

Population Division

Variations in State Mortality From 1960 to 1990

by
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This paper reports the results of research and analysis undertaken by the U.S. Census Bureau staff. It has undergone a Census Bureau review more limited in scope than that given to official Census Bureau publications. This report is released to inform interested parties of ongoing research and to encourage discussion of work in progress.

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Abstract

In order to evaluate a fundamental assumption in state population projections for the United States, this paper assesses trends in mortality levels as indicated by changes in state life expectancy at birth and at age 65 from 1960 to 1990. The most recent state population projections assume that existing differences between state mortality levels will continue through the projection period. Inter-quartile ranges, coefficients of variation, and the Dispersion Index were calculated from National Center for Health Statistics life table data to determine whether state life expectancies became more or less similar to each other over the four time periods. There is some evidence of converging life expectancies from 1960 to 1980, but the trend appears to have reversed by 1990 when most of the indicators of variation in state mortality returned to the 1960 levels. Though there is little evidence of systematic convergence or divergence for the nation from 1960 to 1990, some general regional trends are identified. Given the number of exceptions to the patterns of mortality changes in every region, inconsistencies in the national trends, and the limited data for races other than White, this evaluation concludes that the assumption currently used for state population projections is the most appropriate assumption.

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I. Introduction

The U.S. Census Bureau periodically produces state population projections for the 50 states and Washington, DC. The most recent projections released in 1996 used a cohort-component method to project the state populations by adding future births, subtracting future deaths, and adding future net movement between states and to or from other countries. These components were projected by age, sex, race, and Hispanic origin for each state. The projections based future births, deaths, and domestic and international migration on various historical and national trends and assumptions (see Campbell 1996 and Campbell 1997).

This paper evaluates the assumption used in this projection that the current differences between state mortality levels by age, sex, race, and Hispanic origin would remain constant over the projection period. This assumption had a substantial impact on projected mortality trends by states, but historical trends have not been examined in detail to determine if the assumption is justified. In fact, there is some evidence that mortality trends may converge toward national averages.

To evaluate the accuracy of the mortality assumption for U.S. state population projections, this research assesses how the relative mortality levels of states¹ changed from 1960 to 1990. Section II presents related research on state, rural-urban, and international differences in mortality. Section III describes data and limitations of the Nation Center for Health Statistics (NCHS) decennial life tables used for the analysis. Section IV discusses the statistics used to evaluate the overall patterns of change in state mortality from 1960 to 1990. Section V reports the results for three measures of variation in state life expectancies for the nation and discusses trends in mortality changes within Census Regions. The life expectancy changes for individual

states are also described in the results section. Finally, Section VI summarizes the conclusions drawn from this research and offers recommendations for projecting state mortality changes.

II. Background

Most of the literature addressing relative changes in U.S. mortality over time is limited to single time periods, specific causes of death, or rural-urban differences across the nation or within individual states. Several studies report consistent regional patterns for mortality levels in the 1980s and 1990s with mortality levels highest in the South. Data from 1988 to 1992 show that mortality rates from all causes were highest in the East South Central Division² and mortality rates were also relatively high in the Pacific region for women (Pickle et al. 1996). The regional pattern of mortality is most influenced by the geographic distribution of heart disease and lung cancer, the leading causes of death. For the period of 1986 to 1990, NCHS vital statistics data show that lung cancer death rates were higher in the South and most of the Midwest and lower in the Northeast and West (Edmondson 1994). Circulatory death rates were also highest in the South (Schneider et al. 1997).

National studies report that mortality in urban areas is higher than rural areas and is lowest in suburbs (Clifford and Brannon 1985). For example, much of the excess mortality from ischemic heart disease (IHD) in New York in 1980 to 1987 was associated with the higher rates

¹All references to “states” include all 50 states of the U.S. and the District of Columbia, except where noted.

²Census Regions and Divisions are: Northeast Region, New England Division – Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut; Northeast Region, Middle Atlantic Division – New York, New Jersey, Pennsylvania; Midwest Region, East North Central Division – Ohio, Indiana, Illinois, Michigan, Wisconsin; Midwest Region, West North Central Division – Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, Kansas; South Region, South Atlantic Division – Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida; South Region, East South Central Division – Kentucky, Tennessee, Alabama, Mississippi; South Region, West South Central Division – Arkansas, Louisiana, Oklahoma, Texas; West Region, Mountain Division – Montana, Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada; West Region, Pacific Division – Washington, Oregon, California, Alaska, Hawaii.

of IHD mortality in urban centers, particularly New York City (McNutt et al. 1994). These differences may be related to differential access to health care, different lifestyles, and exposure to environmental hazards.

The question of interest regarding change over time within the United States is examined more directly in two studies that are limited to one cause of death in one state or rural-urban differences. Lung cancer research by Pommerenke and colleagues (1994), for example, found that within South Carolina lung cancer mortality for all men ages 40 years and over rose from below the national average in 1953 to 1962 to above the national average in 1978 to 1987. A national study of rural-urban differences in mortality from 1950 to 1980 showed that the absolute rural-urban mortality differential declined over the time period, but the relative differential increased (Clifford and Brannon 1985).

There is also some research on the convergence of mortality trends at the international level. A detailed analysis of mortality patterns in Africa and Latin America describes regional convergence during periods of rapid life expectancy improvements in the 1930s to 1950s. From the 1950s to 1970s, the life expectancy differences among nations in many of the developing regions remained relatively stable. The Latin American and Caribbean countries actually experienced some divergence in mortality levels from the 1960s to 1970s (Gwatkin 1980).

White (2002) evaluated annual changes in life expectancy for 21 industrially developed countries over four decades. Among other findings, lower life expectancy in 1955 was associated with higher average annual increases in life expectancy at birth from 1955 to 1996. This tendency to converge toward the mean occurred primarily before 1980, and there has been relatively low variance in life expectancy since 1980. The rate of life expectancy change for these developed countries was generally between its previous rate of change and that of the

entire group. A similar study for Japan concludes that the slowing of Japanese mortality decline corresponds to a convergence with the mortality levels of other developed countries (Wilmoth 1998).

An evaluation of about 184 United Nations countries reports declining differences in the range of life expectancy at birth from 1950-55 to 2000 (Wilson 2001). The inter-quartile range of life expectancies for these countries declined from 26 years in the early 1950s to 8 years in 2000. This study also showed convergence of fertility rates over the same time period.

These findings suggest that geographic differences in mortality may change over time rather than remain constant as assumed in the state projections. Factors that influence changes in life expectancy within the United States include increasing mobility and communication, decreasing differential access to health care, nearly universal access to vaccines against childhood diseases, improved public health services (White 2002), and changes in income inequality (Lochner et al 2001). It is hypothesized that these changes reduce the differences in mortality levels between states and that state mortality rates converge, or become more similar to each other, over time. A convergence toward national mortality levels may also be associated with approaching the biological limits of mortality (Coale 1996, White 2002). This hypothesis proposes that states with above average life expectancy will experience slower life expectancy gains and states with below average life expectancy will experience relatively faster life expectancy gains and “catch up” to the states with higher life expectancies.

The alternative hypothesis and the assumption currently used in state population projections is that relative differences in state mortality levels will remain in the future. This may be due to the wide variety of factors that influence mortality levels, such as education,

income, environmental conditions, public health services and access to health care, and these may continue to differ across states.

Similar studies of the convergence or divergence of state fertility rates over time provide the general framework for this research. O'Connell (1981) calculated changes in the relative variation (coefficient of variation) among states from 1940 to 1977 for the total fertility rates and the average number of lifetime births expected. The results did not show a consistent pattern of convergence or divergence of fertility over time for individual states, however, South and non-South differences declined substantially over this time period. Heaton (1998) also found no consistent trends in the changes in fertility for states relative to the nation and each other over time.

III. Data

The average number of years lived, or life expectancy at birth, is a composite measure of the mortality experience of a population at a given time period. Life expectancy at birth captures the higher risk of mortality at infancy and early childhood as well as the degree to which mortality risk increases at older ages. The average number of years remaining for people who survive to a specific age eliminates variations caused by the heavily weighted impact of infant and child mortality and death in early adulthood. Comparisons of life expectancy at age 65 are commonly used to indicate different levels of mortality from chronic, degenerative diseases of old age rather than the more diverse mortality experience of the entire population.

Figure 1 shows examples of life expectancy trends from birth to age 110 for Hawaii and the District of Columbia in 1990. The small increase from life expectancy at birth to life expectancy at age 1 for the District of Columbia is explained by the relatively high risk of death

during the first year of life compared to later in childhood. After age 65, life expectancy begins to decline at slower rates. The differences in life expectancy are generally smaller at age 65 than at birth. Life expectancy at birth is used in this research to capture state differences in overall mortality and life expectancy at age 65 is used to capture the more limited mortality differences among states at the ages where most deaths occur.

NCHS produced a series of U.S. Decennial Life Tables from state level mortality data for the three years surrounding the decennial years 1960, 1970, 1980 and 1990³, as well as earlier periods not included in this study (NCHS 1975b, 1985-86, 1998b). These years were selected because they follow the substantial mortality declines in the first half of the twentieth century due to the widespread use of antibiotics and vaccines (NCHS 1987b) and they are most relevant to projecting future mortality. In each series U.S. and state life tables were calculated for single years of age up to 110 for the total population, males, females, Whites, All Other Nonwhites (referred to as Nonwhites in this paper), and the four sex-race groups. In 1980 and 1990, life tables were also calculated for Blacks, Black males, and Black females within the All Other Nonwhite group.

NCHS made several adjustments to the life tables and source data:

1) The life table calculations used birth registration data for the population under age two instead of Census data for all four time periods because infants were under-enumerated in Census population data (NCHS 1967, 1975a, 1987a, 1998a).

³Decennial years refer to the three-year period for which the life expectancies are calculated: 1960 (1959-1961); 1970 (1969-1971); 1980 (1979-1981); and 1990 (1989-1991).

2) To correct for birthday preferences of 1900 in the 1960 Census, the Nonwhite population ages 55 to 64 was redistributed in the two relevant five-year age groups (55 to 59 years and 60 to 64 years) (NCHS 1967).

3) Sample Census data were used to construct 1960 life table populations for ages 85 to 100 because complete 1960 Census tabulations were only available through age 85 (NCHS 1967).

4) The 1970 and 1980 Census populations required adjustments to the centenarian population and the population other than White or Black due to overestimates of each (NCHS 1975a, 1987a).

5) The 1990 Census population included modifications by age and race that differed from the 1970 and 1980 adjustments (NCHS 1998a).

6) The 1970, 1980, and 1990 life tables used Medicare death data for ages 85 and older (NCHS 1975a, 1987a, 1998a).

7) Trend smoothing was applied to address some of the variations caused by differential coverage, age misreporting, and small denominator populations (NCHS 1967, 1975a, 1987a, 1998a).

Though the NCHS life tables were based on Census data and birth and death registration data, no effort was made to adjust these data where they were believed to be incomplete (NCHS 1967, 1975a, 1987a, 1998a). Census coverage rates varied by state, race, and age and differed for the four time periods. The estimated net undercount generally declined from 1960 to 1990 and was 3.1 percent in 1960, 2.7 percent in 1970, 1.2 percent in 1980, and 1.8 percent in 1990 (Hogan and Robinson 1993, Robinson and West 2000). For all four Censuses the undercount for Blacks was 3.7 to 4.4 percent higher than for the other races combined. The net undercount was

particularly large for Black children and adult men. Due to race and age compositions and other factors, Census coverage differed by state and region as well. The estimated 1990 Census undercount in the West and South Regions was higher than in the Northeast and Midwest Regions. The undercount was also higher for non-urban areas than urban areas (Hogan and Robinson 1993).

Evaluations of birth registration data have shown that under-registration, though less than one percent by the 1960s, was historically larger for the Black population than other populations. The death registration data used to create the NCHS life tables were largely complete also, but may have contained errors due to misreported age and race (Robinson and West 2000).

There are well-established historical differences in life expectancy for males and females and Whites and Nonwhites (see Appendices A-1 through A-8). For example, U.S. White male life expectancy at birth was 72.7 years in 1990, about seven years lower than the White female life expectancy of 79.5 years. The Nonwhite female life expectancy of 75.4 years was also substantially lower (about four years) than the White female life expectancy. While life expectancy differences between the sexes have generally increased, differences between the Black and White populations have decreased over the past several decades. In order to make comparisons of state mortality that are not biased by differences in race and sex distributions across states, comparisons must be made separately for White males, White females, Nonwhite males, and Nonwhite females.

NCHS did not compute state life expectancies for all four sex-race groups for every state because some states did not contain enough registered deaths to produce reliable and stable

estimates of mortality rates for the three-year period⁴. For Nonwhites, life expectancy was calculated for 25 states in 1960 and 40 states in 1990. For Whites, life expectancy was computed for every state and for every year except Alaska and Hawaii in 1970. The 48 remaining states and the District of Columbia are referred to as the “selected states” for the White population in this paper.

Long-term patterns of state life expectancy can only be analyzed for Whites and Nonwhites because Black life expectancy was not available in the NCHS data for 1960 and 1970. However, life expectancy differences between states and changes in individual states over time are biased because there are different proportions of Blacks, Asian and Pacific Islanders, American Indians, and other groups included in the Nonwhite classification and because these populations have very different life expectancies. The proportion of the Nonwhite population who are Black decreased for most states from 1960 to 1990 and Asian and Pacific Islanders made up increasingly larger proportions of Nonwhites.

In order to evaluate at least some of the available data on Nonwhite life expectancy, states were selected for the analyses if at least 80 percent of the Nonwhite population was Black, as enumerated in each of the 1960 to 1990 decennial Censuses. Though this set of states is not entirely free of biases due to differential racial composition, it represents a fairly homogeneous population of Black males and females. The twenty states that met the selection criteria for all four time periods are Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Indiana, Kentucky, Louisiana, Maryland, Michigan, Mississippi, Missouri, North Carolina, Ohio, Pennsylvania, South Carolina, Tennessee, Virginia, and West Virginia. However, the number of

⁴The number of deaths required for the standards of accuracy was 2000 in 1960, 1600 in 1970, and 700 in 1980 and 1990.

Nonwhite deaths for at least one sex group in Delaware and West Virginia did not meet the NCHS standards to compute life tables for 1960 and 1970 and those two states were excluded from the analyses. The 18 remaining states are referred to as the “selected states” for the Nonwhite population in this paper.

The state figures for the White population are also biased by combining the mortality experiences of both the Hispanic and non-Hispanic populations. However, there are no separate state-level data on these two populations from 1960 to 1990, so Hispanic and non-Hispanic effects cannot be separated in this evaluation.

IV. Methods

Three measures of variation are used to determine whether state life expectancies are becoming more or less similar to each other or the national average over time: 1) inter-quartile range; 2) coefficient of variation; and 3) Dispersion Index. The measures of variation are calculated for life expectancy at birth and at age 65 separately for White males, White females, Nonwhite males, and Nonwhite females for all the selected states combined and within Census Regions and the Southern Divisions. The inter-quartile range measures the difference between the life expectancies for states at the 25th and 75th percentiles. The coefficient of variation and the Dispersion Index are both summary measures of the variation in state life expectancy that can be compared over the four time periods.

The coefficient of variation is the standard deviation of the differences between state life expectancies and the mean life expectancy for the selected states divided by the mean life expectancy for the selected states (Blalock 1979, O’Connell 1981). The mean for the selected

states is used in order to treat the life expectancies of all states equally, regardless of population size.

The Dispersion Index is an indicator of variation that does not rely on state differences from the average life expectancy. In situations where the mean life expectancy is dominated by one or a few outliers among the states, the Dispersion Index should provide a better measure of the overall spread of the data than the coefficient of variation. The Dispersion Index is based on the Root Mean-Squared Deviation (RMSD), which

is the square-root of *mean-square deviation* (MSD), a measure of variation that is computed *independently* of the mean. That is, unlike variance, MSD is computed by averaging the sum of squared differences among *all* distinct pairs of observations instead of averaging the sum of squared differences from the mean (Galal and Qureshi 1997: 1894).

The Dispersion Index is the ratio of the RMSD for each time period to the first time period of interest, 1960, designated as the base year. The index gives a relative measure of change in the RMSD, but does not produce results that are uniquely different from it.

