction of deaths in each month in each birth cohort for each

[16] Although Vital Statistics produced such matched records starting with birth cohort 1983, the 1989 cohort file is the first to contain both month of death and month of birth, both necessary for my calculation.

[17] This results in dropping 26 out of 38,227 observations.

age/sex/race/month of death cell.

After merging this dataset to the deaths dataset, I assign deaths to each birth cohort by age and month of death. Note that by only using cohorts 1989 and 1990 to adjust for the seasonality of births and infant deaths I am assuming that the seasonality does not differ across years.

Once I assign deaths to each year of birth by month of death, I collapse the dataset down to a final deaths dataset consisting of total annual deaths by Census year, race, sex, and Census year of birth.

4.3 Demographic Estimate of Population

To calculate the demographic analysis estimate of population for each cohort, I first merge the birth and death files for each Census. I then calculate the total number of deaths by age, sex, and race. I estimate the population on Census day for each age/race/sex cell by subtracting these total deaths from total births for the cohort. I end up with a dataset containing this "demographic estimate" of population for each race, sex, and age cell.

4.4 Census Estimate of Population

Using census data from the 5% PUMS, I calculate population estimates by age, sex, and race for 1980, 1990, and 2000. I restrict the sample to those who report their place of birth as being within the 50 states and Washington, DC. I recode race into the Black and Non-Black categories using the IPUMS RACESING variable. I choose to use this race variable as it has been created by IPUMS-USA to be historically compatible across censuses, and it makes sure to reclassify Hispanics who checked the "other" box on the census form and wrote in "Hispanic" as white.[18] I then calculate the census population estimate by sex, race, and age using the provided person weights as inflation factors.

[18]See http://usa.ipums.org/usa-action/variables/RACESING

5 Results

In this section I present the results of the undercount calculations for the native born by age, sex, and race for the 1980, 1990, and 2000 censuses. I first describe the general patterns for each year, and then discuss potential explanations for the trends and patterns. Finally, I compare my results to those reported by Census for the year 2000.

5.1 1980

Percent net census undercount for ages 0 to 11 is shown in Table 1. Recall that detailed birth records are only available back to 1968, therefore I can only calculate undercount for ages 11 and under in 1980. Results are displayed for each age year overall as well as for black and non-black males and females separately. These results are also shown in graphical form in Figure 1. The total undercount for these ages is 0.97%, approximately 385,000 individuals.[19] Overall undercount is significantly higher for blacks (4.3%) than non-blacks (0.28-0.39%), although there appears to be little difference between females and males within the two races.

When considering the pattern across ages and races, it is noticeable that the undercount for young children (ages 0-3) is much higher than for older children (ages 4-7), especially for blacks. Among the oldest children for whom I calculate undercount, the overall undercount is much lower than for younger children. There also appears to be some evidence of age rounding, as there are more 10-year-olds reported in the Census than expected based on DA estimates for all four race/sex groups. Further note the relatively high undercount of 8-year-olds compared to surrounding ages. I will return to this phenomenon in a later section.

[19]The components of the 1980 undercount calculation by age can be found in Appendix Table A.5.

5.2 1990

Results for the 1990 census are shown in Table 2 and Figure 2, with their underlying components in Appendix Table A.6. As we have move forward another 10 years in time, in 1990 undercounts can be calculated for ages 0 through 21. Overall, this population is undercounted by 3.60%, with blacks undercounted at a higher rate than non-blacks (8.5% versus 2.7%), and again with little difference between the sexes within each race group. The most striking result is the massive undercount of infants (those under the age of 1) for all four groups. The census misses 20% of all non-black and over 30% of all black infants when compared to demographic analysis estimates of this population. The Census Bureau attributes this undercount to a poorly-designed age question on the 1990 form, an issue I discuss in more detail later. Turning to older age groups, we see that ages 1-11 are undercounted at a much higher rate than in the 1980 census. Ages 8 and under are undercounted at approximately twice the rate as their peers ages 9 to 17. While less apparent than in 1980, there appears to be some evidence of age rounding at age 10, especially among non-blacks. Eighteen-year-olds, who were 8 years old in 1980, are also missed at a higher rate than those ages 17 and 19, similar to the pattern their cohort displayed in 1980. Note that the undercount starts to increase rapidly above age 18, especially for black males.

5.3 2000

Percent net undercounts in the 2000 Census for ages 0-31 are displayed in Table 3 and Figure 3, with their components in Appendix Table A.7. The overall undercount for these ages is 2.16%, but most apparent is the rapid increase in undercount for black males over age 18. While the massive undercount of infants in 1990 does not recur in 2000, those under the age of 4 are still undercounted at a much higher rate (around 5% overall) than those aged 4-8 (closer to 2%). Again we see evidence of age rounding at 10. However, the overall population of 12-20 year olds are *overcounted* by a small amount. Above age 20, undercount increases

once again but the pattern across ages is more of a sawtooth-like shape than a consistent upward trend, especially for females. In addition to the rapid increase in undercount for black men, non-black men also experience a large increase in undercount over age 20. Those aged 28 are still undercounted at a higher rate than 27- and 29-year-olds, but this pattern does not appear as anomalous as that for 8-year-olds in 1980 and for 18-year-olds in 1990, as those aged 25 and 26 are undercounted at a rate similar to 28-year-olds in 2000.

5.4 Discussion

The most striking result noted above is the very large undercount of infants (those less than 1 year old) in 1990. Fortunately, the Census Bureau noticed this problem almost immediately and adjusted their national, state, and county tabulations for the error, although the 5% PUMS has not been corrected. This undercount arose due to a poorly worded age question on the 1990 census enumeration form. The age question asked those filling out the form to enter each individual's age at last birthday as well as their year of birth. It was not clear that this should be age at last birthday as of April 1, 1990, and so those who filled out the census form later in the year had a tendency to report their age as one year older than it would have been on April 1. For most single years of age, these errors offset, but, according to Census, "the problem is most pronounced at age 0 because persons lost to age 1 may not have been fully offset by the inclusion of babies born after April 1, 1990 and because there may have been more rounding up to age 1 to avoid reporting age as 0 years." (Bureau, 1992) Although the age question was worded similarly in 1980, this problem did not arise as the question also asked for month of birth, which helped with the enumeration of those less than 1 year of age. In 2000, the problem was avoided as the question specifically asked for age as of April 1, 2000, instead of age as of last birthday. The modified 1990 census counts issued by the Census Bureau added an additional 730,000 infants to the total count, an increase of 22.7%, but only added 81,052 individuals to the total U.S. population (an increase of only

0.03%), as many other age groups were estimated to be overcounted.

Unlike the undercount of infants in 1990, the relatively high undercount of children under age 10 in all three censuses is not easily explained. Several papers on the undercount of children, both by individuals at the Census Bureau and outside, have called attention to this undercount and offered potential explanations. These fall into two major categories: those related to the design of the census enumeration form and the way in which individuals fill it out, and those involving the structure and situation of households that tend to contain young children. The census form only contains room for complete demographic information for the first six people in the household. Census has noted that individuals tend to fill out the form for household members in reverse order of age, meaning if there are more than six members in a household, the information for the youngest members would not be included on the initial form, and would have to be collected in later follow-up interviews. Even if there is enough room on the form for all household members, the individual filling it out may tire of answering so many questions before getting to the information on the youngest household member (O'Hare, 2009). Householders also may not follow Census guidelines on who to include as a household member, which could impact children disproportionately. For example, a child could be living with his or her grandparents, who may believe the child should be counted in their parents' household, or could be in a more complicated living situation such as splitting time between two households. Children are also more likely to live in households the Census Bureau identifies as "Hard to Count" (HTC), such as large and/or complex households or those with complicated living arrangements, relative to other groups such as the elderly (Robinson and West, 1999). Households in these situations could be entirely missed, meaning children are undercounted disproportionately. Note that the explanations the authors pose for the undercount of children have not been empirically tested.

Along with the high undercount of children, causes of the large undercount of men over

age 20, especially black men, have been investigated by others. Two studies conducted by the Census Bureau using Post Enumeration Surveys of small areas after the 1990 census find that black males are undercounted due to their low availability and visibility in their neighborhood and their low socioeconomic status and high unemployment (Durant and Jack, 1993) They are also undercounted because many young black men live alone, making it easy to miss their household entirely (Brownrigg and Wobus, 1993). Young black men also have a high rate of incarceration, but the incarcerated population is included in the census, making it unlikely that this is the cause of the undercount. The relative undercount of black men has been long acknowledged as a potential problem, especially when computing mortality and marriage rates by race (Lichter et al., 1991; Geronimus et al., 2001; Raley, 2002), although adjusting for the undercount has not been found to make much of a difference when computing these rates.

I also pointed out the relatively high undercount rate of 8-, 18-, and 28-year-olds in the 1980, 1990, and 2000 censuses, respectively. As these three groups are the same birth cohort (those born in census year 1971), they either were more likely to be undercounted as a cohort than their peers one year older or younger, or there was an error in the enumeration of the Vital Statistics records for their cohort. I find the last explanation to be more likely, but have yet to find evidence of this. As the largest component of the DA estimate of this cohort is births, it is likely an overcount of the number of births recorded in that year. However, looking at the components of the DA population estimate in Table A.5, the number of births recorded for 8-year-olds in 1980 does not seem to be especially high compared to the number of births recorded for 7- and 9-year-olds.

5.5 Comparison to Census

In this section, I explore how my undercount results for the native-born population compare to undercount estimates published by the Census Bureau. Ideally, I would compare my

results for all three census years, but unfortunately the reports on undercount for the 1980 and 1990 censuses I have found so far only contain estimates for 5-year age groups, not single year of age. Fortunately, a report by Robinson (2010) contains not only estimates of undercount by single year of age, but also the components used in the calculation of population undercount, such as births, deaths, and immigration. As the availability of this information provides a straightforward means of comparison between my results and those of Census, I choose to limit the comparison to the year 2000, fortunately also the year for which I can calculate undercount for the largest set of ages. Unfortunately, I was only able to find undercount numbers from Census for the entire population by single year of age, not for race or sex groups, so I am only able to compare estimates for the population as a whole.

The Census undercount results and components for ages 0-31 are displayed in Table 4. This table is a direct reproduction of Appendix Table 2 in Robinson (2010) for the ages for which I also calculate undercount. As Census seeks to calculate undercount for the entire resident population, not just the native born, this table also includes columns for categories such as legal immigration and temporary migrants in addition to births and deaths. The final column, labeled "Percent Difference" is the Census estimate of undercount for the resident population.

Using the birth and death numbers from Census displayed in Table 4, I calculate a measure of undercount for the native born population analogous to the measure I calculate. My results and these Census estimates of undercount for the native born are displayed in the first two columns of Table 5. Encouragingly, Census' and my results are very similar, with my estimate of undercount for this population only 0.1 percentage points higher than Census' (2.16% vs. 2.06%). Comparing the results for individual ages, I estimate a higher undercount for infants and 10- and 11-year-olds than Census, but our estimates of undercount for ages 1-9 are virtually identical. Estimates for 12- through 16-year-olds are also very similar, while my estimate of undercount for ages 17-19 is slightly lower than Census'. For all the ages

over age 19 except age 27, Census' estimate of undercount is lower than my own. As we are supposedly getting our birth and death numbers from the same sources, it is unclear why there are any differences between our estimates. The only differences I can explain are those for infants and for those ages 16 and over. Robinson (2010) states that the birth numbers for the years 1999 and 2000 available at the time their demographic analysis was conducted were preliminary, therefore I suspect the difference in our estimates of undercount for infants is primarily due to my use of revised birth records for these years.[20] Ages 16 and over in 2000 had their birth estimates adjusted for underregistration of births, and as I do not know the exact method Census used to do this, I attribute our difference in birth estimates for these years to differences in our methods of adjustment. Despite these differences, it is comforting to know that my estimates and those using data from the Census Bureau are similar.

Less comforting is the striking dissimilarity between both of these estimates of undercount for the native born and Census' estimate of undercount for the population as a whole. These estimates are reproduced in the third column of Table 5. Both my and Census' estimates of the undercount for the native-born population are much higher than the estimates for the population as a whole for nearly all ages, as much as over 5 percentage points higher in some cases. Census estimates the undercount for ages 0-31 in the 2000 census at only 0.08%, whereas the native-born population is undercounted 2.06% using Census' measures of births and deaths. Taken at face value, as the difference between the entire population and the native-born population is the foreign-born population, this difference implies that the foreign-born population is undercounted at a lower rate (or perhaps even overcounted) compared to the native-born population. While entirely possible, this makes little intuitive sense. As a large part of the foreign-born population is made up of illegal immigrants, who likely are very hard to count in the Census due to their tendency to fall in the transient,

[20]The comparisons of my estimates of births and deaths with those of Census are shown in Appendix Table A.8.

"hard to count" population as well as their fear of discovery and deportation, it is hard to imagine that this population would be undercounted less than the native-born population.

Assuming that the foreign-born population is not undercounted at a lower rate than the native-born population, there are two other potential explanations for this result. First, the Census Bureau could be underestimating the size of the foreign-born population in their demographic analysis estimates of the population. As the Bureau itself admits that the immigration components of the calculation are subject to "much uncertainty" (Robinson, 2010), this is entirely possible, although very hard to prove. The other explanation is that the demographic analysis estimate of the native-born is too high due to the assumption of zero native-born emigration. To investigate the plausibility of this explanation I perform the following thought experiment: how large would native-born emigration have to be in order for the native-born population to be undercounted at the same rate as the entire population? Using my DA estimates of the native-born population, I calculate that 1,077,079 native-born individuals under the age of 31 must have left the United States between their date of birth and April 1, 2000. This amounts to just under 1% of the estimate of the native-born population in Census 2000. Could native-born emigration be plausibly that high? The Census Bureau estimated total emigration of the native-born was 27,000 annually between 1970 and 1990, and 48,000 annually from 1990-2000 (Passel and Robinson, 1988; Gibbs et al., 2003).[21] Assuming that the probability of emigration is independent of age, I estimate that these annual rates would have led to total emigration of just under 280,000 native-born individuals under the age of 32 before the 2000 census. This number is just over a quarter of the size of out-migration needed to make the undercount of the native-born equivalent to the Census Bureau's estimate of undercount of the entire population. Therefore, I conclude that the difference between the estimate of the undercount of the native-born population and the

[21]Later work revised the 1990-2000 figure down to 18,000 annually (Gibbs et al., 2003). I use the larger figure in my calculations as it places an upper bound on the size of out-migration.

entire population is not primarily due to emigration of the native born, and is more likely due to an underestimate of the size of the foreign-born population by the Census Bureau.

6 Undercount by State of Birth

After confirming that my estimates of undercount for the native-born population are consistent with those reported by Census, I now estimate undercount for a category not previously reported by Census: by state of birth for the native born.[22] In this section I briefly describe the methodological differences between the nationwide and state of birth analyses, then report my results by state of birth for the 1980, 1990, and 2000 censuses. Finally, I show the implications the undercount has when comparing black/white mortality differentials by state of birth.

6.1 Methods

The construction of the birth and death datasets for the state of birth analysis is very similar to that of the nationwide dataset, with a few minor exceptions. First, I can only perform calculations for those born in 1979 and later due to the lack of state of birth on the death records prior to 1979. I calculate undercount for each state of birth by single year of age and race (black and non-black), but not by sex as the sample sizes for some states and race combinations already get very small. Further, recall that there was little difference in the nationwide results across the two sexes within race category until after the age of 18, and due to the data limitations described above, I can only calculate undercount for 20-year-olds and under. I therefore doubt that not calculating undercount by sex obscures any important trends in the undercount within state of birth and race for this age group.

The second way in which my estimation of the undercount by state of birth differs from the

[22] I estimate undercount by state of birth, not state of residence. Demographic analysis cannot be used to estimate undercount by state of residence without accurate measures of interstate migration. The Census Bureau uses Post-Enumeration Surveys to estimate undercount by state of residence.

nationwide calculation is I calculate standard errors for my demographic analysis estimates of population. I did not need to do this for the nation as a whole as all the information I used came from a true census, whether of the population as a whole, or of births and deaths. In the 1980, 1990, and 2000 censuses, the state of birth question was not asked of the entire population, but instead was only included on the so-called "long form", given to a probability sample of 5% of the population. This means that estimates of population by state of birth from the census could be biased estimates of the true population by state of birth simply due to sampling variation. This is particularly a problem for small states. Using my DA estimates by state of birth (which, under my assumptions, are still a true census of population by state of birth), I determine whether or not the difference between the census and DA estimates of population is statistically significant by the following method.

I first calculate the fraction of the native-born population in the age group of interest (infants in 1980, ages 0-10 in 1990, and ages 0-20 in 2000) that reports being born in each state and the District of Columbia. The calculation is done for the two race groups separately. Using the "STRATA" and "CLUSTER" variables provided by IPUMS, I calculate the variance of each state's fraction using the suggested STATA code.[23] The method suggested by IPUMS accounts for the complicated sampling design of the census long form, which resulted in some population groups having a higher probability of receiving the form than others. I then use the calculated fractions and variances to form estimates of the total census population by state of birth and its variance. Using this variance, I can test the statistical significance of the difference between the DA and census estimates by seeing whether or not the DA estimate falls within the 95% confidence interval of the census estimate, as by definition the DA estimate has a standard error of zero.

[23] See the IPUMS documentation on variance estimation with the IPUMS, http://usa.ipums.org/usa/complex_survey_vars/userNotes_variance.shtml, and the user note by Davern and Strief (2008).

6.2 Results

Tables 6, 7, 8, and 9 contain estimates of undercount by state of birth, along with Census and DA population estimates, for 1980, 1990, and 2000. Results are calculated for the full set of ages available in each Census. The 1980 results are therefore for those under age 1 only, the 1990 results are for ages 0-10, and the 2000 results for ages 0-20. Results are sorted from highest undercount through lowest undercount (or highest overcount). The stars (**) indicate a statistically significant difference between the DA and census estimates of the population for this state of birth, meaning that the calculated undercount is significantly different from zero.

The 1980 results are simply a measure of the undercount of infants by state of birth. Recall from Table 1 that native-born infants were overcounted nationwide by 0.81% in the 1980 census, although blacks were undercounted by around 6%. For non-blacks, only the District of Columbia has a statistically significant undercount (43%). All other statistically significant values are overcounts. Note that this could be due to people filling out their census form later than April 1, and including infants on the form that were born after April 1. The story is quite different for blacks, with many states having significant levels of undercount, notably California (16.2%) and Florida (9.9%). A few of the overcounts are also statistically significant, including Arkansas, a state with a relatively large black population, with an overcount of black infants of over 11%. I attribute the very large significant overcount of blacks born in Idaho of 335% to misreporting of state of birth on the census, as there are so few blacks born in this state.

The 1990 and 2000 results are more informative, as they measure undercount for a larger age group. Very few states have populations aged 0-10 that are overcounted in the census in 1990, as can be seen in Table 2. Many more states in this year have significantly different census and DA population estimates than in 1980. As the very large undercount of infants in the 1990 census could be overly influencing the total undercount rate for this

population, I also compute undercount by state of birth excluding those under the age of one, as can be found in Table 8. The size of the undercount is reduced substantially for both blacks and non-blacks, and more states have statistically insignificant levels of undercount, but even excluding infants, many states have significantly undercounted native-born populations. Further note that none of the overcounts for non-blacks and only ones for blacks (Washington) are statistically significant, and two of the very largest states, Texas and California, are tied for the third-highest rate of undercount for non-blacks (4.38%).

The 2000 results cover ages 0-20, and the overall undercount level for both blacks and non-blacks is much lower than in the 1990 census. Among non-blacks, none of the overcount rates are significant, although for blacks the overcount rates in states with small black populations are statistically significant. Notice once again that some of the very largest states (including California, Florida, and Texas) have some of the highest undercount rates for both non-blacks and blacks. The fact that these three states display very high undercount rates for non-blacks is surprising. These three states are known for having large Hispanic populations, classified here as non-black. Many of these Hispanics are illegal immigrants from South and Central America. Note that these Hispanics, as they are not native born, would not show up in the Vital Statistics birth records. If anything, the presence of these illegal immigrants in these states should make one expect the non-black population to be overcounted, as if they were to respond to the Census at all, these immigrants would be likely to list their state of birth as the state in which they currently reside (Texas, Florida, or California) in order to hide their illegal status. Therefore, the sizable undercount of the non-black population in these states is surprising. A possible explanation for the undercount is a large return migration of Hispanics born in these states to the home country of their parents, something that unfortunately cannot be measured using administrative data. However, while return migration could explain the undercount of the non-black population in these states, it is a less likely explanation for the large undercount of blacks born in these three states.

