PRELIMINARY; PLEASE DO NOT CITE

Children Receiving OASDI and SSI by State and County, 1970-2019: Description and Fifty Years of Data*

Timothy Moore
Purdue University and NBER

Abstract

Abstract: This paper describes the digitization and analysis of county-level data from Social Security Administration publications reporting children receiving Social Security benefits and Supplemental Security Income. Data sets are created that begin in the 1970s and go through until 2019, which are merged with population data to create rates of receipt in the population. The variables are described and then used to analyze patterns in receipt across counties and over time. Other county-level data are also merged with these data to examine what is correlated with the number of beneficiaries and recipients at the county level. The data will be made freely available for use in examining a wide variety of questions around social insurance.

Keywords: Social Security; SSI; children; disability; survivors; retirement; geographic differences; state; county.

* The research reported herein was performed pursuant to grant RDR18000003 from the US Social Security Administration (SSA) funded as part of the Retirement and Disability Research Consortium. The opinions and conclusions expressed are solely those of the author(s) and do not represent the opinions or policy of SSA, any agency of the Federal Government, or NBER. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of the contents of this report. Reference herein to any specific commercial product, process or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply endorsement, recommendation or favoring by the United States Government or any agency thereof.

1. Introduction

Studies have documented substantial geographic variation in the distribution of federal income support, such as to adult beneficiaries of Social Security Disability Insurance (e.g., Strand 2002, McVicar 2006, Coe et al. 2011). However, relatively little is known about the geographic differences in the degree of this support to children, apart from a small number of studies have found substantial state variation in the proportion of children on SSI and linked these differences to community characteristics and state policies (e.g., Perrin et al. 1998; Garrett and Glied, 2000).

It is important to examine this variation in detail. In addition to differences across states, there is enormous variation within states. Research on other social insurance for other groups that has used county-level data, such as worker receipt of Social Security Disability Insurance, has found far greater variation at that level than at the state level (McCoy, Davis, and Hudson, 1994).

Documenting geographic variation is important for understanding the enormous changes over time in the number of children receiving payments through Old Age, Survivors and Disability Insurance (OASDI, or "Social Security") or the Supplemental Security Income (SSI) programs. For example, SSI had around 70,000 recipients aged under 18 when introduced in 1974. This increased to around 300,000 in 1990, more than tripled by 1996 and then continued to grow, largely due to the 1990 Zebley expansion in medical criteria for children (Duggan and Kearney, 2007). Rupp, Hemmeter and Davies (2015) examine how the mortality rates of individuals who received SSI as children has changed over time, and find evidence that suggests there are substantial changes to the characteristics of SSI child participants that could be related to Zebley and subsequent welfare reform in the late 1990s.

This paper outlines the creation of county-level datasets containing the rates of children receiving Social Security and SSI at the county level from 1970 to 2019. The Social Security

Administration (SSA) publishes *OASDI Beneficiaries by State and County* and *SSI Recipients by State and County* each year, but these are underutilized because they have been in paper form until 1998 and subsequently as online state-specific PDF/Excel files. These data were collected, digitized and cleaned. Policy researchers will be able to use them for standalone analysis, merge it with other socioeconomic data, or use it to explore the potential of a topic before seeking more detailed administrative data.

With more than 3,000 counties and the availability of many county-level measures of demographic characteristics, poverty, income, health and socioeconomic factors, these new data assets will allow a better understanding of the geographic variation in income support for children. These data also include information on beneficiaries, payments and subgroups. Given there are more than 3,000 counties and up to 50 years of data, this means that these data include between 100,000 and 150,000 observations for the main variables.

The features of the datasets are described in some detail. They are then used to examine how the distribution of benefit receipt varies over time, in terms of aspects like the location of counties with the highest rates of child beneficiaries or recipients, relative dispersion across counties, and how much variation occurs across states and within states. These data are also merged with information on demographic characteristics, economic activity, population health and house prices (as a measure of local living costs). Different regression specifications are used to understand the correlations between these measures and Social Security beneficiary rates or SSI recipient rates for children. These results showcase the data and reveal potential avenues for research using these data.

2. Fifty Years of State and County Data on Social Security and SSI

Since at least the 1960s, extracts of the Master Beneficiary Record have been used to produce a snapshot of Social Security beneficiaries in current payment status in each state and county in December of each year. This was called *Social Security Beneficiaries by State and County* until 1985, and has since been called *OASDI Beneficiaries by State and County*. A similar publication, *SSI Recipients by State and County*, has been created for SSI recipients using extracts from the Supplemental Security Record since SSI started in 1974.

Paper copies of the OASDI publication series were obtained from 1970 through to 1998, with the exception of 1981.[1] Online versions are available since 1999. Paper copies of the SSI publication series were obtained from 1974 to 1997, and online versions are available from 1998 to 2019. This means that the DI data is available from 1970 to 2019, with the exception of 1981, and the SSI data are available from 1974 to 2019.

The paper copies were digitally scanned and sent for data entry by Digital Divide Data. Two separate operators keyed the data into Excel files and a third operator conducted quality control, resulting in accuracy expected to be at least 99.5%. Once the files were provided, Federal Information Processing System (FIPS) codes were attached on the basis of county and state names. The data were further checked for transcription and other errors, and corrected where found.

The data are for December of each year. They are generally taken from 100% data extracts, although the OASDI data for 1986 is based on a 10% extract of the Master Beneficiary Record. This makes some of the OASDI statistics for 1986 more variable, and it is sometimes omitted from measures of dispersion and variance in the data.

[1] Searches for this publication occurred at a number of places, including SSA libraries at Woodlawn and in DC, and having SSA publications staff search their own archives. It is interesting to note that some other SSA publications do not cover data in 1981, so it is possible that it was never produced.

Some information changes over the years; I describe the coverage of payments for children below, and provide more details about all of the variables in the datasets later in the paper. The data sets include all of the available information, even if it appears for a limited period of time. The appendix includes information on the rules under which data were suppressed to protect confidentiality. These also vary over time.

County-level population data were merged into the data sets to allow calculation of benefit and recipient rates. The population data come from Census Bureau data that was compiled by the Surveillance, Epidemiology, and End Results program of the National Cancer Institute. The data includes annual estimated population counts by sex and single years of age. Data for county-equivalents in Alaska and Hawaii are not available in the earlier years, and therefore are generally not used in the analysis of benefits for children.

Some county borders change over time, and that occurs at different times in different data sets. Counties that had border changes were merged together to create consistent geographical units over time. This affects relatively few counties; the changes are concentrated in Alaska and in Virginia, where several of the independent cities and surrounding counties have changed over time. Details of these changes are provided in the appendix.

3. Supplemental Security Income for Children

Eligibility for SSI for children is limited to those under age 18, and the medical redetermination at age 18 has been documented and used in previous research to understand how social insurance affects their outcomes (e.g., Davies, Rupp and Wittenburg 2009; Hemmeter and Gilby 2009; Deshpande 2016). The strict age definition makes it easier to calculate rates for SSI child recipients than for each of the Social Security programs, so I start with documenting the county-level characteristics of SSI for children since the start of the program.