The inter-quartile range, the coefficient of variation, and the Dispersion Index show the variation or dispersion in state life expectancy values change from 1960 to 1990. If the indicators decline in magnitude over time then state life expectancies generally converged toward the national average. If the indicators increase in magnitude over time, states became increasingly different from each other and the national average. There may be no consistent pattern across the four time periods, in which case the 1996 state population projection assumption that states maintain their mortality levels relative to the nation is probably the best alternative.

In addition to the summary measures, trends for individual states are assessed by changes in life expectancy ranks from 1960 to 1990 and comparisons of the linear fit or average amount

of change in life expectancy. States are ranked in order of life expectancy values and how their positions shift over time roughly indicates convergence or divergence. Slopes generated from the linear fit of life expectancy over the four time periods are used to determine whether the average rate of change in life expectancy for individual states is higher or lower than the average rate of change in life expectancy for the United States.

V. Results

A. Variation in White Life Expectancy

Table 1 presents the inter-quartile range, coefficient of variation, and Dispersion Index, as calculated for the selected states, for life expectancy at birth and age 65 for White males and White females. There is no uniform pattern of convergence or divergence from one decade to the next. For White male life expectancy at birth, the inter-quartile range increases from 1.0 year in 1960 to 1.6 years in 1990. The Dispersion Index also shows some increasing variation from 1960 to 1990 with the exception of 1980. In contrast, the coefficient of variation remains relatively constant throughout the four time periods.

For White female life expectancy at birth, there is little change in all three measures of variation across the four time periods. For example, the coefficient of variation only ranges from 0.009 to 0.010 from 1960 to 1990.

For White male life expectancy at age 65, the summary measures decline in value from 1960 to 1980, suggesting a pattern of convergence, and increase in value from 1980 to 1990, suggesting divergence. A similar reversal in the trend is recorded by the Dispersion Index for White female life expectancy at age 65, but the inter-quartile range and coefficient of variation

show convergence across the entire time period. One explanation for the apparent convergence of life expectancy levels from 1960 to 1980 and the divergence from 1980 to 1990 may be the increasing diversity of the White population in some states, such as the growing Hispanic population in the South and West. However, these findings are also consistent with a cyclical pattern of convergence and divergence.

Though there are few differences over time in the summary measures of variation, the relative positions of individual states in the range of White life expectancies may have changed completely between 1960 and 1990 (see Section V.C. below).

B. Variation in Nonwhite Life Expectancy

Table 2 presents the inter-quartile range, coefficient of variation, and Dispersion Index for Nonwhite male and female life expectancy at birth and at age 65 for the 18 selected states. Similar to White male life expectancy at birth, the measures of variation for Nonwhite male life expectancy at birth do not show clear patterns of convergence or divergence. The inter-quartile range suggests convergence from 1970 (1.8 years) to 1990 (1.4 years) while the other two measures show declining variation from 1960 to 1980 with relatively large increases in variation from 1980 to 1990. The coefficient of variation and Dispersion Index for 1990 are larger than for 1960, suggesting that the convergence of state life expectancy between 1960 and 1980 had little lasting effect on the overall levels of differences in state mortality.

The trends for Nonwhite female life expectancy at birth are similar to those for Nonwhite male life expectancy at birth except the increases in the measures of variation from 1980 to 1990 are somewhat smaller, suggesting a general trend toward convergence. For example, the Dispersion Index is 1.00 for 1960 (by definition), 0.50 for 1980, and 0.65 for 1990.

For life expectancy at age 65, all three measures of variation for Nonwhite males and females generally show steady declines in variation from 1960 to 1990. For example, the coefficient of variation for Nonwhite males decreased from 0.046 for 1960 to 0.020 for 1990. The convergence hypothesis is most consistently supported by the results for the two Nonwhite groups.

C. State Rankings of White Life Expectancy

Given the mixed pattern of convergence and divergence described by the three measures of variation, a closer examination of the trends in life expectancy for individual states and regions is warranted. Tables 3 through 8 show the state rankings for life expectancy at birth and at age 65 by sex and race group. While there are some general regional patterns, there are also a number of exceptions to the patterns and the results do not support a single conclusion of convergence or divergence. It is important to note that due to the small differences in life expectancies, the precise order of state rankings should not be considered reliable.

For White male life expectancy at birth (see Table 3):

- Many states in the Midwest maintained roughly the same ranks across all four time periods. These states include North Dakota (ranks ranging from 1 to 3), Iowa (ranks ranging from 4 to 9), Michigan (ranks ranging from 20 to 24), and Illinois (ranks ranging from 27 to 30).
- States in the Northeast experienced relatively large life expectancy gains as reflected in improved ranks from 1960 to 1990, such as those for New Jersey

(rank 24 to 16), Massachusetts (rank 26 to 14), New Hampshire (rank 34 to 15), and Maine (rank 39 to 26).

- One exception to the trends in the Northeast is New York, with a rank that declined from 28 in 1960 to 37 in 1990.
- States in the West generally recorded the largest improvements in ranks from 1960 to 1990: Utah (rank 6 to 1), Washington (rank 15 to 8), New Mexico (rank 40 to 31), Wyoming (rank 42 to 19), and Montana (rank 45 to 13).
- California, ranked 19 in 1960 and 32 in 1990, stands out as an exception to the relatively large improvements in the West.
- States in the South recorded some of the largest declines in rank, most notably Arkansas (rank 11 to 40), Oklahoma (rank 12 to 38), Mississippi (rank 30 to 48), and Kentucky (rank 32 to 47).
- Large declines in rank also occurred for some of the southern-most Midwest states, such as Missouri (rank 13 to 34), Indiana (rank 23 to 33), and Ohio (rank 18 to 30), suggesting that closer ties with the South is associated with relatively slower life expectancy increases.
- However, the White males in the Southern states of Virginia (rank 31 to 25), Maryland (rank 37 to 21), and Washington, DC (rank 48 to 43) improved in life expectancy ranks.

For White female life expectancy at birth (see Table 4):

- Midwest states maintained about the same positions over all four time periods, particularly from 1970 to 1990. Examples of these states include Iowa (ranks ranking from 4 to 7), South Dakota (ranks ranging from 1 to 5), and Michigan (ranks ranging from 34 to 35).
- Ranks for Northeastern states tended to rise, similar to the changes for White males: Connecticut (rank 25 to 9), New Hampshire (ranks 32 to 19), Vermont (ranks 33 to 21), and Massachusetts (rank 37 to 14).
- One difference from White males is an increase in ranking of White female life expectancy for New York (rank 47 to 37) where males experienced a decline (rank 28 to 37).
- Some Western states recorded improved rankings, such as Utah (rank 11 to 8), Colorado (rank 24 to 12), Arizona (rank 28 to 17), Montana (rank 30 to 16), and New Mexico (rank 45 to 23), while others experienced declines in life expectancy ranks, including Washington (rank 14 to 18), Oregon (rank 15 to 20), California (rank 19 to 32), and Wyoming (rank 23 to 26).
- There were relatively large declines in the South: Arkansas (rank 4 to 41), Oklahoma (rank 6 to 45), Texas (rank 10 to 28), Georgia (rank 13 to 40), Mississippi (rank 16 to 43), and Kentucky (rank 38 to 47).
- As with White males, there are some exceptions where the ranks increased from 1960 to 1990 in Virginia (rank 27 to 25), Maryland (rank 43 to 33), and Washington, DC (rank 46 to 3).

For White male life expectancy at age 65 (see Table 5):

- Compared with White male life expectancy at birth, the trends in the Midwest states for life expectancy at age 65 are more variable. Most states fall in wider ranges of life expectancy over the four time periods, such as Kansas (ranks ranging from 2 to 14), Nebraska (ranks ranking from 8 to 19), Wisconsin (ranks ranging from 14 to 20), and Illinois (ranks ranging from 31 to 38).
- More Midwestern states declined in rank than increased in rank from 1960 to 1990.
- Northeastern states generally rose in rank from 1960 to 1990. For example, Connecticut (rank 33 to 11), Massachusetts (rank 39 to 21), New York (rank 44 to 22) experienced relatively large gains.
- Western states with higher ranks in 1990 than in 1960 include Utah (rank 10 to 2), Washington (rank 21 to 9), California (rank 24 to 13), and Arizona (rank 26 to 3).
- States in the South experienced relatively large declines in life expectancy ranks: Arkansas (rank 4 to 33), Texas (rank 15 to 25), Mississippi (rank 16 to 47), and Virginia (rank 31 to 34).
- Florida stands out as an exception to the declines in the South with the highest life expectancy at age 65 for each of the four time periods⁵.

For White female life expectancy at age 65 (see Table 6):

- Rankings for Midwestern states fall within relatively narrow ranges, but in contrast to the declines in rank for White males, the ranks for White females

⁵If included, Hawaii would rank first in 1980 and 1990.

generally increased. Examples include South Dakota (rank 9 to 2), Iowa (rank 12 to 6), North Dakota (rank 16 to 1), and Illinois (rank 42 to 28).

- Life expectancy ranks for all nine states in the Northeast increased from 1960 to 1990. Some of the largest increases occurred for Vermont (rank 35 to 25), New Hampshire (rank 37 to 30), Maine (rank 38 to 29), Connecticut (rank 40 to 12), New Jersey (rank 47 to 40), and Pennsylvania (rank 49 to 42).
- In contrast to the increases for White males, the ranks for White females in the Western states mainly declined, including Oregon (rank 10 to 20), Colorado (rank 11 to 16), California (rank 13 to 26), and Nevada (rank 24 to 49).
- However, Utah (rank 14 to 9), New Mexico (rank 22 to 17), and Montana (rank 26 to 15) recorded improvements in life expectancy relative to the other states.
- With some exceptions like Florida (rank 1 to 4) and Washington DC (rank 21 to 3), Southern states generally experienced large declines in rank. Oklahoma (rank 2 to 41), Arkansas (rank 5 to 27), Georgia (rank 19 to 38), Louisiana (rank 29 to 45) and West Virginia (rank 36 to 48) lost twelve or more positions from 1960 to 1990.

D. State Rankings of Nonwhite Life Expectancy

Tables 7 and 8 show the state rankings for life expectancy at birth and at age 65 for the Nonwhite population in the selected states. As with White life expectancy, there are some general regional patterns, but there are also a number of exceptions to the patterns and the results do not support a single conclusion of convergence or divergence. With only 18 states selected for the analysis of Nonwhite life expectancy, the regional trends are better described by North-

South and East-West differences.

For Nonwhite male life expectancy at birth (Table 7):

- States in the Southeast tended to have the lowest life expectancy ranks in 1960 or experienced the slowest improvements and declined toward the lowest ranks by 1990. These states include Georgia (rank 17 to 15), South Carolina (rank 18 to 16), Louisiana (rank 6 to 17), and Mississippi (rank 7 to 11).
- The rank for Florida increased from 15 to 6, in the opposite direction from most of the South.
- The northernmost states in the Southern Region recorded increases in rank: Maryland (rank 12 to 5), Virginia (rank 13 to 1), Kentucky (rank 14 to 3), and North Carolina (rank 16 to 9).
- However, the rank for Washington, D.C. declined from 9 in 1960 to last (18) in 1990.
- Some states in the Midwest and North experienced declines in ranks, for example Michigan (rank 1 to 14) and Pennsylvania (rank 5 to 13), while others maintained relatively high positions: Ohio (rank 3 to 4), Indiana (rank 4 to 2) and Missouri (rank 10 to 7).

For Nonwhite female life expectancy at birth (Table 7):

- The changes in ranks for Nonwhite females from 1960 to 1990 are nearly identical to the changes for Nonwhite males.

- States in the Southeast had the lowest ranks in 1960 and remained relatively low or declined to the lowest positions by 1990: Louisiana (rank 7 to 17), Georgia (rank 17 to 13), and South Carolina (rank 18 to 16).
- The rank for Florida increased from 15 to 7, in the opposite direction from most of the South.
- The states in the northern half of the South, such as Maryland (rank 11 to 2), Virginia (rank 14 to 1), Kentucky (rank 13 to 4), and North Carolina (rank 12 to 5), generally increased in rank with the exception of Washington, D.C. (rank 5 to 18).
- Some states in the Midwest and North declined in rank, for example Michigan (rank 1 to 14) and Pennsylvania (rank 6 to 12), while others maintained relatively high positions: Ohio (rank 3 in 1960 and 1990), Indiana (rank 4 to 6) and Missouri (rank 9 in 1960 and 1990).
- Though the ranks for males changed little for Tennessee and Alabama from 1960 to 1990, for Nonwhite females, Tennessee lost several positions (rank 10 to 15) and Alabama improved by several positions (rank 16 to 10).

For Nonwhite male life expectancy at age 65 (Table 8):

- Many of the Southern states showed dramatic declines in life expectancy ranks: South Carolina (rank 5 to 16), Alabama (rank 6 to 11), Georgia (rank 7 to 17), and Louisiana (rank 8 to 12).
- Florida maintained a relatively high level of life expectancy through most of the

four time periods (rank 1 to 4), but ranked as low 9 in 1980.

- The more northern states of Ohio (rank 11 to 3), Indiana (rank 12 to 8), Pennsylvania (rank 14 to 6), Virginia (rank 15 to 10), and Maryland (rank 18 to 9) had relative improvements in rank.
- The rank for Washington, D.C. also increased from 17 in 1960 to 13 in 1990, in contrast to the decline to last place for Nonwhite male life expectancy at birth.

For Nonwhite female life expectancy at age 65 (Table 8):

- While some of the states in the South recorded steep declines in rank, like South Carolina (rank 4 to 16), Georgia (rank 3 to 14), and Louisiana (rank 6 to 17), other Southern states showed improvements in rank, such as North Carolina (rank 11 to 3) and Alabama (rank 8 to 6).
- The more northern of the Southern states tended to increase in rank: Virginia (rank 16 to 5), and Maryland (rank 18 to 11), and Washington, D.C. (rank 17 to 2).
- Florida experienced relatively high levels of life expectancy through most of the four time periods (rank 1 in 1960 and 1990), but ranked as low 6 in 1980.
- Some of the North and Midwest states declined in life expectancy ranks, such as Michigan (rank 5 to 10), Missouri (rank 10 to 12), and Pennsylvania (rank 13 to 15), while little change occurred for Ohio (rank 9 to 8) and Indiana (rank 12 to 9).

E. Linear Regression Estimates for State Life Expectancies

Tables 9 through 12 summarize the state life expectancies for four time periods into a single measure of linear fit, or slope estimate. While the linear fit ignores some of the fluctuation in life expectancy by averaging the change over time, it allows for a systematic evaluation of relative change. A linear fit was calculated for each state and compared to the corresponding value for the nation. States that are identified as improving slower or faster than the U.S. may be converging toward or diverging from the national trends, depending on the actual levels of life expectancy. State slopes that are relatively close to the U.S. slopes are considered to be equivalent to the U.S. These are the states for which the population projection assumption regarding mortality, that states maintain their mortality levels relative to the nation over time, is most accurate. Slope values were calculated for life expectancy at birth and at age 65 for the four sex-race groups. The results are consistent with the general conclusions about the state rankings as discussed above.

White male life expectancy at birth improved slowest in Missouri and all the states in the West South Central and East South Central divisions (see Table 9). States in the South with smaller than average changes also had lower than average life expectancies throughout all four time periods. This combination essentially describes divergence from the U.S. mean from 1960 to 1990. In contrast, many states in the Northeast and West had better than average improvements in White male life expectancy at birth. The states with lower life expectancies in 1960 converged with and sometimes exceeded the national average by 1980 or 1990. Most of the Midwest states experienced average changes in White male life expectancy at birth similar to the average change at the national level.

The geographical distribution of states with slower increases in life expectancy at birth for White females is similar to that of White males. In addition to most states in the South, California, Kansas, and Nebraska had lower than average improvements in White female life expectancy at birth. More rapid increases in life expectancy at birth occurred for New Mexico, North Dakota, South Dakota, Washington, D.C. and most Northeastern states. Given their lower life expectancies in 1960 and their higher rates of change, some of these states converged toward the national average from 1960 to 1990 and some rose above the national average by 1990.