6.3 Implication: Mortality Rates

The results discussed above indicate that the population by state of birth is significantly over- or undercounted by the census for most of the states for the age groups studied. I now turn to the implications of the undercount by state of birth for a topic of interest for economists and demographers: the ratio of black to non-black mortality rates by state of birth. I calculate this ratio first using Census estimates of the population by state of birth for the denominator, and then using DA estimates. The numerator is the number of deaths occurring in each Census year. Rates and ratios are calculated by race and by age group (infants, 1- and 2-year-olds, 3- and 4-year-olds, etc.). I restrict my analysis to the ten most populous states for the ages analyzed in each year. I do this as these states are less likely to be affected by measurement error in race or state of birth than smaller states. Many small states also have a mortality rate of zero for blacks for specific age groups. The ratios of black to non-black mortality rates by state of birth for infants in 1980 are shown in Table 10. Using the Census denominator, black infants born in California have a mortality rate 2.13 times higher than the non-black mortality rate. This number decreases to 1.76 times using the DA denominator, a difference of 0.37 percentage points. Note that if blacks and non-blacks are undercounted (or overcounted) at approximately the same rate in a state, this ratio will not change (even if the actual mortality rates change). The ratio changes when blacks and non-blacks are undercounted at different rates within the same state of birth. For example, California-born non-black infants were overcounted in 1980 at a rate of 1.28%, while blacks were undercounted by 16.23%. These differential undercount rates lead to the decrease in the ratio of black to non-black mortality rates, as the non-black mortality rate was underestimated and the black mortality rate overestimated using the Census estimate of population.[24]

[24]Complete census and DA mortality rates by age group and state for 1980, 1990, and 2000 are shown in Appendix Tables A.9 through A.26.

It is not surprising that the ratio for infants changes substantially for the ten most populous states in 1990, shown in Table 11. All infants were badly undercounted, but blacks much more so than non-blacks. The changes do vary across states, however, with Texas' ratio decreasing 0.20 and New Jersey's 1.19. Overall, Texas experiences the lowest change when moving from Census to DA estimates of population for all age groups, even though the Texas-born population was undercounted relatively highly for these age groups. Black and non-black Texas natives were undercounted at similar rates (4.38% for non-blacks and 5.56% for blacks, excluding infants). New Jersey natives of the same ages, in contrast, were undercounted 1.24% for non-blacks and 18.40% for blacks. Note that almost all of the ratios decrease (with the exception of that for 7- & 8-year-olds in Michigan) when the DA denominator is used.

This is not the case in 2000, however, as can be seen in Table 12. For the majority of states the ratios don't change much when the DA estimates of population are used, again despite the fact that some of these states, like California and Florida, have high undercount rates. Those states experiencing the largest changes are New Jersey, Massachusetts, and Illinois. In these states, the ratio of black to non-black mortality rates declines when using the DA denominator for almost all age groups.

The results for all three years indicate that using the census population as a denominator when calculating mortality rates by state of birth usually overstates the ratio of black to non-black mortality rates. The true black mortality rate for individuals born in these states of birth is much lower relative to the non-black mortality rate than what is indicated by the census rates.

7 Undercount of Infants in 1990 by Age and Education of Mother

I now return to the large undercount of infants (those less than 1 year of age) in 1990 to examine the pattern of undercount by mother's age and education. As the high infant

undercount was caused by a poorly-worded age question, I form some hypotheses about what the pattern of undercount should look like by mother's age and education. As better-educated individuals are expected to be more likely to be able to decipher the age question's wording and answer it correctly, I expect undercount of infants to decrease with the education of the mother, or at least be highest among the least educated. The expected pattern of undercount by age is less clear. It is well known that better educated women tend to begin their childbearing later, so if I was measuring undercount by age at first birth, I would expect the undercount to decline with age. However, I am measuring undercount by age of mother, no matter how old the mother was when she had her first child. In this case, I expect the undercount to be highest for young mothers, but have no prediction for the undercount pattern above ages 20-25.

In constructing the sample of infants by mother's education, I run into a few problems. First, in 1989 and 1990 not all states reported mother's education on the birth certificate, and within state not all areas report mother's education.[25] To correct for this fact, I calculate the fraction of births missing mother's education by state of birth, and deflate the census population of infants by this fraction.[26]

Calculating the census population of infants by characteristics of their mothers is unfortunately not simple. To identify an infant's mother, I use the IPUMS variable MOMLOC, which identifies the person number of an individual's mother if she is present in the household. MOMLOC is a variable constructed by IPUMS on the basis of relationship to the household head, age, marital status, and the order in which individuals are listed on the census form. Unfortunately, these variables are not enough to identify the mother of all infants, especially those in large, multi-generational households. In the 1990 IPUMS, 7.27% of all

[25]Mother's age and education are not on the death certificate at all. However, matched infant birth-death records are available for 1989 and 1990, so I use these records to compute infant deaths by mother's age and education.

[26]Here I make the assumption that mother's education is missing for an equivalent number of infant deaths within state of birth.

children under 1 year of age do not have their mother identified by the MOMLOC variable, 6.07% of non-black children and 15.15% of black children. These infants could fall into one of several categories: their mother could indeed be present in the household but cannot be identified using the criteria used by IPUMS, they could be living with an extended family member such as a grandparent, or they could be in a foster household. MOMLOC makes no distinction between biological and adoptive or step-parents, so in these cases I could be assigning the "wrong" mother to an infant, as the birth certificate lists the age and education of the biological mother. The largest problem category here is likely adoptive parents, as I expect very few infants live with their stepmother. In the case of adoptive mothers, I likely am overstating the children born to older mothers (as women who adopt children tend to be older) and understating the children born to younger mothers (as those mothers who give their children up for adoption tend to be younger). I will discuss in more detail how this affects my results below. Instead of attempting to assign a mother to those infants with no mother identified using MOMLOC, I keep them as missing. Therefore, my total census population of infants by mother's age and education is understated by approximately 7.27%, 6.07% for non-blacks and 15.15% for blacks.

Fortunately, unlike education, mother's age is never missing on the birth records in 1989 and 1990. Mother's age on the birth certificate ranges from 10 to 49. However, probably due to following the rules of MOMLOC, the age of women matched as mothers to infants in the 1990 census ranges from 15 to 90. To avoid this problem, I exclude all infants in the census with mothers over age 49 and all births in the Vital Statistics records to mothers under age 15. This drops $3,631$ infants with young non-black mothers, $4,726$ infants with young black mothers, and $6,592$ and $2,686$ infants with non-black and black mothers assigned to them that are older than 49, respectively. The results for undercount of infants in 1990 by age and race of the mother is shown in Table 13. Results are shown for non-black and black mothers separately. As predicted, the highest undercount rates for both blacks and

non-blacks are for the youngest mothers. Counting error decreases steadily as age increases, reaching a minimum at age 36 for non-blacks (0.42% undercount) and 38 for blacks (5.46% undercount). Infants born to mothers over age 40 are overcounted at an enormous rate. This is likely due to MOMLOC assigning an infant to a foster or adoptive mother, or a grandmother (who has stated on her Census form that she is the mother of the child). Adoptions probably account for part of the undercount of infants born to young mothers as well. Overall, the undercounts for infants is 25.07% for non-blacks and 42.31% for blacks, higher than the overall undercount of infants in 1990 due to the large percentage of infants not assigned a mother in the census.

The undercount results for infants by mother's education is shown in Table 14. Education is measured in three categories: less than high school, high school graduate, some college, and college graduate and above. I display both the raw census count and the census count deflated by state of birth for the fraction of births missing mother's education. This should account for differences in the education distribution across states with missing and non-missing education, assuming that education is missing at random within states. As predicted, the largest undercount of infants is for those with mothers with less than a high school education. High school graduates are undercounted slightly less, but the surprising thing is infants with mothers with some college education are *overcounted*, while those with college-educated and above mothers are undercounted by a significant margin. The overcount of infants with a mother with some college education could be partially accounted for by mothers giving birth while they had only a high school degree, and then entering college after the baby was born and entering "some college" as their education on their census form. However, this population is likely to be quite small. Another explanation would be a higher rate of overstating one's education (that is, an individual reporting she has a college degree when really she only has two years of college) on the birth certificate than on the census, but this seems unlikely as birth certificates are usually filled out in person (the nurse/doctor asks

the mother in person how much education she has) and the census is filled out anonymously.

8 Conclusion

This paper uses demographic analysis to estimate census undercount of the native-born population by single year of age for those born in 1968 and later in the 1980, 1990, and 2000 censuses. Results generally reveal a relatively high undercount of young children, especially in the 1990 census, small errors in counting youth ages 10-20, and a sharp increase in undercount for black men in their 20s. Comparison to results published by the Census Bureau for the year 2000 shows the undercount of the native-born to be higher than for Census' estimates for the entire population. I attribute this difference to underestimation by Census of the foreign-born population for use in their DA measures of the total population, as emigration of the native-born would have to be much higher than expected to make up the difference in undercount.

One of the most striking results from the nationwide analysis is the very large undercount of infants in the 1990 census. Caused by a poorly worded age question on the enumeration form, Census has corrected for the undercount in its area population tabulations, but not in the Public Use Micro Samples from which my population estimates come. Analysis of this undercount by mother's age and education shows undercount decreases with increasing age and education, although infants with mothers with a college education and above are undercounted at a higher rate than those with mothers who only have completed some college.

Results from the state of birth analysis show large variation in undercount across states for all three censuses. Almost all states have statistically significant levels of undercount, and some of the largest states, like Texas, California, and Florida, have some of the highest undercount rates for all three censuses. Using DA estimates of population to compute mortality rates by state of birth generally reduces the ratio of black to non-black mortality

rates, although the amount of reduction depends on the relative undercount of blacks to non-blacks within each state of birth.

Census undercount of the native-born population is a significant problem. Researchers using census data should be aware of the issue, and if not correct for it, understand how the undercount could affect their results. Future work on how the undercount varies with population characteristics beyond age, race, and sex would be very helpful in informing this issue.

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9 Tables and Figures

Table 1: Percent Net Census Undercount by Age for the Native-Born Population, Total and by Race and Sex, 1980

		Male		Female	
Age in 1980	Total	Non-Black	Black	Non-Black	Black
0	-0.81	-1.56	6.16	-2.84	6.31
1	2.86	1.82	8.49	1.59	8.97
2	3.08	1.92	8.31	2.12	8.85
3	1.67	0.72	8.36	0.37	6.57
4	0.60	0.14	3.98	-0.34	4.40
5	0.56	-0.04	4.02	-0.34	5.01
6	1.22	0.83	6.53	0.13	3.50
7	-0.11	-0.85	0.71	-0.18	3.28
8	3.32	2.58	5.13	3.40	5.07
9	0.26	-0.03	1.43	0.18	1.21
10	-1.03	-1.26	-2.09	-0.47	-1.69
11	0.23	0.56	0.86	-0.23	0.26
Total	**0.97**	**0.39**	**4.33**	**0.28**	**4.32**

Note: Undercount calculated using demographic analysis population estimates. Negative numbers imply an overcount. Age is age measured as of census day (April 1).

Table 2: Percent Net Census Undercount by Age for the Native-Born Population, Total and by Race and Sex, 1990

		Male		Female	
Age in 1990	Total	Non-Black	Black	Non-Black	Black
0	22.13	19.66	31.99	20.45	32.45
1	1.33	-0.25	10.89	-0.81	9.98
2	3.09	2.00	9.68	1.67	9.15
3	5.18	3.87	11.66	4.08	11.15
4	4.73	3.70	12.07	3.47	9.43
5	3.08	1.20	8.49	2.92	8.77
6	4.28	2.99	10.18	3.05	11.89
7	3.54	2.35	8.04	2.81	9.30
8	6.20	5.03	11.01	5.44	11.83
9	1.47	0.31	5.61	0.91	6.49
10	0.95	-0.25	5.07	0.47	5.61
11	1.47	0.48	5.23	0.91	5.67
12	2.17	1.69	4.88	1.62	4.85
13	0.98	0.51	3.14	0.41	4.24
14	1.86	0.95	2.54	2.11	4.86
15	1.21	0.68	4.01	0.62	4.35
16	0.61	-0.19	3.09	0.52	2.86
17	1.53	0.07	0.98	2.75	3.64
18	3.92	4.32	6.03	2.79	5.50
19	1.01	1.57	5.40	-0.61	2.08
20	0.66	0.62	6.42	-0.84	3.52
21	3.69	3.54	11.59	1.76	7.54
Total	**3.60**	**2.65**	**8.54**	**2.70**	**8.38**

Note: Undercount calculated using Demographic Analysis population estimates. Negative numbers imply an overcount. Age is measured as of Census day (April 1).

Table 3: Percent Net Census Undercount by Age for the Native-Born Population, Total and by Race and Sex, 2000

		Male		Female	
Age in 2000	Total	Non-Black	Black	Non-Black	Black
0	6.30	6.20	8.66	5.14	10.19
1	5.39	5.29	6.33	4.81	7.83
2	5.81	5.67	6.89	5.24	8.30
3	4.65	4.08	6.73	4.68	5.33
4	2.45	2.45	0.52	2.71	3.21
5	2.23	1.86	0.96	2.60	3.70
6	2.88	2.83	3.56	2.31	5.06
7	1.90	1.72	2.16	1.92	2.48
8	1.86	1.97	3.64	1.35	1.89
9	0.51	0.11	0.66	0.82	0.85
10	-0.13	-0.44	-0.20	-0.16	1.59
11	1.19	0.14	2.18	1.66	3.21
12	-0.45	-0.85	0.48	-0.39	0.36
13	-0.73	-0.79	-2.76	-0.52	0.60
14	-1.38	-1.44	-1.22	-1.12	-2.60
15	-0.19	-0.37	-0.95	-0.18	1.49
16	0.32	0.27	-0.06	0.46	0.20
17	1.06	0.15	1.44	1.95	1.06
18	-1.08	-0.52	-0.95	-1.63	-1.39
19	0.14	1.37	2.12	-1.08	-2.28
20	-1.30	-1.67	3.74	-2.11	-0.38
21	0.41	0.78	4.57	-1.05	1.66
22	2.61	2.79	8.83	0.89	4.31
23	1.86	1.42	11.93	0.40	1.58
24	1.55	1.85	10.61	-0.20	-0.13
25	4.49	4.76	14.56	2.51	3.29
26	5.32	5.66	15.23	2.87	6.20
27	3.28	4.58	11.82	0.61	1.53
28	5.28	5.13	15.19	3.39	6.18
29	4.52	5.03	13.76	2.28	4.65
30	3.47	3.70	8.65	2.52	2.29
31	5.60	6.25	13.48	3.79	4.23
Total	**2.16**	**2.15**	**4.97**	**1.49**	**2.76**

Note: Undercount calculated using demographic analysis population estimates. Negative numbers imply an overcount. Age is measured as of census day (April 1).

Table 4: Components of Population Used to Construct the Demographic Analysis Estimates of the U.S. Resident Population as of April 1, 2000: Ages 0-31

Age	Births (+)	Deaths (-)	Legal Immigration (+)	Net Civilian Citizens (+)	Net Puerto Rican Migration (+)	Residual Foreign Born (+)	Legal Emigration (-)	Temporary Migrants (+)	Net Armed Forces Overseas (-)	DA total resident population	Census total population	Difference between DA and Census population	Percent Difference
in 2000	1	2	3	4	5	6	7	8	9	10=f(1-9)	11	12=10-11	13=12/10*100
Total	118,068,374	2,320,435	5,436,641	364,468	210,595	7,030,412	1,897,987	519,807	186,347	127,225,534	127,120,147	105,387	0.08
0	3,961,602	23,493	2,485	-1,196	86	67,138	1,504	1,146	0	4,006,264	3,805,648	200,616	5.01
1	3,945,403	29,679	12,513	-3,065	256	70,347	4,564	7,186	0	3,998,397	3,820,582	177,815	4.45
2	3,898,412	30,747	18,341	-3,111	430	86,624	7,720	6,344	0	3,968,573	3,790,446	178,127	4.49
3	3,882,831	32,072	22,931	-2,678	616	90,852	10,950	13,673	0	3,965,203	3,832,799	132,404	3.34
4	3,898,606	34,140	28,645	-2,692	820	110,749	14,237	10,815	0	3,998,567	3,926,323	72,244	1.81
5	3,930,609	36,739	33,324	-2,055	1,005	107,611	17,763	11,057	0	4,027,050	3,965,103	61,947	1.54
6	3,992,092	39,662	39,003	-461	1,162	121,141	21,513	7,887	0	4,099,649	4,019,705	79,944	1.95
7	4,045,919	42,623	47,522	1,473	1,330	130,788	25,269	9,151	0	4,168,291	4,118,147	50,144	1.2
8	4,111,537	47,143	56,831	4,383	1,504	137,425	29,020	7,193	0	4,242,709	4,179,230	63,479	1.5
9	4,148,094	48,165	68,235	5,830	1,680	144,367	32,759	5,500	0	4,292,782	4,267,320	25,462	0.59
10	4,070,554	53,137	79,077	8,067	1,902	151,968	36,124	7,434	0	4,229,741	4,274,056	-44,315	-1.05
11	3,916,303	50,368	92,050	9,923	2,156	141,842	39,137	7,500	0	4,080,269	4,115,093	-34,824	-0.85
12	3,833,478	51,422	106,912	11,762	2,405	147,414	42,160	5,701	0	4,014,090	4,075,842	-61,752	-1.54
13	3,761,690	52,224	118,711	13,615	2,632	147,407	45,175	4,357	0	3,951,013	4,010,850	-59,837	-1.51
14	3,767,164	54,698	134,226	15,057	2,859	149,041	48,165	5,205	0	3,970,691	4,052,231	-81,540	-2.05
15	3,687,597	56,467	148,374	16,173	3,355	159,221	52,056	3,582	0	3,909,779	4,019,404	-109,625	-2.8
16	3,634,527	58,994	161,446	17,066	4,120	171,000	56,840	6,509	0	3,878,834	3,975,021	-96,187	-2.48
17	3,691,277	63,793	174,760	17,598	4,880	205,011	61,579	7,055	64	3,975,144	4,046,012	-70,868	-1.78
18	3,645,966	67,999	190,259	17,392	5,658	231,526	66,291	16,855	3,345	3,970,020	4,051,598	-81,578	-2.05
19	3,618,254	74,347	206,324	16,758	6,429	261,066	70,996	27,952	11,336	3,980,104	4,127,855	-147,751	-3.71
20	3,537,447	79,733	228,143	14,970	7,943	289,941	78,305	32,007	16,968	3,935,446	4,049,448	-114,002	-2.9
21	3,378,569	82,466	241,322	13,927	9,108	297,330	83,550	26,977	18,108	3,783,110	3,841,082	-57,972	-1.53
22	3,327,844	87,245	245,669	14,553	10,214	329,488	88,588	31,692	17,965	3,765,662	3,758,648	7,014	0.19
23	3,226,434	91,656	252,603	15,552	11,312	353,707	93,444	28,013	16,103	3,686,419	3,673,582	12,837	0.35
24	3,155,250	97,036	259,635	16,622	12,393	380,155	98,153	32,231	15,103	3,645,995	3,641,241	4,754	0.13
25	3,179,680	103,301	273,623	16,887	13,683	401,125	101,857	28,560	14,527	3,693,873	3,744,539	-50,666	-1.37
26	3,126,844	109,521	295,167	16,735	14,519	392,867	104,578	22,636	13,647	3,641,022	3,619,660	21,362	0.59
27	3,238,101	120,485	320,359	17,231	15,302	402,881	107,241	32,577	13,009	3,785,716	3,789,800	-4,084	-0.11
28	3,481,912	135,132	345,219	19,455	16,043	392,437	109,874	24,142	13,856	4,020,347	3,984,812	35,535	0.88
29	3,764,783	150,477	371,459	22,748	16,777	366,067	112,510	27,814	12,066	4,294,594	4,242,525	52,069	1.21
30	3,649,839	155,173	411,458	28,735	18,653	324,900	115,807	32,821	10,612	4,184,814	4,289,970	-105,156	-2.51
31	3,559,756	160,298	450,015	27,214	19,363	266,976	120,258	28,235	9,638	4,061,366	4,011,575	49,791	1.23

Note: Direct reproduction of values for Ages 0-31 in Appendix Table 2 in Robinson (2010). Total is total calculated for these ages by author.