3.1 Data characteristics, data quality and summary statistics of SSI Child data

In this section, I describe the basic characteristics of the SSI dataset, including a comparison to statistics from other available SSA sources.

Summary statistics for the cleaned SSI data are presented in Table 1. There are 142,156 observations from 1974 to 2019. FIPS state and county identifiers are attached to all observations. Once observations are excluded that do not include SSI recipient information or population data that allow the calculation of rates, there are 141,515 observations that contain a county-level rate of SSI Child recipients per population aged under 18 years. Table 1 shows the number of observations, mean, standard deviation, minimum and maximum values for all of the variables. The values have ranges that are reasonable and consistent with other available data.

A key measure is the number of SSI Child recipients. In Figure 1, the annual sum of this measure in the county data is compared to published numbers for SSI Child recipients from the most recent *SSI Annual Statistical Report* (SSA, 2020a). There is a slight undercount in the county data up to the early 1990s, that averages less than 10 percent of the national total. After that, the counts in both datasets are almost identical. This is likely because some SSI recipients

are not assigned to counties or the data sources are slightly different. The trends in the two series are similar, with the most striking pattern being the sharp rise in the number of SSI Child recipients from the early 1990s following the *Zebley* decision.

In Table 2, more detailed summary statistics are provided for SSI Child recipients per county population aged under 18 years. For this and subsequent analyses, a balanced panel is used. To achieve this: (i) 1974 is dropped, because counties in four states are missing; (ii) Massachusetts is dropped, because its counties are missing through 1977; (iii) Alaska and Hawaii are dropped, as population data are not available throughout for these states; and (iv) counties that are suppressed for disclosure reasons in some years are dropped.

This creates a balanced panel that consists of 2,268 county-equivalents each year for 45 years. The summary statistics of the SSI Child rate are provided for each year. The average rate of SSI Child recipients increases over time, from 0.2% of the population in 1975 to around two percent since 2010. These SSI data seem consistent over time, providing similar averages, quartiles and maximums. This suggests that the data entry and processes involved in creating consistent county-equivalents and matching them to the Census population data has been of a high quality.

3.2 Insights into county-level variation in SSI Child benefit receipt

In this section, I describe some of the features of the data. These analyses can help to understand how SSI payments for children vary across counties and over time. A key feature of the data is the dispersion in the rate of SSI Child recipients across counties. It is well known that there is substantial geographic variation in disability benefit receipt among adults, but less is known about how much SSI disability rates vary among younger Americans.

Figure 2 shows kernel densities for SSI Child recipient rates for different years: 1975, 1990, 2005 and 2019. As the rates have increased over time, the absolute dispersion has increased and the positive skewness appears to have increased slightly. This suggests that there has been an increasing number of counties with disproportionately high levels of beneficiaries.

To assess more clearly what is happening to relative dispersion, Figure 3 shows the ratios of the SSI Child recipient rates at different percentiles of the annual distribution. Panel A shows the ratio of 75th percentile rate divided by the 25th percentile, showing the relative ratio as the underlying rates have increased over time. The ratio is approximately 4.5 in 1975, and then falls rapidly through to 1985, when it is approximately half of the original number. This implies that a county at the 75th percentile goes from having approximately 350% more recipients than a county at 25th percentile in 1975 to having 120% more ten years later. Between 1985 and 2019, the ratio of the 75th to 25th percentile is quite stable, remaining between 2.05 and 2.32 during this period. The annual ratio of the 90th to the 10th percentile is shown in Panel B of Figure 3. This is measuring the relative dispersion further out in the tails of the distribution. It shows a similar pattern to those already described for Panel A, settling between 2.5 and 2.9 since the mid-1980s after initially being above six.

These results show that the absolute dispersion in the kernel densities are related to increasing SSI Child numbers, but that in relative terms the dispersion has been decreasing. There is a large decrease in relative dispersion in the early years of the SSI program that is ahead of the large increase in numbers related to *Zebley*. Although the 1990s saw enormous growth in the number of SSI Child recipients, it appears to be fairly consistent across the United States. It is worth noting that, even after the decreases in relative dispersion, the cross-county variation in SSI Child recipient numbers is much larger than observed for SSI Adults (Moore 2020a; 2020b).

It is also useful to measure the persistence in SSI Child rates within counties across the different time periods. I measure persistence through looking at the Spearman correlation in where counties rank in terms of SSI Child recipient rate; this is measuring the persistence in the relative position of counties rather than their underlying absolute rates.

Table 3 shows the rank correlations between 1975, 1985, 1995, 2005 and 2019. The rank correlation between 1975 and 2019 is 0.54, suggesting some persistence over time. Interestingly, it is almost identical to the rank for a similar period for SSI Aged recipients (getting it on the basis of being aged 65 or older), which is 0.57 between 1975 and 2018. However, both of these are substantially smaller than the correlation for the SSI Disabled adult rates, which have a rank correlation of 0.76 between 1975 and 2018 (Moore 2020a, 2020b).

The rank correlations for the shorter periods of time are useful for assessing whether persistence is similar over time. The rank correlations for recent years are much higher than in earlier years. For example, the rank correlation in SSI Child rates is 0.57 between 1975 and 1995, while it is 0.80 between 1995 and 2019. Correlations over shorter periods also suggest that persistence increased markedly since the 1990s.

It is also useful to consider the persistence in annual changes within counties; for example, do counties that rank highly in their growth rates in early years also rank highly in their growth rates in later years? The information in Table 4 helps shed light on this, by displaying a similar set of rank correlation results for annual changes in SSI Child rates in different years. There is no persistence in relative growth rates across time; across any period, the absolute size of these rank correlations in annual changes are never larger than 0.06.

One interesting question is how much of the county-level variation in SSI Child rates is accounted by the states to which they belong. This provides information about the potential role

that state policies and other state-level factors have on the extent to which children need and use the support provided by SSI. To understand this, I regress the county rates in each year against a complete set of state dummy variables for each year and report the fraction of the total variation that is explained by variation between states, rather than the variation within them.

This is plotted for the SSI Child recipient rates for each year in Figure 4. In 1975, around 20 percent of the county-level variation is accounted for by state dummy variables. Interestingly, this fraction increases over time, peaking at around 43 percent during 2005 to 2009 and then falling slightly. One way to think about this is that state factors were increasing in importance between 1975 and 2005, after which they have had a fairly stable influence.

It is also interesting to compare the rank correlation between SSI Child rates and other groups of SSI recipients. In Panel A of Figure 5, I plot the correlation each year between SSI Child rates and SSI Adult Disabled rates (where the latter is relative to the 18 to 64 population in each county). The correlation is between 0.73 and 0.83 during the 1975 to 2019 period, with a slight rise between 1975 and the late 1990s and a small decline from 2005. The high positive correlation suggests that counties with high rates of SSI Child rates also have high rates of SSI Disabled Adult rates.