As seen with the results for life expectancy at birth, improvement in White male life expectancy at age 65 was slower than average in many of the Southern states (see Table 10). Combined with some of the higher life expectancies in 1960, the slower increases in life expectancy produced convergence toward the U.S. average eventually followed by decline in relative life expectancy in the South, as shown by the changes in ranks above. Many of the Midwest states, such as Nebraska, Kansas, Indiana, and Missouri, also had relatively small average improvements in life expectancy at age 65. Several states in the Northeast and a few of the states in the West had larger improvements in White male life expectancy at age 65 than the national average. The relatively large improvements in life expectancy in the Northeast generally produced convergence toward the U.S. mean.

Several states in the South and West have smaller slopes for White female life expectancy at age 65, including Oregon, Nevada, California, Louisiana, Mississippi, Georgia, Oklahoma, Arkansas, and Texas. The states in the West generally converge toward the U.S. mean life expectancy for White females, while the states in the South moved toward the U.S. mean from 1960 to 1980 and then continued to fall in rank and diverged below the mean by

1990. The average change in life expectancy at age 65 for the Northeast and Midwest was higher than the change for the U.S. resulting in convergence toward the mean.

In addition to the slopes for Nonwhite life expectancy for the entire U.S., slopes were calculated for the average of the 18 selected states, weighted by their corresponding Census populations, to provide more meaningful comparisons. Among the states selected to represent the Black population, Nonwhite male life expectancy at birth rose slower in Washington, D.C., Pennsylvania, and the Midwest (see Table 11). The more western of the Southern states, Arkansas, Louisiana, and Mississippi, also experienced smaller average changes than the national average. These findings are consistent with the changes in ranks discussed above and with a convergence toward the national average because these states had relatively higher life expectancies in 1960. The life expectancy in Kentucky and the South Atlantic Division states increased faster than the U.S. average. These states all had lower life expectancies in 1960 and thus converged toward the U.S. mean and some states even surpassed the mean U.S. life expectancy at birth by 1990. Over the period of 1960 to 1990, Pennsylvania and the Midwest states reversed positions with the South Atlantic Division and the life expectancy differentials, as indicated by the measures of variation discussed above (Section V.B.), actually increased from 1980 to 1990.

The geographic distribution of states with slowly increasing life expectancy at birth for Nonwhite females closely resembles that of Nonwhite males. Most of the Midwest and more western of the Southern states had life expectancies with smaller than average changes than the nation. The Nonwhite female life expectancy for Maryland, Virginia, and South Carolina increased faster than the national average. As with Nonwhite male life expectancy at birth, the

measures of dispersion for Nonwhite females indicate convergence from 1960 to 1980 and divergence between 1980 and 1990.

The trends in Nonwhite male life expectancy at age 65 are very different from the corresponding trends for life expectancy at birth (see Table 12). Most of the Northern half of the country, including Virginia, Kentucky, and Missouri, had life expectancies at age 65 that improved faster than the Southern half of the country. By 1990, only Arkansas, Florida, and Mississippi had above average life expectancy at age 65 along with the majority of the Northern states. The combination of smaller improvements in life expectancy for Southern states that had above average life expectancy in 1960 and larger improvements for Northern states that had below average life expectancy in 1960 is consistent with the measures of variation that indicate convergence of Nonwhite male life expectancy at age 65 from 1960 to 1990 (Section V.B.).

Life expectancy at age 65 for Nonwhite females improved more slowly in the southernmost states of Arkansas, Louisiana, Florida, Georgia, and South Carolina than the average for the states selected for this analysis. More rapid advances in life expectancy for Nonwhite females occurred for Kentucky, North Carolina, Virginia, Maryland, and Washington, D.C. As with Nonwhite males, life expectancy at age 65 in these states generally converged toward the Nonwhite female national average from 1960 to 1990.

F. Variation in Life Expectancy by Regions

The coefficient of variation was calculated by Census Regions or Divisions because the measures of variation as calculated for the entire U.S. do not capture the regional patterns identified by examining life expectancy changes for individual states. This measure was selected because it is largely consistent with the Dispersion Indices calculated for all states and because

the inter-quartile range would lose meaning if applied to only a few observations. The coefficient of variation includes the number of observations in its formula and there are about twice as many states in the South as in the other Census Regions. Therefore, separate calculations were produced for the South Atlantic Division and the combined states of the East South Central and West South Central Divisions. For some Nonwhite statistics, Pennsylvania, the only Northeast state of the selected group, was included with the states in the Midwest.

Table 13 shows the coefficients of variation for White life expectancy at birth and at age 65 by Census Regions and Southern Divisions. White male and female life expectancy at birth for states in the Midwest show no measurable change in variation from 1970 to 1990. These states did not experience large changes in rank relative to other states and had average changes between the four time periods that were similar to those for the nation as a whole. Figure 2 shows how the life expectancy changes in the Midwest states for White males roughly parallel each other and the changes for the U.S.

The coefficients of variation for states in the South Central Division decline in value for both White male and female life expectancy at birth, suggesting some convergence of life expectancy trends from 1960 to 1990. The coefficients of variation fluctuate over time for the Northeast, West, and South Atlantic Division. With relatively small ranges of values within these regions, it could be argued that the levels of variation were about the same over the four time periods.

The coefficients of variation for White male and female life expectancy at age 65 for the Midwest varied more than the corresponding values for life expectancy at birth (Table 13). However, the values fluctuate and there is no consistent pattern across time. In general, life

expectancy at age 65 for White males in the Northeast tended to diverge, while life expectancy for White females tended to converge from 1960 to 1990.

The variation in White male life expectancy among states in the West Region and South Atlantic and South Central Divisions declined from 1960 to 1980, but increased from 1980 to 1990. This also occurred for White female life expectancy at birth for the South Atlantic Division. There is no consistent pattern in the coefficient of variation for White females in the West, but the values consistently decrease over the four time periods in the South Central Division, indicating convergence within the region. Figure 3 shows the narrower range of life expectancy at age 65 for White females in the South Central states in 1990 compared to 1960.

Table 14 shows the coefficients of variation for Nonwhite male and female life expectancy at birth and at age 65 by Census Region and the Southern Division. For Nonwhite male life expectancy at birth, the coefficients of variation show some convergence or decreasing variation from 1960 to 1980 for the Midwest, the Midwest and Northeast combined, the South, and the South Central Division. All the coefficients of variation for 1990, however, are larger than the coefficients of variation for 1980, suggesting a reversal of the convergence within regions. This also occurred within all regions for Nonwhite female life expectancy at birth except for the South Central Division where the coefficient of variation shows convergence across all four time periods. Figure 4 traces the declining variation in Nonwhite female life expectancy at birth for the South Central Division.

The states in the South Atlantic Division had increasing variation from 1970 to 1990 for Nonwhite male life expectancy at birth. This result is largely influenced by the decline in life expectancy for Washington, D.C. from 1980 to 1990. The range of values for Nonwhite female

life expectancy for the South Atlantic Division is much smaller than for males and does not indicate a pattern of increasing or decreasing variation.

The coefficient of variation for both Nonwhite male and Nonwhite female life expectancy at age 65 indicates consistent trends toward convergence within all regions. Many of the values decline by more than half from 1960 to 1990. An example of the dramatic decreases in variation for Nonwhite females in the South Atlantic Division is shown in Figure 5. As found with the measures of variation for all of the selected states combined (see Section V.B.), the evidence for convergence of Nonwhite life expectancy at age 65 is the most consistent in this research.

VI. Summary and Conclusions

This paper assesses trends in the relative changes in state life expectancy from 1960 to 1990 for White males, White females, Nonwhite males, and Nonwhite females. Three measures of variation, the inter-quartile range, Dispersion Index, and coefficient of variation, generally show that state life expectancy at birth and at age 65 converged toward the national average from 1960 to 1980 for all four sex-race groups. However, in many cases there was a reversal of the convergence trend between 1980 and 1990 where the measures indicate that the variation in state life expectancy at birth for all four sex-race groups increased. In some cases the measures of variation for 1990 are as large as or larger than for 1960. The trend reversal also occurred for White male and female life expectancy at age 65, but the 1960 to 1980 decreases in variation continued through 1990 for Nonwhite male and female life expectancy at age 65.

Though the measures of variation do not yield a single conclusion about whether life expectancy differences among states became smaller or larger from 1960 to 1990, there are some

fairly consistent regional patterns. States in the Northeast experienced relatively large improvements in White life expectancy over the four time periods. Western states also recorded relatively large increases in life expectancy compared with other states, but only for White males. States in the South generally had smaller life expectancy gains among Whites and life expectancy changes for states in the Midwest kept pace with the national average.

With sufficient data on Nonwhite life expectancy available for only 18 states, the analysis of the regional trends from 1960 to 1990 for Nonwhites is more limited. The changes in life expectancy at birth were generally smaller in the Midwest and the more western of the Southern states while the changes were larger in the South Atlantic Division. In contrast, the pace of the change in life expectancy at age 65 was higher for the northernmost of the Southern states than that for the Midwest and the other Southern states.

Despite the trends identified by this research, there are several reasons why it would be difficult to justify projecting mortality rates that differ by state or region. First, there are exceptions to the patterns for every region and some of those exceptions are states with large populations, such as California and New York. Second, there are insufficient data for the Nonwhite population for much of the period from 1960 to 1990, so there is little basis for projecting different changes in Nonwhite mortality for the majority of the states. Third, the state life expectancies for the White population apply to Hispanics and non-Hispanics and the state life expectancies for the Nonwhite population apply to Blacks, Asian and Pacific Islanders, American Indians, and other Nonwhite groups. These populations may have very different life expectancies and may experience different changes in life expectancy over time. Consequently, the trends identified in this paper are biased to the degree that population distributions by race and Hispanic origin differ across states.

Finally, many of the measures of variation for both the nation and regions indicate convergence from 1960 to 1980 and trend reversals from 1980 to 1990. These findings offer little support for the hypothesis that the levels of state mortality become more similar to each other over time. These results may be interpreted as a cyclical pattern with a peak in life expectancy convergence around 1980, but predicting the degree and timing of state mortality changes based on only part of a cycle is not advisable. Updated state life tables for 1999-2001 may clarify the trends, but NCHS life tables will not be available for some time.

Attempting to incorporate the trends described in this analysis into mortality projections for individual states would require broad assumptions and would likely introduce serious flaws into the results. Lacking a better alternative, the assumption that the levels of state mortality relative to national mortality are constant is the most defensible for state population projections produced in the near future.

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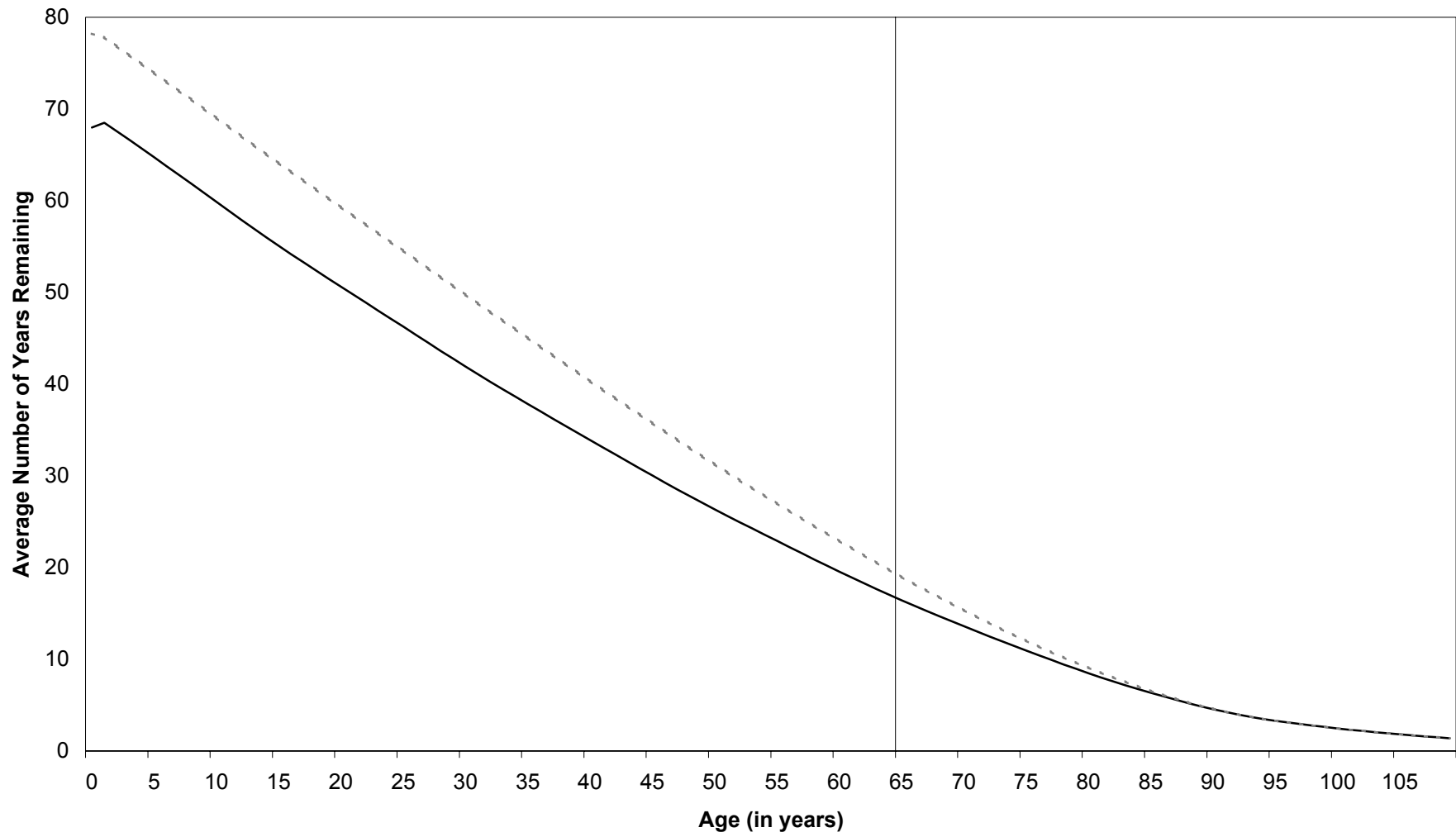
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Figure 1. Life Expectancy by Age for the District of Columbia and Hawaii: 1989-1991



Source: National Center For Health Statistics, 1998. U.S. Decennial Life Tables

— District of Columbia - - - - Hawaii

Table 1. Measures of Variation in State Life Expectancy at Birth and at Age 65 for White Males and Females: 1960 to 1990

	Interquartile Difference (years)	Coefficient of Variation	Root Mean Square Deviation (RMSD)	Dispersion Index
Life Expectancy at Birth				
White Males				
1960	1.0	0.014	0.93	1.00
1970	1.3	0.015	1.04	1.12
1980	1.1	0.013	0.94	1.01
1990	1.6	0.015	1.13	1.22
White Females				
1960	1.0	0.010	0.76	1.00
1970	1.0	0.010	0.74	0.97
1980	0.8	0.009	0.73	0.96
1990	0.9	0.010	0.81	1.07
Life Expectancy at Age 65				
White Males				
1960	0.9	0.040	0.52	1.00
1970	0.8	0.038	0.50	0.96
1980	0.8	0.035	0.50	0.96
1990	0.9	0.038	0.58	1.12
White Females				
1960	0.9	0.034	0.55	1.00
1970	0.9	0.030	0.52	0.95
1980	0.7	0.025	0.47	0.85
1990	0.6	0.028	0.55	1.00

Sources: National Center for Health Statistics, 1975. Some Trends and Comparisons of United States Life-Table Data: 1900-1971. National Center for Health Statistics, 1985-86. State Life Tables, Alabama-Wyoming, U.S. Decennial Life Tables for 1979-81. National Center for Health Statistics, 1998. U.S. Decennial Life Tables for 1989-91, State Life Tables.