Table 5: Undercount by Age, Census and Author's calculations, 2000

Age in 2000	Johnson Native Born	Census Native Born	Census Entire Population
0	6.30	5.48	5.01
1	5.39	5.41	4.45
2	5.81	5.82	4.49
3	4.65	4.64	3.34
4	2.45	2.45	1.81
5	2.23	2.23	1.54
6	2.88	2.88	1.95
7	1.90	1.90	1.20
8	1.86	1.82	1.50
9	0.51	0.50	0.59
10	-0.13	-0.39	-1.05
11	1.19	0.60	-0.85
12	-0.45	-0.47	-1.54
13	-0.73	-0.72	-1.51
14	-1.38	-1.33	-2.05
15	-0.19	-0.27	-2.80
16	0.32	0.28	-2.48
17	1.06	1.39	-1.78
18	-1.08	-0.52	-2.05
19	0.14	0.26	-3.71
20	-1.30	-1.37	-2.90
21	0.41	0.30	-1.53
22	2.61	2.46	0.19
23	1.86	1.71	0.35
24	1.55	1.35	0.13
25	4.49	4.28	-1.37
26	5.32	5.04	0.59
27	3.28	3.42	-0.11
28	5.28	4.79	0.88
29	4.52	4.22	1.21
30	3.47	3.13	-2.51
31	5.60	5.27	1.23
Total	**2.16**	**2.06**	**0.08**

Note: "Johnson Native Born" is author's total net census undercount from Table 3. "Census Native Born" calculated using birth and death numbers from Table 4. "Census Entire Population" is total net undercount reported by Census in Column 13 of Table 4. For more details see Section 5.5.

Table 6: Percent Net Undercount by State of Birth, 1980 (Age 0)

	Non-Black					Black			
State	DA Population	Census Population	% Under		State	DA Population	Census Population	% Under	
DC	8,781	4,920	43.97	**	HI	557	360	35.37	**
HI	16,899	16,340	3.31		DC	11,222	8,120	27.64	**
MA	66,767	66,060	1.06		MA	5,059	3,780	25.28	**
TX	221,794	219,480	1.04		AZ	1,913	1,500	21.59	**
TN	55,173	54,800	0.68		ND	98	80	18.37	
DE	7,029	7,020	0.13		CA	40,111	33,600	16.23	**
FL	88,483	88,540	-0.06		MO	11,717	10,100	13.80	**
OR	41,608	41,900	-0.70		MT	69	60	13.04	
NC	58,748	59,240	-0.84		NV	1,202	1,060	11.81	
ND	12,527	12,640	-0.90		DE	2,039	1,800	11.72	
MN	63,930	64,600	-1.05		UT	224	200	10.71	
CA	336,620	340,940	-1.28		FL	31,129	28,040	9.92	**
GA	56,745	57,960	-2.14		KS	3,204	2,920	8.86	
AL	39,276	40,120	-2.15		VA	18,539	17,000	8.30	**
ME	15,663	16,020	-2.28		PA	20,169	18,540	8.08	**
KY	53,943	55,180	-2.29		TN	16,372	15,060	8.01	**
RI	11,404	11,680	-2.42		CO	2,205	2,060	6.58	
NH	12,646	12,980	-2.64		IL	38,927	36,380	6.54	**
MO	66,157	68,040	-2.85		NJ	18,772	17,560	6.46	**
OH	142,898	147,260	-3.05	**	CT	4,743	4,460	5.97	
MI	118,539	122,180	-3.07	**	NM	634	600	5.36	
OK	42,101	43,520	-3.37		NY	47,309	45,320	4.20	**
IN	77,328	79,980	-3.43	**	LA	30,135	28,880	4.16	
VA	54,716	56,700	-3.63		AL	21,907	21,180	3.32	
CO	45,227	46,940	-3.79		SC	19,561	18,920	3.28	
AK	8,517	8,840	-3.79		TX	36,830	35,840	2.69	
UT	41,597	43,220	-3.90		NC	24,688	24,060	2.54	
LA	48,463	50,600	-4.41	**	OH	22,864	22,340	2.29	
IA	45,892	48,000	-4.59	**	GA	32,005	31,300	2.20	
NY	187,775	196,640	-4.72	**	MI	23,489	22,980	2.17	
PA	137,528	144,060	-4.75	**	RI	745	740	0.67	
IL	140,396	147,240	-4.87	**	MS	21,522	21,580	-0.27	
WI	67,812	71,220	-5.03	**	MD	14,189	14,300	-0.78	
NM	23,902	25,120	-5.10		OK	4,920	4,960	-0.81	
WA	60,956	64,100	-5.16	**	KY	5,653	5,700	-0.83	
CT	33,430	35,180	-5.23	**	NH	79	80	-1.27	
KS	33,935	35,760	-5.38	**	WI	4,545	4,620	-1.65	
AZ	44,391	46,820	-5.47	**	AK	393	400	-1.78	
NJ	73,867	78,160	-5.81	**	IN	9,335	9,560	-2.41	
SD	12,716	13,480	-6.01		SD	57	60	-5.26	
MT	13,644	14,500	-6.27		OR	947	1,000	-5.60	
NE	25,181	27,000	-7.22	**	IA	1,091	1,160	-6.32	
SC	28,554	30,640	-7.31	**	WV	1,088	1,200	-10.29	
WY	8,893	9,640	-8.40		AR	8,395	9,340	-11.26	**
AR	26,781	29,280	-9.33	**	MN	1,415	1,580	-11.66	
WV	28,855	31,560	-9.37	**	NE	1,174	1,400	-19.25	
ID	19,343	21,160	-9.39	**	ME	72	100	-38.89	
MD	36,345	39,960	-9.95	**	WA	2,429	3,540	-45.74	**
MS	23,616	25,980	-10.01	**	WY	97	160	-64.95	
VT	7,246	8,040	-10.96		ID	78	340	-335.90	**
NV	10,998	12,420	-12.93	**	VT	13	80	-515.38	

Note: ** DA and census population estimates significantly different at 95% level (p-value greater than 0.05). Results sorted descending by percent undercount within race.

Table 7: Percent Net Undercount by State of Birth, 1990 (Ages 0-10)

	Non-Black					Black			
State	DA Population	Census Population	% Under		State	DA Population	Census Population	% Under	
DC	96,136	81,784	14.93	**	MT	691	466	32.56	
HI	193,500	173,915	10.12	**	ID	886	611	31.04	
CA	4,519,728	4,206,410	6.93	**	NH	1,168	872	25.34	
FL	1,283,668	1,206,083	6.04	**	AZ	26,234	20,366	22.37	**
TX	2,772,015	2,606,139	5.98	**	NJ	219,479	172,888	21.23	**
AZ	587,742	552,992	5.91	**	AK	5,654	4,511	20.22	**
ID	191,481	180,714	5.62	**	DC	122,372	98,906	19.18	**
NM	282,160	266,377	5.59	**	SD	1,039	841	19.06	
TN	605,042	577,769	4.51	**	RI	9,886	8,097	18.10	**
NY	2,213,731	2,114,995	4.46	**	KS	36,840	30,473	17.28	**
CO	550,880	526,958	4.34	**	MA	67,396	55,893	17.07	**
OR	444,367	426,162	4.10	**	CA	492,230	409,668	16.77	**
GA	684,814	656,798	4.09	**	IA	11,814	9,919	16.04	**
OK	492,570	473,167	3.94	**	MO	130,497	110,201	15.55	**
WY	92,791	89,166	3.91		NY	594,482	502,249	15.51	**
ND	133,878	128,713	3.86	**	CO	29,615	25,056	15.39	**
AL	423,215	407,537	3.70	**	HI	8,719	7,387	15.28	**
AR	290,091	280,323	3.37	**	IL	421,378	357,073	15.26	**
WA	715,750	691,935	3.33	**	DE	24,080	20,611	14.41	**
NJ	890,549	861,283	3.29	**	FL	410,622	352,283	14.21	**
SD	131,192	126,940	3.24		MN	21,005	18,073	13.96	**
LA	532,567	516,735	2.97	**	PA	238,368	205,250	13.89	**
MS	249,474	242,122	2.95	**	NV	16,705	14,463	13.42	**
NC	692,933	673,211	2.85	**	OK	55,841	48,432	13.27	**
WV	272,941	265,177	2.84	**	UT	3,070	2,676	12.83	
KS	382,933	372,083	2.83	**	OR	10,697	9,409	12.04	
CT	410,186	398,926	2.75	**	NE	14,435	12,863	10.89	
RI	137,637	133,871	2.74		ND	1,305	1,164	10.80	
SC	328,524	319,642	2.70	**	CT	57,598	51,457	10.66	**
NV	148,939	145,025	2.63		WI	59,110	52,888	10.53	**
ME	174,929	170,345	2.62		MD	184,369	165,004	10.50	**
IL	1,525,991	1,487,492	2.52	**	TN	177,482	159,489	10.14	**
VA	671,787	655,511	2.42	**	LA	329,434	299,853	8.98	**
KY	534,671	522,040	2.36	**	VA	216,621	197,961	8.61	**
VT	84,463	82,511	2.31		NC	280,448	256,969	8.37	**
MT	141,345	138,190	2.23		OH	251,730	231,032	8.22	**
UT	428,040	418,717	2.18	**	GA	370,708	341,170	7.97	**
MA	817,964	801,267	2.04	**	AL	223,350	205,577	7.96	**
AK	115,370	113,106	1.96		TX	441,184	406,651	7.83	**
NH	161,579	158,590	1.85		IN	95,797	88,444	7.68	**
MN	708,638	695,723	1.82	**	NM	6,912	6,412	7.23	
PA	1,526,977	1,499,249	1.82	**	MS	222,596	207,002	7.01	**
MO	719,545	708,184	1.58	**	WY	1,075	1,017	5.40	
NE	268,068	264,254	1.42		KY	54,585	51,830	5.05	
IN	800,543	792,787	0.97		AR	85,280	81,890	3.98	
WI	730,206	723,291	0.95		WV	10,733	10,336	3.70	
OH	1,516,522	1,506,819	0.64		SC	214,835	208,251	3.06	**
MI	1,249,208	1,241,500	0.62		MI	258,600	252,194	2.48	
DE	84,005	83,986	0.02		WA	32,809	34,833	-6.17	
MD	468,998	469,227	-0.05		ME	911	1,225	-34.47	
IA	455,085	455,369	-0.06		VT	236	500	-111.86	

Note: ** DA and census population estimates significantly different at 95% level (p-value greater than 0.05). Results sorted descending by percent undercount within race.

Table 8: Percent Net Undercount by State of Birth, 1990 (Ages 1-10, excluding infants)

	Non-Black					Black			
State	DA Population	Census Population	% Under		State	DA Population	Census Population	% Under	
DC	86,979	75,138	13.61	**	MT	625	432	30.88	
HI	175,180	160,449	8.41	**	ID	807	579	28.25	
TX	2,509,226	2,399,293	4.38	**	NH	1,028	791	23.05	
CA	4,007,667	3,832,310	4.38	**	AZ	23,306	18,244	21.72	**
NM	256,116	245,513	4.14	**	NJ	195,413	159,452	18.40	**
ID	175,865	168,762	4.04	**	AK	4,993	4,098	17.93	
AZ	524,350	503,901	3.90	**	DC	109,703	90,955	17.09	**
FL	1,137,816	1,097,952	3.50	**	CA	438,918	375,182	14.52	**
ND	123,193	119,122	3.30		KS	33,232	28,426	14.46	**
CO	501,482	486,320	3.02	**	HI	7,775	6,685	14.02	**
OR	403,159	391,058	3.00	**	MO	117,251	100,957	13.90	**
OK	451,920	438,680	2.93	**	CO	26,496	22,820	13.87	**
WY	86,441	83,943	2.89		IA	10,582	9,126	13.76	
TN	546,540	531,319	2.78	**	SD	912	788	13.60	
SD	120,297	117,290	2.50		MA	58,431	50,876	12.93	**
NY	1,987,954	1,940,866	2.37	**	MN	18,189	15,845	12.89	**
GA	614,170	600,437	2.24	**	NY	530,465	462,797	12.76	**
AL	383,331	375,178	2.13	**	RI	8,668	7,583	12.52	
KS	349,240	342,062	2.06		IL	377,851	330,830	12.44	**
WA	646,041	633,667	1.92	**	DE	21,570	18,942	12.18	**
AR	263,523	258,629	1.86		OR	9,548	8,391	12.12	
LA	489,561	481,085	1.73		NV	14,737	13,017	11.67	**
MS	227,764	224,390	1.48		FL	365,399	324,172	11.28	**
WV	250,921	247,620	1.32		PA	212,127	188,782	11.01	**
UT	392,137	387,042	1.30		OK	50,489	45,066	10.74	**
NJ	796,824	786,917	1.24		NE	12,945	11,654	9.97	
ME	158,270	156,363	1.20		UT	2,721	2,482	8.78	
MT	130,076	128,649	1.10		WI	52,108	47,655	8.55	**
IL	1,384,563	1,369,969	1.05		MD	163,589	150,241	8.16	**
SC	295,637	292,730	0.98		TN	159,101	146,156	8.14	**
VA	601,800	596,520	0.88		ND	1,199	1,114	7.09	
CT	367,945	364,818	0.85		LA	299,920	278,778	7.05	**
KY	487,535	483,568	0.81		VA	193,423	179,981	6.95	**
NE	245,215	243,298	0.78		CT	50,918	47,588	6.54	
NC	621,308	616,526	0.77		OH	225,609	211,068	6.45	**
MN	644,655	640,157	0.70		WY	980	919	6.22	
RI	123,629	122,861	0.62		GA	331,199	312,066	5.78	**
PA	1,385,011	1,378,514	0.47		AL	202,009	190,649	5.62	**
MO	653,671	650,860	0.43		TX	397,051	374,964	5.56	**
AK	104,597	104,174	0.40		NC	250,357	236,442	5.56	**
NV	131,671	131,326	0.26		MS	202,435	191,414	5.44	**
NH	144,351	144,181	0.12		IN	86,493	81,928	5.28	**
VT	76,425	76,335	0.12		NM	6,244	5,974	4.32	
MA	734,250	733,736	0.07		KY	49,405	47,677	3.50	
WI	666,173	666,358	-0.03		WV	9,820	9,631	1.92	
IN	727,005	729,083	-0.29		AR	77,530	76,391	1.47	
OH	1,379,282	1,386,849	-0.55		MI	228,671	227,872	0.35	
MI	1,133,984	1,140,884	-0.61		SC	193,235	192,582	0.34	
IA	417,231	421,805	-1.10		ME	807	860	-6.57	
MD	419,530	426,887	-1.75		WA	29,092	31,776	-9.23	**
DE	75,283	76,791	-2.00		VT	205	447	-118.05	

Note: ** DA and census population estimates significantly different at 95% level (p-value greater than 0.05). Results sorted descending by percent undercount within race.

Table 9: Percent Net Undercount by State of Birth, 2000 (Ages 0-20)

	Non-Black					Black			
State	DA Population	Census Population	% Under		State	DA Population	Census Population	% Under	
DC	162,615	147,509	9.29	**	MA	158,548	135,507	14.53	**
HI	371,031	353,997	4.59	**	DC	227,703	195,100	14.32	**
CA	9,614,645	9,193,281	4.38	**	HI	17,661	15,707	11.06	**
NV	368,174	356,743	3.10	**	RI	22,053	19,949	9.54	**
AZ	1,273,769	1,237,829	2.82	**	NJ	444,532	405,817	8.71	**
FL	2,742,132	2,665,039	2.81	**	FL	860,531	803,483	6.63	**
TX	5,592,142	5,460,968	2.35	**	PA	486,110	456,139	6.17	**
OR	872,318	851,993	2.33	**	CA	974,360	929,358	4.62	**
ND	228,676	223,899	2.09		SD	2,562	2,449	4.41	
TN	1,205,407	1,181,833	1.96	**	IL	816,680	780,800	4.39	**
GA	1,423,252	1,395,608	1.94	**	MO	257,371	246,617	4.18	**
AK	213,663	209,545	1.93		NY	1,186,364	1,145,584	3.44	**
DE	169,568	167,132	1.44		TN	358,458	346,212	3.42	**
WV	484,789	478,126	1.37		DE	48,987	47,579	2.87	
WA	1,440,264	1,420,952	1.34	**	NC	573,378	559,351	2.45	**
CT	800,071	791,106	1.12		MD	399,525	390,830	2.18	
VA	1,359,347	1,344,717	1.08		TX	875,983	859,111	1.93	**
UT	829,727	820,897	1.06		LA	608,071	599,144	1.47	
RI	267,414	264,591	1.06		GA	774,533	763,185	1.47	
OK	897,116	889,522	0.85		VA	444,577	440,583	0.90	
CO	1,070,919	1,063,558	0.69		WY	2,019	2,016	0.15	
NY	4,346,215	4,321,405	0.57		AL	424,937	425,443	-0.12	
NJ	1,791,471	1,781,849	0.54		KS	71,847	71,940	-0.13	
NH	306,092	304,482	0.53		OH	506,388	507,917	-0.30	
AL	820,105	815,888	0.51		WI	127,777	128,341	-0.44	
NC	1,443,744	1,437,077	0.46		IN	194,727	196,529	-0.93	
MO	1,361,581	1,357,377	0.31		SC	409,064	414,377	-1.30	
IL	2,948,740	2,939,970	0.30		CT	120,191	121,973	-1.48	
KS	708,201	706,876	0.19		MI	533,009	541,426	-1.58	
ME	317,673	317,284	0.12		OK	108,084	112,851	-4.41	
AR	556,606	556,448	0.03		AR	159,290	166,745	-4.68	**
MA	1,571,971	1,571,665	0.02		MS	420,525	441,569	-5.00	**
LA	927,725	928,752	-0.11		NE	29,046	30,508	-5.03	
MN	1,315,681	1,317,239	-0.12		NV	39,880	41,895	-5.05	
NE	488,180	488,945	-0.16		MN	57,742	60,675	-5.08	
OH	2,822,309	2,827,387	-0.18		CO	63,569	66,880	-5.21	
IN	1,533,272	1,536,654	-0.22		AK	11,879	12,541	-5.57	
NM	541,824	543,383	-0.29		AZ	56,571	60,150	-6.33	
MI	2,335,835	2,345,779	-0.43		IA	25,606	27,508	-7.43	
KY	999,782	1,004,715	-0.49		OR	24,613	26,636	-8.22	
ID	365,728	368,394	-0.73		KY	105,018	116,217	-10.66	**
SC	647,563	652,447	-0.75		ND	2,648	3,001	-13.33	
MD	938,505	945,834	-0.78		WV	20,570	23,493	-14.21	**
WI	1,335,234	1,346,081	-0.81		UT	7,353	8,633	-17.41	
MS	460,381	464,124	-0.81		WA	74,909	92,094	-22.94	**
IA	816,336	823,240	-0.85		NM	13,746	18,276	-32.96	**
PA	2,825,648	2,849,612	-0.85		NH	2,705	3,664	-35.45	**
SD	235,537	237,889	-1.00		ID	2,056	2,792	-35.80	**
VT	152,128	153,707	-1.04		ME	2,335	3,551	-52.08	**
MT	249,233	251,872	-1.06		MT	1,500	2,584	-72.27	**
WY	151,873	155,195	-2.19		VT	646	1,662	-157.28	**

Note: ** DA and census population estimates significantly different at 95% level (p-value greater than 0.05). Results sorted descending by percent undercount within race.