The annual correlations between SSI Child and SSI Aged recipient rates are shown in Panel B of Figure 5. The correlation between these rates starts out at 0.67, which is only slightly lower than the correlation between SSI Child and SSI Disabled Adult rates shown in Panel A. However, this correlation declines steadily over time and is around 0.5 in the last couple of years of the sample period. Counties with relatively high rates of SSI Child recipients also have relatively high rates of SSI Aged recipients, although the link is not as strong as in Panel A and has weakened over time.

3.3 Insights from combining data on SSI Child rates with other county-level information

There is long-term persistence in county-level benefit rates, although there is movement of where counties rank. There is also variation over time in the level of dispersion across counties and the amount of variation that is explained by states. It is interesting to merge these data with other socioeconomic data in order to examine the correlations between the rate of SSI Child recipients at the county level and other county characteristics.

3.3.1 Data on socioeconomic characteristics

Data are drawn from a number of sources that have information over many years that are available at the county level.

Demographic data. Demographic measures can be created from the already-described population data from the Census Bureau that was compiled by the Surveillance, Epidemiology, and End Results program of the National Cancer Institute. The data includes annual estimated population counts by sex, race and single years of age. This is used to calculate the fraction of the population by sex and in different age and race groups. This is available throughout.

Mortality data. Mortality is a widely available measure of population health. I use a compilation of mortality data from the Institute for Health Metrics and Evaluation. The mortality rates are created from deidentified death records from the National Center for Health Statistics, who compile data from death certificates lodged with state vital statistics bureaus. Census population data are used to create the rates. Mortality rates are separately available for those aged 5 to 25, 25 to 45, 45 to 65, and above 65. This is available from 1980 to 2014.

Housing price data. House prices are a widely available measure of local living costs. Housing price index data is available from the Federal Housing Finance Agency, which constructs an index of housing prices that starts in 1975 and is available at the county level (Bogin, Doerner, and Larson, 2016). It uses proprietary data held by the Agency on single family homes with roughly constant characteristics throughout the measurement period. It is constructed by regressing the change in log sale price of a home on period fixed effects and then taking the exponential of the fixed effects coefficients. The Index is available from 1975, although the coverage of the data is not complete in the earlier years.

Earnings and employment. Information on county-level measures is taken from the Regional Economic Accounts of the Bureau of Economic Analysis. The Bureau constructs statistics based primarily on data from the U.S. Bureau of Labor Statistics and the Internal Revenue Service, and then uses additional data and adjustments. Net earnings and jobs per capita are measures of economic activity that are consistently available in the data. This is available from the mid-1970s.

In order to have all of the covariates in the analysis, the data is restricted from 1980 to 2014. This is merged into the SSI Child data. This allows me to consider the relationship between SSI Child recipient rates and these various measures in regressions where the SSI rate is the dependent variable and the other measures are used as independent variables. The regression model takes the form:

$$y_{it} = X_{it}\beta + \gamma_{it} + \epsilon_{it} \quad (1)$$

Where y_{it} is either the benefit/recipient rates in county i and year t. In terms of the independent variables on the right-hand side, X_{it} are county-level characteristics that are related

to economic activity (earnings and employment); population health (mortality rates); living costs (housing price index values); and demographic characteristics (age, sex and race measures).

I use three different sets of controls: (1) a complete set of year dummy variables, to control for common shocks; (2) year dummies plus county fixed effects, to additionally control for permanent differences related to each county; and (3) year and county fixed effects, plus state-by-year fixed effects, to additionally control for time-varying state-level characteristics (such as state policies). There is no "right" specification; they are measuring the conditional correlations using different types of variation. For example, if we want to know the overall relationships of these characteristics, then the first specification might be most informative. However, if we want to know how these factors relate to SSI Child rates once accounting for time-varying state factors as well as permanent county characteristics, then the third specification is informative.

3.3.2 SSI Child rates and associations with these characteristics

Table 5 shows the regression results for the full sample of counties from 1980 to 2014 using county-level SSI Child recipient rates as the dependent variable. Column (1) shows the results with only year fixed effects. These correlations essentially show what sort of characteristics are associated with higher rates of SSI Child recipients. For the demographic characteristics, rates are positively correlated at statistically significant levels with the proportion of residents who are female, negatively correlated with the fraction of the county population that are children, and positively correlated with the fraction of residents who are black (relative to the fraction of residents of other races – i.e., non-white and non-black).

The statistically significant associations between SSI Child rates and the mortality risks of different age groups are mixed, with a negative relationship for mortality risks between ages five and 25 and positive relationships with the mortality rates for ages 25 to 45 and ages 65 and over (and no statistically significant relationship between SSI Child rates and mortality rates for ages 45 to 65 years). This suggests that the associations are related to broad measures of population health, rather than the determinants of mortality among children.

There is a positive relationship between SSI Child rates and house prices. There is a negative correlation with average net earnings, meaning that areas where average earnings are low has relatively higher benefit rates. There is a positive correlation with employment. It is interesting that the R-squared is 0.66, suggesting that these measures explain a lot of the cross-county and temporal variation. What is also interesting is that the direction and statistical significance of these relationships are very similar to those when SSI Adult Disability rates is the dependent variable. This suggests that there are a common set of determinants for SSI county rates for both disabled adults and children (Moore 2020a).

The results with county fixed effects added are in column (2), and results with the further addition of state-by-year fixed effects are in column (3). Most of the key takeaways are fairly similar across both of these columns. In terms of demographic characteristics, the fraction of a county's population that is female no longer has a statistically significant relationship to SSI Child rates, while the relationships for the fraction of the population that are children and the fraction of residents that is black remain similar to column (1). The size and statistical significance of the coefficients are similar for the mortality rates of children and seniors, with some changes for the precision of the relationships for mortality rates among residents aged 25 to 45 and also 45 to 65 years.

The relationships of the economic characteristics remain similar except for housing prices; the sign on the housing price index switches from positive in the first specification to negative in the second and third specifications (with the first and third coefficients statistically significant at the one percent level). This suggests that, once controlling for time-varying state factors and permanent county characteristics, it is the counties where there has been a decrease in housing prices that have seen an increase in SSI Child rates.

4. Social Security Benefits for Children

The Social Security OASDI program provides support to children based on several criteria. The most common basis for support is being a child aged under 18 years who has an eligible parent who is retired, deceased or disabled. These dependent benefit payments have been in place from the early stages of the program. Payments to dependent children aged under 18 years from the Old Age/Retirement and Survivors Insurance components that were based on fathers' earnings records were introduced in 1940, while payments based on mothers' earnings records were introduced in 1951. Support was extended to the minor children of Disability Insurance beneficiaries in 1957. In 1972, minor children could receive benefits based on the wage record of a grandparent in certain circumstances (Kennedy 1996).

Adult children are also able to receive benefits under certain circumstances. Since 1957, adult children determined to be disabled before the age of 18 continue to receive benefits into adulthood; this was subsequently extended to also include children who became disabled between the ages of 18 and 22 years. From 1965, full-time students could receive benefits up to the age of 22, although these benefits were phased out from 1982 and now only apply to full-time high school students aged 18 years (Kennedy 1996, Tamborini, Cupito and Shoffner 2011).