Table 2. Measures of Variation in State Life Expectancy at Birth and at Age 65 for Nonwhite Males and Females: 1960 to 1990

	Interquartile Difference (years)	Coefficient of Variation	Root Mean Square Deviation (RMSD)	Dispersion Index
Life Expectancy at Birth				
Nonwhite Males				
1960	1.6	0.026	1.65	1.00
1970	1.8	0.018	1.12	0.68
1980	1.4	0.016	1.03	0.62
1990	1.4	0.029	1.95	1.18
Nonwhite Females				
1960	1.4	0.017	1.14	1.00
1970	0.9	0.011	0.79	0.69
1980	0.9	0.008	0.57	0.50
1990	0.8	0.010	0.74	0.65
Life Expectancy at Age 65				
Nonwhite Males				
1960	0.8	0.046	0.60	1.00
1970	0.4	0.036	0.46	0.77
1980	0.5	0.027	0.37	0.62
1990	0.4	0.020	0.27	0.45
Nonwhite Females				
1960	0.7	0.044	0.68	1.00
1970	0.7	0.027	0.43	0.63
1980	0.4	0.015	0.26	0.38
1990	0.2	0.014	0.25	0.37

Sources: National Center for Health Statistics, 1975. Some Trends and Comparisons of United States Life-Table Data: 1900-1971. National Center for Health Statistics, 1985-86. State Life Tables, Alabama-Wyoming, U.S. Decennial Life Tables for 1979-81. National Center for Health Statistics, 1998. U.S. Decennial Life Tables for 1989-91, State Life Tables.

Table 3. Rankings of State Life Expectancy at Birth for White Males: 1960 to 1990

State*	Year			
	1960	1970	1980	1990
North Dakota	1	1	2	3
Nebraska	2	7	7	11
Kansas	3	8	10	12
Minnesota	4	3	1	2
Iowa	5	9	4	7
Utah	6	2	3	1
Wisconsin	7	6	6	6
Connecticut	8	4	8	5
South Dakota	9	5	5	4
Idaho	10	16	12	9
Arkansas	11	32	34	40
Oklahoma	12	24	41	38
Missouri	13	25	28	34
Florida	14	18	19	22
Washington	15	17	9	8
Rhode Island	16	13	21	17
Texas	17	22	37	36
Ohio	18	21	36	30
California	19	14	18	32
Colorado	20	11	11	10
Michigan	21	20	24	23
Delaware	22	29	32	29
Indiana	23	31	30	33
New Jersey	24	10	16	16
Oregon	25	12	13	18
Massachusetts	26	15	15	14
Tennessee	27	38	40	42
New York	28	19	25	37
Illinois	29	30	29	27
Mississippi	30	45	47	48
Virginia	31	27	31	25
Kentucky	32	40	45	47
Alabama	33	41	42	46
New Hampshire	34	34	14	15
Pennsylvania	35	28	33	28
Vermont	36	26	22	20
Maryland	37	23	26	21
North Carolina	38	39	39	35
Maine	39	36	27	26
New Mexico	40	35	35	31
Georgia	41	44	43	41
Wyoming	42	43	38	19
Louisiana	43	42	48	45
West Virginia	44	49	49	49
Montana	45	37	23	13
Arizona	46	33	20	24
South Carolina	47	46	46	39
D.C.	48	47	17	43
Nevada	49	48	44	44

*Alaska and Hawaii are excluded from the rankings since life expectancy was not calculated in 1970 for these two states.

Sources: National Center for Health Statistics, 1975. Some Trends and Comparisons of United States Life-Table Data: 1900-1971. National Center for Health Statistics, 1985-86. State Life Tables, Alabama-Wyoming, U.S. Decennial Life Tables for 1979-81. National Center for Health Statistics, 1998. U.S. Decennial Life Tables for 1989-91, State Life Tables.

Table 4. Rankings of State Life Expectancy at Birth for White Females: 1960 to 1990

State*	Year			
	1960	1970	1980	1990
Florida	1	8	12	6
Nebraska	2	3	5	7
Kansas	3	5	6	11
Arkansas	4	10	17	41
South Dakota	5	2	1	1
Oklahoma	6	14	33	45
Iowa	7	7	4	5
North Dakota	8	1	2	2
Minnesota	9	4	3	4
Texas	10	17	28	28
Utah	11	6	7	8
Idaho	12	12	8	15
Georgia	13	31	34	40
Washington	14	16	15	18
Oregon	15	11	13	20
Mississippi	16	33	32	43
Missouri	17	28	26	24
North Carolina	18	20	19	27
California	19	24	31	32
Alabama	20	21	30	42
Wisconsin	21	13	9	10
Louisiana	22	36	47	46
Wyoming	23	30	23	26
Colorado	24	15	10	12
Connecticut	25	9	11	9
Tennessee	26	23	25	35
Virginia	27	19	27	25
Arizona	28	25	14	17
Indiana	29	35	39	36
Montana	30	27	29	16
Delaware	31	32	44	44
New Hampshire	32	37	24	19
Vermont	33	18	20	21
Michigan	34	34	35	34
South Carolina	35	45	40	38
Ohio	36	39	45	39
Massachusetts	37	26	18	14
Kentucky	38	43	46	47
Illinois	39	41	37	30
Rhode Island	40	22	21	13
Maine	41	44	22	22
West Virginia	42	48	48	48
Maryland	43	29	42	33
New Jersey	44	38	36	29
New Mexico	45	40	16	23
D.C.	46	46	38	3
New York	47	42	41	37
Pennsylvania	48	47	43	31
Nevada	49	49	49	49

*Alaska and Hawaii are excluded from the rankings since life expectancy was not calculated in 1970 for these two states.

Sources: National Center for Health Statistics, 1975. Some Trends and Comparisons of United States Life-Table Data: 1900-1971. National Center for Health Statistics, 1985-86. State Life Tables, Alabama-Wyoming, U.S. Decennial Life Tables for 1979-81. National Center for Health Statistics, 1998. U.S. Decennial Life Tables for 1989-91, State Life Tables.

Table 5. Rankings of State Life Expectancy at Age 65 for White Males: 1960 to 1990

State*	Year			
	1960	1970	1980	1990
Florida	1	1	1	1
Kansas	2	9	9	14
North Dakota	3	2	2	5
Arkansas	4	13	21	33
New Mexico	5	8	5	4
South Dakota	6	5	8	12
Colorado	7	10	11	8
Nebraska	8	7	10	19
Idaho	9	3	6	6
Utah	10	4	4	2
Minnesota	11	6	7	10
Oklahoma	12	19	25	37
Iowa	13	15	13	17
Kentucky	14	23	40	48
Texas	15	18	22	25
Mississippi	16	38	37	47
Wyoming	17	20	19	18
Oregon	18	11	14	16
Tennessee	19	24	29	44
Wisconsin	20	14	17	20
Washington	21	22	12	9
Alabama	22	30	39	43
West Virginia	23	36	43	49
California	24	16	15	13
Missouri	25	25	31	29
Arizona	26	12	3	3
North Carolina	27	27	34	38
Montana	28	17	16	15
Georgia	29	47	45	46
Indiana	30	34	38	39
Virginia	31	35	41	34
Ohio	32	39	46	40
Connecticut	33	21	20	11
Louisiana	34	45	47	45
Michigan	35	32	35	30
Maine	36	43	26	35
Vermont	37	40	30	27
Illinois	38	37	36	31
Massachusetts	39	29	24	21
Delaware	40	48	48	32
Rhode Island	41	26	32	23
D.C.	42	28	18	7
New Hampshire	43	42	23	26
New York	44	31	27	22
New Jersey	45	33	33	24
Pennsylvania	46	44	44	36
South Carolina	47	49	49	42
Maryland	48	46	42	28
Nevada	49	41	28	41

*Alaska and Hawaii are excluded from the rankings since life expectancy was not calculated in 1970 for these two states.

Sources: National Center for Health Statistics, 1975. Some Trends and Comparisons of United States Life-Table Data: 1900-1971. National Center for Health Statistics, 1985-86. State Life Tables, Alabama-Wyoming, U.S. Decennial Life Tables for 1979-81. National Center for Health Statistics, 1998. U.S. Decennial Life Tables for 1989-91, State Life Tables.

Table 6. Rankings of State Life Expectancy at Age 65 for White Females: 1960 to 1990

State*	Year			
	1960	1970	1980	1990
Florida	1	1	3	4
Oklahoma	2	15	20	41
Arizona	3	6	8	10
Texas	4	16	19	23
Arkansas	5	14	16	27
Kansas	6	5	5	8
Idaho	7	11	9	11
Nebraska	8	4	6	7
South Dakota	9	2	1	2
Oregon	10	9	12	20
Colorado	11	13	10	16
Iowa	12	7	4	6
California	13	18	26	26
Utah	14	19	13	9
Minnesota	15	8	2	5
North Dakota	16	3	7	1
Washington	17	20	14	19
Wyoming	18	10	21	18
Georgia	19	26	34	38
Mississippi	20	29	33	34
D.C.	21	17	18	3
New Mexico	22	21	11	17
Missouri	23	30	27	21
Nevada	24	45	43	49
Alabama	25	25	31	36
Montana	26	12	23	15
Tennessee	27	27	24	31
North Carolina	28	24	17	24
Louisiana	29	35	45	45
Kentucky	30	33	40	46
Virginia	31	28	35	35
Wisconsin	32	22	15	14
Indiana	33	38	39	39
South Carolina	34	42	36	33
Vermont	35	32	25	25
West Virginia	36	47	46	48
New Hampshire	37	37	30	30
Maine	38	39	29	29
Michigan	39	34	37	37
Connecticut	40	23	22	12
Ohio	41	43	47	44
Illinois	42	44	38	28
Massachusetts	43	31	32	22
Delaware	44	40	44	47
Rhode Island	45	36	28	13
Maryland	46	41	42	43
New Jersey	47	48	48	40
New York	48	46	41	32
Pennsylvania	49	49	49	42

*Alaska and Hawaii are excluded from the rankings since life expectancy was not calculated in 1970 for these two states.

Sources: National Center for Health Statistics, 1975. Some Trends and Comparisons of United States Life-Table Data: 1900-1971. National Center for Health Statistics, 1985-86. State Life Tables, Alabama-Wyoming, U.S. Decennial Life Tables for 1979-81. National Center for Health Statistics, 1998. U.S. Decennial Life Tables for 1989-91, State Life Tables.

Table 7. Rankings of State Life Expectancy at Birth for Nonwhite Males and Females: 1960 to 1990

Panel A. Males

State*	Year			
	1960	1970	1980	1990
Michigan	1	5	7	14
Arkansas	2	1	4	10
Ohio	3	3	5	4
Indiana	4	2	3	2
Pennsylvania	5	13	10	13
Louisiana	6	7	15	17
Mississippi	7	9	9	11
Tennessee	8	4	8	8
D.C.	9	14	18	18
Missouri	10	12	11	7
Alabama	11	10	12	12
Maryland	12	6	1	5
Virginia	13	8	2	1
Kentucky	14	11	6	3
Florida	15	15	13	6
North Carolina	16	16	14	9
Georgia	17	17	16	15
South Carolina	18	18	17	16

Panel B. Females

State*	Year			
	1960	1970	1980	1990
Michigan	1	3	10	14
Arkansas	2	1	1	8
Ohio	3	2	8	3
Indiana	4	4	4	6
D.C.	5	6	17	18
Pennsylvania	6	7	13	12
Louisiana	7	10	14	17
Mississippi	8	14	6	11
Missouri	9	8	7	9
Tennessee	10	11	9	15
Maryland	11	5	2	2
North Carolina	12	13	3	5
Kentucky	13	15	12	4
Virginia	14	9	5	1
Florida	15	16	16	7
Alabama	16	12	11	10
Georgia	17	17	18	13
South Carolina	18	18	15	16

*States are ranked for Nonwhite Life Expectancy only if 80% or more of the Nonwhite Census population was reported as Black in the corresponding census year.

Sources: National Center for Health Statistics, 1975. Some Trends and Comparisons of United States Life-Table Data: 1900-1971. National Center for Health Statistics, 1985-86. State Life Tables, Alabama-Wyoming, U.S. Decennial Life Tables for 1979-81. National Center for Health Statistics, 1998. U.S. Decennial Life Tables for 1989-91, State Life Tables.

Table 8. Rankings of State Life Expectancy at Age 65 for Nonwhite Males and Females: 1960 to 1990

Panel A. Males

State*	Year			
	1960	1970	1980	1990
Florida	1	6	9	4
Arkansas	2	1	1	2
Michigan	3	2	3	1
Mississippi	4	3	2	5
South Carolina	5	4	7	16
Alabama	6	5	6	11
Georgia	7	9	15	17
Louisiana	8	10	8	12
Tennessee	9	12	10	18
North Carolina	10	14	12	14
Ohio	11	11	11	3
Indiana	12	7	4	8
Missouri	13	8	5	7
Pennsylvania	14	15	13	6
Virginia	15	16	14	10
Kentucky	16	18	17	15
D.C.	17	17	18	13
Maryland	18	13	16	9

Panel B. Females

State*	Year			
	1960	1970	1980	1990
Florida	1	2	6	1
Arkansas	2	1	1	4
Georgia	3	5	15	14
South Carolina	4	4	8	16
Michigan	5	3	3	10
Louisiana	6	18	18	17
Mississippi	7	9	5	7
Alabama	8	10	7	6
Ohio	9	7	11	8
Missouri	10	6	9	12
North Carolina	11	11	2	3
Indiana	12	8	4	9
Pennsylvania	13	12	10	15
Tennessee	14	13	12	18
Kentucky	15	17	17	13
Virginia	16	14	16	5
D.C.	17	15	13	2
Maryland	18	16	14	11

*States are ranked for Nonwhite Life Expectancy only if 80% or more of the Nonwhite Census population was reported as Black in the corresponding census year.

Sources: National Center for Health Statistics, 1975. Some Trends and Comparisons of United States Life-Table Data: 1900-1971. National Center for Health Statistics, 1985-86. State Life Tables, Alabama-Wyoming, U.S. Decennial Life Tables for 1979-81. National Center for Health Statistics, 1998. U.S. Decennial Life Tables for 1989-91, State Life Tables.

Table 9. Slope Estimates* for Linear Fit of 10-Year Changes in Life Expectancy at Birth by States for White Males and Females: 1960 to 1990

White Males		White Females	
State	Estimated Slope	State	Estimated Slope
Arkansas	1.33	Oklahoma	1.14
Mississippi	1.34	Arkansas	1.21
Oklahoma	1.35	Louisiana	1.45
Kentucky	1.43	Georgia	1.48
Tennessee	1.46	Mississippi	1.48
Alabama	1.53	Texas	1.52
Texas	1.53	Alabama	1.53
West Virginia	1.55	Kentucky	1.57
Missouri	1.63	Delaware	1.59
Louisiana	1.64	Kansas	1.62
New York	1.67	California	1.64
Kansas	1.70	West Virginia	1.66
Indiana	1.72	Florida	1.67
Nebraska	1.72	Tennessee	1.69
Ohio	1.74	Nebraska	1.69
California	1.74	North Carolina	1.69
Georgia	1.75	Missouri	1.70
Delaware	1.81	Oregon	1.71
United States	1.84	Indiana	1.72
Iowa	1.87	Washington	1.74
Florida	1.87	Ohio	1.75
Rhode Island	1.90	Idaho	1.77
Michigan	1.90	Virginia	1.79
North Carolina	1.91	Wyoming	1.80
Wisconsin	1.94	South Carolina	1.81
Illinois	1.95	Michigan	1.82
North Dakota	1.96	United States	1.85
New Jersey	1.99	Iowa	1.87
Oregon	1.99	Utah	1.88
Connecticut	1.99	Nevada	1.89
Pennsylvania	2.01	Maryland	1.96
South Carolina	2.02	Vermont	1.96
Virginia	2.03	Illinois	1.97
South Dakota	2.05	Montana	1.99
Idaho	2.05	Arizona	1.99
New Mexico	2.08	Colorado	2.00
Minnesota	2.09	Wisconsin	2.00
Massachusetts	2.10	New York	2.00
Utah	2.15	Minnesota	2.02
Washington	2.17	New Hampshire	2.03
Maryland	2.18	Connecticut	2.05
Colorado	2.18	New Jersey	2.06
Maine	2.19	North Dakota	2.06
Vermont	2.22	Massachusetts	2.11
D.C.	2.30	South Dakota	2.11
New Hampshire	2.32	Pennsylvania	2.14
Nevada	2.36	Rhode Island	2.17
Wyoming	2.38	Maine	2.18
Arizona	2.48	New Mexico	2.20
Montana	2.52	D.C.	2.63

*Slope estimates are calculated using the least squares method.