Table 10: Ratio of Black to Non-Black Mortality Rates, Census and DA estimates for the Ten Most Populous States, Infants, 1980

State	Census Mortality Rate	DA Mortality Rate	Difference
CA	2.13	1.76	0.37
TX	1.72	1.69	0.03
NY	2.08	1.90	0.18
OH	2.12	2.01	0.11
IL	2.55	2.27	0.28
PA	2.06	1.81	0.25
MI	2.36	2.24	0.12
FL	2.12	1.91	0.21
IN	2.33	2.31	0.02
NJ	2.54	2.24	0.30

Note: Ratio calculated as black mortality rate over non-black mortality rate. Census mortality rate calculated using census population estimate as denominator, and DA mortality rate using DA estimate of population. Mortality rates for all states can be found in Appendix Table A.9.

Table 11: Ratio of Black to Non-Black Mortality Rates, Census and DA estimates for the Ten Most Populous States by Age Group, 1990

	California			Texas			New York		
Age Group	Census	DA	Diff	Census	DA	Diff	Census	DA	Diff
0	2.23	1.97	0.26	2.21	2.01	0.20	2.79	2.22	0.57
1 & 2	2.00	1.86	0.14	1.94	1.92	0.03	2.38	2.06	0.32
3 & 4	2.12	1.97	0.15	1.57	1.56	0.01	2.27	2.00	0.27
5 & 6	2.05	1.77	0.28	1.22	1.22	0.00	2.63	2.34	0.29
7 & 8	1.52	1.30	0.22	1.18	1.14	0.05	2.05	1.84	0.21
9 & 10	1.79	1.58	0.21	1.16	1.15	0.01	1.43	1.35	0.08

	Pennsylvania			Illinois			Ohio		
Age Group	Census	DA	Diff	Census	DA	Diff	Census	DA	Diff
0	3.48	2.56	0.93	3.78	2.72	1.05	2.52	2.20	0.32
1 & 2	2.11	1.82	0.30	2.60	2.19	0.41	1.75	1.65	0.10
3 & 4	2.96	2.66	0.30	1.91	1.69	0.23	1.54	1.46	0.08
5 & 6	1.85	1.67	0.17	2.80	2.42	0.38	1.72	1.62	0.09
7 & 8	2.17	1.94	0.23	1.86	1.74	0.12	1.56	1.46	0.10
9 & 10	1.91	1.75	0.16	1.66	1.50	0.16	2.40	2.11	0.29

	Florida			Michigan			New Jersey		
Age Group	Census	DA	Diff	Census	DA	Diff	Census	DA	Diff
0	2.62	2.19	0.43	2.89	2.69	0.21	3.96	2.77	1.19
1 & 2	2.36	2.06	0.30	1.97	1.98	-0.01	4.20	3.27	0.93
3 & 4	2.74	2.55	0.19	2.26	2.25	0.02	3.56	3.02	0.54
5 & 6	1.89	1.73	0.16	2.25	2.15	0.10	2.83	2.38	0.44
7 & 8	1.24	1.18	0.06	1.04	1.08	-0.03	1.99	1.61	0.38
9 & 10	1.64	1.52	0.11	1.79	1.73	0.06	1.22	1.04	0.18

	Massachusetts		
Age Group	Census	DA	Diff
0	2.69	1.86	0.83
1 & 2	2.14	1.74	0.40
3 & 4	2.15	1.90	0.25
5 & 6	3.38	3.13	0.24
7 & 8	3.77	3.39	0.38
9 & 10	1.95	1.67	0.28

Note: Ratio calculated as black mortality rate over non-black mortality rate. Census mortality rate calculated using census population estimate as denominator, and DA mortality rate using DA estimate of population. Mortality rates for all states can be found in Appendix Tables A.10 through A.15.

Table 12: Ratio of Black to Non-Black Mortality Rates, Census and DA estimates for the Ten Most Populous States by Age Group, 2000

	California			Texas			New York			Illinois			Pennsylvania		
Age Group	Census	DA	Diff	Census	DA	Diff	Census	DA	Diff	Census	DA	Diff	Census	DA	Diff
0	2.00	2.07	-0.07	2.01	1.95	0.06	2.30	1.99	0.30	2.72	2.42	0.31	2.50	2.25	0.26
1 & 2	1.28	1.27	0.00	1.70	1.66	0.04	1.23	1.12	0.11	2.04	1.92	0.11	1.48	1.38	0.10
3 & 4	1.52	1.57	-0.05	1.38	1.40	-0.03	1.29	1.26	0.03	2.20	2.16	0.04	2.40	2.21	0.19
5 & 6	1.93	1.97	-0.04	1.28	1.30	-0.02	1.61	1.57	0.04	1.98	1.87	0.11	1.14	1.02	0.12
7 & 8	1.46	1.52	-0.06	1.55	1.52	0.03	0.72	0.72	0.00	1.63	1.57	0.07	0.74	0.67	0.08
9 & 10	1.81	1.84	-0.03	2.18	2.18	0.01	1.88	1.87	0.01	3.55	3.33	0.22	1.58	1.46	0.12
11 & 12	1.13	1.16	-0.02	1.04	1.04	0.00	2.04	1.98	0.06	2.25	2.21	0.03	1.33	1.20	0.13
13 & 14	1.00	1.00	0.00	0.83	0.86	-0.03	2.59	2.48	0.11	2.27	2.31	-0.05	2.08	2.00	0.07
15 & 16	1.44	1.34	0.10	1.29	1.31	-0.02	1.10	1.08	0.01	1.75	1.71	0.04	1.46	1.41	0.05
17 & 18	1.78	1.65	0.14	1.03	1.03	0.00	1.72	1.72	-0.01	1.81	1.74	0.07	1.96	1.93	0.03
19 & 20	1.61	1.48	0.13	1.40	1.41	-0.01	1.81	1.78	0.03	2.63	2.39	0.25	1.79	1.74	0.05

	Ohio			Florida			Michigan			New Jersey			Massachusetts		
Age Group	Census	DA	Diff	Census	DA	Diff	Census	DA	Diff	Census	DA	Diff	Census	DA	Diff
0	2.22	2.32	-0.10	2.58	2.31	0.27	3.04	2.82	0.21	3.20	2.83	0.37	2.67	1.90	0.77
1 & 2	2.16	2.18	-0.02	1.17	1.10	0.07	2.23	2.24	-0.01	1.28	1.15	0.13	1.25	0.98	0.28
3 & 4	1.19	1.22	-0.03	2.07	1.97	0.10	2.37	2.38	-0.01	2.31	2.09	0.21	1.54	1.21	0.33
5 & 6	1.04	1.00	0.04	1.69	1.63	0.06	2.26	2.28	-0.02	1.77	1.58	0.20	1.72	1.31	0.41
7 & 8	1.38	1.36	0.03	2.29	2.18	0.10	1.64	1.63	0.01	1.49	1.38	0.11	1.82	1.40	0.42
9 & 10	1.35	1.43	-0.08	1.45	1.41	0.04	2.56	2.58	-0.02	2.04	1.88	0.16	5.70	4.51	1.19
11 & 12	1.30	1.33	-0.04	1.30	1.24	0.06	2.15	2.18	-0.03	1.48	1.36	0.12	1.54	1.50	0.04
13 & 14	1.05	1.07	-0.02	1.15	1.15	0.00	1.64	1.78	-0.14	3.73	3.53	0.20	2.46	2.43	0.02
15 & 16	0.97	0.98	-0.01	1.41	1.38	0.04	1.41	1.44	-0.03	1.92	1.71	0.22	3.02	3.36	-0.34
17 & 18	1.25	1.21	0.04	0.94	0.94	-0.01	1.65	1.69	-0.04	1.66	1.56	0.10	1.52	1.51	0.01
19 & 20	1.73	1.61	0.12	1.55	1.43	0.12	2.53	2.56	-0.04	1.89	1.82	0.07	1.11	1.06	0.05

Note: Ratio calculated as black mortality rate over non-black mortality rate. Census mortality rate calculated using census population estimate as denominator, and DA mortality rate using DA estimate of population. Mortality rates for all states can be found in Appendix Table A.16 through A.26.

Table 13: Percent Net Undercount of Infants by Age and Race of Mother, 1990

	Non-Black Mother			Black Mother		
Age of Mother	DA Population	Census Population	% Under	DA Population	Census Population	% Under
15	10,961	3,905	64.37	8,754	2,895	66.93
16	35,906	12,459	65.30	20,971	7,251	65.42
17	66,225	23,945	63.84	29,941	10,479	65.00
18	103,309	43,415	57.98	40,151	14,309	64.36
19	136,936	65,080	52.47	46,195	21,323	53.84
20	150,929	85,660	43.24	45,140	21,389	52.62
21	160,174	95,516	40.37	44,613	21,540	51.72
22	170,564	102,450	39.93	42,684	22,198	47.99
23	181,102	120,162	33.65	41,087	22,880	44.31
24	196,908	131,533	33.20	39,548	22,107	44.10
25	215,100	152,764	28.98	38,163	23,009	39.71
26	222,854	164,466	26.20	35,544	21,415	39.75
27	224,670	175,298	21.98	32,985	21,486	34.86
28	221,501	170,707	22.93	30,448	18,201	40.22
29	212,649	177,884	16.35	28,206	18,416	34.71
30	194,804	173,053	11.17	25,144	18,032	28.29
31	174,113	147,661	15.19	21,600	14,105	34.70
32	151,779	137,617	9.33	18,808	15,929	15.31
33	126,283	114,486	9.34	15,875	12,350	22.20
34	106,238	98,689	7.11	13,194	10,696	18.93
35	86,417	83,887	2.93	10,543	9,167	13.05
36	66,678	66,401	0.42	8,255	6,645	19.50
37	50,271	51,832	-3.11	6,192	5,787	6.54
38	36,007	38,441	-6.76	4,743	4,484	5.46
39	25,005	28,007	-12.01	3,265	3,813	-16.78
40	17,139	21,330	-24.45	2,222	2,899	-30.47
41	10,968	11,983	-9.25	1,404	1,553	-10.61
42	6,810	8,774	-28.84	888	1,169	-31.64
43	3,347	6,061	-81.09	452	674	-49.12
44	1,579	3,688	-133.57	255	720	-182.35
45	746	2,159	-189.41	104	1,041	-900.96
46	258	1,792	-594.57	31	408	-1216.13
47	112	1,235	-1002.68	17	271	-1494.12
48	71	796	-1021.13	10	315	-3050.00
49	33	966	-2827.27	4	344	-8500.00
Total	**3,368,446**	**2,524,102**	**25.07**	**657,436**	**379,300**	**42.31**

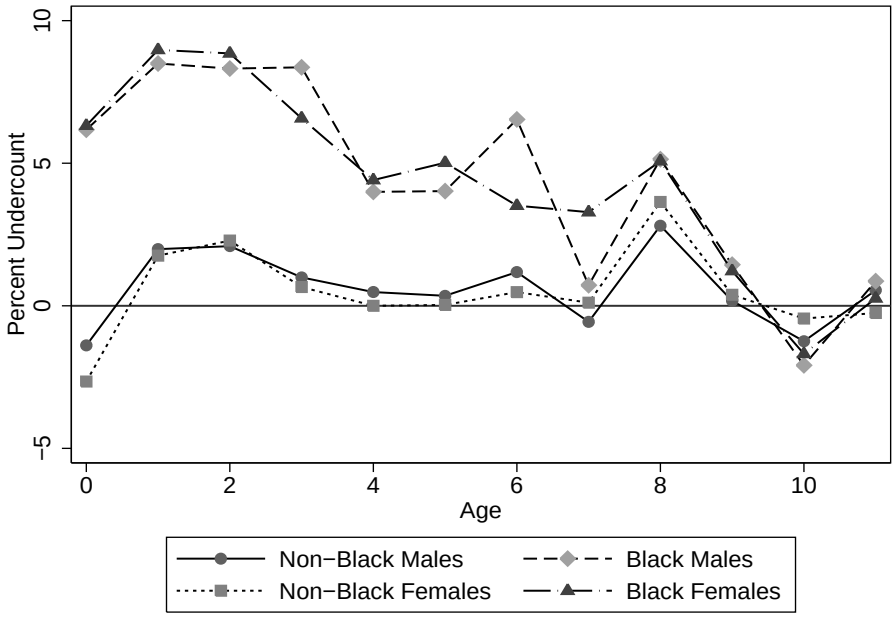
Note: Populations are population of infants (children under age 1).

Table 14: Percent Net Undercount of Infants by Education of Mother, 1990

Education of Mother	DA population	Census Population	Deflated Census Population	Raw Undercount	Deflated Undercount
Less than high school	872,564	463,291	435,701	46.90	50.07
High school graduate	1,460,707	992,462	927,998	32.06	36.47
Some college	763,346	871,485	808,346	-14.17	-5.90
College and above	653,887	585,432	539,496	10.47	17.49

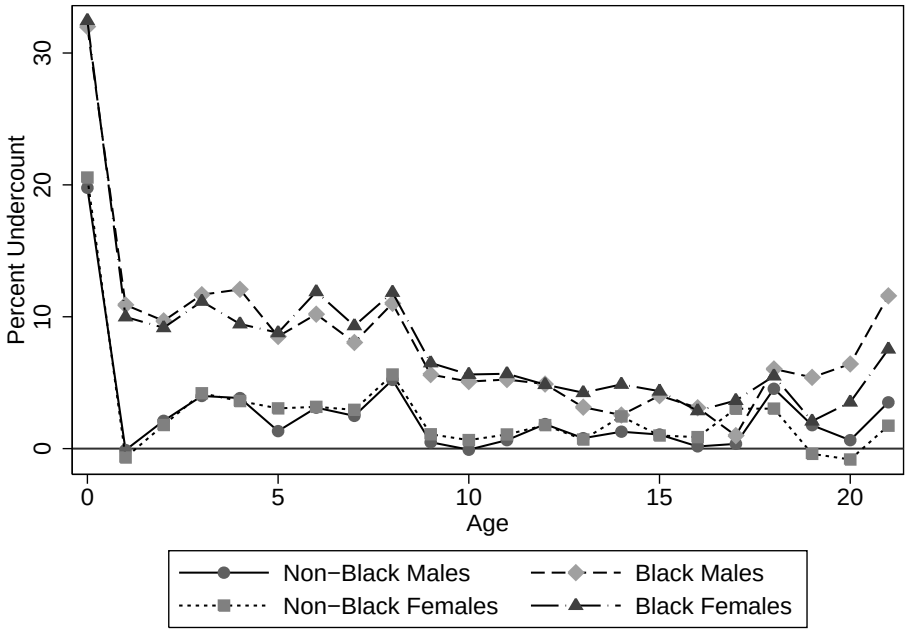
Note: Populations are population of infants (children under age 1). "Deflated" means census population count has been decreased by percentage of mothers missing education on birth certificate by state.

Figure 1: Percent Net Undercount by Age, 1980



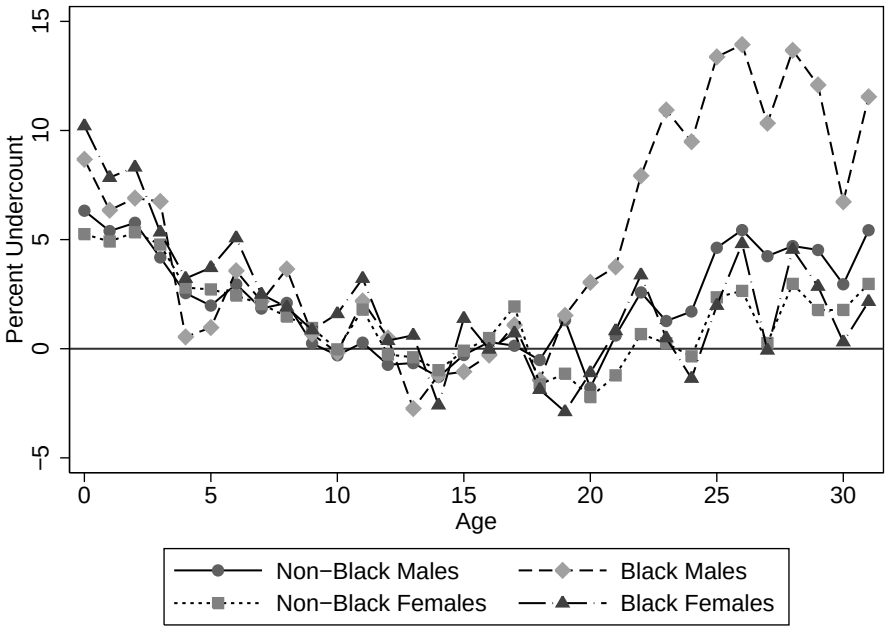
Note: See notes to Table 1.

Figure 2: Percent Net Undercount by Age, 1990



Note: See notes to Table 2.

Figure 3: Percent Net Undercount by Age, 2000



Note: See notes to Table 3.

A Appendix

Table A.1: Percentage of Births to Foreign Mothers, 1970-2000

Year	Percent	Year	Percent
1970	0.17	1986	0.11
1971	0.21	1987	0.10
1972	0.23	1988	0.11
1973	0.25	1989	0.12
1974	0.27	1990	0.11
1975	0.21	1991	0.11
1976	0.33	1992	0.11
1977	0.18	1993	0.11
1978	0.16	1994	0.11
1979	0.16	1995	0.09
1980	0.16	1996	0.09
1981	0.17	1997	0.09
1982	0.13	1998	0.09
1983	0.11	1999	0.10
1984	0.12	2000	0.12
1985	0.12		

Note: Foreign mothers defined as those reporting place of residence outside of the 50 states and DC on the birth certificate. 1968 and 1969 birth records do not identify foreign mothers.

Table A.2: Percent of Births Missing Race of One or Both Parents, 1968-2000

Cohort	Father's Race Unknown	Both Mother's and Father's Race Unknown	Mother's Race Imputed
1968	7.04	0.09	
1969	7.19	0.12	
1970	7.58	0.10	
1971	7.78	0.11	
1972	8.62	0.09	
1973	8.95	0.12	
1974	8.72	0.13	
1975	9.66	0.11	
1976	10.18	0.13	
1977	10.64	0.14	
1978	11.10	0.25	
1979	11.28	0.38	
1980	11.36	0.27	
1981	11.33	0.27	
1982	11.52	0.30	
1983	11.92	0.29	
1984	12.38	0.36	
1985	12.18	0.29	
1986	12.77	0.27	
1987	13.30	0.23	
1988	13.94	0.22	
1989	14.83		0.37
1990	14.92		0.30
1991	15.66		0.31
1992	15.63		0.31
1993	15.71		0.33
1994	15.56		0.34
1995	14.89		0.32
1996	14.57		0.39
1997	14.56		0.37
1998	14.46		0.39
1999	14.28		0.49
2000	14.01		0.42

Note: Individuals missing both mother's and father's race had child's race imputed prior to 1989. After 1989 mother's race was imputed. For more details see text.

Table A.3: Weights to Correct for Underregistration of Births, 1968-1985

	Percent of Births Registered		Initial Weights		Final Weights	
Year	White	Non-white	White	Non-white	Black	Non-black
1968	99.20	98.00	1.0081	1.0204	1.0204	1.0083
1969	99.25	98.12	1.0076	1.0192	1.0192	1.0078
1970	99.29	98.24	1.0071	1.0180	1.0180	1.0073
1971	99.34	98.35	1.0066	1.0167	1.0167	1.0068
1972	99.39	98.47	1.0062	1.0155	1.0155	1.0064
1973	99.44	98.59	1.0057	1.0143	1.0143	1.0059
1974	99.48	98.71	1.0052	1.0131	1.0131	1.0054
1975	99.53	98.83	1.0047	1.0119	1.0119	1.0049
1976	99.58	98.94	1.0043	1.0107	1.0107	1.0044
1977	99.62	99.06	1.0038	1.0095	1.0095	1.0039
1978	99.67	99.18	1.0033	1.0083	1.0083	1.0035
1979	99.72	99.30	1.0028	1.0071	1.0071	1.0030
1980	99.76	99.42	1.0024	1.0059	1.0059	1.0025
1981	99.81	99.53	1.0019	1.0047	1.0047	1.0020
1982	99.86	99.65	1.0014	1.0035	1.0035	1.0015
1983	99.91	99.77	1.0010	1.0023	1.0023	1.0010
1984	99.95	99.89	1.0005	1.0011	1.0011	1.0005
1985	100.00	100.00	1.0000	1.0000	1.0000	1.0000

Note: Calculation based on reported value of underregistration in 1968 and assumption of 100% registration in 1985. Linear interpolation between the two years.