Rule around the maximum payments made to families apply the same way to beneficiaries with eligible adult and minor children (Romig and Shoffner 2015).

The varying age definitions make it harder to calculate rates for OASDI Child recipients, as the county-level data provided in the SSA publications combines adult and minor child beneficiaries. The majority are aged under 18 years, so rates are calculated using county-level populations of minor children (i.e., the population aged under 18 years). However, some additional national statistics for each insurance component of OASDI are presented so readers can better understand the composition of Social Security child beneficiaries.

4.1 Data characteristics, data quality and summary statistics of Social Security Child data

In this section, I describe the basic characteristics of the Social Security Child dataset, including a comparison to statistics from other available SSA sources.

Summary statistics for the cleaned Social Security data are presented in Table 6. There are 150,528 observations from 1975 to 2019. The underlying dataset also contains information on beneficiaries aged under 21 years between 1970 and 1974, but these numbers are not comparable to the overall number of Social Security Child beneficiaries so they are not used in the analysis in this paper.

FIPS state and county identifiers are attached to all observations. Once observations are excluded that do not include consistent child beneficiary information or population data that allow the calculation of rates, there are 135,168 observations that contain a county-level rate of Social Security Child recipients per population aged under 18 years. There are 119,808 observations that contain a county-level rate for specific OASDI components, which I call the Child Disability Insurance, Child Survivors Insurance and Child Retirement Insurance rates. The

difference in observations is because the combined number of Social Security Child beneficiaries are provided between 1975 and 1979, but not the more detailed information.

Table 6 shows the number of observations, mean, standard deviation, minimum and maximum values for all of the variables. Payment information for each group are also available for the same years and counties as beneficiary numbers. The values have ranges that are reasonable and consistent with other available data.

The number of Social Security Child beneficiaries in the county dataset is compared to national numbers for Social Security Child beneficiaries from the *Statistical Supplement to the Social Security Bulletin* (SSA 2020b and some earlier years). This is shown for each year in Figure 6. The slight undercount in the county data is consistent over time. The aggregated county numbers are equal to between 93 and 97 percent of the national numbers throughout the sample period, likely reflecting the effects of suppressing data for a small number of counties for disclosure reasons. The trends in the two series are similar, showing a decline from around five million to three million child beneficiaries between 1975 and 1990, and then a steady increase to around 4.5 million in 2012 and a small decrease to around four million through 2019.

Before considering Social Security Child beneficiary rates per population, it is helpful to understand the relative importance of each OASDI insurance component. The aggregate annual counts for each component are displayed in Figure 7, together with the overall annual counts for Social Security Child beneficiaries. In 1980, the first year that the information on the individual components became available, 58 percent of the Social Security Child beneficiaries received benefits through Survivors Insurance, 29 percent through Disability Insurance and 13 percent through Retirement Insurance. The relative importance of Survivors Insurance remains at around 60 percent until 1990. It then declines to under half by 1999, and accounts for between 43 and 50

percent of Social Security Child beneficiaries thereafter. The relative decline in children receiving Survivors Insurance is offset by the fraction receiving Disability Insurance, which increases steadily over time and peaks at accounting for 43 percent of all Social Security Child beneficiaries in 2012 and declining slightly through to 2019. Retirement Insurance accounts for only 11 to 17 percent of Social Security Child beneficiaries throughout the 1980-2019 period.

It is also helpful to understand what fraction of child beneficiaries are minors, and how that varies across the different OASDI components. That information, which is only available in the national statistics from the Statistical Supplement to the Social Security Bulletin, is shown in Figure 8. Disability Insurance has the highest fraction of its Child beneficiaries that are aged under 18 years; it is around 90 percent throughout. The next highest is for Survivors Insurance, which has approximately 75 percent of its Child beneficiaries aged under 18 years in 1975 and closer to 80 percent by 1985. The fraction of Child beneficiaries who are aged under 18 years is lowest for Retirement Insurance, which starts out at around 60 percent in 1975 and is approximately 50 percent by 2019. When Child beneficiary numbers are converted into rates based on the county population aged under 18 years, measurement issues related to Child beneficiaries aged 18 and over should be relatively minor for Disability Insurance and more important for Survivors Insurance and especially Retirement Insurance.

In Table 7, more detailed summary statistics are provided for Social Security Child recipients scaled per county population aged under 18 years. For this and subsequent analyses, a balanced panel is used. To achieve this, Alaska and Hawaii are dropped as their county-level population data are not available before 1980 and counties that are suppressed for disclosure reasons in any years are omitted. This creates a balanced panel that consist of 2,357 county-equivalents each year for 45 years. The summary statistics of the Social Security Child rate are

provided for each year. The average rate varies over time, from 8.1 percent of the child population in 1975 to 5.6 percent in 1989 and around seven percent since 2005. These Social Security data seem consistent over time, providing similar averages, quartiles and maximums. This suggests that the data entry and processes involved in creating consistent county-equivalents and matching them to the Census population data has been of a high quality.

4.2 Insights into county-level variation in Social Security Child benefit receipt

In this section, I describe some of the features of the Social Security Child data. These analyses can help to understand how Social Security cash benefits for children vary across counties and over time. A key feature of the data is the dispersion in the rate of Social Security Child beneficiaries across counties. It is well known that there is substantial geographic variation in disability benefit receipt among adults, but less is known about how much beneficiary rates vary among younger Americans.

Figure 9 shows kernel densities for Social Security Child recipient rates for different years. In Panel A, the overall Social Security Child rates are shown for four years: 1975, 1990, 2005 and 2019. The absolute dispersion is fairly constant over time, with the dispersion decreasing slightly between 2000 and 2019. Panels B, C and D show similar kernel density plots for 1980, 2000 and 2019 for Disability Insurance, Survivors Insurance and Retirement Insurance, respectively. The dispersion in Disability Insurance Child rates is remarkably similar over time. The decreasing dispersion in the overall Social Security Child rates come from reduced dispersion in the Survivor Insurance and Retirement Insurance rates, suggesting that there have been a decreasing number of counties with very high rates of Child beneficiaries eligible under these programs.

To assess more clearly what is happening to the relative dispersion of Social Security Child rates, Figure 10 shows the ratios of the rates at different percentiles of the annual distribution. Panel A shows the ratio of 75th percentile rate divided by the 25th percentile. The ratio is approximately 1.55 in 1975, and then rises steadily to around 1.7 by 2019. This implies that a county at the 75th percentile goes from having approximately 55 percent more Child beneficiaries than a county at 25th percentile in 1975 to having 70 percent more ten years later, which is not a large change over time. The 75th to 25th annual ratios are much lower than for SSI Child recipients discussed in Section 3.2, which are always above two, but higher than those for both adult Social Security Disability Insurance and Retirement/Survivors Insurance beneficiaries (Moore 2020a, 2020b).