Sources: National Center for Health Statistics, 1975. [Some Trends and Comparisons of United States Life-Table Data: 1900-1971](#). National Center for Health Statistics, 1985-86. [State Life Tables, Alabama-Wyoming, U.S. Decennial Life Tables for 1979-81](#). National Center for Health Statistics, 1998. [U.S. Decennial Life Tables for 1989-91, State Life Tables](#).

Table 10. Slope Estimates* for Linear Fit of 10-Year Changes in Life Expectancy at Age 65 by States for White Males and Females: 1960 to 1990

White Males		White Females	
State	Estimated Slope	State	Estimated Slope
Kentucky	0.29	Oklahoma	0.66
West Virginia	0.35	Nevada	0.73
Mississippi	0.36	Arkansas	0.79
Arkansas	0.41	Texas	0.81
Oklahoma	0.45	California	0.89
Tennessee	0.46	Georgia	0.90
Alabama	0.48	Kentucky	0.91
Georgia	0.56	Louisiana	0.93
North Carolina	0.60	Mississippi	0.94
Texas	0.61	Oregon	0.96
Louisiana	0.63	Alabama	0.97
Nebraska	0.63	Florida	0.98
Kansas	0.65	West Virginia	0.98
Indiana	0.66	Arizona	0.99
Missouri	0.66	Wyoming	1.01
Ohio	0.67	Colorado	1.03
Virginia	0.70	Tennessee	1.04
South Dakota	0.71	Idaho	1.05
Iowa	0.73	Washington	1.05
Colorado	0.75	Delaware	1.05
Wisconsin	0.76	Indiana	1.06
Wyoming	0.76	Virginia	1.07
North Dakota	0.77	Kansas	1.07
Florida	0.77	Ohio	1.08
Oregon	0.78	Missouri	1.09
Minnesota	0.78	North Carolina	1.09
Idaho	0.79	Nebraska	1.09
United States	0.81	Montana	1.11
New Mexico	0.81	South Carolina	1.13
Michigan	0.81	Michigan	1.13
South Carolina	0.83	United States	1.14
Maine	0.83	New Mexico	1.15
Illinois	0.83	Utah	1.16
Delaware	0.84	Vermont	1.18
California	0.87	New Hampshire	1.19
Vermont	0.87	Iowa	1.19
Pennsylvania	0.88	Maryland	1.19
Montana	0.89	Maine	1.20
Utah	0.91	Illinois	1.21
Nevada	0.92	New Jersey	1.26
Rhode Island	0.93	Minnesota	1.27
Washington	0.93	Wisconsin	1.27
New Hampshire	0.94	Massachusetts	1.28
New Jersey	0.94	Pennsylvania	1.33
Massachusetts	0.95	South Dakota	1.33
Maryland	0.97	New York	1.35
New York	0.98	D.C.	1.35
Connecticut	1.00	Connecticut	1.36
Arizona	1.04	North Dakota	1.38
D.C.	1.17	Rhode Island	1.47

*Slope estimates are calculated using the least squares method.

Sources: National Center for Health Statistics, 1975. Some Trends and Comparisons of United States Life-Table Data: 1900-1971. National Center for Health Statistics, 1985-86. State Life Tables, Alabama-Wyoming, U.S. Decennial Life Tables for 1979-81. National Center for Health Statistics, 1998. U.S. Decennial Life Tables for 1989-91, State Life Tables.

Table 11. Slope Estimates* for Linear Fit of 10-Year Changes in Life Expectancy at Birth by States for Nonwhite Males and Females: 1960 to 1990

Nonwhite Males		Nonwhite Females	
State	Estimated Slope	State	Estimated Slope
D.C.	-0.54	D.C.	2.02
Michigan	0.51	Michigan	2.12
Arkansas	0.81	Arkansas	2.46
Louisiana	1.18	Louisiana	2.63
Pennsylvania	1.37	Pennsylvania	2.66
Tennessee	1.44	Ohio	2.68
Mississippi	1.45	Indiana	2.70
Ohio	1.68	Mississippi	2.95
Missouri	1.73	Tennessee	2.99
Alabama	1.74	Missouri	2.99
Indiana	1.81	United States	3.17
18 States**	2.04	Florida	3.26
United States	2.11	Georgia	3.27
Florida	2.12	Alabama	3.32
Georgia	2.22	18 States**	3.32
North Carolina	2.25	North Carolina	3.34
Maryland	2.33	Kentucky	3.36
Kentucky	2.54	Maryland	3.44
South Carolina	2.59	Virginia	3.57
Virginia	2.60	South Carolina	3.60

*Slope estimates are calculated using the least squares method.

**Slope estimates for the mean for 18 selected states, weighted by corresponding Nonwhite Census population.

Sources: National Center for Health Statistics, 1975. Some Trends and Comparisons of United States Life-Table Data: 1900-1971. National Center for Health Statistics, 1985-86. State Life Tables, Alabama-Wyoming, U.S. Decennial Life Tables for 1979-81. National Center for Health Statistics, 1998. U.S. Decennial Life Tables for 1989-91, State Life Tables.

Table 12. Slope Estimates* for Linear Fit of 10-Year Changes in Life Expectancy at Age 65 by States for Nonwhite Males and Females: 1960 to 1990

Nonwhite Males		Nonwhite Females	
State	Estimated Slope	State	Estimated Slope
Florida	0.04	Georgia	0.52
Georgia	0.07	Florida	0.54
South Carolina	0.07	South Carolina	0.55
Arkansas	0.07	Arkansas	0.65
Tennessee	0.15	Louisiana	0.76
Alabama	0.16	Michigan	0.79
Louisiana	0.21	Tennessee	0.90
North Carolina	0.22	Ohio	0.90
Mississippi	0.23	Missouri	0.91
Michigan	0.25	Mississippi	0.93
18 States**	0.31	Alabama	0.93
Ohio	0.42	18 States**	0.94
Indiana	0.43	Pennsylvania	0.96
Missouri	0.43	Indiana	1.00
Kentucky	0.43	United States	1.03
Pennsylvania	0.44	Kentucky	1.06
United States	0.48	North Carolina	1.08
Virginia	0.49	Virginia	1.15
Maryland	0.54	Maryland	1.22
D.C.	0.55	D.C.	1.28

*Slope estimates are calculated using the least squares method.

**Slope estimates for the mean for 18 selected states, weighted by corresponding Nonwhite Census population.

Sources: National Center for Health Statistics, 1975. Some Trends and Comparisons of United States Life-Table Data: 1900-1971. National Center for Health Statistics, 1985-86. State Life Tables, Alabama-Wyoming, U.S. Decennial Life Tables for 1979-81. National Center for Health Statistics, 1998. U.S. Decennial Life Tables for 1989-91, State Life Tables.

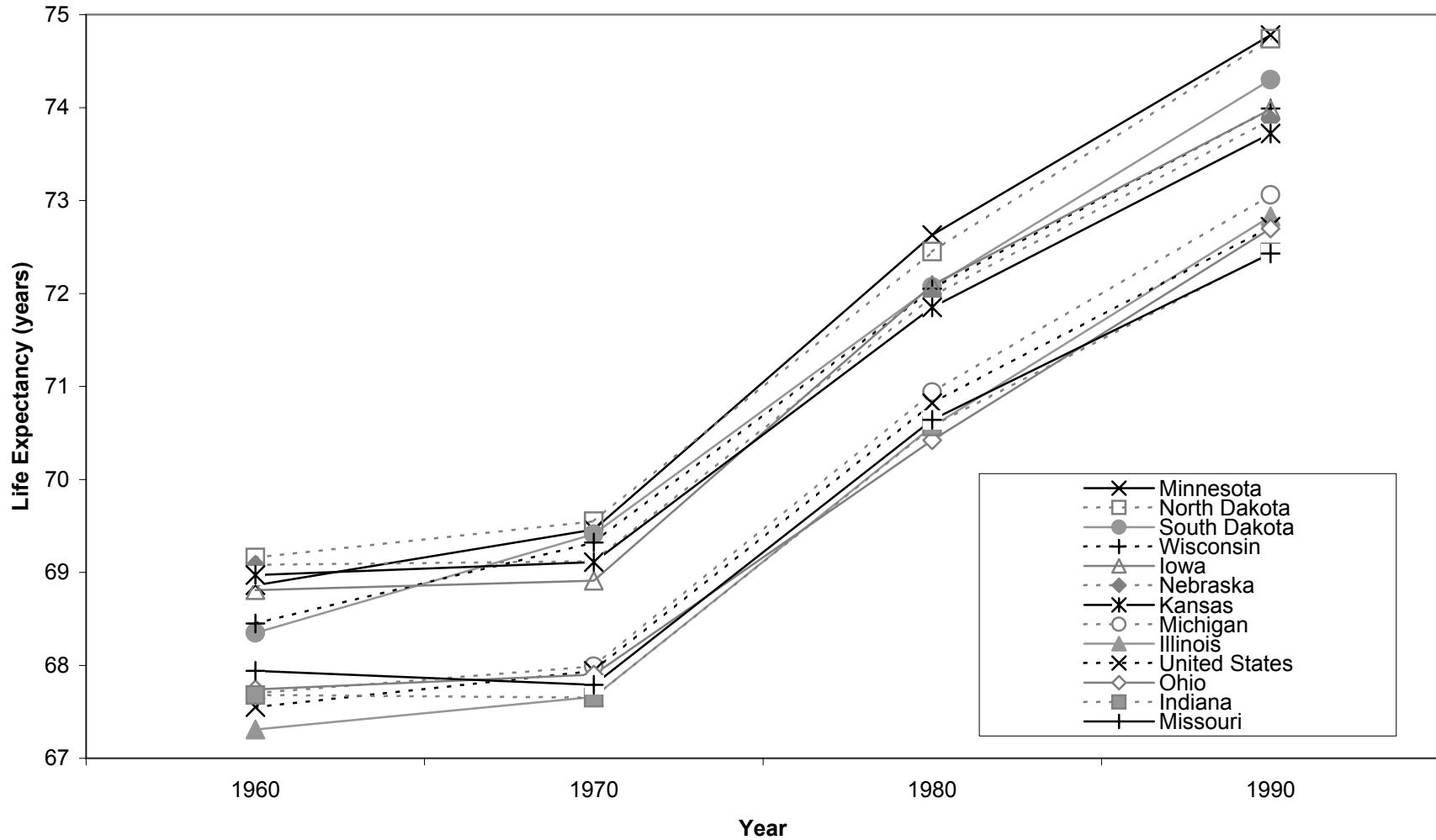
Table 13. Coefficients of Variation in Life Expectancy at Birth and at Age 65 within Census Regions or Divisions for White Males and Females: 1960 to 1990

	Region				
	Northeast	Midwest	West	South*	
				South Atlantic	South Central
Life Expectancy at Birth					
White Males					
1960	0.007	0.009	0.017	0.011	0.007
1970	0.009	0.011	0.015	0.013	0.009
1980	0.005	0.011	0.011	0.011	0.006
1990	0.008	0.011	0.012	0.012	0.006
White Females					
1960	0.005	0.009	0.009	0.010	0.007
1970	0.007	0.011	0.010	0.009	0.006
1980	0.005	0.011	0.008	0.006	0.005
1990	0.005	0.011	0.008	0.011	0.004
Life Expectancy at Age 65					
White Males					
1960	0.010	0.033	0.033	0.046	0.022
1970	0.016	0.035	0.026	0.045	0.024
1980	0.013	0.035	0.020	0.041	0.018
1990	0.016	0.026	0.025	0.047	0.021
White Females					
1960	0.018	0.028	0.012	0.037	0.025
1970	0.017	0.033	0.019	0.032	0.019
1980	0.017	0.031	0.016	0.024	0.015
1990	0.014	0.032	0.022	0.035	0.011

*The South Region is divided into the South Atlantic and South Central Divisions since preliminary evaluations show that states in these two division have different trends in mortality changes. Also, the number of states is an element for the calculation of the coefficient of variation and the results are more comparable with the South Region divided since the number of states in the two divisions are more similar to the number of states in the other three Census Regions.

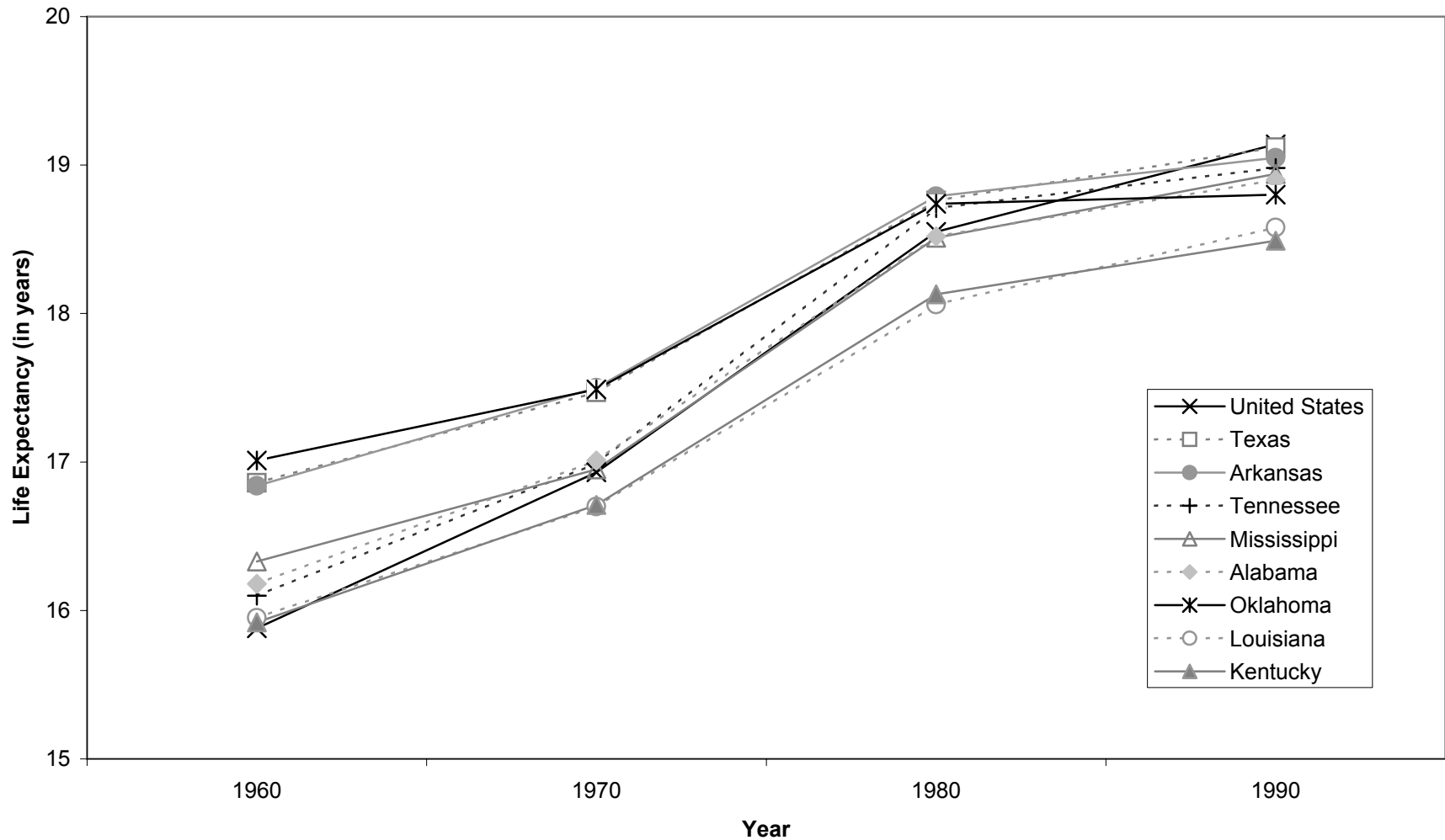
Sources: National Center for Health Statistics, 1975. Some Trends and Comparisons of United States Life-Table Data: 1900-1971. National Center for Health Statistics, 1985-86. State Life Tables, Alabama-Wyoming, U.S. Decennial Life Tables for 1979-81. National Center for Health Statistics, 1998. U.S. Decennial Life Tables for 1989-91, State Life Tables.