Table A.4: Percentage of Births Occurring in Each Quarter, Selected Census Years

	Census Year			
Quarter of birth	1968	1978	1988	1998
1 (Apr-Jun)	24.02	23.26	24.47	24.78
2 (Jul-Sep)	26.17	26.06	26.59	26.29
3 (Oct-Dec)	25.46	24.81	24.56	24.85
4 (Jan-Mar)	24.35	25.86	24.39	24.08

Note: Census year runs from April 1 - March 31.

Table A.5: Components of Population for Demographic Analysis Estimates of the U.S. Native-Born Population by Age, 1980

Age in 1980	Births	Deaths	DA Population	Census Population	Difference	Percent Undercount
0	3,542,432	41,136	3,501,296	3,529,660	-28,364	-0.81
1	3,384,491	47,684	3,336,807	3,241,380	95,427	2.86
2	3,333,991	50,680	3,283,311	3,182,280	101,031	3.08
3	3,232,896	54,366	3,178,530	3,125,540	52,990	1.67
4	3,162,418	57,270	3,105,148	3,086,600	18,548	0.60
5	3,187,869	61,683	3,126,186	3,108,760	17,426	0.56
6	3,135,792	63,960	3,071,832	3,034,280	37,552	1.22
7	3,248,100	84,795	3,163,305	3,166,900	-3,595	-0.11
8	3,492,985	72,845	3,420,140	3,306,680	113,460	3.32
9	3,778,198	90,530	3,687,668	3,677,940	9,728	0.26
10	3,663,431	92,256	3,571,175	3,607,780	-36,605	-1.03
11	3,572,843	94,499	3,478,344	3,470,200	8,144	0.23
Total	**40,735,446**	**811,704**	**39,923,742**	**39,538,000**	**385,742**	**0.97**

Note: Births and Deaths from Vital Statistics. DA Population calculated as Births - Deaths. Census population from 5% PUMS. Age is age as of Census day (April 1).

Table A.6: Components of Population for Demographic Analysis Estimates of the U.S. Native-Born Population by Age, 1990

Age in 1990	Births	Deaths	DA Population	Census Population	Difference	Percent Undercount
0	4,078,732	35,305	4,043,427	3,148,466	894,961	22.13
1	3,939,637	40,468	3,899,169	3,847,300	51,869	1.33
2	3,833,984	42,421	3,791,563	3,674,400	117,163	3.09
3	3,761,452	44,098	3,717,354	3,524,889	192,465	5.18
4	3,765,651	46,738	3,718,913	3,542,975	175,938	4.73
5	3,689,647	47,387	3,642,260	3,530,208	112,052	3.08
6	3,635,411	49,025	3,586,386	3,432,727	153,659	4.28
7	3,692,367	65,162	3,627,205	3,498,965	128,240	3.54
8	3,649,035	76,507	3,572,528	3,350,853	221,675	6.20
9	3,623,475	66,091	3,557,384	3,505,101	52,283	1.47
10	3,542,432	61,319	3,481,113	3,447,912	33,201	0.95
11	3,384,491	61,362	3,323,129	3,274,435	48,694	1.47
12	3,333,991	61,987	3,272,004	3,201,020	70,984	2.17
13	3,232,896	64,629	3,168,267	3,137,266	31,001	0.98
14	3,162,418	67,093	3,095,325	3,037,642	57,683	1.86
15	3,187,869	71,961	3,115,908	3,078,194	37,714	1.21
16	3,135,792	75,329	3,060,463	3,041,786	18,677	0.61
17	3,248,100	98,494	3,149,606	3,101,430	48,176	1.53
18	3,492,985	89,935	3,403,050	3,269,643	133,407	3.92
19	3,778,198	111,556	3,666,642	3,629,781	36,861	1.01
20	3,663,431	116,080	3,547,351	3,523,847	23,504	0.66
21	3,572,843	121,078	3,451,765	3,324,385	127,380	3.69
Total	**78,404,837**	**1,514,025**	**76,890,812**	**74,123,225**	**2,767,587**	**3.60**

Note: Births and Deaths from Vital Statistics. DA Population calculated as Births - Deaths. Census population from 5% PUMS. Age is age as of Census day (April 1).

Table A.7: Components of Population for Demographic Analysis Estimates of the U.S. Native-Born Population by Age, 2000

Age in 2000	Births	Deaths	DA Population	Census Population	Difference	Percent Undercount
0	3,997,766	24,980	3,972,786	3,722,437	250,349	6.30
1	3,943,755	29,073	3,914,682	3,703,741	210,941	5.39
2	3,898,417	30,809	3,867,608	3,642,741	224,867	5.81
3	3,882,831	31,975	3,850,856	3,671,907	178,949	4.65
4	3,898,606	34,141	3,864,465	3,769,600	94,865	2.45
5	3,930,609	36,683	3,893,926	3,806,941	86,985	2.23
6	3,992,092	39,798	3,952,294	3,838,592	113,702	2.88
7	4,045,919	42,611	4,003,308	3,927,242	76,066	1.90
8	4,111,537	45,534	4,066,003	3,990,484	75,519	1.86
9	4,148,094	48,000	4,100,094	4,079,267	20,827	0.51
10	4,078,732	51,052	4,027,680	4,033,089	-5,409	-0.13
11	3,939,637	50,786	3,888,851	3,842,756	46,095	1.19
12	3,833,984	51,191	3,782,793	3,799,884	-17,091	-0.45
13	3,761,452	52,169	3,709,283	3,736,247	-26,964	-0.73
14	3,765,651	54,843	3,710,808	3,762,015	-51,207	-1.38
15	3,689,647	55,914	3,633,733	3,640,807	-7,074	-0.19
16	3,635,411	58,648	3,576,763	3,565,419	11,344	0.32
17	3,692,367	76,847	3,615,520	3,577,102	38,418	1.06
18	3,649,035	90,965	3,558,070	3,596,563	-38,493	-1.08
19	3,623,475	83,873	3,539,602	3,534,764	4,838	0.14
20	3,542,432	82,205	3,460,227	3,505,209	-44,982	-1.30
21	3,384,491	84,728	3,299,763	3,286,168	13,595	0.41
22	3,333,991	88,410	3,245,581	3,160,723	84,858	2.61
23	3,232,896	93,379	3,139,517	3,081,191	58,326	1.86
24	3,162,418	98,034	3,064,384	3,017,015	47,369	1.55
25	3,187,869	104,811	3,083,058	2,944,650	138,408	4.49
26	3,135,792	109,558	3,026,234	2,865,185	161,049	5.32
27	3,248,100	135,025	3,113,075	3,011,072	102,003	3.28
28	3,492,985	128,866	3,364,119	3,186,442	177,677	5.28
29	3,778,198	152,602	3,625,596	3,461,636	163,960	4.52
30	3,663,431	156,710	3,506,721	3,385,139	121,582	3.47
31	3,572,843	161,752	3,411,091	3,220,202	190,889	5.60
Total	**118,254,463**	**2,385,972**	**115,868,491**	**113,366,230**	**2,502,261**	**2.16**

Note: Births and Deaths from Vital Statistics. DA Population calculated as Births - Deaths. Census population from 5% PUMS. Age is age as of census day (April 1).

Table A.8: Components of Population for Demographic Analysis Estimates of the U.S. Native-Born Population by Age, Census and Author's calculations, 2000

	Non-Black			Black		
Age in 2000	Johnson Births	Census Births	Difference	Johnson Deaths	Census Deaths	Difference
0	3,997,766	3,961,602	36,164	24,980	23,493	1,487
1	3,943,755	3,945,403	-1,648	29,073	29,679	-606
2	3,898,417	3,898,412	5	30,809	30,747	62
3	3,882,831	3,882,831	0	31,975	32,072	-97
4	3,898,606	3,898,606	0	34,141	34,140	1
5	3,930,609	3,930,609	0	36,683	36,739	-56
6	3,992,092	3,992,092	0	39,798	39,662	136
7	4,045,919	4,045,919	0	42,611	42,623	-12
8	4,111,537	4,111,537	0	45,534	47,143	-1,609
9	4,148,094	4,148,094	0	48,000	48,165	-165
10	4,078,732	4,070,554	8,178	51,052	53,137	-2,085
11	3,939,637	3,916,303	23,334	50,786	50,368	418
12	3,833,984	3,833,478	506	51,191	51,422	-231
13	3,761,452	3,761,690	-238	52,169	52,224	-55
14	3,765,651	3,767,164	-1,513	54,843	54,698	145
15	3,689,647	3,687,597	2,050	55,914	56,467	-553
16	3,635,411	3,634,527	884	58,648	58,994	-346
17	3,692,367	3,691,277	1,090	76,847	63,793	13,054
18	3,649,035	3,645,966	3,069	90,965	67,999	22,966
19	3,623,475	3,618,254	5,221	83,873	74,347	9,526
20	3,542,432	3,537,447	4,985	82,205	79,733	2,472
21	3,384,491	3,378,569	5,922	84,728	82,466	2,262
22	3,333,991	3,327,844	6,147	88,410	87,245	1,165
23	3,232,896	3,226,434	6,462	93,379	91,656	1,723
24	3,162,418	3,155,250	7,168	98,034	97,036	998
25	3,187,869	3,179,680	8,189	104,811	103,301	1,510
26	3,135,792	3,126,844	8,948	109,558	109,521	37
27	3,248,100	3,238,101	9,999	135,025	120,485	14,540
28	3,492,985	3,481,912	11,073	128,866	135,132	-6,266
29	3,778,198	3,764,783	13,415	152,602	150,477	2,125
30	3,663,431	3,649,839	13,592	156,710	155,173	1,537
31	3,572,843	3,559,756	13,087	161,752	160,298	1,454
Total	**118,254,463**	**118,068,374**	**186,089**	**2,385,972**	**2,320,435**	**65,537**

Note: Births and Deaths from Vital Statistics. DA Population calculated as Births - Deaths. Census population from 5% PUMS. Age is age as of census day (April 1).

Table A.9: One-year Mortality Rates by State of Birth, Infants, 1980

Non-Blacks				Blacks			
State	Census Rate	DA Rate	% Difference	State	Census Rate	DA Rate	% Difference
AZ	12.6	13.3	5.2	UT	40.8	36.4	-12.2
ND	13.1	13.2	0.9	MT	33.9	29.4	-15.3
OK	12.6	13.0	3.3	IL	28.7	26.8	-7.1
WA	12.3	12.9	4.9	NH	25.3	25.6	1.3
FL	12.9	12.9	0.1	DE	28.7	25.3	-13.5
TN	12.8	12.7	-0.7	OK	24.9	25.1	0.8
AK	12.1	12.5	3.7	IA	23.5	25.1	6.0
MT	11.7	12.5	5.9	AZ	31.8	24.9	-28.0
SC	11.5	12.4	6.8	IN	24.1	24.7	2.4
OR	12.2	12.3	0.7	FL	27.4	24.7	-11.2
DC	22.0	12.3	-79.3	MI	25.0	24.5	-2.2
KY	11.8	12.1	2.3	NV	27.7	24.4	-13.6
RI	11.8	12.1	2.4	NM	25.3	23.9	-5.7
NC	12.0	12.1	0.8	DC	32.7	23.5	-38.8
AL	11.6	11.9	2.1	SC	24.2	23.4	-3.4
MO	11.5	11.8	2.8	NJ	24.1	22.6	-7.0
IL	11.2	11.8	4.7	MS	22.4	22.5	0.3
MS	10.7	11.8	9.1	GA	23.0	22.5	-2.3
PA	11.2	11.7	4.6	WV	20.2	22.3	9.4
WV	10.7	11.7	8.6	OH	22.7	22.2	-2.4
TX	11.7	11.6	-1.1	MN	19.8	22.2	10.5
SD	10.9	11.5	5.7	KY	21.6	21.8	0.8
NE	10.8	11.5	6.8	TN	23.4	21.5	-8.8
VA	10.9	11.3	3.5	LA	22.4	21.5	-4.4
NM	10.7	11.2	4.9	MO	24.8	21.3	-16.2
LA	10.7	11.1	4.2	PA	23.1	21.2	-8.9
MD	10.1	11.1	9.1	WY	12.6	20.8	39.6
OH	10.7	11.0	3.0	NE	17.3	20.7	16.3
MI	10.6	10.9	3.0	AL	21.2	20.5	-3.5
CA	10.7	10.9	1.3	NC	21.0	20.5	-2.6
NH	10.5	10.8	2.6	NY	21.1	20.2	-4.4
GA	10.5	10.8	2.1	VA	22.0	20.2	-9.2
IN	10.4	10.7	3.3	AR	18.0	20.1	10.2
IA	10.2	10.7	4.4	CT	21.3	20.0	-6.4
NY	10.1	10.6	4.5	WI	19.7	20.0	1.6
VT	9.5	10.5	9.9	MD	19.8	19.9	0.8
HI	10.9	10.5	-3.4	KS	21.8	19.9	-9.8
CO	10.1	10.5	3.7	TX	20.1	19.5	-2.8
WY	9.7	10.5	7.8	CA	22.9	19.2	-19.6
AR	9.6	10.5	8.6	RI	19.1	19.0	-0.7
CT	9.9	10.5	5.0	CO	19.1	17.8	-7.1
ME	10.2	10.5	2.2	SD	16.8	17.7	5.0
MN	10.3	10.4	1.0	MA	23.0	17.1	-34.2
UT	9.9	10.3	3.8	OR	16.1	17.0	5.3
ID	9.4	10.2	8.6	WA	9.7	14.1	31.5
WI	9.6	10.1	4.8	AK	12.6	12.8	1.8
MA	10.2	10.1	-1.1	ND	12.6	10.3	-22.6
NJ	9.5	10.1	5.5	HI	14.0	9.0	-55.1
NV	8.6	9.7	11.5				
KS	8.7	9.2	5.1				
DE	9.0	9.0	-0.1				

Note: Rates expressed as deaths per 1000 population. No black deaths for this age group were reported in the states of ID, ME, and VT.

Table A.10: One-year Mortality Rates by State of Birth, Infants, 1990

Non-Blacks				Blacks			
State	Census Rate	DA Rate	% Difference	State	Census Rate	DA Rate	% Difference
ID	12.9	9.8	-30.9	VT	38.46	66.67	42.3
NV	12.3	9.8	-26.2	DC	37.28	23.24	-60.4
AK	11.6	9.6	-20.7	MN	28.68	22.63	-26.8
WV	12.0	9.5	-25.6	MI	27.21	22.06	-23.4
SD	10.6	9.4	-13.0	IL	35.88	21.48	-67.0
SC	10.9	8.9	-22.3	MO	30.87	21.44	-44.0
GA	11.1	8.9	-25.5	DE	31.65	20.93	-51.2
TN	10.8	8.5	-26.1	CO	28.12	20.08	-40.0
AL	10.5	8.5	-23.4	PA	32.08	20.01	-60.3
OH	9.7	8.5	-14.5	VA	24.95	19.28	-29.4
OK	10.0	8.5	-18.0	ND	40.82	19.05	-114.3
NC	10.7	8.5	-26.5	GA	25.86	18.98	-36.2
NM	10.6	8.4	-25.0	NV	25.92	18.98	-36.6
IN	9.7	8.4	-15.5	NE	23.43	18.97	-23.5
AZ	10.8	8.4	-29.3	OH	24.59	18.74	-31.2
DC	11.5	8.3	-38.0	WI	24.96	18.59	-34.2
CO	10.1	8.3	-21.7	TN	25.14	18.17	-38.3
MI	9.4	8.2	-14.6	IA	28.13	18.02	-56.1
OR	9.6	8.2	-17.5	NJ	32.37	17.94	-80.4
AR	10.0	8.2	-22.6	IN	25.65	17.89	-43.3
MS	10.0	8.1	-22.5	MS	23.10	17.82	-29.7
MO	9.4	8.1	-15.0	SC	24.16	17.47	-38.3
IL	9.5	7.9	-20.4	NC	25.36	17.23	-47.2
PA	9.2	7.8	-17.7	FL	27.30	16.88	-61.7
WA	9.4	7.8	-19.7	AZ	23.36	16.88	-38.4
KS	8.7	7.8	-12.3	WV	21.51	16.57	-29.8
IA	8.8	7.8	-12.8	LA	23.14	16.47	-40.5
CA	10.6	7.7	-37.1	AL	23.11	16.11	-43.5
FL	10.4	7.7	-35.1	NY	26.19	16.06	-63.1
RI	9.8	7.7	-27.4	WA	19.49	16.00	-21.8
ND	8.5	7.6	-11.5	SD	38.46	15.87	-142.3
KY	9.2	7.5	-22.6	OR	17.84	15.79	-13.0
MT	8.8	7.5	-18.2	CT	27.25	15.69	-73.6
NE	8.1	7.5	-9.1	MD	21.71	15.37	-41.2
VA	8.8	7.4	-18.7	MT	29.85	15.27	-95.5
DE	8.8	7.2	-21.3	CA	23.65	15.23	-55.2
NY	9.4	7.2	-29.8	OK	24.05	15.06	-59.7
TX	9.1	7.1	-27.2	UT	26.11	14.43	-80.9
UT	8.1	7.1	-13.4	TX	20.02	14.33	-39.7
WI	7.8	7.0	-12.5	KS	24.23	13.67	-77.2
MN	8.0	7.0	-15.2	NM	20.76	13.56	-53.1
HI	9.4	6.9	-36.2	AR	18.72	13.25	-41.3
LA	8.3	6.8	-20.7	RI	31.62	13.22	-139.1
NH	8.0	6.7	-19.6	HI	17.24	12.79	-34.8
CT	8.2	6.7	-23.9	KY	15.04	12.04	-24.9
WY	8.1	6.6	-21.7	MA	20.95	11.67	-79.5
ME	7.9	6.6	-19.2	ME	2.74	9.66	71.6
NJ	8.2	6.5	-26.1	AK	12.18	7.59	-60.4
VT	8.3	6.4	-30.3				
MA	7.8	6.3	-24.1				
MD	6.6	5.7	-16.9				

Note: Rates expressed as deaths per 1000 population. No black deaths for this age group were reported in the states of ID, NH, and WY.