The annual ratio of the 90th to the 10th percentile is shown in Panel B of Figure 10. This is measuring the relative dispersion further out in the tails of the distribution. It shows a similar pattern to those already described for Panel A, climbing from 2.2 in 1975 to approximately 2.7 in 2019. These results show that the absolute dispersion in the kernel densities are related to decreasing Social Security Child rates, but that in relative terms the dispersion has been increasing over time. Theses trends are in the opposite directions to what has been happening for SSI Child recipients.

Figure 11 shows the 75th/25th and 90th/10th ratios for Social Security Child beneficiary rates in Disability Insurance, Survivors Insurance and Retirement Insurance. For Disability Insurance, the ratio of the 75th to 25th percentiles in Figure 11a is between 1.9 and 2.1 throughout the sample period, which is higher than for the overall group of Social Security Child beneficiaries. Rather than steadily increasing like it did for all Social Security Child beneficiaries, it falls slightly between 1980 and the early 2000s before increasing slightly

thereafter. The same U-shaped pattern is present for Disability Insurance Child beneficiaries' $90^{th}/10^{th}$ ratio, shown in Figure 11b, declining from 4.2 to 3.4 between 1983 and 1999 and then increasing to around 3.8 by 2019. These time trends for Disability Insurance Child beneficiaries are similar to those for adults receiving Disability Insurance, although Child beneficiaries have larger levels of relative dispersion (Moore 2020a).

The same $75^{th}/25^{th}$ and $90^{th}/10^{th}$ ratios are presented for Survivors Insurance Child beneficiaries in Figure 11c and Figure 11d, respectively. These patterns are very similar to the patterns for all Social Security Child beneficiaries presented in Figure 10. For Retirement Insurance Child beneficiaries, these measures of relative dispersion – shown in Figure 11e and Figure 11f – lie between those of Disability Insurance and Survivors Insurance, and are relatively stable over time.

It is also useful to measure the persistence in Social Security Child rates within counties across the different time periods. Like for SSI Child recipient rates in Section 3.2, I measure persistence through looking at the Spearman correlation in where counties rank in terms of Social Security Child beneficiary rates. Table 8 shows the rank correlations between 1975, 1985, 1995, 2005 and 2019. The rank correlation between 1975 and 2019 is 0.67, which is larger than the correlation of 0.54 for SSI Child recipients but smaller than the correlation of 0.76 for the SSI Disabled adult rates over a similar period (Moore 2020a).

The rank correlations for the shorter periods of time are also shown in Table 8; the 10-year correlations are similar throughout the sample period, which suggests that persistence within counties is similar from the mid-1970s through to the most recent years. The rank correlation in annual changes in Social Security Child beneficiary rates across different years are

shown in Table 9. There is no persistence in relative growth rates across time; across any period, the absolute size of these rank correlations in annual changes are never larger than 0.032.

Following the analysis of SSI rates in Section 3.2, I next consider how much of the county-level variation in Social Security Child beneficiary rates is accounted for by the states to which they belong. Figure 12 shows the fraction of the total variation in Social Security Child rates that is explained by variation across states, rather than the variation within them. Around 40 percent of the county-level variation is accounted for by state dummy variables, which is slightly higher than for SSI Child recipients. The fraction is relatively stable over time. When this analysis is done separately for the Child beneficiaries in specific OASDI programs, the state dummies account for the greatest fraction of the total variation for Disability Insurance, followed by Survivors Insurance, and then Retirement Insurance. The fractions are fairly stable over time, except for Disability Insurance where cross-state differences account for around 36 percent during the 1990s and close to 50 percent in recent years.

It is also interesting to compare the rank correlations over time between the different Social Security Child rates. This is done in Figure 14. There are strong positive correlations between the rates for children receiving Disability Insurance, Survivors Insurance and Retirement Insurance. The highest correlation is between Child Disability Insurance and Child Survivor Insurance rates; it is around 0.65 in 1980 and increases steadily to 0.75 by 2019. Children's Disability/ Retirement and Survivor/ Retirement rate correlations are between 0.52 and 0.64 throughout the sample period, with the both correlations increasing over time.

Figure 14 also compares the correlations between the rates for children and adults receiving benefits from the same Social Security programs. The highest correlations are between the child and adult rates for the Disability Insurance program, which are consistently between

0.87 and 0.90. This is not surprising, given that most of the Child Disability Insurance beneficiaries are minors who are dependents of adult Disability Insurance beneficiaries. However, the correlations between child and adult rates in the Survivor Insurance program are much lower, at around 0.45, and even lower in the Retirement Insurance program, where it is around 0.4 at the beginning and end of the sample period but as low as 0.23 in 1998. These differences highlight the value of examining child beneficiaries separately from adults in these Social Security programs.

4.3 Insights from combining Social Security Child rates with other county information

Like in Section 3.3 for SSI Child recipients, it can be informative to merge the Social Security Child rates with other socioeconomic data in order to examine the correlations between the rate of Social Security Child recipients at the county level and other county characteristics. I complete a similar set of regressions as before.

The results are presented in Table 10. Column (1) shows the results with only year fixed effects. These correlations essentially show what sort of characteristics are associated with higher rates of Social Security Child beneficiary rates. For the demographic characteristics, rates are positively correlated with the proportion of residents who are female and the proportions who are white and who are black (relative to the proportion who are of another race), and negatively correlated with the fraction of a county's population aged under 18 years. There is a positive correlation with the mortality risks at all ages, suggesting that counties with high mortality rates have higher Social Security Child rates. There is a negative correlation with house prices, which means that Social Security Child rates are higher in counties with relatively cheap house prices. There are negative correlations with average net earnings and jobs per capita, meaning that areas

where average earnings are low and/or employment is low have relatively higher Social Security Child rates. The R-squared is 0.68, suggesting that these measures explain a lot of the cross-county and temporal variation.

The results with county fixed effects added are in column (2), and results with the further addition of state-by-year fixed effects are in column (3). Most of the key takeaways remain fairly similar in these two columns. The fraction white and the fraction black have no statistically significant relationship to Social Security Child rates once state-by-year fixed effects are added, while some of the positive relationships to the different mortality rates become weaker, although there is always a positive and statistically significant relationship between the mortality rate at ages 65+ and Social Security Child rates. The only other difference is that the negative and statistically significant relationship to jobs per capita disappears once state-by-year fixed effects are added in Column (3).

In Tables 11 to 13, the regression results are repeated for the Child beneficiary rates for Disability Insurance, Survivors Insurance and Retirement Insurance. The results are generally similar to those presented in Table 10 and discussed above, although the direction and magnitude of the coefficients on the race variables are not consistent across the different programs. These results suggest that demographic, health and economic characteristics may all influence the number of children receiving Social Security benefits.

5. Fifty Years of Social Security and SSI County-level Data

With the availability of the 2019 data, the Social Security data now span the 50-year period from 1970 to 2019. The variable lists for the Social Security dataset are provided in Tables 14 and 15, which includes information on beneficiaries, payments and population

numbers for the calculation of rates. Table 16 shows the coverage of the variables across the years. Fortunately, the format and information has been quite consistent since 1985, and some variables are available throughout the 50-year period.