Figure 2. State Life Expectancy at Birth for White Males in the Midwest Region: 1960 to 1990



Sources: National Center for Health Statistics (NCHS), 1975. Some Trends and Comparisons of United States Life-Table Data: 1900-1971. NCHS, 1985-86. State Life Tables, Alabama-Wyoming, U.S. Decennial Life Tables for 1979-81. NCHS, 1998. U.S. Decennial Life Tables for 1989-91, State Life Tables.

Figure 3. State Life Expectancy at Age 65 for White Females in the South Central Division: 1960 to 1990



Sources: National Center for Health Statistics (NCHS), 1975. Some Trends and Comparisons of United States Life-Table Data: 1900-1971. NCHS, 1985-86. State Life Tables, Alabama-Wyoming, U.S. Decennial Life Tables for 1979-81. NCHS, 1998. U.S. Decennial Life Tables for 1989-91, State Life Tables.

Table 14. Coefficients of Variation in Life Expectancy at Birth and at Age 65 within Census Regions or Divisions for Nonwhite Males and Females: 1960 to 1990

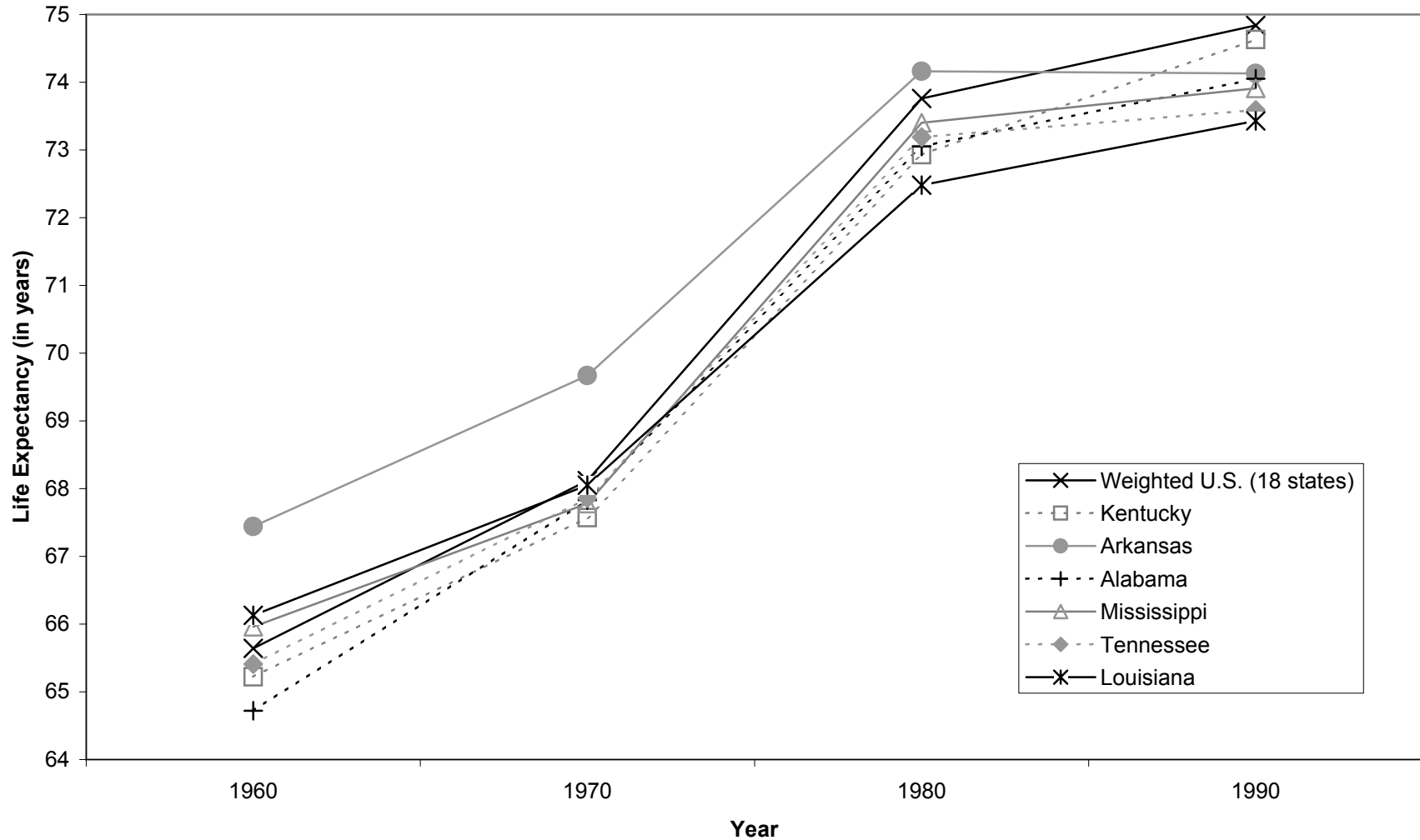
	Region				
	Midwest	Midwest and Northeast*	South	South**	
				South Atlantic	South Central
Life Expectancy at Birth					
Nonwhite Males					
1960	0.020	0.019	0.024	0.019	0.017
1970	0.014	0.016	0.018	0.014	0.013
1980	0.009	0.009	0.017	0.020	0.010
1990	0.015	0.016	0.032	0.042	0.012
Nonwhite Females					
1960	0.011	0.010	0.015	0.014	0.013
1970	0.007	0.008	0.010	0.009	0.010
1980	0.002	0.003	0.009	0.009	0.007
1990	0.006	0.006	0.011	0.014	0.005
Life Expectancy at Age 65					
Nonwhite Males					
1960	0.030	0.028	0.050	0.056	0.039
1970	0.014	0.020	0.040	0.028	0.047
1980	0.014	0.019	0.029	0.016	0.032
1990	0.012	0.011	0.019	0.017	0.021
Nonwhite Females					
1960	0.013	0.014	0.051	0.061	0.035
1970	0.013	0.016	0.029	0.029	0.029
1980	0.008	0.007	0.016	0.013	0.019
1990	0.000	0.004	0.016	0.013	0.017

*Midwest and Northeast adds Pennsylvania to the calculations for the Midwest since Pennsylvania is the only state from the Northeast selected for analysis with the criteria that 80% of the Nonwhite population reported as Black in the corresponding censuses.

**The South Region is divided into the South Atlantic and South Central Divisions since preliminary evaluations show that states in these two division have different trends in mortality changes. Also, the number of states is an element for the calculation of the coefficient of variation and the results are more comparable with the South Region divided since the number of states in the two divisions are more similar to the number of states in the other three Census Regions.

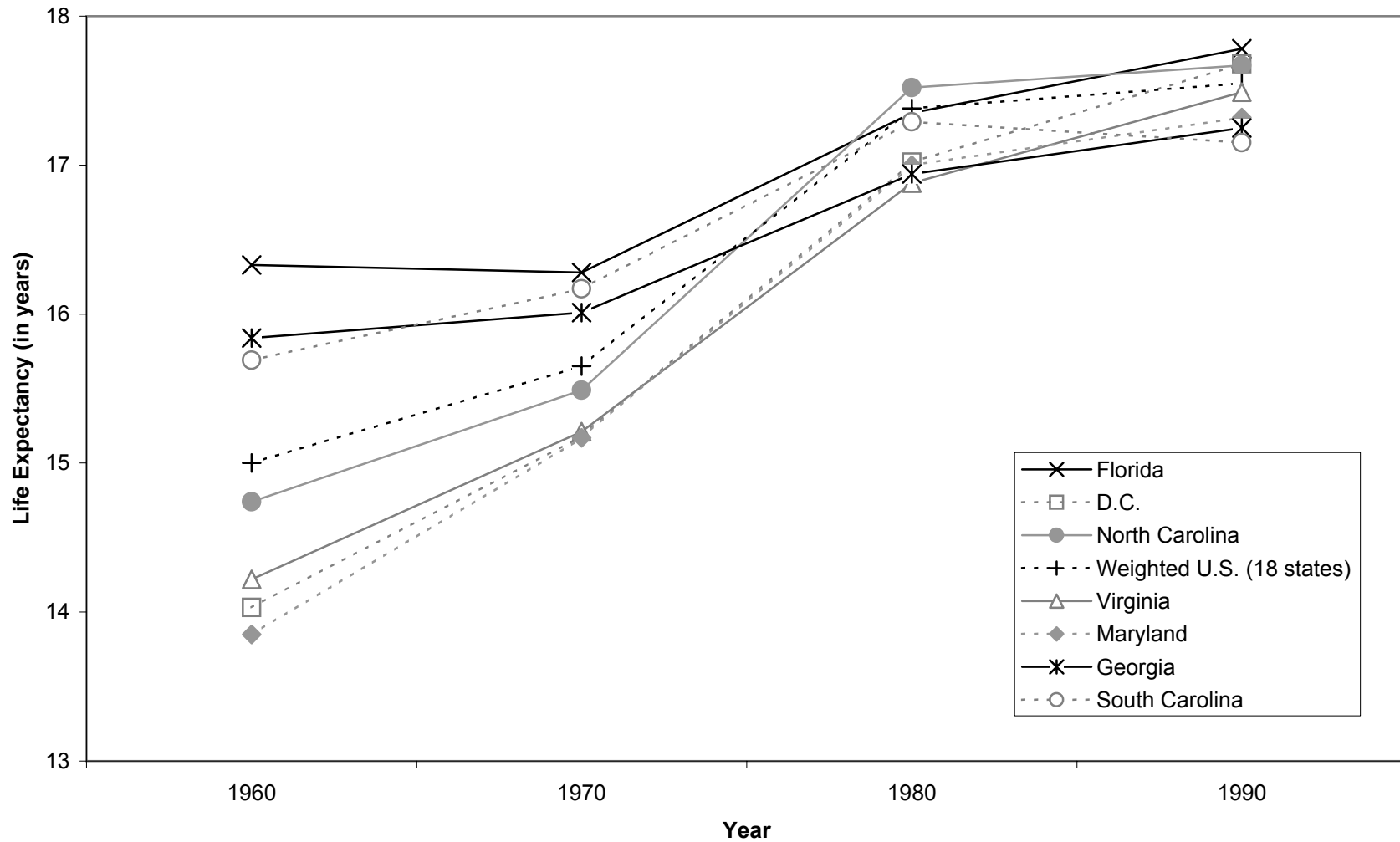
Sources: National Center for Health Statistics, 1975. Some Trends and Comparisons of United States Life-Table Data: 1900-1971. National Center for Health Statistics, 1985-86. State Life Tables, Alabama-Wyoming, U.S. Decennial Life Tables for 1979-81. National Center for Health Statistics, 1998. U.S. Decennial Life Tables for 1989-91, State Life Tables.

Figure 4. State Life Expectancy at Birth for Nonwhite Females in the South Central Division: 1960 to 1990



Sources: National Center for Health Statistics (NCHS), 1975. Some Trends and Comparisons of United States Life-Table Data: 1900-1971. NCHS, 1985-86. State Life Tables, Alabama-Wyoming, U.S. Decennial Life Tables for 1979-81. NCHS, 1998. U.S. Decennial Life Tables for 1989-91, State Life Tables.

Figure 5. State Life Expectancy at Age 65 for Nonwhite Females in the South Atlantic Division: 1960 to 1990



Sources: National Center for Health Statistics (NCHS), 1975. Some Trends and Comparisons of United States Life-Table Data: 1900-1971. NCHS, 1985-86. State Life Tables, Alabama-Wyoming, U.S. Decennial Life Tables for 1979-81. NCHS, 1998. U.S. Decennial Life Tables for 1989-91, State Life Tables.

Appendix A-1. Life Expectancy at Birth by Sex and Race: 1959-1961

State	White				Nonwhite			
	Male	Difference from U.S. Life Expectancy	Female	Difference from U.S. Life Expectancy	Male	Difference from U.S. Life Expectancy	Female	Difference from U.S. Life Expectancy
United States	67.55	-	74.19	-	61.48	-	66.47	-
Alabama	67.06	-0.49	74.59	0.40	60.28	-1.20	64.72	-1.75
Alaska	66.59	-0.96	73.76	-0.43				
Arizona	65.99	-1.56	74.22	0.03				
Arkansas	68.06	0.51	75.63	1.44	63.33	1.85	67.44	0.97
California	67.73	0.18	74.62	0.43	66.60	5.12	71.42	4.95
Colorado	67.71	0.16	74.42	0.23				
Connecticut	68.42	0.87	74.39	0.20				
Delaware	67.68	0.13	74.05	-0.14				
D.C.	65.42	-2.13	73.34	-0.85	60.99	-0.49	66.58	0.11
Florida	67.93	0.38	75.71	1.52	59.95	-1.53	65.06	-1.41
Georgia	66.75	-0.80	74.90	0.71	58.71	-2.77	64.39	-2.08
Hawaii	69.95	2.40	72.37	-1.82	70.69	9.21	74.81	8.34
Idaho	68.15	0.60	75.01	0.82				
Illinois	67.31	-0.24	73.78	-0.41	61.48	0.00	66.20	-0.27
Indiana	67.68	0.13	74.19	0.00	62.16	0.68	66.87	0.40
Iowa	68.81	1.26	75.41	1.22				
Kansas	68.97	1.42	75.66	1.47				
Kentucky	67.16	-0.39	73.87	-0.32	60.01	-1.47	65.22	-1.25
Louisiana	66.58	-0.97	74.47	0.28	61.40	-0.08	66.13	-0.34
Maine	66.86	-0.69	73.53	-0.66				
Maryland	66.94	-0.61	73.47	-0.72	60.23	-1.25	65.35	-1.12
Massachusetts	67.55	0.00	73.91	-0.28				
Michigan	67.70	0.15	73.98	-0.21	64.25	2.77	67.89	1.42
Minnesota	68.86	1.31	75.30	1.11				
Mississippi	67.30	-0.25	74.81	0.62	61.35	-0.13	65.96	-0.51
Missouri	67.94	0.39	74.76	0.57	60.72	-0.76	65.79	-0.68
Montana	66.47	-1.08	74.17	-0.02				
Nebraska	69.08	1.53	75.68	1.49				
Nevada	64.55	-3.00	72.68	-1.51				
New Hampshire	67.05	-0.50	74.04	-0.15				
New Jersey	67.64	0.09	73.43	-0.76	61.45	-0.03	66.47	0.00
New Mexico	66.77	-0.78	73.39	-0.80				
New York	67.39	-0.16	73.31	-0.88	60.77	-0.71	67.15	0.68
North Carolina	66.94	-0.61	74.74	0.55	59.09	-2.39	65.33	-1.14
North Dakota	69.16	1.61	75.33	1.14				
Ohio	67.74	0.19	73.92	-0.27	62.39	0.91	67.12	0.65
Oklahoma	67.95	0.40	75.44	1.25	62.92	1.44	68.05	1.58
Oregon	67.62	0.07	74.89	0.70				
Pennsylvania	67.04	-0.51	73.13	-1.06	61.67	0.19	66.49	0.02
Rhode Island	67.83	0.28	73.68	-0.51				
South Carolina	65.97	-1.58	73.93	-0.26	57.27	-4.21	63.40	-3.07
South Dakota	68.35	0.80	75.56	1.37				
Tennessee	67.49	-0.06	74.38	0.19	61.28	-0.20	65.41	-1.06
Texas	67.79	0.24	75.15	0.96	62.30	0.82	67.33	0.86
Utah	68.79	1.24	75.04	0.85				
Vermont	66.95	-0.60	74.02	-0.17				
Virginia	67.20	-0.35	74.37	0.18	60.17	-1.31	65.14	-1.33
Washington	67.92	0.37	74.90	0.71				
West Virginia	66.55	-1.00	73.50	-0.69				
Wisconsin	68.45	0.90	74.56	0.37				
Wyoming	66.62	-0.93	74.47	0.28				

Source: National Center for Health Statistics, 1975. Some Trends and Comparisons of United States Life-Table Data: 1900-1971.

