United States Population Projections by Age, Sex, Race, and Hispanic Origin:
July 1, 2000-2050

The 2008 National Population Projections provide projections of resident population and demographic components of change (births, deaths, and net international migration) through 2050. Population projections are available by age, sex, race and Hispanic origin. Data are presented in five-year and other selected age groups in the summary tables, and are available by single year of age in downloadable files. Race is tabulated according to OMB 1997 guidelines.[1] For each of five racial categories (White, Black, American Indian and Alaska Native, Asian, and Native Hawaiian and Other Pacific Islander) we project the population that would give that response alone and the number that would give it alone or in combination with other races. The projections do not precisely agree with population estimates available elsewhere on the U.S. Census Bureau website for various reasons. For example, the projections are based on, and move forward from, Census 2000 whereas the estimates are updated annually. Where both estimates and projections are available for a given time reference, we recommend use of the population estimates as the measure of the current population. Below we provide a general description of the methods used to produce the 2008 National Population Projections.

The projections originate with a base population from Census 2000 and are produced using a cohort-component method. Many of the characteristics of the U.S. resident population, as measured by Census 2000, are preserved as demographic patterns that work their way through the projection period. Using the cohort-component method, the components of population change (births, deaths, and net international migration) are projected for each birth cohort (persons born in a given year). For each passing year, we advance the population one year of age. We update the new age categories using survival rates and levels of net international migration projected for the passing year. A new birth cohort is added to form the population under one year of age by applying projected age-specific fertility rates to the female population aged 15 to 49, and updating the new cohort for the effects of mortality and net international migration.

The assumptions for the components of change are based on time series analysis. Initially, demographic models were used to summarize historical trends. The forecast parameters obtained from these models were utilized in the models' framework to create fertility, mortality, and migration schedules required for the cohort-component method. Because of limited data about racial characteristics in the fertility and mortality historical series, the assumptions were first developed for three mutually exclusive and exhaustive groups: Hispanic origin (any race), non-Hispanic Black alone, and non-Hispanic all other races. These assumptions were then applied to their respective detailed race/ethnic categories to project the population, which allows us to present the race categories described above.

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[1] Office of Management and Budget, "Revisions to the Standards for the Classification of Federal Data on Race and Ethnicity," Notice, Vol. 62, No. 210, Thursday, October 30, 1997.
[**http://www.whitehouse.gov/omb/fedreg_1997standards**]

General Assumptions

Mortality

Historical mortality trends were calculated using National Center for Health Statistics' data on deaths and the Census Bureau's population estimates for 1984 through 2003. Where race or ethnicity was not available, methods akin to indirect standardization were used to impute mortality for those groups. For example, historical trends in mortality for the Hispanic population were developed for states that had included Hispanic origin in their vital statistics, and were used with the age and sex composition of states not reporting Hispanic origin to derive imputed values. Analogous procedures were applied to the non-Hispanic Black alone and non-Hispanic all other races populations of these states.

Using these data, estimates of national mortality schedules were derived for the non-Hispanic all other races population and annual life tables were constructed by single-year detail. Mortality was then forecast using time series models, as indicated above, to develop age-sex-specific mortality schedules. Once the forecast time series of male and female mortality schedules was developed for the non-Hispanic all other races population, mortality schedules for the remaining two major race/ethnic categories were derived by logistic interpolation between the observed schedules for these groups in 2003 and the forecast 2075 schedules for the non-Hispanic all other races population. That is, convergence of mortality of all groups to that of non-Hispanic all other races schedules was assumed to occur in 2075. Table 1 below shows the projected life expectancy at birth for the three major race/Hispanic groups.

For the detailed race/ethnic categories, we did not attempt to differentiate mortality rates or their trends separately for each group because of the scarcity of historical data from which to project and the discrepancies in the reporting of race between vital statistics and census enumerations for some of these groups.

Table 1. Projected Life Expectancy at Birth for the 2008 National Projections, by Race and Hispanic Origin

Year	Hispanic (any race)		Non-Hispanic Black alone		Non-Hispanic all other races	
	Male	Female	Male	Female	Male	Female
2001	77.2	82.7	68.3	75.2	75.1	80.1
2010	78.4	83.7	70.1	77.1	76.4	81.1
2025	79.7	84.7	73.6	80.0	78.1	82.7
2050	81.9	86.3	79.0	84.3	81.0	85.3

Note: the life expectancies presented in this table represent the input assumptions and may not match calculated life expectancies due to rounding and other processing.