Table A.11: One-year Mortality Rates by State of Birth, 1- & 2-Year-Olds, 1990

Non-Blacks				Blacks			
State	Census Rate	DA Rate	% Difference	State	Census Rate	DA Rate	% Difference
NV	0.73	0.72	-0.6	ND	6.23	3.71	0.0
AK	0.68	0.71	3.5	UT	4.35	3.22	-35.2
AR	0.67	0.71	5.5	AK	1.82	1.75	-4.3
SC	0.68	0.69	0.9	AR	1.40	1.40	-0.1
HI	0.73	0.68	-7.7	KS	1.46	1.31	-11.5
SD	0.70	0.67	-4.3	AL	1.19	1.15	-3.7
OR	0.65	0.65	0.0	FL	1.32	1.14	-15.9
AL	0.61	0.61	0.3	MS	1.14	1.10	-2.9
NM	0.63	0.60	-5.9	NV	1.14	1.10	-3.1
IN	0.57	0.60	5.0	WV	1.62	1.09	-48.4
TN	0.59	0.59	-1.0	DE	1.27	1.08	-17.3
KY	0.56	0.59	3.6	IL	1.25	1.08	-16.1
GA	0.57	0.57	0.3	TX	1.14	1.07	-6.3
TX	0.59	0.56	-4.8	WA	0.97	1.06	9.1
FL	0.56	0.55	-1.3	TN	1.12	1.03	-9.1
ID	0.57	0.55	-2.9	NJ	1.31	1.03	-27.9
AZ	0.56	0.54	-2.6	NY	1.18	1.01	-16.4
MO	0.53	0.54	2.7	MN	1.22	1.00	-21.3
CA	0.56	0.53	-4.8	CA	1.11	0.99	-12.6
ME	0.52	0.53	2.0	KY	0.98	0.96	-1.9
NC	0.51	0.53	3.3	LA	1.03	0.94	-10.1
OK	0.53	0.52	-1.7	PA	1.06	0.93	-14.1
MT	0.48	0.52	9.1	DC	1.14	0.92	-23.9
RI	0.51	0.52	1.9	MI	0.89	0.92	3.2
IA	0.47	0.51	7.8	NC	0.95	0.91	-3.4
MD	0.48	0.51	5.5	SC	0.82	0.83	1.6
PA	0.50	0.51	1.9	IN	0.83	0.81	-2.0
OH	0.48	0.49	3.1	OH	0.83	0.81	-2.7
NY	0.49	0.49	-0.8	OK	0.81	0.80	-2.0
IL	0.48	0.49	2.1	MD	0.90	0.79	-13.7
ND	0.50	0.49	-2.4	AZ	1.08	0.72	-49.2
WI	0.47	0.48	2.2	MO	0.80	0.70	-14.5
UT	0.46	0.47	3.0	CO	0.76	0.66	-16.0
MI	0.45	0.47	2.9	GA	0.68	0.65	-4.1
LA	0.45	0.45	1.0	VA	0.64	0.61	-4.6
VT	0.42	0.45	6.6	WI	0.62	0.56	-10.7
MS	0.45	0.45	-0.1	HI	0.63	0.56	-14.0
KS	0.45	0.45	-0.1	MA	0.64	0.52	-21.5
WA	0.43	0.44	2.6	CT	0.51	0.51	-0.6
CO	0.44	0.44	-1.2	IA	0.48	0.45	-5.3
WV	0.43	0.43	1.3				
MN	0.41	0.42	2.1				
VA	0.41	0.41	1.3				
CT	0.36	0.36	0.2				
DE	0.34	0.36	7.7				
NE	0.35	0.35	2.5				
DC	0.40	0.33	-21.9				
NJ	0.31	0.31	0.4				
NH	0.30	0.30	0.8				
MA	0.30	0.30	1.1				
WY	0.22	0.22	0.0				

Note: Rates expressed as deaths per 1000 population. No black deaths for this age group were reported in the states of ID, ME, MT, NE, NH, NM, OR, RI, SD, VT, and WY.

Table A.12: One-year Mortality Rates by State of Birth, 3- & 4-Year-Olds, 1990

Non-Blacks				Blacks			
State	Census Rate	DA Rate	% Difference	State	Census Rate	DA Rate	% Difference
AK	0.68	0.65	-5.5	WV	1.59	1.64	3.0
MT	0.54	0.52	-4.5	NE	1.65	1.54	-6.7
NE	0.45	0.46	2.3	WI	1.13	0.98	-15.8
AL	0.43	0.41	-4.9	NV	1.04	0.97	-8.0
HI	0.45	0.41	-10.4	AK	1.20	0.88	-37.0
AZ	0.43	0.40	-7.5	NM	0.73	0.80	8.9
OK	0.41	0.39	-5.8	FL	0.81	0.71	-13.3
IN	0.39	0.39	-1.4	AR	0.71	0.67	-7.4
TN	0.40	0.39	-3.5	PA	0.73	0.66	-11.7
OR	0.39	0.38	-2.6	GA	0.69	0.63	-10.4
MD	0.39	0.38	-1.1	MI	0.63	0.62	-0.9
LA	0.36	0.34	-6.0	TN	0.65	0.57	-15.0
MO	0.34	0.33	-3.2	IN	0.61	0.55	-10.3
GA	0.34	0.33	-5.0	IL	0.61	0.53	-15.5
KS	0.31	0.32	1.2	CA	0.60	0.51	-15.7
KY	0.32	0.31	-3.1	NJ	0.62	0.51	-21.5
IL	0.32	0.31	-1.8	WA	0.48	0.49	2.0
NC	0.32	0.31	-3.6	IA	0.52	0.48	0.0
SD	0.32	0.30	-5.4	NY	0.57	0.48	-17.7
WA	0.31	0.30	-4.2	AL	0.52	0.46	-12.6
WV	0.31	0.30	-2.8	LA	0.51	0.46	-10.4
NH	0.31	0.30	-3.1	DE	0.58	0.46	-26.3
TX	0.31	0.29	-7.7	TX	0.49	0.45	-8.1
UT	0.29	0.28	-1.9	MS	0.49	0.44	-10.3
FL	0.30	0.28	-5.5	MO	0.51	0.43	-19.1
VA	0.29	0.28	-3.2	NC	0.46	0.42	-8.8
MI	0.28	0.28	-0.2	VA	0.46	0.40	-13.8
MS	0.28	0.27	-2.1	AZ	0.48	0.40	-19.5
AR	0.29	0.27	-8.3	OK	0.50	0.39	-28.0
CA	0.28	0.26	-7.6	MD	0.42	0.38	-10.0
DE	0.25	0.26	4.9	SC	0.37	0.37	0.7
IA	0.26	0.26	-1.5	DC	0.42	0.36	-15.8
WI	0.25	0.25	-2.0	OH	0.38	0.36	-6.6
PA	0.25	0.25	-0.5	CO	0.45	0.35	-27.2
OH	0.25	0.24	-1.1	KS	0.35	0.31	-14.3
ID	0.26	0.24	-7.4	CT	0.32	0.29	-9.9
NY	0.25	0.24	-3.6	MA	0.28	0.25	-13.1
SC	0.24	0.23	-3.1				
CT	0.24	0.23	-1.6				
CO	0.24	0.23	-4.0				
NM	0.25	0.23	-8.3				
ME	0.23	0.22	-4.7				
MN	0.20	0.20	-0.8				
RI	0.20	0.20	-2.0				
NV	0.18	0.18	0.2				
NJ	0.17	0.17	-3.1				
MA	0.13	0.13	0.3				
VT	0.13	0.13	0.6				
ND	0.13	0.12	-6.3				
WY	0.13	0.12	-6.8				
DC	0.14	0.12	-15.5				

Note: Rates expressed as deaths per 1000 population. No black deaths for this age group were reported in the states of HI, ID, KY, ME, MN, MT, ND, NH, OR, RI, SD, UT, VT, and WY.

Table A.13: One-year Mortality Rates by State of Birth, 5- & 6-Year-Olds, 1990

Non-Blacks				Blacks			
State	Census Rate	DA Rate	% Difference	State	Census Rate	DA Rate	% Difference
AR	0.47	0.46	-2.1	HI	1.32	1.18	-11.4
ND	0.37	0.35	-4.7	AZ	0.81	0.65	-25.1
OK	0.38	0.35	-6.4	MA	0.51	0.47	-7.5
NE	0.33	0.32	-1.9	IN	0.51	0.47	-6.7
AL	0.33	0.32	-3.2	TN	0.46	0.43	-7.4
NM	0.32	0.31	-3.3	MS	0.45	0.42	-6.9
AZ	0.31	0.29	-6.2	NY	0.47	0.41	-16.1
SD	0.30	0.29	-3.0	MD	0.44	0.40	-8.3
KS	0.29	0.28	-3.1	NJ	0.48	0.40	-21.0
UT	0.28	0.28	-1.6	LA	0.42	0.40	-6.3
WY	0.28	0.27	-3.4	MO	0.48	0.40	-21.4
DE	0.29	0.27	-3.9	AR	0.39	0.39	-0.8
MN	0.28	0.27	-1.1	MI	0.41	0.39	-4.4
MO	0.27	0.27	-1.0	CO	0.45	0.39	-15.4
OR	0.27	0.27	-3.0	NE	0.42	0.38	-8.5
NC	0.26	0.26	-0.3	FL	0.42	0.37	-12.9
GA	0.27	0.26	-2.7	GA	0.40	0.36	-8.5
SC	0.26	0.26	-0.5	NV	0.49	0.36	-36.7
IN	0.26	0.25	-0.6	CA	0.43	0.35	-20.4
KY	0.24	0.24	-1.1	WA	0.33	0.35	4.4
IA	0.24	0.24	-1.5	PA	0.37	0.33	-12.1
WA	0.24	0.23	-1.5	KS	0.40	0.31	-30.1
TX	0.24	0.23	-4.9	CT	0.32	0.30	-6.6
TN	0.23	0.22	-4.9	IL	0.35	0.30	-16.9
ME	0.22	0.22	0.4	OH	0.32	0.30	-6.3
FL	0.22	0.22	-3.5	TX	0.29	0.28	-5.1
VA	0.21	0.20	-1.4	NC	0.30	0.27	-8.3
CA	0.21	0.20	-3.6	AL	0.27	0.25	-5.2
MS	0.20	0.20	-1.6	SC	0.25	0.24	-3.2
LA	0.20	0.20	-2.2	DE	0.26	0.23	-12.1
PA	0.20	0.20	-1.5	VA	0.22	0.21	-4.9
WI	0.20	0.19	-0.2	WI	0.23	0.20	-15.5
NV	0.20	0.19	-3.7	DC	0.17	0.14	-24.1
OH	0.19	0.18	-0.5				
CO	0.19	0.18	-4.1				
MI	0.18	0.18	0.3				
MD	0.18	0.18	0.5				
AK	0.17	0.17	2.2				
NY	0.18	0.17	-3.2				
NJ	0.17	0.17	-1.9				
ID	0.18	0.17	-5.7				
CT	0.16	0.17	1.1				
WV	0.17	0.16	-3.0				
MA	0.15	0.15	0.3				
NH	0.15	0.15	-3.2				
IL	0.13	0.12	-0.9				
RI	0.12	0.12	0.5				
HI	0.12	0.11	-8.0				
MT	0.08	0.07	-4.9				
VT	0.07	0.07	-1.0				
DC	0.06	0.06	-1.9				

Note: Rates expressed as deaths per 1000 population. No black deaths for this age group were reported in the states of AK, IA, ID, KY, ME, MN, MT, ND, NH, NM, OK, OR, RI, SD, UT, VT, WV, and WY.

Table A.14: One-year Mortality Rates by State of Birth, 7- & 8-Year-Olds, 1990

Non-Blacks				Blacks			
State	Census Rate	DA Rate	% Difference	State	Census Rate	DA Rate	% Difference
NE	0.31	0.29	-7.0	OR	0.57	0.54	-4.8
DE	0.28	0.27	-3.4	AR	0.52	0.51	-0.6
KY	0.28	0.27	-3.7	WV	0.44	0.48	9.7
NM	0.28	0.27	-3.7	DE	0.49	0.48	-1.6
ID	0.27	0.27	-1.7	MA	0.56	0.48	-16.9
HI	0.29	0.26	-11.5	IA	0.51	0.48	-8.1
FL	0.26	0.25	-6.7	MO	0.51	0.43	-18.3
MS	0.23	0.23	-0.4	TN	0.45	0.43	-6.0
MO	0.23	0.23	-2.5	CO	0.44	0.39	-12.8
IA	0.23	0.22	-1.6	NE	0.46	0.39	-18.7
NH	0.22	0.22	0.7	KY	0.39	0.38	-1.8
LA	0.22	0.21	-3.9	GA	0.39	0.38	-3.7
OK	0.21	0.21	-0.8	NV	0.45	0.37	-22.6
AK	0.21	0.20	-2.7	MS	0.39	0.36	-9.0
NV	0.21	0.20	-4.7	WA	0.34	0.36	4.1
AZ	0.20	0.20	-2.5	NY	0.38	0.32	-17.3
TX	0.20	0.19	-3.6	MN	0.36	0.32	-15.6
AR	0.20	0.19	-3.4	NC	0.33	0.30	-7.3
MI	0.20	0.19	-2.1	OK	0.36	0.30	-20.9
CO	0.20	0.19	-5.2	IL	0.33	0.30	-11.5
TN	0.18	0.18	-3.0	PA	0.35	0.30	-17.0
NC	0.18	0.18	-3.2	FL	0.33	0.29	-11.8
NY	0.18	0.17	-5.0	DC	0.35	0.28	-23.9
VA	0.18	0.17	-2.0	AL	0.29	0.27	-8.4
IL	0.18	0.17	-4.3	VA	0.30	0.27	-11.6
RI	0.18	0.17	-4.5	NJ	0.34	0.27	-24.5
NJ	0.17	0.17	-1.0	LA	0.27	0.25	-8.4
KS	0.18	0.17	-5.8	IN	0.26	0.23	-11.9
CA	0.17	0.16	-4.9	OH	0.25	0.23	-9.1
MD	0.17	0.16	-1.6	TX	0.24	0.22	-7.9
IN	0.17	0.16	-2.0	CA	0.26	0.21	-22.4
ME	0.16	0.16	-0.7	MI	0.20	0.21	1.2
OH	0.16	0.16	-2.0	SC	0.21	0.20	-4.7
SC	0.16	0.16	-3.2	MD	0.21	0.20	-7.1
PA	0.16	0.15	-4.3	WI	0.12	0.11	-11.2
WY	0.16	0.15	-8.7	CT	0.13	0.11	-23.5
WV	0.15	0.15	-1.7				
WI	0.15	0.15	-0.8				
AL	0.15	0.14	-3.5				
OR	0.16	0.14	-7.7				
UT	0.15	0.14	-2.8				
MA	0.15	0.14	-5.0				
GA	0.14	0.13	-4.2				
CT	0.14	0.13	-4.5				
WA	0.13	0.12	-6.6				
SD	0.12	0.12	-3.3				
MN	0.12	0.11	-4.4				
MT	0.11	0.11	-5.2				
VT	0.07	0.07	-4.7				
ND	0.04	0.04	-4.7				
DC	0.00	0.00	0.0				

Note: Rates expressed as deaths per 1000 population. No non-black deaths were reported for DC natives in this age group. No black deaths for this age group were reported for natives of the states of AK, AZ, HI, ID, KS, ME, MT, ND, NH, NM, RI, SD, UT, VT, WY.

Table A.15: One-year Mortality Rates by State of Birth, 9- & 10-Year-Olds, 1990

Non-Blacks				Blacks			
State	Census Rate	DA Rate	% Difference	State	Census Rate	DA Rate	% Difference
WY	0.37	0.38	1.8	WI	0.42	0.44	5.9
NV	0.33	0.35	7.6	NE	0.46	0.41	-11.5
AL	0.29	0.29	0.1	NV	0.43	0.40	-5.3
WV	0.28	0.28	-0.5	SC	0.37	0.38	3.3
ND	0.28	0.28	0.9	TN	0.40	0.37	-7.1
WA	0.27	0.27	-0.5	MS	0.37	0.37	-0.6
NE	0.25	0.25	0.3	AR	0.36	0.36	0.7
GA	0.25	0.25	-0.1	KY	0.40	0.36	-12.1
KS	0.25	0.25	-2.7	PA	0.38	0.36	-6.9
TN	0.25	0.24	-1.9	MI	0.35	0.34	-1.6
IN	0.23	0.23	0.2	MO	0.37	0.34	-8.5
AK	0.23	0.23	0.3	GA	0.35	0.34	-4.5
AZ	0.23	0.23	-1.0	OH	0.37	0.33	-10.3
MS	0.24	0.23	-3.2	FL	0.36	0.33	-8.8
MT	0.22	0.22	0.2	NC	0.31	0.31	-2.3
FL	0.22	0.22	-1.4	VA	0.28	0.27	-3.4
TX	0.21	0.21	-1.3	CA	0.29	0.25	-15.0
SC	0.21	0.21	0.8	TX	0.25	0.24	-2.0
NM	0.21	0.21	-0.4	CT	0.22	0.22	1.2
IA	0.20	0.21	2.2	LA	0.22	0.22	-3.1
NJ	0.21	0.20	-0.8	NJ	0.25	0.21	-17.6
PA	0.20	0.20	1.9	IL	0.23	0.21	-11.3
VT	0.21	0.20	-3.1	MA	0.23	0.20	-13.6
LA	0.20	0.20	2.2	NY	0.19	0.18	-5.4
MI	0.19	0.20	2.0	MD	0.18	0.18	-4.3
OR	0.19	0.19	-2.2	IN	0.16	0.16	1.2
MD	0.18	0.19	4.8	AL	0.16	0.16	-1.1
CO	0.19	0.18	-0.8	KS	0.17	0.15	-10.6
RI	0.17	0.17	0.5	DC	0.10	0.09	-16.1
OK	0.17	0.17	-0.1				
MO	0.17	0.17	1.5				
MN	0.17	0.17	0.6				
CA	0.16	0.16	-1.4				
OH	0.15	0.16	3.1				
ID	0.16	0.16	-3.4				
AR	0.15	0.15	-2.0				
HI	0.16	0.15	-7.7				
VA	0.14	0.14	0.6				
KY	0.14	0.14	0.0				
DE	0.14	0.14	2.7				
WI	0.14	0.14	0.9				
IL	0.14	0.14	-0.6				
NC	0.14	0.14	-0.7				
NY	0.13	0.13	0.4				
UT	0.14	0.13	-3.0				
MA	0.12	0.12	2.6				
SD	0.11	0.12	2.4				
DC	0.14	0.11	-19.5				
CT	0.10	0.10	0.2				
ME	0.10	0.10	-3.4				
NH	0.07	0.08	4.1				

Note: Rates expressed as deaths per 1000 population. No black deaths for this age group were reported for natives of the states of AK, AZ, CO, DE, HI, IA, ID, ME, MN, MT, ND, NH, NM, OK, OR, RI, SD, UT, VT, WA, WV, and WY.

Table A.16: One-year Mortality Rates by State of Birth, Infants, 2000

Non-Blacks				Blacks			
State	Census Rate	DA Rate	% Difference	State	Census Rate	DA Rate	% Difference
ND	9.85	8.47	-16.3	ME	27.03	30.77	12.2
HI	9.23	8.16	-13.0	NH	21.69	22.78	4.8
WV	7.83	7.81	-0.3	DE	19.02	18.40	-3.3
TN	8.34	7.67	-8.8	TN	19.65	17.82	-10.3
DE	8.59	7.49	-14.7	MI	18.93	17.78	-6.5
RI	7.62	7.40	-3.0	SC	16.89	17.27	2.2
AL	7.27	7.32	0.7	WI	16.06	17.15	6.3
OK	7.40	7.26	-2.0	MO	18.89	17.15	-10.2
NC	7.20	6.98	-3.1	IA	20.07	17.02	-17.9
IN	7.00	6.84	-2.4	NE	18.41	16.95	-8.6
AZ	7.48	6.83	-9.5	IL	18.88	16.05	-17.7
ID	7.12	6.70	-6.2	DC	23.19	15.76	-47.2
VT	5.97	6.70	11.0	AL	16.83	15.72	-7.1
NE	6.77	6.64	-2.0	OH	15.16	15.16	0.0
IL	6.93	6.64	-4.5	NC	15.62	14.83	-5.3
MO	6.73	6.62	-1.7	OK	13.46	14.80	9.1
KY	6.72	6.60	-1.8	NV	15.27	14.65	-4.3
OH	6.84	6.55	-4.5	GA	15.77	14.45	-9.2
KS	6.58	6.55	-0.5	LA	14.01	14.27	1.8
AK	6.68	6.46	-3.4	PA	16.24	14.24	-14.0
AR	6.89	6.45	-6.8	MN	13.72	14.04	2.3
PA	6.49	6.34	-2.4	MS	13.79	14.01	1.6
CO	6.62	6.33	-4.6	CO	14.05	14.00	-0.4
MI	6.23	6.30	1.0	AR	13.45	13.90	3.3
SD	6.68	6.27	-6.5	CT	13.22	13.39	1.3
NM	6.63	6.22	-6.6	IN	13.46	13.32	-1.1
MS	6.37	6.20	-2.7	AZ	13.72	13.08	-4.9
LA	6.24	6.19	-0.8	NJ	14.67	12.91	-13.7
GA	6.46	6.01	-7.5	AK	11.11	12.84	13.5
MT	5.70	5.96	4.3	FL	15.56	12.82	-21.4
IA	6.05	5.92	-2.2	MD	15.09	12.81	-17.8
OR	6.04	5.83	-3.6	RI	15.85	12.60	-25.8
NV	6.13	5.80	-5.6	KS	11.78	12.36	4.7
UT	6.18	5.78	-6.9	MT	5.04	12.27	58.9
WA	6.09	5.75	-6.0	VA	12.76	12.12	-5.3
WI	5.76	5.63	-2.3	UT	9.93	11.47	13.4
FL	6.03	5.56	-8.5	NM	7.09	11.24	36.9
TX	5.80	5.35	-8.4	OR	10.68	11.14	4.1
SC	5.53	5.33	-3.7	KY	12.49	11.13	-12.2
VA	5.34	5.21	-2.4	CA	11.54	10.76	-7.3
CT	5.33	5.19	-2.8	TX	11.64	10.44	-11.5
CA	5.76	5.19	-11.0	NY	12.25	10.28	-19.1
NY	5.33	5.16	-3.3	WA	7.66	9.00	15.0
MN	5.29	5.11	-3.4	WY	5.63	8.81	36.1
MD	5.10	4.99	-2.2	HI	11.35	8.65	-31.3
ME	5.66	4.97	-14.0	WV	7.29	8.51	14.3
NH	4.79	4.86	1.5	MA	11.64	8.42	-38.2
NJ	4.59	4.56	-0.6	ND	8.66	6.12	-41.6
MA	4.37	4.44	1.6				
WY	4.09	4.10	0.2				
DC	3.95	3.76	-5.0				

Note: Rates expressed as deaths per 1000 population. No black deaths for this age group were reported for natives of the states of ID, SD, and VT.