Appendix A-2. Life Expectancy at Birth by Sex and Race: 1969-1971

State	White				Nonwhite			
	Male	Difference from U.S. Life Expectancy	Female	Difference from U.S. Life Expectancy	Male	Difference from U.S. Life Expectancy	Female	Difference from U.S. Life Expectancy
United States	67.94	-	75.49	-	60.98	-	69.05	-
Alabama	66.56	-1.38	75.64	0.15	59.86	-1.12	67.83	-1.22
Alaska								
Arizona	67.46	-0.48	75.59	0.10				
Arkansas	67.58	-0.36	76.26	0.77	62.01	1.03	69.67	0.62
California	68.41	0.47	75.60	0.11	66.81	5.83	73.73	4.68
Colorado	68.53	0.59	76.04	0.55				
Connecticut	69.45	1.51	76.33	0.84	63.68	2.70	70.57	1.52
Delaware	67.66	-0.28	75.37	-0.12				
D.C.	66.08	-1.86	74.76	-0.73	58.96	-2.02	68.34	-0.71
Florida	68.15	0.21	76.41	0.92	58.89	-2.09	67.25	-1.80
Georgia	66.18	-1.76	75.38	-0.11	58.59	-2.39	67.10	-1.95
Hawaii					71.08	10.10	76.93	7.88
Idaho	68.31	0.37	76.22	0.73				
Illinois	67.66	-0.28	74.95	-0.54	59.46	-1.52	68.03	-1.02
Indiana	67.65	-0.29	75.18	-0.31	61.89	0.91	68.98	-0.07
Iowa	68.91	0.97	76.57	1.08				
Kansas	69.11	1.17	76.84	1.35				
Kentucky	66.74	-1.20	74.91	-0.58	59.81	-1.17	67.57	-1.48
Louisiana	66.55	-1.39	75.17	-0.32	60.65	-0.33	68.05	-1.00
Maine	67.25	-0.69	74.83	-0.66				
Maryland	67.83	-0.11	75.42	-0.07	60.67	-0.31	68.81	-0.24
Massachusetts	68.33	0.39	75.58	0.09	63.22	2.24	72.32	3.27
Michigan	67.99	0.05	75.24	-0.25	60.95	-0.03	69.28	0.23
Minnesota	69.46	1.52	76.87	1.38				
Mississippi	66.14	-1.80	75.32	-0.17	60.17	-0.81	67.78	-1.27
Missouri	67.79	-0.15	75.50	0.01	59.55	-1.43	68.21	-0.84
Montana	67.16	-0.78	75.56	0.07				
Nebraska	69.12	1.18	76.92	1.43				
Nevada	66.02	-1.92	73.73	-1.76				
New Hampshire	67.46	-0.48	75.17	-0.32				
New Jersey	68.56	0.62	75.16	-0.33	60.09	-0.89	68.82	-0.23
New Mexico	67.29	-0.65	75.07	-0.42				
New York	68.04	0.10	74.94	-0.55	60.39	-0.59	69.67	0.62
North Carolina	66.76	-1.18	75.71	0.22	58.82	-2.16	67.80	-1.25
North Dakota	69.55	1.61	77.28	1.79				
Ohio	67.90	-0.04	75.11	-0.38	61.34	0.36	69.52	0.47
Oklahoma	67.83	-0.11	76.15	0.66	63.47	2.49	72.25	3.20
Oregon	68.51	0.57	76.25	0.76				
Pennsylvania	67.71	-0.23	74.69	-0.80	59.42	-1.56	68.25	-0.80
Rhode Island	68.50	0.56	75.62	0.13				
South Carolina	66.11	-1.83	74.82	-0.67	58.33	-2.65	67.01	-2.04
South Dakota	69.41	1.47	77.03	1.54				
Tennessee	67.07	-0.87	75.61	0.12	61.09	0.11	67.86	-1.19
Texas	67.85	-0.09	75.88	0.39	61.71	0.73	69.47	0.42
Utah	69.54	1.60	76.60	1.11				
Vermont	67.75	-0.19	75.75	0.26				
Virginia	67.72	-0.22	75.72	0.23	60.36	-0.62	68.19	-0.86
Washington	68.29	0.35	75.99	0.50				
West Virginia	65.84	-2.10	74.04	-1.45				
Wisconsin	69.32	1.38	76.20	0.71				
Wyoming	66.34	-1.60	75.40	-0.09				

Source: National Center for Health Statistics, 1975. Some Trends and Comparisons of United States Life-Table Data: 1900-1971.

Appendix A-3. Life Expectancy at Birth by Sex and Race: 1979-1981

State	White				Nonwhite			
	Male	Difference from U.S. Life Expectancy	Female	Difference from U.S. Life Expectancy	Male	Difference from U.S. Life Expectancy	Female	Difference from U.S. Life Expectancy
United States	70.82	-	78.22	-	65.63	-	74.00	-
Alabama	69.67	-1.15	78.15	-0.07	63.76	-1.87	73.05	-0.95
Alaska	69.99	-0.83	77.93	-0.29				
Arizona	71.08	0.26	78.66	0.44	64.63	-1.00	75.04	1.04
Arkansas	70.46	-0.36	78.59	0.37	65.51	-0.12	74.16	0.16
California	71.18	0.36	78.12	-0.10	70.86	5.23	77.81	3.81
Colorado	71.84	1.02	78.89	0.67	70.74	5.11	77.32	3.32
Connecticut	71.90	1.08	78.86	0.64	67.13	1.50	75.55	1.55
Delaware	70.53	-0.29	77.59	-0.63	64.93	-0.70	73.15	-0.85
D.C.	71.24	0.42	77.88	-0.34	62.10	-3.53	72.19	-1.81
Florida	71.10	0.28	78.86	0.64	63.76	-1.87	72.41	-1.59
Georgia	69.56	-1.26	78.01	-0.21	63.41	-2.22	72.06	-1.94
Hawaii	73.04	2.22	79.81	1.59	74.57	8.94	80.72	6.72
Idaho	71.58	0.76	79.19	0.97				
Illinois	70.57	-0.25	77.96	-0.26	64.32	-1.31	72.99	-1.01
Indiana	70.57	-0.25	77.82	-0.40	65.53	-0.10	73.54	-0.46
Iowa	72.09	1.27	79.64	1.42				
Kansas	71.85	1.03	79.26	1.04	67.87	2.24	74.75	0.75
Kentucky	69.46	-1.36	77.46	-0.76	64.90	-0.73	72.93	-1.07
Louisiana	69.20	-1.62	77.42	-0.80	63.63	-2.00	72.48	-1.52
Maine	70.77	-0.05	78.39	0.17				
Maryland	70.86	0.04	77.73	-0.49	65.89	0.26	73.81	-0.19
Massachusetts	71.38	0.56	78.54	0.32	69.60	3.97	77.51	3.51
Michigan	70.94	0.12	77.99	-0.23	64.73	-0.90	73.17	-0.83
Minnesota	72.63	1.81	79.90	1.68				
Mississippi	69.26	-1.56	78.09	-0.13	64.19	-1.44	73.40	-0.60
Missouri	70.64	-0.18	78.29	0.07	64.02	-1.61	73.29	-0.71
Montana	71.00	0.18	78.19	-0.03				
Nebraska	71.97	1.15	79.53	1.31				
Nevada	69.52	-1.30	76.72	-1.50				
New Hampshire	71.39	0.57	78.38	0.16				
New Jersey	71.25	0.43	77.99	-0.23	65.73	0.10	73.90	-0.10
New Mexico	70.46	-0.36	78.63	0.41	65.32	-0.31	76.12	2.12
New York	70.90	0.08	77.80	-0.42	65.58	-0.05	74.26	0.26
North Carolina	70.02	-0.80	78.53	0.31	63.66	-1.97	73.58	-0.42
North Dakota	72.45	1.63	79.95	1.73				
Ohio	70.42	-0.40	77.53	-0.69	65.16	-0.47	73.24	-0.76
Oklahoma	69.90	-0.92	78.07	-0.15	67.63	2.00	76.26	2.26
Oregon	71.41	0.59	78.79	0.57				
Pennsylvania	70.52	-0.30	77.64	-0.58	64.07	-1.56	72.93	-1.07
Rhode Island	71.06	0.24	78.45	0.23				
South Carolina	69.40	-1.42	77.81	-0.41	62.96	-2.67	72.47	-1.53
South Dakota	72.07	1.25	80.07	1.85				
Tennessee	69.99	-0.83	78.31	0.09	64.37	-1.26	73.19	-0.81
Texas	70.30	-0.52	78.22	0.00	65.40	-0.23	74.05	0.05
Utah	72.42	1.60	79.22	1.00				
Vermont	71.03	0.21	78.47	0.25				
Virginia	70.54	-0.28	78.28	0.06	65.76	0.13	73.49	-0.51
Washington	71.86	1.04	78.64	0.42	70.18	4.55	77.83	3.83
West Virginia	68.99	-1.83	77.09	-1.13	65.03	-0.60	72.88	-1.12
Wisconsin	72.05	1.23	79.05	0.83	67.53	1.90	74.83	0.83
Wyoming	70.15	-0.67	78.39	0.17				

Source: National Center for Health Statistics, 1985-86. State Life Tables, Alabama-Wyoming, U.S. Decennial Life Tables for 1979-81.

Appendix A-4. Life Expectancy at Birth by Sex and Race: 1989-1991

State	White				Nonwhite			
	Male	Difference from U.S. Life Expectancy	Female	Difference from U.S. Life Expectancy	Male	Difference from U.S. Life Expectancy	Female	Difference from U.S. Life Expectancy
United States	72.72	-	79.45	-	66.97	-	75.39	-
Alabama	71.12	-1.60	78.85	-0.60	64.79	-2.18	74.05	-1.34
Alaska	72.82	0.10	79.40	-0.05	67.65	0.68	76.17	0.78
Arizona	73.04	0.32	79.84	0.39	68.89	1.92	76.81	1.42
Arkansas	71.54	-1.18	78.89	-0.56	64.87	-2.10	74.13	-1.26
California	72.61	-0.11	79.26	-0.19	72.34	5.37	79.18	3.79
Colorado	73.88	1.16	80.13	0.68	72.63	5.66	78.61	3.22
Connecticut	74.25	1.53	80.37	0.92	67.82	0.85	76.61	1.22
Delaware	72.75	0.03	78.62	-0.83	66.39	-0.58	73.63	-1.76
D.C.	71.36	-1.36	81.06	1.61	58.14	-8.83	72.03	-3.36
Florida	73.19	0.47	80.46	1.01	65.40	-1.57	74.19	-1.20
Georgia	71.46	-1.26	78.94	-0.51	64.49	-2.48	73.65	-1.74
Hawaii	75.12	2.40	81.09	1.64	75.49	8.52	81.48	6.09
Idaho	73.90	1.18	79.93	0.48				
Illinois	72.83	0.11	79.33	-0.12	64.58	-2.39	73.79	-1.60
Indiana	72.44	-0.28	79.03	-0.42	66.99	0.02	74.35	-1.04
Iowa	73.98	1.26	80.62	1.17				
Kansas	73.72	1.00	80.25	0.80	69.25	2.28	76.26	0.87
Kentucky	71.01	-1.71	78.24	-1.21	66.78	-0.19	74.63	-0.76
Louisiana	71.15	-1.57	78.54	-0.91	64.33	-2.64	73.43	-1.96
Maine	72.98	0.26	79.61	0.16				
Maryland	73.20	0.48	79.23	-0.22	66.27	-0.70	75.15	-0.24
Massachusetts	73.54	0.82	79.95	0.50	71.29	4.32	78.60	3.21
Michigan	73.06	0.34	79.14	-0.31	64.68	-2.29	73.65	-1.74
Minnesota	74.78	2.06	81.02	1.57	69.46	2.49	76.80	1.41
Mississippi	70.74	-1.98	78.82	-0.63	64.84	-2.13	73.91	-1.48
Missouri	72.43	-0.29	79.48	0.03	65.00	-1.97	74.07	-1.32
Montana	73.59	0.87	79.92	0.47				
Nebraska	73.87	1.15	80.44	0.99	67.64	0.67	74.52	-0.87
Nevada	71.26	-1.46	77.99	-1.46	69.15	2.18	76.42	1.03
New Hampshire	73.48	0.76	79.74	0.29				
New Jersey	73.37	0.65	79.34	-0.11	66.59	-0.38	74.66	-0.73
New Mexico	72.66	-0.06	79.53	0.08	68.97	2.00	77.93	2.54
New York	72.01	-0.71	79.03	-0.42	66.70	-0.27	75.97	0.58
North Carolina	72.21	-0.51	79.44	-0.01	64.96	-2.01	74.55	-0.84
North Dakota	74.74	2.02	81.32	1.87				
Ohio	72.70	-0.02	78.95	-0.50	66.70	-0.27	74.82	-0.57
Oklahoma	71.76	-0.96	78.59	-0.86	71.17	4.20	78.21	2.82
Oregon	73.28	0.56	79.73	0.28	72.02	5.05	78.45	3.06
Pennsylvania	72.81	0.09	79.28	-0.17	64.69	-2.28	73.78	-1.61
Rhode Island	73.31	0.59	79.97	0.52				
South Carolina	71.62	-1.10	78.97	-0.48	64.37	-2.60	73.57	-1.82
South Dakota	74.30	1.58	81.59	2.14				
Tennessee	71.38	-1.34	79.10	-0.35	64.99	-1.98	73.59	-1.80
Texas	72.08	-0.64	79.42	-0.03	67.08	0.11	75.38	-0.01
Utah	75.00	2.28	80.44	0.99				
Vermont	73.25	0.53	79.65	0.20				
Virginia	73.04	0.32	79.48	0.03	67.03	0.06	75.27	-0.12
Washington	73.97	1.25	79.81	0.36	72.72	5.75	79.59	4.20
West Virginia	70.66	-2.06	78.02	-1.43	66.77	-0.20	75.46	0.07
Wisconsin	73.99	1.27	80.27	0.82	68.27	1.30	76.25	0.86
Wyoming	73.27	0.55	79.46	0.01				

Source: National Center for Health Statistics, 1998. U.S. Decennial Life Tables for 1989-91, State Life Tables.

Appendix A-5. Life Expectancy at Age 65 by Sex and Race: 1959-1961

State	White				Nonwhite			
	Male	Difference from U.S. Life Expectancy	Female	Difference from U.S. Life Expectancy	Male	Difference from U.S. Life Expectancy	Female	Difference from U.S. Life Expectancy
United States	12.97	-	15.88	-	12.84	-	15.12	-
Alabama	13.20	0.23	16.18	0.30	12.90	0.06	14.94	-0.18
Alaska	12.72	-0.25	15.36	-0.52				
Arizona	13.12	0.15	16.87	0.99				
Arkansas	13.83	0.86	16.84	0.96	13.62	0.78	15.93	0.81
California	13.19	0.22	16.52	0.64	13.91	1.07	16.29	1.17
Colorado	13.68	0.71	16.53	0.65				
Connecticut	12.79	-0.18	15.59	-0.29				
Delaware	12.58	-0.39	15.44	-0.44				
D.C.	12.54	-0.43	16.29	0.41	11.65	-1.19	14.03	-1.09
Florida	14.34	1.37	17.39	1.51	13.67	0.83	16.33	1.21
Georgia	12.96	-0.01	16.36	0.48	12.76	-0.08	15.84	0.72
Hawaii	12.00	-0.97	14.95	-0.93	14.73	1.89	16.92	1.80
Idaho	13.67	0.70	16.69	0.81				
Illinois	12.59	-0.38	15.53	-0.35	12.05	-0.79	14.38	-0.74
Indiana	12.93	-0.04	15.79	-0.09	12.21	-0.63	14.63	-0.49
Iowa	13.55	0.58	16.53	0.65				
Kansas	13.85	0.88	16.79	0.91				
Kentucky	13.48	0.51	15.92	0.04	11.92	-0.92	14.32	-0.80
Louisiana	12.74	-0.23	15.95	0.07	12.74	-0.10	14.99	-0.13
Maine	12.62	-0.35	15.65	-0.23				
Maryland	12.23	-0.74	15.24	-0.64	11.65	-1.19	13.85	-1.27
Massachusetts	12.59	-0.38	15.48	-0.40				
Michigan	12.68	-0.29	15.61	-0.27	13.11	0.27	15.17	0.05
Minnesota	13.57	0.60	16.43	0.55				
Mississippi	13.43	0.46	16.33	0.45	12.97	0.13	14.96	-0.16
Missouri	13.17	0.20	16.19	0.31	12.21	-0.63	14.76	-0.36
Montana	13.07	0.10	16.18	0.30				
Nebraska	13.68	0.71	16.69	0.81				
Nevada	12.11	-0.86	16.19	0.31				
New Hampshire	12.50	-0.47	15.67	-0.21				
New Jersey	12.42	-0.55	15.14	-0.74	12.53	-0.31	14.63	-0.49
New Mexico	13.74	0.77	16.22	0.34				
New York	12.43	-0.54	15.05	-0.83	12.50	-0.34	14.80	-0.32
North Carolina	13.12	0.15	16.05	0.17	12.53	-0.31	14.74	-0.38
North Dakota	13.85	0.88	16.43	0.55				
Ohio	12.83	-0.14	15.57	-0.31	12.41	-0.43	14.86	-0.26
Oklahoma	13.57	0.60	17.01	1.13	13.96	1.12	15.68	0.56
Oregon	13.36	0.39	16.57	0.69				
Pennsylvania	12.32	-0.65	14.96	-0.92	12.18	-0.66	14.61	-0.51
Rhode Island	12.55	-0.42	15.25	-0.63				
South Carolina	12.32	-0.65	15.77	-0.11	12.96	0.12	15.69	0.57
South Dakota	13.74	0.77	16.64	0.76				
Tennessee	13.30	0.33	16.10	0.22	12.66	-0.18	14.40	-0.72
Texas	13.46	0.49	16.86	0.98	13.67	0.83	16.31	1.19
Utah	13.67	0.70	16.44	0.56				
Vermont	12.61	-0.36	15.76	-0.12				
Virginia	12.90	-0.07	15.85	-0.03	11.96	-0.88	14.22	-0.90
Washington	13.24	0.27	16.38	0.50				
West Virginia	13.20	0.23	15.70	-0.18				
Wisconsin	13.25	0.28	15.85	-0.03				
Wyoming	13.37	0.40	16.37	0.49				

Source: National Center for Health Statistics, 1975. Some Trends and Comparisons of United States Life-Table Data: 1900-1971.