Similar information is provided for the SSI dataset in Tables 17 and 18. This dataset starts in 1974, at the beginning of the SSI program, and therefore spans 46 years. The variable list is slightly shorter, but there is still county-level information on recipients, payments and population. The variable coverage is provided in Table 18; the data has been consistent since 1997, and some of the key variables are available throughout the 1974 to 2019 period.

6. Conclusion

The Social Security Administration has developed some great resources for researchers and policy makers, including annual publications providing statistical information on program activity at the county level. This paper outlines the structure of the data and shows some interesting patterns and uses of it. The data will be made available to everyone, providing a data asset for people interested in federal income support.

There is substantial geographic variation in the number of children who receive income support through the Social Security and SSI programs. Understanding this geographic variation is important to understand the value of these programs. There has been some change over time, but it is not uniform. This paper gives an overview of the data and its characteristics, paving the way for further research to examine specific issues in more detail.

7. References

Bogin, Alexander, William Doerner and William Larson. 2016. "Local House Price Dynamics: New Indices and Stylized Facts." *Federal Housing Finance Agency Working Paper 16-01*.

Chaffin, L.Y., & Corder, J.K. 2018. "How do social security expenditures vary by state? The surprising impact of unemployment." *Journal of Public Policy*, 38(3): 305-328.

Coe, Norma, Kelly Haverstick, Alicia Munnell, and Anthony Webb. 2011. "What Explains State Variation in SSDI Application Rates?" *Center for Retirement Research at Boston College Technical Report 2011-23*.

Davies, Paul S., Kalman Rupp, & David Wittenburg. 2009. "A Life-Cycle Perspective on the Transition to Adulthood among Children Receiving Supplemental Security Income Payments." *Journal of Vocational Rehabilitation*, 30: 133-151.

Deshpande, Manasi. 2016. "Does Welfare Inhibit Success? The Long-Term Effects of Removing Low-Income Youth from the Disability Rolls." *American Economic Review*, 106(11): 3300-3330.

Duggan, Mark, and Melissa Kearney. 2007. The Impact of Child SSI Enrollment on Household Outcomes: Evidence from the SIPP. *Journal of Policy Analysis and Management*, 26(4): 861-886.

Dwyer-Lindgren, L., Bertozzi-Villa, A., Stubbs, R.W., Morozoff, C., Mackenbach, J.P., van Lenthe, F.J., Mokdad, A.H., & Murray, C.J.L. 2017. "Inequalities in life expectancy among US counties, 1980 to 2014." *JAMA Internal Medicine*. 8 May 2017. doi:10.1001/jamainternmed.2017.0918.

Garret, Bowen, and Sherry Glied. 2000. "Does state AFDC generosity affect child SSI participation?" *Journal of Policy Analysis and Management*, 19(2): 275-295.

Gettens, Jack, Pei-Pei Lei, and Alexis Henry. 2018." Accounting for geographic variation in Social Security Disability Program participation." *Social Security Bulletin*, 78: 29-47.

Hemmeter, Jeffrey, and Elaine Gilby. 2009. "The Age-18 Redetermination and Postdetermination Participation in SSI." *Social Security Bulletin* 69(4): 1–25.

Kennedy, L. 1996. SSA programs that benefit children. *Social Security Bulletin*, 59: 64-66.

McCoy, John L., Miles Davis, and Russell E. Hudson. 1994. "Geographic Patterns of Disability in the United States." *Social Security Bulletin*, 57(1): 25–36.

McVicar Duncan. 2006. "Why do disability benefit rolls vary between regions? A review of the evidence from the USA and the UK." *Regional Studies*, 40: 519–533.

Moore, Timothy J. 2020a. "Disability Benefit Receipt by State and County, 1970-2018: Description and Dataset." *Working paper*, Prepared for the NBER Disability Research Consortium.

Moore, Timothy J. 2020b. "Social Security Beneficiaries and Aged SSI Recipients by State & County, 1970-2018: Description and Dataset." *Working paper*, Prepared for the NBER Retirement and Disability Research Consortium.

Perrin, J.M., S.L. Ettner, T.J. McLaughlin, S.L. Gortmaker, S.R. Bloom, and K. Kuhthau. 1998. State variations in supplemental security income for children and adolescents. *American Journal of Public Health*, 88(6): 928-931.

Rosenberg, M.W., & Wilson, K. 2000. "Gender, poverty and location: how much difference do they make in the geography of health inequalities?" *Social Science & Medicine*, 51(2): 275-287.

Rupp, Kalman, Jeffrey Hemmeter, and Paul S. Davies. 2015. Longitudinal Patterns of Disability Program Participation and Mortality Across Childhood SSI Award Cohorts. *Social Security Bulletin*, 75(1), 2015: 35-64.

Social Security Administration. 2021a. *Annual Statistical Report on the Social Security Disability Insurance Program, 2018*. (Social Security Administration Publication No. 13-11826.)

Washington DC: Social Security Administration Office of Retirement and Disability Policy, and Office of Research, Evaluation, and Statistics.

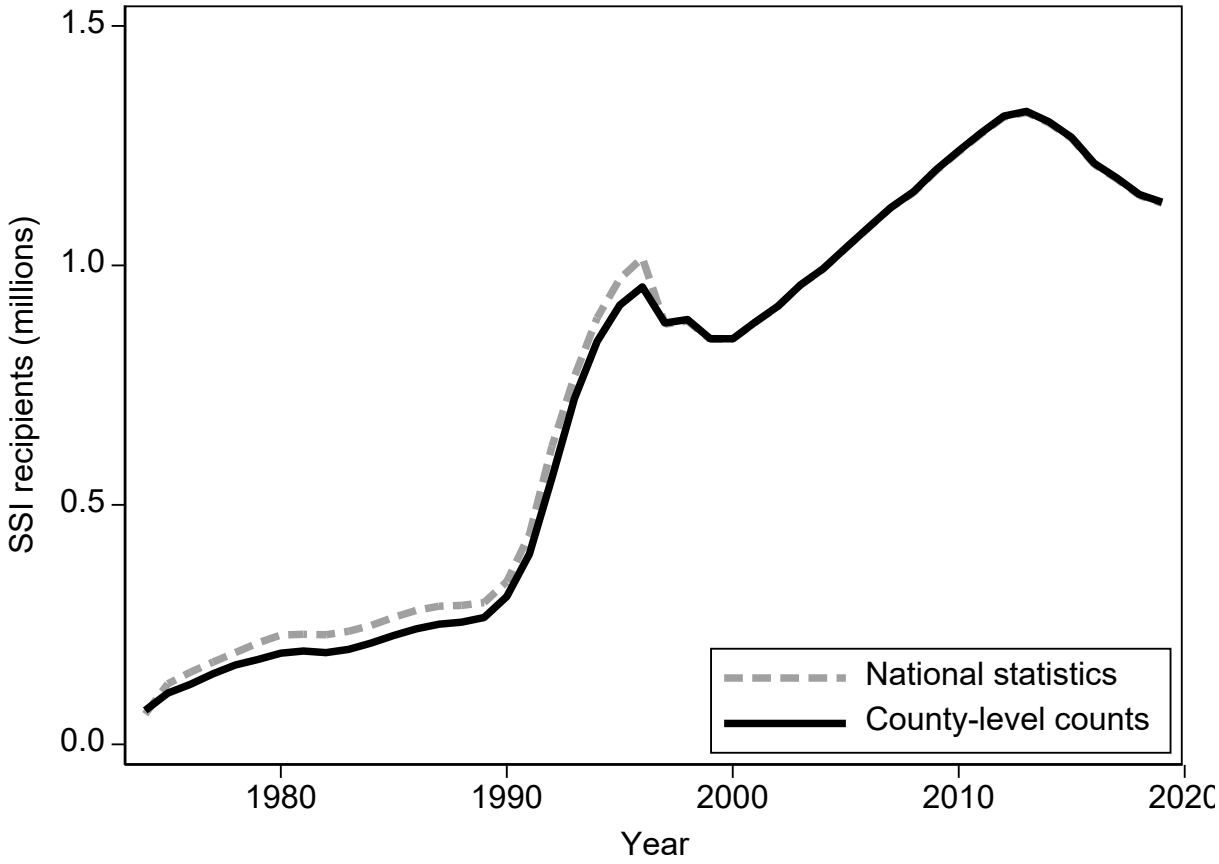
Social Security Administration. 2021b. *SSI Annual Statistical Report, 2018.* (Social Security Administration Publication No. 13-11827.) Washington DC: Social Security Administration Office of Retirement and Disability Policy, and Office of Research, Evaluation, and Statistics.