Fertility

Fertility trends were calculated using National Center for Health Statistics' births data and Census Bureau estimates of the female population. The time series included data from 1980

through 2003. As with mortality, where race or ethnic information was not available, they were imputed.

The projected trajectory in the level of fertility for women aged 15-49 of the non-Hispanic all other races population was forecast from a times-series model. The model was based on the observed series of total fertility rates for the non-Hispanic all other races category over the 24-year period. The fertility schedules of the Hispanic and non-Hispanic Black alone populations were assumed to converge to the fertility levels of the non-Hispanic all other races population in the year 2100 using logistic interpolation. Table 2 below shows the projected total fertility rates for the three major race/ethnic groups. As with mortality, we did not differentiate fertility for the detailed categories.

Table 2. Projected Total Fertility Rates for the 2008 National Projections, by Race and Hispanic Origin

Year	U.S. Total	Hispanic (of any race)	Non-Hispanic Black alone	Non-Hispanic all other races
2001	2.02	2.73	2.10	1.84
2010	2.06	2.70	1.93	1.90
2025	2.06	2.53	1.91	1.90
2050	2.03	2.29	1.88	1.89

Note: The TFR's presented in this table represent the input assumptions and may not match calculated TFR's due to rounding and other processing.

Determining Race of Child

In assigning race to new births, we had to consider that the 1997 OMB guidelines on the tabulation of race, that allow for multiple race reporting, effectively invalidate the traditional and convenient cohort-component assumption that race of child follows race of mother. We addressed this problem by observing the racial and ethnic composition of family households in Census 2000. Race of child is thus determined based upon the race of the mother, the racial composition of men in the projected population, and the Census 2000 distribution of race and ethnicity of women and men with children less than 18 years of age in the household.

International Migration

As with mortality and fertility, our assumptions for international migration were developed using historical time series information. However, the international migration components are primarily forecast as numerical levels with age and sex detail, rather than rates.

To start, net foreign-born international migration was forecast for four large country-of-birth groups deemed to be reasonably homogeneous with respect to race and Hispanic origin, and which offered historically consistent series of immigrant data. The four groups were as follows.

1) Mexico, the Spanish Caribbean islands, Central and South America
2) The non-Spanish Caribbean islands and sub-Saharan Africa

3) South Asia, Southeast Asia, East Asia, and Pacific Islands
4) Canada, Europe, Central Asian countries, and the Middle East.

For a complete listing of each county assigned to each of the four groups see the Country-of-Birth Detailed Country List.

Detailed race and ethnicity were imputed within each of the 4 country-of-birth categories using Census 2000 data on the foreign-born population that arrived from 1995 to the census date in 2000. The imputation was robust, because of the near-homogeneity of the country-of-birth categories. The four categories were also quite differentiated with respect to their propensity to migrate in or out of the United States, as well as the age and sex of migrants. Age and sex of migrants was assigned based on historical trends.

Total net international migration was projected by adding net migration from Puerto Rico and net movement of the Armed Forces population from overseas to the United States, to the net foreign-born international migration described above, and subtracting emigration of people born in the United States.

Overall, the net international migration assumptions show an increase in net migration over the projection period in total and for the 4 country-of-birth categories, though not at the rates observed in the 1990s. Table 3 presents the total net international migration and the net foreign-born international migration for the 4 country-of-birth categories.

Table 3. Projected Net International Migration for the 2008 National Projections,
In Total and by Country-of-Birth Group[1] (Numbers in Thousands)

Year	Total Net International Migration	Mexico, the Spanish Caribbean islands, Central and South America	The non-Spanish Caribbean islands and sub-Saharan Africa	South Asia, Southeast Asia, East Asia, and Pacific islands	Canada, Europe, Central Asian countries, and the Middle East
2001	1,173	627	93	259	216
2010	1,338	665	103	303	213
2025	1,569	806	135	388	243
2050	2,047	1,040	188	530	292

[1] These country groupings were designed for the purposes of these projections.

As with past projections, the international migration assumptions forecast for this series are not constrained to any current or proposed policy or administratively determined immigration levels.