Appendix A-6. Life Expectancy at Age 65 by Sex and Race: 1969-1971

State	White				Nonwhite			
	Male	Difference from U.S. Life Expectancy	Female	Difference from U.S. Life Expectancy	Male	Difference from U.S. Life Expectancy	Female	Difference from U.S. Life Expectancy
United States	13.02	-	16.93	-	12.87	-	15.99	-
Alabama	12.79	-0.23	17.01	0.08	12.71	-0.16	15.49	-0.50
Alaska								
Arizona	13.47	0.45	17.67	0.74				
Arkansas	13.47	0.45	17.50	0.57	13.62	0.75	16.44	0.45
California	13.33	0.31	17.35	0.42	14.92	2.05	18.01	2.02
Colorado	13.67	0.65	17.56	0.63				
Connecticut	13.19	0.17	17.05	0.12	14.31	1.44	17.17	1.18
Delaware	12.29	-0.73	16.56	-0.37				
D.C.	12.80	-0.22	17.44	0.51	11.74	-1.13	15.18	-0.81
Florida	14.24	1.22	18.19	1.26	12.70	-0.17	16.28	0.29
Georgia	12.39	-0.63	17.00	0.07	12.62	-0.25	16.01	0.02
Hawaii					15.11	2.24	18.19	2.20
Idaho	13.84	0.82	17.59	0.66				
Illinois	12.68	-0.34	16.50	-0.43	12.45	-0.42	15.37	-0.62
Indiana	12.71	-0.31	16.63	-0.30	12.70	-0.17	15.61	-0.38
Iowa	13.40	0.38	17.63	0.70				
Kansas	13.68	0.66	17.74	0.81				
Kentucky	13.00	-0.02	16.71	-0.22	11.67	-1.20	15.14	-0.85
Louisiana	12.48	-0.54	16.70	-0.23	12.52	-0.35	15.11	-0.88
Maine	12.55	-0.47	16.59	-0.34				
Maryland	12.45	-0.57	16.54	-0.39	12.33	-0.54	15.17	-0.82
Massachusetts	12.80	-0.22	16.88	-0.05	13.94	1.07	17.47	1.48
Michigan	12.76	-0.26	16.71	-0.22	12.97	0.10	16.17	0.18
Minnesota	13.74	0.72	17.61	0.68				
Mississippi	12.68	-0.34	16.95	0.02	12.97	0.10	15.54	-0.45
Missouri	12.94	-0.08	16.95	0.02	12.69	-0.18	15.83	-0.16
Montana	13.33	0.31	17.57	0.64				
Nebraska	13.73	0.71	17.89	0.96				
Nevada	12.58	-0.44	16.48	-0.45				
New Hampshire	12.56	-0.46	16.64	-0.29				
New Jersey	12.73	-0.29	16.33	-0.60	12.45	-0.42	15.68	-0.31
New Mexico	13.70	0.68	17.18	0.25				
New York	12.77	-0.25	16.36	-0.57	12.89	0.02	16.39	0.40
North Carolina	12.82	-0.20	17.05	0.12	12.33	-0.54	15.49	-0.50
North Dakota	13.85	0.83	17.92	0.99				
Ohio	12.66	-0.36	16.51	-0.42	12.48	-0.39	15.81	-0.18
Oklahoma	13.23	0.21	17.49	0.56	14.02	1.15	17.85	1.86
Oregon	13.49	0.47	17.60	0.67				
Pennsylvania	12.50	-0.52	16.08	-0.85	12.22	-0.65	15.42	-0.57
Rhode Island	12.83	-0.19	16.67	-0.26				
South Carolina	12.21	-0.81	16.52	-0.41	12.74	-0.13	16.17	0.18
South Dakota	13.78	0.76	18.08	1.15				
Tennessee	12.99	-0.03	16.99	0.06	12.37	-0.50	15.35	-0.64
Texas	13.30	0.28	17.47	0.54	13.27	0.40	16.45	0.46
Utah	13.82	0.80	17.34	0.41				
Vermont	12.61	-0.41	16.83	-0.10				
Virginia	12.71	-0.31	16.96	0.03	12.03	-0.84	15.21	-0.78
Washington	13.11	0.09	17.32	0.39				
West Virginia	12.71	-0.31	16.35	-0.58				
Wisconsin	13.42	0.40	17.13	0.20				
Wyoming	13.20	0.18	17.60	0.67				

Source: National Center for Health Statistics, 1975. Some Trends and Comparisons of United States Life-Table Data: 1900-1971.

Appendix A-7. Life Expectancy at Age 65 by Sex and Race: 1979-1981

State	White				Nonwhite			
	Male	Difference from U.S. Life Expectancy	Female	Difference from U.S. Life Expectancy	Male	Difference from U.S. Life Expectancy	Female	Difference from U.S. Life Expectancy
United States	14.26	-	18.55	-	13.83	-	17.60	-
Alabama	13.82	-0.44	18.52	-0.03	13.44	-0.39	17.33	-0.27
Alaska	13.54	-0.72	18.02	-0.53				
Arizona	15.10	0.84	19.18	0.63	15.53	1.70	18.88	1.28
Arkansas	14.40	0.14	18.79	0.24	14.11	0.28	17.79	0.19
California	14.60	0.34	18.65	0.10	15.95	2.12	19.39	1.79
Colorado	14.75	0.49	19.10	0.55	15.32	1.49	19.38	1.78
Connecticut	14.41	0.15	18.72	0.17	14.48	0.65	18.50	0.90
Delaware	13.63	-0.63	18.07	-0.48	12.78	-1.05	17.57	-0.03
D.C.	14.46	0.20	18.77	0.22	12.84	-0.99	17.02	-0.58
Florida	15.45	1.19	19.48	0.93	13.38	-0.45	17.35	-0.25
Georgia	13.66	-0.60	18.49	-0.06	12.99	-0.84	16.94	-0.66
Hawaii	15.92	1.66	19.54	0.99	16.95	3.12	20.50	2.90
Idaho	14.98	0.72	19.18	0.63				
Illinois	13.91	-0.35	18.24	-0.31	13.52	-0.31	17.09	-0.51
Indiana	13.85	-0.41	18.18	-0.37	13.61	-0.22	17.36	-0.24
Iowa	14.69	0.43	19.37	0.82				
Kansas	14.85	0.59	19.37	0.82	14.29	0.46	17.66	0.06
Kentucky	13.82	-0.44	18.13	-0.42	12.85	-0.98	16.87	-0.73
Louisiana	13.64	-0.62	18.06	-0.49	13.40	-0.43	16.83	-0.77
Maine	14.13	-0.13	18.56	0.01				
Maryland	13.74	-0.52	18.11	-0.44	12.94	-0.89	17.00	-0.60
Massachusetts	14.15	-0.11	18.51	-0.04	15.21	1.38	19.68	2.08
Michigan	13.93	-0.33	18.27	-0.28	13.67	-0.16	17.47	-0.13
Minnesota	14.98	0.72	19.51	0.96				
Mississippi	13.86	-0.40	18.51	-0.04	13.99	0.16	17.36	-0.24
Missouri	14.06	-0.20	18.63	0.08	13.57	-0.26	17.22	-0.38
Montana	14.56	0.30	18.72	0.17				
Nebraska	14.77	0.51	19.37	0.82				
Nevada	14.10	-0.16	18.11	-0.44				
New Hampshire	14.22	-0.04	18.56	0.01				
New Jersey	14.00	-0.26	17.97	-0.58	13.42	-0.41	17.40	-0.20
New Mexico	15.04	0.78	19.06	0.51	16.40	2.57	19.94	2.34
New York	14.13	-0.13	18.12	-0.43	13.90	0.07	17.79	0.19
North Carolina	13.94	-0.32	18.79	0.24	13.17	-0.66	17.52	-0.08
North Dakota	15.19	0.93	19.37	0.82				
Ohio	13.66	-0.60	18.02	-0.53	13.18	-0.65	17.13	-0.47
Oklahoma	14.14	-0.12	18.74	0.19	14.98	1.15	19.13	1.53
Oregon	14.68	0.42	19.04	0.49				
Pennsylvania	13.67	-0.59	17.85	-0.70	13.06	-0.77	17.20	-0.40
Rhode Island	14.03	-0.23	18.58	0.03				
South Carolina	13.51	-0.75	18.28	-0.27	13.44	-0.39	17.29	-0.31
South Dakota	14.98	0.72	19.73	1.18				
Tennessee	14.07	-0.19	18.71	0.16	13.24	-0.59	17.09	-0.51
Texas	14.37	0.11	18.76	0.21	13.90	0.07	17.66	0.06
Utah	15.10	0.84	18.96	0.41				
Vermont	14.07	-0.19	18.68	0.13				
Virginia	13.79	-0.47	18.40	-0.15	13.04	-0.79	16.88	-0.72
Washington	14.75	0.49	18.90	0.35	15.46	1.63	19.51	1.91
West Virginia	13.68	-0.58	18.06	-0.49	13.31	-0.52	17.54	-0.06
Wisconsin	14.54	0.28	18.89	0.34	14.01	0.18	17.92	0.32
Wyoming	14.42	0.16	18.73	0.18				

Source: National Center for Health Statistics, 1985-86. State Life Tables, Alabama-Wyoming, U.S. Decennial Life Tables for 1979-81.

Appendix A-8. Life Expectancy at Age 65 by Sex and Race: 1989-1991

State	White				Nonwhite			
	Male	Difference from U.S. Life Expectancy	Female	Difference from U.S. Life Expectancy	Male	Difference from U.S. Life Expectancy	Female	Difference from U.S. Life Expectancy
United States	15.24	-	19.14	-	14.11	-	18.02	-
Alabama	14.47	-0.77	18.90	-0.24	13.19	-0.92	17.44	-0.58
Alaska	15.08	-0.16	18.51	-0.63	14.99	0.88	18.60	0.58
Arizona	16.04	0.80	19.67	0.53	14.99	0.88	18.57	0.55
Arkansas	14.89	-0.35	19.05	-0.09	13.69	-0.42	17.64	-0.38
California	15.66	0.42	19.06	-0.08	16.35	2.24	19.72	1.70
Colorado	15.83	0.59	19.44	0.30	16.05	1.94	19.64	1.62
Connecticut	15.73	0.49	19.56	0.42	14.76	0.65	19.01	0.99
Delaware	14.92	-0.32	18.44	-0.70	12.90	-1.21	16.57	-1.45
D.C.	15.87	0.63	20.34	1.20	13.12	-0.99	17.68	-0.34
Florida	16.50	1.26	20.21	1.07	13.57	-0.54	17.78	-0.24
Georgia	14.40	-0.84	18.85	-0.29	12.87	-1.24	17.25	-0.77
Hawaii	16.77	1.53	19.97	0.83	17.58	3.47	21.17	3.15
Idaho	15.91	0.67	19.65	0.51				
Illinois	14.96	-0.28	18.98	-0.16	13.54	-0.57	17.47	-0.55
Indiana	14.74	-0.50	18.82	-0.32	13.33	-0.78	17.38	-0.64
Iowa	15.54	0.30	19.91	0.77				
Kansas	15.63	0.39	19.80	0.66	14.32	0.21	18.23	0.21
Kentucky	14.18	-1.06	18.49	-0.65	12.96	-1.15	17.28	-0.74
Louisiana	14.44	-0.80	18.58	-0.56	13.13	-0.98	16.96	-1.06
Maine	14.87	-0.37	18.98	-0.16				
Maryland	15.02	-0.22	18.68	-0.46	13.25	-0.86	17.32	-0.70
Massachusetts	15.29	0.05	19.20	0.06	15.91	1.80	19.81	1.79
Michigan	14.99	-0.25	18.87	-0.27	13.72	-0.39	17.37	-0.65
Minnesota	15.76	0.52	20.02	0.88	15.06	0.95	18.47	0.45
Mississippi	14.24	-1.00	18.94	-0.20	13.39	-0.72	17.44	-0.58
Missouri	15.01	-0.23	19.25	0.11	13.34	-0.77	17.32	-0.70
Montana	15.63	0.39	19.48	0.34				
Nebraska	15.42	0.18	19.83	0.69	13.32	-0.79	17.36	-0.66
Nevada	14.68	-0.56	18.08	-1.06	15.51	1.40	18.44	0.42
New Hampshire	15.07	-0.17	18.98	-0.16				
New Jersey	15.13	-0.11	18.80	-0.34	14.35	0.24	18.03	0.01
New Mexico	15.99	0.75	19.43	0.29	16.33	2.22	19.73	1.71
New York	15.24	0.00	18.95	-0.19	14.84	0.73	18.75	0.73
North Carolina	14.75	-0.49	19.10	-0.04	12.99	-1.12	17.67	-0.35
North Dakota	15.96	0.72	20.54	1.40				
Ohio	14.73	-0.51	18.68	-0.46	13.58	-0.53	17.43	-0.59
Oklahoma	14.77	-0.47	18.80	-0.34	15.68	1.57	19.59	1.57
Oregon	15.55	0.31	19.29	0.15	15.79	1.68	18.94	0.92
Pennsylvania	14.87	-0.37	18.79	-0.35	13.38	-0.73	17.21	-0.81
Rhode Island	15.24	0.00	19.50	0.36				
South Carolina	14.65	-0.59	18.95	-0.19	12.96	-1.15	17.15	-0.87
South Dakota	15.72	0.48	20.51	1.37				
Tennessee	14.46	-0.78	18.98	-0.16	12.87	-1.24	16.82	-1.20
Texas	15.12	-0.12	19.12	-0.02	13.87	-0.24	17.94	-0.08
Utah	16.26	1.02	19.75	0.61				
Vermont	15.03	-0.21	19.07	-0.07				
Virginia	14.88	-0.36	18.92	-0.22	13.24	-0.87	17.49	-0.53
Washington	15.80	0.56	19.35	0.21	16.21	2.10	20.26	2.24
West Virginia	14.04	-1.20	18.38	-0.76	13.18	-0.93	18.29	0.27
Wisconsin	15.40	0.16	19.49	0.35	14.67	0.56	18.24	0.22
Wyoming	15.49	0.25	19.37	0.23				

Source: National Center for Health Statistics, 1998. U.S. Decennial Life Tables for 1989-91, State Life Tables.

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