Table A.17: One-year Mortality Rates by State of Birth, 1- & 2-Year-Olds, 2000

Non-Blacks				Blacks			
State	Census Rate	DA Rate	% Difference	State	Census Rate	DA Rate	% Difference
KY	0.58	0.55	-4.3	WY	2.83	5.36	47.2
SD	0.56	0.55	-2.0	SD	3.01	2.84	-6.0
IN	0.56	0.54	-3.4	DE	1.59	1.59	0.2
NM	0.57	0.54	-4.4	NM	1.16	1.47	20.9
FL	0.52	0.49	-6.7	AR	1.28	1.40	8.3
AL	0.49	0.49	-1.4	KS	1.36	1.31	-3.6
DE	0.50	0.48	-3.8	AZ	1.25	1.21	-3.0
MT	0.48	0.47	-2.3	UT	0.95	1.08	12.2
MS	0.48	0.47	-2.2	WI	0.95	0.99	4.0
TX	0.49	0.45	-8.6	MS	0.94	0.95	1.2
AZ	0.50	0.45	-9.3	KY	0.82	0.91	10.3
OK	0.47	0.45	-4.6	AL	0.96	0.91	-6.1
NV	0.46	0.45	-2.9	IN	0.93	0.89	-4.6
AK	0.44	0.44	-1.9	TN	0.92	0.86	-7.6
WI	0.44	0.43	-2.2	LA	0.92	0.85	-8.6
GA	0.45	0.42	-6.4	MO	0.88	0.83	-6.3
KS	0.42	0.41	-2.6	TX	0.84	0.76	-11.2
SC	0.42	0.41	-2.5	MI	0.77	0.75	-2.4
VT	0.43	0.40	-7.7	SC	0.75	0.71	-5.8
AR	0.41	0.40	-3.9	OH	0.71	0.69	-3.6
MO	0.41	0.39	-4.9	NC	0.74	0.67	-9.8
LA	0.40	0.39	-4.7	NE	0.75	0.67	-11.9
NE	0.39	0.39	-1.1	DC	0.84	0.66	-27.8
ID	0.38	0.38	0.1	GA	0.62	0.60	-2.5
TN	0.40	0.38	-6.4	MD	0.63	0.59	-6.8
ME	0.37	0.38	1.1	CO	0.58	0.57	-1.4
UT	0.39	0.37	-3.7	CT	0.60	0.57	-4.4
VA	0.38	0.37	-1.9	IL	0.61	0.56	-9.4
NC	0.38	0.36	-4.0	WA	0.50	0.56	10.9
CO	0.37	0.36	-1.8	OK	0.55	0.55	-0.3
IA	0.35	0.35	0.3	FL	0.61	0.54	-13.4
WA	0.36	0.35	-2.5	VA	0.57	0.53	-6.6
WY	0.36	0.35	-3.2	WV	0.49	0.50	3.6
NY	0.36	0.34	-4.6	MN	0.50	0.48	-4.7
CA	0.38	0.34	-11.0	CA	0.48	0.44	-11.1
MA	0.34	0.34	-1.6	PA	0.47	0.43	-9.3
MI	0.34	0.34	-2.7	NY	0.44	0.39	-14.8
MN	0.35	0.33	-4.6	NJ	0.42	0.36	-15.6
NJ	0.33	0.32	-4.1	OR	0.32	0.34	6.1
OH	0.33	0.32	-4.3	IA	0.30	0.34	12.8
PA	0.32	0.31	-2.2	MA	0.43	0.33	-30.2
WV	0.30	0.29	-3.8	NV	0.20	0.20	-2.6
NH	0.30	0.29	-2.5				
IL	0.30	0.29	-3.4				
OR	0.29	0.27	-6.8				
HI	0.20	0.18	-6.9				
RI	0.17	0.16	-4.4				
ND	0.17	0.16	-3.3				
CT	0.15	0.15	-3.5				
MD	0.15	0.14	-1.1				
DC	0.10	0.09	-19.8				

Note: Rates expressed as deaths per 1000 population. No black deaths for this age group were reported for natives of the states of AK, HI, ID, ME, MT, ND, NH, RI, and VT.

Table A.18: One-year Mortality Rates by State of Birth, 3- & 4-Year-Olds, 2000

Non-Blacks				Blacks			
State	Census Rate	DA Rate	% Difference	State	Census Rate	DA Rate	% Difference
AK	0.68	0.69	2.4	UT	1.07	1.06	-1.5
WY	0.35	0.35	0.4	NM	0.54	0.76	28.1
NE	0.33	0.32	-1.7	OR	0.73	0.68	-7.3
LA	0.31	0.31	0.4	AR	0.56	0.55	-1.5
AR	0.29	0.30	2.5	AZ	0.46	0.53	14.6
MS	0.28	0.29	2.2	WV	0.42	0.50	15.8
KS	0.28	0.28	2.1	LA	0.49	0.47	-3.8
MT	0.27	0.28	3.2	MO	0.48	0.47	-1.9
OR	0.28	0.27	-6.3	CO	0.42	0.45	6.5
MO	0.26	0.26	-1.1	KS	0.44	0.45	2.2
OH	0.26	0.25	-0.6	MS	0.42	0.44	5.7
AL	0.25	0.25	-0.4	NV	0.41	0.44	7.5
NM	0.27	0.25	-5.6	MI	0.42	0.41	-0.4
AZ	0.27	0.25	-9.0	IL	0.41	0.39	-6.4
WV	0.24	0.24	1.7	PA	0.42	0.38	-9.8
TN	0.24	0.23	-4.5	IA	0.43	0.38	-13.5
TX	0.24	0.23	-6.1	TN	0.41	0.37	-9.5
SC	0.23	0.23	-1.8	FL	0.40	0.37	-9.6
OK	0.22	0.23	1.7	NC	0.39	0.36	-9.5
GA	0.22	0.22	0.1	NE	0.31	0.35	12.8
MD	0.22	0.22	-0.7	TX	0.33	0.32	-4.1
NC	0.20	0.20	-1.2	OH	0.30	0.31	1.7
ID	0.19	0.20	1.9	SC	0.31	0.31	-1.4
UT	0.20	0.20	-3.2	KY	0.27	0.30	10.0
WI	0.19	0.19	0.0	CA	0.31	0.29	-7.3
SD	0.19	0.19	1.4	GA	0.30	0.28	-6.7
IN	0.19	0.19	-1.1	MN	0.24	0.27	12.0
FL	0.20	0.19	-4.3	AL	0.25	0.26	0.7
CA	0.21	0.19	-10.8	MD	0.25	0.24	-5.7
IA	0.18	0.18	0.3	WI	0.22	0.23	2.8
DE	0.18	0.18	-2.1	DE	0.22	0.21	-3.5
IL	0.19	0.18	-4.3	VA	0.22	0.21	-3.9
MN	0.18	0.18	-0.2	OK	0.18	0.20	13.0
NV	0.19	0.18	-6.0	NY	0.21	0.19	-7.1
CO	0.17	0.17	0.0	NJ	0.21	0.19	-11.9
PA	0.18	0.17	-1.1	MA	0.23	0.17	-31.1
MI	0.18	0.17	-0.9	DC	0.19	0.16	-18.6
HI	0.20	0.17	-15.4	IN	0.15	0.16	6.7
KY	0.17	0.16	-0.4	WA	0.10	0.12	15.3
RI	0.16	0.16	-2.6	CT	0.08	0.08	4.8
CT	0.16	0.16	-1.0				
ND	0.17	0.16	-6.6				
VT	0.16	0.16	-2.3				
WA	0.16	0.15	-2.5				
NY	0.16	0.15	-4.5				
MA	0.15	0.14	-2.7				
VA	0.14	0.13	-4.7				
ME	0.11	0.11	0.2				
NH	0.11	0.11	0.3				
NJ	0.09	0.09	-1.6				
DC	0.00	0.00	0.0				

Note: Rates expressed as deaths per 1000 population. No black deaths for this age group were reported for natives of the states of AK, HI, ID, ME, MT, ND, NH, RI, SD, VT, and WY.

Table A.19: One-year Mortality Rates by State of Birth, 5- & 6-Year-Olds, 2000

Non-Blacks				Blacks			
State	Census Rate	DA Rate	% Difference	State	Census Rate	DA Rate	% Difference
SD	0.51	0.52	1.7	NM	1.05	1.41	25.6
MT	0.34	0.37	7.2	DE	0.86	0.85	-1.9
ID	0.35	0.35	-0.1	NE	0.83	0.68	-21.4
NE	0.30	0.30	1.1	WV	0.44	0.49	10.4
IA	0.26	0.26	1.2	OK	0.37	0.39	3.5
AR	0.26	0.25	-1.1	RI	0.51	0.39	-31.3
AK	0.26	0.25	-4.9	WA	0.28	0.36	22.3
NM	0.26	0.25	-4.6	LA	0.33	0.32	-5.9
NV	0.25	0.24	-2.6	MO	0.33	0.31	-6.9
TX	0.21	0.20	-5.5	IN	0.32	0.30	-4.1
IN	0.20	0.19	-1.2	MS	0.28	0.30	6.2
GA	0.20	0.19	-4.7	CA	0.30	0.29	-5.3
OH	0.19	0.19	0.1	MI	0.28	0.28	2.1
OK	0.20	0.19	-2.7	SC	0.26	0.26	-2.0
MO	0.19	0.19	-0.8	TX	0.26	0.25	-3.9
WV	0.19	0.18	-5.3	MD	0.28	0.25	-11.3
NC	0.18	0.18	-1.3	CT	0.24	0.24	-0.9
WI	0.18	0.18	2.2	IL	0.25	0.24	-7.2
AZ	0.18	0.17	-3.0	NC	0.23	0.22	-4.4
UT	0.17	0.17	2.0	TN	0.23	0.22	-6.8
VA	0.17	0.17	-3.6	AR	0.20	0.21	4.0
AL	0.17	0.17	-1.1	FL	0.22	0.20	-8.8
KY	0.16	0.16	-0.3	AL	0.20	0.19	-3.7
SC	0.16	0.16	1.2	OH	0.20	0.19	-3.5
MN	0.15	0.16	1.9	AZ	0.13	0.17	24.5
OR	0.16	0.16	-3.7	VA	0.18	0.17	-1.4
PA	0.15	0.15	-1.5	NY	0.17	0.17	-5.0
RI	0.16	0.15	-4.0	MA	0.22	0.16	-35.4
WA	0.15	0.15	-3.8	PA	0.17	0.15	-12.9
TN	0.14	0.15	0.9	CO	0.15	0.15	-1.4
MS	0.15	0.15	-3.2	NJ	0.17	0.15	-12.7
CA	0.16	0.14	-7.5	WI	0.14	0.14	0.0
VT	0.15	0.14	-3.0	KS	0.15	0.14	-7.5
ME	0.14	0.14	1.1	GA	0.14	0.14	-3.4
CO	0.14	0.14	-1.8	KY	0.09	0.10	10.2
HI	0.14	0.14	-6.5	DC	0.10	0.09	-21.3
IL	0.13	0.13	-1.1				
MA	0.13	0.13	-3.2				
MI	0.12	0.13	1.2				
FL	0.13	0.12	-4.8				
MD	0.12	0.12	-0.3				
CT	0.12	0.11	-2.4				
KS	0.11	0.11	-4.3				
NY	0.11	0.11	-2.3				
NJ	0.09	0.09	0.0				
LA	0.06	0.06	0.1				
DE	0.06	0.06	0.4				
NH	0.04	0.03	-3.6				

Note: Rates expressed as deaths per 1000 population. No non-black deaths were reported for this age group for natives of the states of ND and WY, and the District of Columbia. No black deaths for this age group were reported for natives of the states of AK, HI, IA, ID, ME, MN, MT, ND, NH, NV, OR, SD, UT, VT, and WY.

Table A.20: One-year Mortality Rates by State of Birth, 7- & 8-Year-Olds, 2000

Non-Blacks				Blacks			
State	Census Rate	DA Rate	% Difference	State	Census Rate	DA Rate	% Difference
LA	0.24	0.24	2.0	RI	1.06	0.77	-37.5
ID	0.23	0.24	2.3	NM	0.51	0.74	31.0
OK	0.20	0.20	-0.6	WA	0.48	0.61	22.4
NH	0.20	0.19	-0.3	MN	0.44	0.46	3.4
GA	0.20	0.19	-1.7	WI	0.41	0.41	1.0
AR	0.19	0.19	1.4	DE	0.37	0.37	0.0
KY	0.19	0.19	-1.5	IA	0.29	0.37	21.4
AZ	0.19	0.19	-1.7	NE	0.30	0.35	13.7
SD	0.20	0.18	-6.0	AZ	0.30	0.34	11.7
NV	0.19	0.18	-3.6	DC	0.38	0.32	-18.0
TN	0.18	0.18	-2.7	CO	0.29	0.30	3.2
MN	0.18	0.18	-1.0	KS	0.27	0.28	3.9
DE	0.17	0.17	1.6	AR	0.26	0.26	1.8
OR	0.17	0.17	0.2	FL	0.28	0.26	-8.1
PA	0.17	0.17	-0.2	SC	0.26	0.26	-1.2
OH	0.16	0.16	0.5	IN	0.25	0.25	-0.7
WY	0.16	0.16	2.2	MI	0.25	0.25	-1.6
ME	0.16	0.16	-1.9	TX	0.24	0.23	-4.4
IN	0.16	0.16	-0.5	OH	0.22	0.22	-1.4
TX	0.16	0.15	-2.6	MO	0.22	0.22	-3.9
KS	0.15	0.15	2.9	AL	0.22	0.21	-0.2
MO	0.16	0.15	-1.5	TN	0.23	0.21	-6.1
ND	0.16	0.15	-3.5	IL	0.19	0.19	-4.8
MI	0.15	0.15	-0.9	GA	0.19	0.18	-0.9
WI	0.15	0.14	-2.2	NC	0.19	0.18	-5.8
MS	0.14	0.14	-0.2	MS	0.16	0.17	5.9
CO	0.14	0.14	-1.2	LA	0.17	0.17	-1.7
UT	0.14	0.14	-3.5	CA	0.17	0.17	-2.4
WV	0.14	0.14	0.1	MA	0.21	0.16	-31.2
MT	0.14	0.14	-0.6	MD	0.14	0.14	-1.1
NE	0.14	0.13	-2.5	VA	0.13	0.13	-2.5
HI	0.14	0.13	-6.8	NJ	0.14	0.13	-9.2
VA	0.13	0.13	-3.6	PA	0.12	0.11	-11.6
AL	0.13	0.13	-1.3	KY	0.08	0.09	12.2
SC	0.12	0.12	0.6	NY	0.09	0.09	-1.2
NY	0.12	0.12	-1.5	CT	0.08	0.08	0.0
MD	0.12	0.12	-2.2				
FL	0.12	0.12	-3.2				
NC	0.12	0.12	-1.0				
IL	0.12	0.12	-0.6				
MA	0.11	0.11	-0.8				
CA	0.12	0.11	-6.4				
WA	0.11	0.11	0.9				
NM	0.09	0.09	1.7				
IA	0.09	0.09	3.0				
NJ	0.09	0.09	-1.2				
CT	0.08	0.07	-4.7				
DC	0.07	0.07	-4.9				
RI	0.04	0.04	-7.2				
AK	0.00	0.00	0.0				
VT	0.00	0.00	0.0				

Note: Rates expressed as deaths per 1000 population. No non-black deaths were reported for this age group for natives of the states of AK and VT. No black deaths for this age group were reported for natives of the states of AK, HI, ID, ME, MT, ND, NH, NV, OK, OR, SD, UT, VT, WV, and WY.

Table A.21: One-year Mortality Rates by State of Birth, 9- & 10-Year-Olds, 2000

Non-Blacks				Blacks			
State	Census Rate	DA Rate	% Difference	State	Census Rate	DA Rate	% Difference
SD	0.36	0.37	3.8	WY	8.37	5.36	-56.1
WY	0.22	0.24	7.8	WV	1.65	2.16	23.6
DE	0.23	0.22	-2.5	DE	0.82	0.79	-3.8
OH	0.19	0.20	2.6	HI	0.59	0.53	-12.8
SC	0.19	0.19	1.9	CT	0.51	0.53	2.8
VT	0.19	0.19	-1.2	MA	0.47	0.38	-24.7
LA	0.18	0.19	3.7	IL	0.37	0.36	-4.2
UT	0.18	0.18	1.9	TN	0.34	0.33	-2.7
NH	0.18	0.18	-3.6	VA	0.29	0.30	3.6
WI	0.16	0.17	5.6	KY	0.24	0.29	19.6
TN	0.17	0.17	0.5	OH	0.26	0.28	7.8
NV	0.17	0.17	-2.7	TX	0.28	0.28	-0.2
OK	0.16	0.16	1.6	AR	0.25	0.26	2.4
NC	0.16	0.16	0.2	MS	0.24	0.25	3.5
IA	0.16	0.16	-0.5	MI	0.24	0.24	1.9
ID	0.15	0.16	3.2	LA	0.24	0.24	0.4
OR	0.15	0.16	2.9	MD	0.23	0.23	0.3
NE	0.15	0.15	0.6	CA	0.23	0.22	-1.0
MO	0.15	0.15	2.7	SC	0.20	0.21	4.1
AR	0.15	0.15	2.3	DC	0.24	0.20	-19.1
KS	0.15	0.15	-2.1	PA	0.20	0.19	-5.5
AZ	0.15	0.15	-0.2	OK	0.18	0.19	6.2
ND	0.15	0.14	-2.7	FL	0.20	0.19	-5.5
AK	0.13	0.14	3.7	NY	0.18	0.18	-0.4
KY	0.13	0.14	2.7	GA	0.17	0.18	1.2
MT	0.13	0.13	5.3	MN	0.16	0.17	10.3
HI	0.14	0.13	-2.6	NJ	0.19	0.17	-9.0
FL	0.14	0.13	-2.8	CO	0.15	0.16	7.6
CO	0.13	0.13	2.4	IN	0.15	0.16	5.6
MD	0.13	0.13	1.4	MO	0.16	0.15	-6.3
TX	0.13	0.13	0.0	WI	0.15	0.14	-6.0
PA	0.13	0.13	2.3	KS	0.14	0.14	-2.5
CA	0.12	0.12	-2.7	WA	0.11	0.13	19.0
IN	0.12	0.12	0.5	AL	0.11	0.12	3.4
ME	0.12	0.12	2.0	NC	0.11	0.12	0.3
GA	0.12	0.12	-0.7				
WA	0.12	0.12	-0.6				
MS	0.11	0.11	2.8				
VA	0.11	0.11	-0.8				
DC	0.13	0.11	-13.1				
IL	0.11	0.11	2.3				
NY	0.10	0.10	-0.1				
NM	0.09	0.10	4.7				
MI	0.09	0.09	1.3				
NJ	0.09	0.09	-0.4				
WV	0.09	0.09	-2.8				
AL	0.09	0.09	-2.6				
MN	0.08	0.09	1.9				
MA	0.08	0.08	1.4				
CT	0.08	0.08	-2.8				
RI	0.07	0.07	-1.5				

Note: Rates expressed as deaths per 1000 population. No black deaths for this age group were reported for natives of the states of AK, AZ, IA, ID, ME, MT, ND, NE, NH, NM, NV, OR, RI, SD, UT, and VT.