Strand, Alexander. 2002. "Social Security Disability Programs: Assessing the Variation in Allowance Rates." *SSA Office of Research Evaluation and Statistics Working Paper No. 98*.

Tamborini, Christopher R., Emily Cupito, and Dave Shoffner. 2011. "A Profile of Social Security Child Beneficiaries and Their Families: Sociodemographic and Economic Characteristics." *Social Security Bulletin*, 71(1): 1–15.

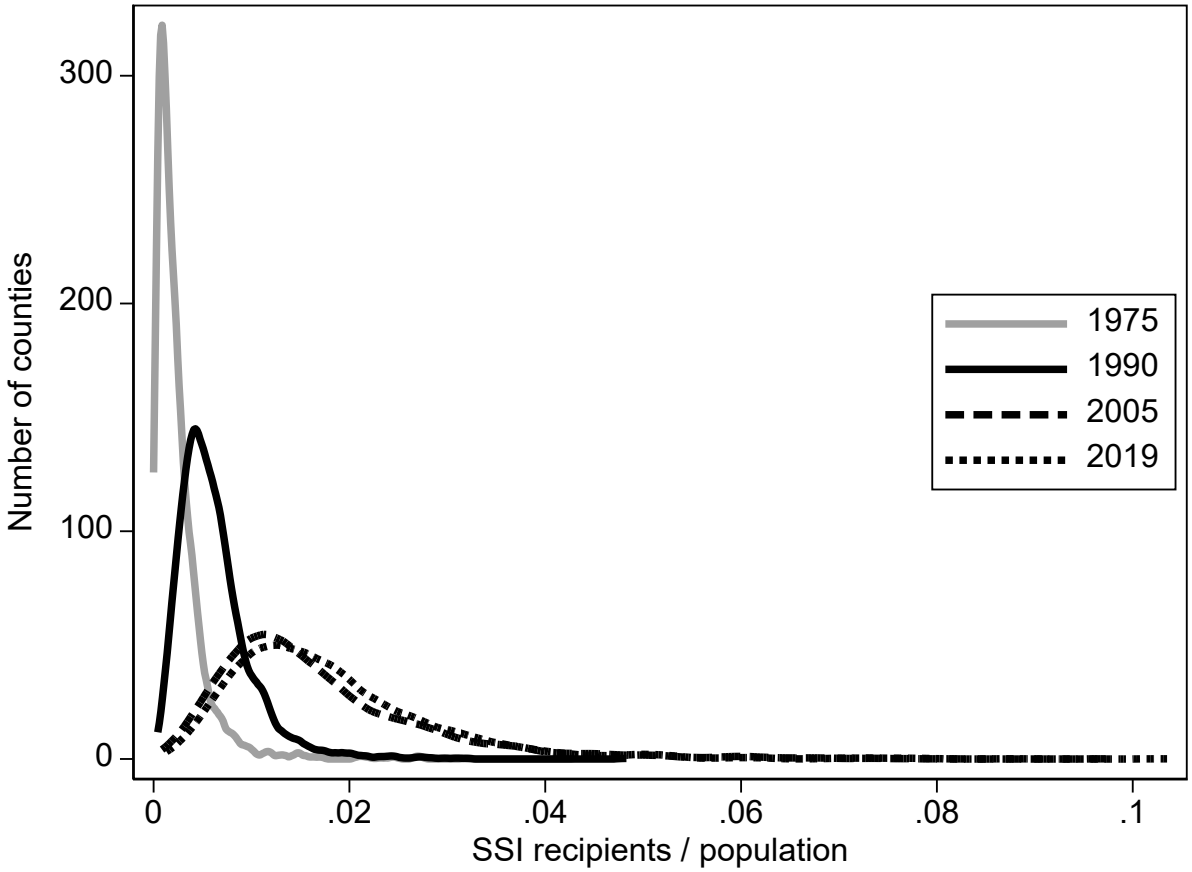
Van de Water, P.N., and Sherman, A. 2012. *Social Security Keeps 21 Million Americans Out of Poverty: A State-by-State Analysis. Center on Budget and Policy Priorities*, cbpp.org (Accessed 19 April 2019).

Figure 1. Comparison of the SSI Recipients aged under 18 years in County-level Data and National Statistics



Sources: Author's own calculations and SSA (2020a).

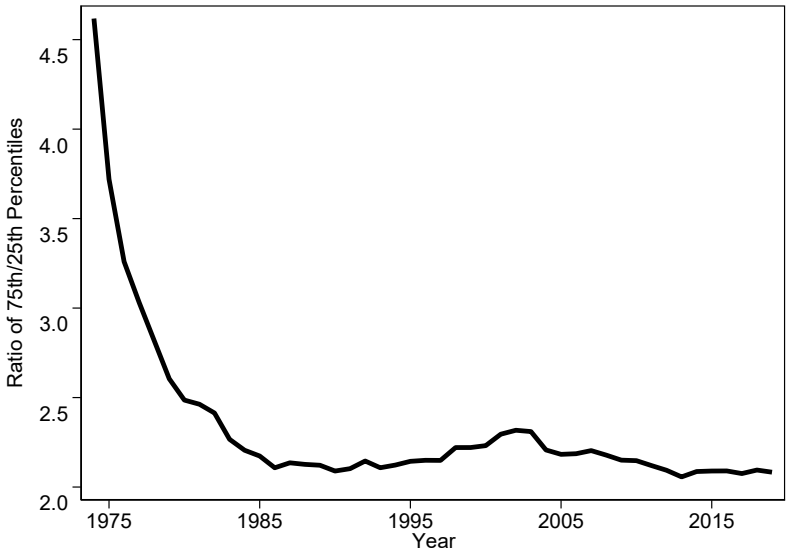
Figure 2. Distribution of Children's SSI Recipient Rates across Counties, Selected Years