Table A.22: One-year Mortality Rates by State of Birth, 11- & 12-Year-Olds, 2000

Non-Blacks				Blacks			
State	Census Rate	DA Rate	% Difference	State	Census Rate	DA Rate	% Difference
ID	0.38	0.39	2.1	UT	1.16	1.62	28.2
AK	0.33	0.33	0.2	NM	0.56	0.80	29.3
AL	0.28	0.27	-1.2	DE	0.66	0.65	-2.1
NC	0.27	0.27	0.1	KS	0.62	0.59	-5.8
NV	0.27	0.26	-1.1	WV	0.45	0.55	18.3
FL	0.24	0.24	-0.4	AR	0.47	0.47	0.4
LA	0.22	0.23	2.8	IA	0.51	0.46	-11.0
MD	0.22	0.22	2.3	TN	0.43	0.41	-3.3
TN	0.22	0.22	0.2	MI	0.35	0.36	2.3
ND	0.23	0.22	-2.5	LA	0.35	0.36	2.0
NE	0.22	0.22	1.3	SC	0.35	0.35	-0.4
TX	0.22	0.22	-0.4	IL	0.33	0.33	0.3
MS	0.21	0.21	1.3	FL	0.32	0.30	-5.7
OK	0.20	0.21	1.1	NV	0.24	0.28	12.5
AZ	0.21	0.21	-1.5	MS	0.25	0.26	5.5
WV	0.21	0.21	-1.5	NY	0.27	0.26	-2.2
KY	0.19	0.20	2.6	NC	0.24	0.24	0.4
CT	0.19	0.19	1.3	VA	0.23	0.24	0.8
NM	0.19	0.19	1.9	OH	0.22	0.23	4.5
KS	0.19	0.19	1.0	TX	0.23	0.22	-0.4
DE	0.18	0.18	2.1	GA	0.22	0.22	0.1
UT	0.18	0.18	1.0	KY	0.18	0.21	15.4
SD	0.17	0.18	3.9	MO	0.21	0.21	-3.2
SC	0.17	0.18	2.4	MA	0.20	0.20	-0.5
IA	0.17	0.18	3.3	PA	0.20	0.19	-9.3
MT	0.17	0.17	1.5	NJ	0.20	0.18	-8.3
WA	0.17	0.17	-0.2	AL	0.16	0.18	6.3
AR	0.17	0.17	0.3	IN	0.16	0.17	6.7
OH	0.17	0.17	1.7	CA	0.16	0.16	-0.2
MO	0.17	0.17	0.6	WA	0.12	0.15	17.8
HI	0.17	0.17	-2.9	DC	0.15	0.13	-11.9
OR	0.16	0.17	3.4	MD	0.13	0.13	-1.0
MI	0.16	0.17	0.9	OK	0.10	0.10	2.5
CO	0.16	0.16	-0.8	CT	0.09	0.08	-2.4
IN	0.15	0.16	3.7	WI	0.08	0.08	-4.9
ME	0.15	0.16	2.8				
PA	0.15	0.15	1.2				
IL	0.15	0.15	1.7				
RI	0.15	0.15	-1.2				
MN	0.14	0.14	3.1				
CA	0.14	0.14	-2.2				
NJ	0.13	0.13	0.2				
MA	0.13	0.13	2.2				
NY	0.13	0.13	1.0				
GA	0.13	0.13	-1.0				
NH	0.13	0.12	-3.7				
VA	0.12	0.12	1.0				
WI	0.09	0.09	2.6				
DC	0.06	0.05	-14.5				

Note: Rates expressed as deaths per 1000 population. No non-black deaths were reported for this age group for natives of the states of VT and WY. No black deaths for this age group were reported for natives of the states of AK, AZ, CO, HI, ID, ME, MN, MT, ND, NE, NH, OR, RI, SD, VT, and WY.

Table A.23: One-year Mortality Rates by State of Birth, 13- & 14-Year-Olds, 2000

Non-Blacks				Blacks			
State	Census Rate	DA Rate	% Difference	State	Census Rate	DA Rate	% Difference
SD	0.49	0.52	6.2	ME	3.71	6.92	46.4
AL	0.44	0.45	2.0	NM	1.16	1.61	28.3
WV	0.44	0.45	0.8	HI	1.30	1.17	-11.0
MT	0.40	0.40	-0.7	NE	0.58	0.77	25.3
AR	0.38	0.38	0.4	CO	0.69	0.71	2.9
KS	0.36	0.36	0.3	RI	0.53	0.54	3.6
OR	0.34	0.33	-1.9	WI	0.53	0.54	1.9
GA	0.33	0.33	0.7	IL	0.52	0.53	2.0
TN	0.32	0.32	1.4	TN	0.50	0.51	1.6
OH	0.32	0.31	-1.3	IA	0.44	0.48	9.4
AK	0.33	0.30	-8.4	MO	0.46	0.47	2.8
NC	0.29	0.30	1.3	KS	0.43	0.46	5.8
IN	0.30	0.30	-0.2	KY	0.40	0.43	7.2
NH	0.30	0.30	-1.1	IN	0.42	0.43	1.1
ND	0.29	0.29	1.9	MS	0.39	0.42	6.5
KY	0.27	0.28	5.0	MA	0.41	0.41	0.4
AZ	0.27	0.27	2.6	AL	0.40	0.41	2.8
MS	0.25	0.27	6.0	DC	0.48	0.41	-18.1
SC	0.26	0.27	3.6	PA	0.39	0.39	-1.5
HI	0.26	0.26	1.8	NJ	0.40	0.38	-5.6
FL	0.26	0.26	0.3	NY	0.38	0.37	-2.7
UT	0.24	0.26	5.2	LA	0.36	0.36	0.3
TX	0.26	0.26	0.0	VA	0.34	0.35	5.1
NV	0.27	0.25	-4.3	MD	0.33	0.35	5.9
CA	0.24	0.25	1.4	OH	0.33	0.33	0.2
WY	0.23	0.24	7.1	MI	0.31	0.33	8.5
WA	0.24	0.24	1.6	NV	0.26	0.32	18.1
MD	0.23	0.24	3.3	GA	0.31	0.32	0.6
CO	0.23	0.23	-1.5	FL	0.30	0.30	0.4
MO	0.23	0.23	2.3	OK	0.28	0.30	4.3
IL	0.23	0.23	-0.2	CT	0.28	0.29	2.4
ME	0.23	0.22	-2.7	NC	0.26	0.28	6.2
MN	0.21	0.21	2.7	AR	0.27	0.27	0.5
NM	0.20	0.21	3.6	MN	0.27	0.26	-6.1
DE	0.19	0.20	4.7	CA	0.24	0.25	1.8
PA	0.19	0.19	2.1	SC	0.22	0.24	6.7
NE	0.19	0.19	0.6	TX	0.21	0.22	3.4
OK	0.19	0.19	-1.5	AZ	0.21	0.20	-4.9
MI	0.19	0.19	0.7				
ID	0.17	0.18	4.5				
WI	0.18	0.18	0.3				
IA	0.18	0.18	-1.6				
VA	0.18	0.18	-1.1				
MA	0.17	0.17	1.3				
CT	0.16	0.17	3.3				
NY	0.15	0.15	1.7				
LA	0.14	0.15	2.3				
DC	0.12	0.12	-3.3				
NJ	0.11	0.11	-0.1				
RI	0.08	0.08	-1.0				
VT	0.06	0.06	0.2				

Note: Rates expressed as deaths per 1000 population. No black deaths for this age group were reported for natives of the states of AK, DE, ID, MT, ND, NH, OR, SD, UT, VT, WA, WV, and WY.

Table A.24: One-year Mortality Rates by State of Birth, 15- & 16-Year-Olds, 2000

Non-Blacks				Blacks			
State	Census Rate	DA Rate	% Difference	State	Census Rate	DA Rate	% Difference
MS	0.93	0.96	2.6	NV	2.17	2.15	-1.1
AK	0.88	0.88	-0.4	IA	1.33	1.50	11.1
MT	0.85	0.85	0.2	KY	1.11	1.32	15.8
DE	0.89	0.83	-8.0	NE	1.09	1.15	5.5
AL	0.78	0.79	0.9	MA	0.78	0.86	8.9
AR	0.78	0.78	0.6	CO	0.66	0.78	14.3
WY	0.65	0.66	1.4	FL	0.76	0.74	-3.4
NH	0.61	0.66	7.3	AR	0.62	0.72	14.7
MO	0.64	0.65	2.8	TX	0.67	0.68	0.5
SC	0.59	0.59	0.5	IL	0.69	0.67	-2.4
NV	0.61	0.58	-5.1	MI	0.64	0.67	4.0
WV	0.57	0.58	2.0	DC	0.69	0.66	-4.6
OR	0.60	0.58	-2.8	TN	0.65	0.66	1.8
OK	0.59	0.58	-1.3	NC	0.66	0.66	-0.3
SD	0.52	0.58	9.4	IN	0.69	0.65	-6.3
AZ	0.58	0.57	-1.8	MD	0.64	0.62	-2.8
GA	0.57	0.57	-0.5	WI	0.56	0.61	8.7
NM	0.56	0.56	-0.8	CT	0.60	0.61	1.4
NC	0.54	0.55	2.6	SC	0.58	0.59	2.9
LA	0.54	0.53	-1.6	AL	0.59	0.59	-0.5
ID	0.53	0.53	1.6	LA	0.58	0.58	1.1
FL	0.54	0.53	-0.7	MO	0.57	0.57	0.0
IA	0.52	0.53	0.5	GA	0.55	0.56	1.6
TN	0.54	0.52	-3.1	OR	0.58	0.54	-7.9
VT	0.51	0.52	3.0	CA	0.59	0.54	-10.2
TX	0.52	0.51	-1.1	WA	0.41	0.52	21.1
VA	0.50	0.51	2.5	NJ	0.57	0.51	-11.2
ME	0.50	0.51	0.4	OK	0.48	0.48	1.0
IN	0.48	0.49	1.6	OH	0.45	0.46	2.8
KY	0.47	0.48	3.0	PA	0.46	0.46	-0.6
MD	0.47	0.48	1.5	VA	0.45	0.46	1.7
WI	0.47	0.47	0.6	MS	0.42	0.45	5.2
OH	0.46	0.47	1.5	AZ	0.47	0.43	-9.1
MI	0.46	0.47	1.8	NY	0.33	0.33	-0.4
NE	0.45	0.46	3.6	MN	0.26	0.31	14.3
MN	0.44	0.45	0.8	KS	0.16	0.15	-2.9
WA	0.44	0.44	0.4				
ND	0.42	0.43	2.6				
KS	0.43	0.42	-2.4				
CA	0.41	0.40	-2.3				
UT	0.39	0.40	1.3				
HI	0.41	0.39	-5.0				
IL	0.39	0.39	-0.3				
CO	0.40	0.39	-2.1				
RI	0.34	0.33	-2.1				
PA	0.32	0.32	2.9				
NY	0.30	0.30	0.7				
NJ	0.29	0.30	1.3				
CT	0.27	0.26	-0.7				
MA	0.26	0.25	-1.2				
DC	0.26	0.24	-7.3				

Note: Rates expressed as deaths per 1000 population. No black deaths for this age group were reported for natives of the states of AK, DE, HI, ID, ME, MT, ND, NH, NM, RI, SD, UT, VT, WV, and WY.

Table A.25: One-year Mortality Rates by State of Birth, 17- & 18-Year-Olds, 2000

Non-Blacks				Blacks			
State	Census Rate	DA Rate	% Difference	State	Census Rate	DA Rate	% Difference
AK	1.93	1.87	-3.4	NM	1.87	2.32	19.4
AR	1.22	1.21	-0.3	NV	2.16	2.22	2.9
VT	1.14	1.12	-1.6	RI	1.42	1.96	27.7
SC	1.08	1.09	1.0	MO	2.17	1.95	-10.9
NM	1.05	1.08	3.0	NE	2.08	1.94	-7.0
AL	1.03	1.01	-1.5	OK	1.81	1.71	-5.8
MS	1.02	0.97	-4.5	AZ	1.62	1.66	2.1
AZ	0.92	0.92	-0.2	CO	1.40	1.58	11.5
MT	0.94	0.91	-3.4	CT	1.28	1.48	13.1
KY	0.91	0.91	-0.8	IN	1.31	1.38	5.5
GA	0.92	0.91	-2.1	MD	1.25	1.31	4.8
FL	0.92	0.90	-2.5	LA	1.31	1.31	-0.7
DE	0.90	0.90	-0.5	WI	1.34	1.29	-3.9
LA	0.93	0.89	-4.2	KY	1.32	1.26	-5.0
TN	0.90	0.89	-0.8	PA	1.25	1.24	-0.7
KS	0.89	0.89	-0.2	AR	1.15	1.23	6.6
IN	0.83	0.84	1.2	MS	1.18	1.21	3.0
CO	0.83	0.84	1.9	KS	1.14	1.20	5.5
MO	0.85	0.84	-1.3	TN	1.19	1.19	0.0
IA	0.83	0.82	-0.6	MI	1.10	1.13	2.8
TX	0.80	0.82	2.6	AL	1.11	1.12	0.8
OR	0.81	0.77	-5.6	CA	1.19	1.10	-8.2
OK	0.77	0.77	-0.5	IL	1.12	1.09	-2.2
SD	0.80	0.77	-4.0	OR	0.86	1.09	20.6
WV	0.77	0.76	-1.2	VA	1.06	1.06	0.5
VA	0.75	0.75	-0.2	DC	1.12	0.99	-13.1
NC	0.74	0.75	1.0	WV	1.02	0.97	-5.0
MD	0.70	0.72	3.0	IA	1.09	0.96	-14.3
NV	0.69	0.68	-1.1	NY	0.90	0.92	2.4
MI	0.67	0.67	0.3	GA	0.89	0.90	1.0
CA	0.66	0.67	0.2	MA	0.87	0.87	0.1
PA	0.64	0.64	1.1	NJ	0.92	0.87	-5.9
IL	0.62	0.63	1.6	FL	0.86	0.85	-1.5
HI	0.62	0.63	1.5	TX	0.82	0.85	2.9
UT	0.63	0.62	-0.8	SC	0.78	0.80	2.6
OH	0.63	0.62	-0.5	OH	0.79	0.76	-3.7
WI	0.62	0.62	1.3	HI	0.75	0.72	-4.0
WA	0.61	0.62	0.9	NC	0.71	0.71	0.2
ME	0.60	0.61	0.9	MN	0.60	0.63	5.0
NE	0.61	0.60	-0.8	DE	0.47	0.48	3.0
ID	0.58	0.59	1.2	WA	0.14	0.18	22.9
NH	0.57	0.59	2.8				
MA	0.57	0.58	1.0				
MN	0.56	0.56	-0.9				
NJ	0.55	0.56	0.6				
ND	0.55	0.54	-2.1				
NY	0.53	0.54	2.0				
CT	0.52	0.51	-2.6				
WY	0.43	0.40	-5.9				
RI	0.35	0.38	6.8				
DC	0.32	0.29	-11.2				

Note: Rates expressed as deaths per 1000 population. No black deaths for this age group were reported for natives of the states of AK, ID, ME, MT, ND, NH, SD, UT, VT, and WY.

Table A.26: One-year Mortality Rates by State of Birth, 19- & 20-Year-Olds, 2000

Non-Blacks				Blacks			
State	Census Rate	DA Rate	% Difference	State	Census Rate	DA Rate	% Difference
AK	1.77	1.75	-1.3	AK	3.41	3.58	4.8
NM	1.34	1.42	5.6	NM	2.45	3.33	26.5
LA	1.25	1.25	0.5	DC	2.44	2.23	-9.7
AR	1.20	1.21	0.6	IN	2.16	2.13	-1.3
AL	1.19	1.20	0.9	NV	2.19	2.03	-7.9
NV	1.19	1.20	0.9	AZ	1.72	1.82	5.9
WV	1.24	1.18	-4.8	TN	1.75	1.78	1.4
AZ	1.15	1.17	1.8	IL	1.87	1.74	-7.2
WY	1.04	1.09	5.0	MO	1.81	1.72	-5.1
MS	1.05	1.09	3.8	MD	1.60	1.70	6.4
MT	1.09	1.08	-0.9	WI	1.74	1.67	-4.5
ME	1.06	1.06	-0.2	LA	1.66	1.64	-1.4
OK	1.04	1.03	-1.5	MS	1.49	1.58	6.1
SC	0.99	1.01	2.8	MI	1.53	1.58	3.1
TX	0.98	1.00	1.9	SC	1.49	1.57	5.1
TN	1.01	1.00	-1.9	PA	1.54	1.56	1.3
CO	0.99	0.99	0.2	AR	1.44	1.52	5.4
SD	0.98	0.94	-3.6	AL	1.52	1.52	-0.3
NE	0.94	0.94	0.7	KY	1.35	1.44	6.6
KY	0.94	0.94	-0.3	TX	1.37	1.41	2.5
DE	0.93	0.91	-1.9	NC	1.41	1.40	-0.9
IN	0.88	0.90	2.6	WV	1.27	1.37	7.0
FL	0.89	0.90	1.1	RI	1.22	1.37	11.2
PA	0.86	0.90	4.2	VA	1.40	1.34	-5.0
MO	0.90	0.89	-1.7	FL	1.38	1.29	-7.0
VA	0.85	0.87	3.1	OH	1.29	1.25	-3.7
GA	0.86	0.87	0.3	NE	1.22	1.24	1.6
KS	0.82	0.84	2.8	OK	1.17	1.23	4.6
CA	0.81	0.82	0.9	KS	1.19	1.22	2.3
IA	0.79	0.82	3.4	CA	1.30	1.21	-7.6
NC	0.81	0.81	0.5	NJ	1.25	1.20	-3.4
ND	0.81	0.80	-1.3	CT	1.12	1.10	-2.1
OH	0.75	0.77	3.3	GA	1.11	1.10	-1.0
WA	0.81	0.77	-5.8	NY	1.06	1.08	1.8
IL	0.71	0.73	2.8	DE	1.07	0.98	-9.6
CT	0.69	0.70	2.5	IA	0.66	0.91	27.5
VT	0.64	0.68	5.7	WA	0.70	0.82	14.3
MA	0.65	0.66	2.1	MN	0.68	0.71	4.6
NJ	0.66	0.66	0.5	MA	0.72	0.70	-2.9
OR	0.68	0.66	-2.9	CO	0.44	0.45	1.4
WI	0.61	0.62	0.6				
NH	0.63	0.62	-1.6				
MI	0.60	0.62	1.8				
MD	0.60	0.61	2.7				
NY	0.59	0.61	3.2				
MN	0.61	0.60	-1.5				
UT	0.65	0.60	-7.4				
ID	0.63	0.60	-5.5				
HI	0.61	0.59	-3.7				
RI	0.53	0.57	7.4				
DC	0.50	0.46	-10.4				

Note: Rates expressed as deaths per 1000 population. No black deaths for this age group were reported for natives of the states of HI, ID, ME, MT, ND, NH, OR, SD, UT, VT, and WY.