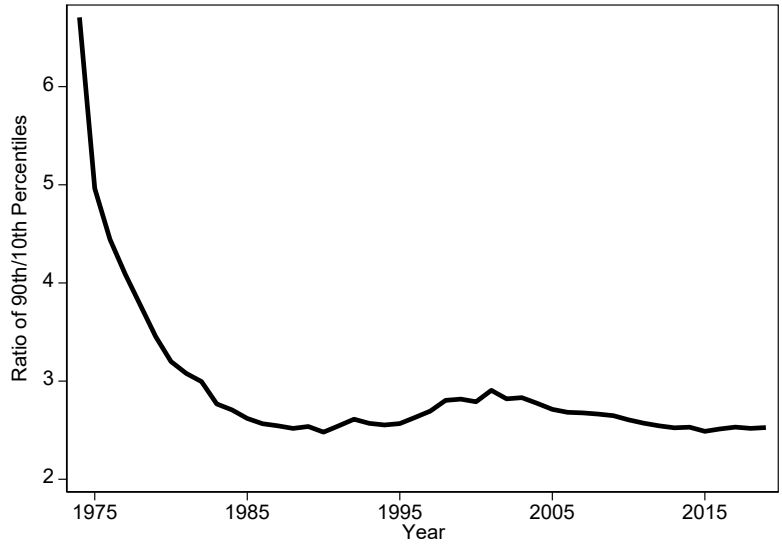
Notes: This figure shows the triangular kernel densities for the distribution of children's SSI beneficiary rates in different years. This approximates the probability density functions of these data.

Figure 3. Dispersion of SSI Child Recipient Rates over Time

A: Ratios of $75^{th}/25^{th}$ percentiles



B: Ratios of $90^{th}/10^{th}$ percentiles



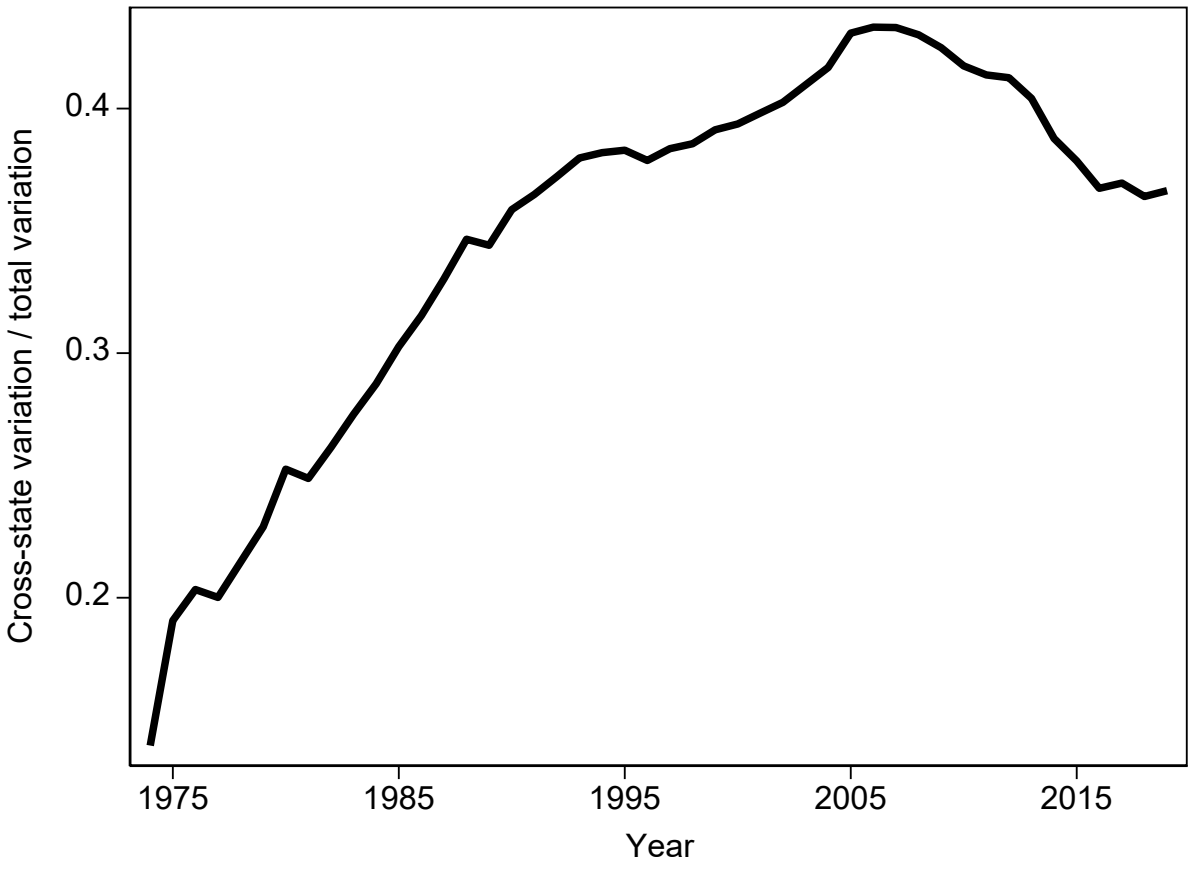
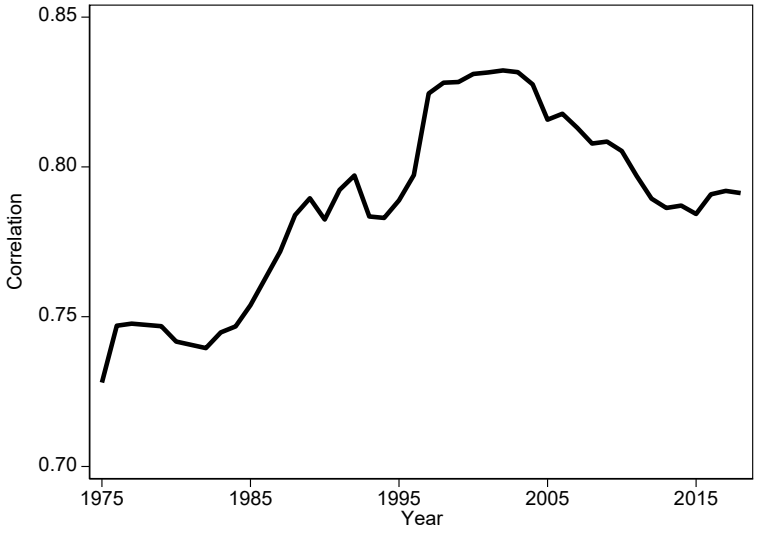

Cross-state variation / total variation
0.4
0.3
0.2
1975
1985
1995
2005
2015
Year

Figure 5. Correlation between SSI Recipient Rates for Children and Other Groups

A: Child SSI Rates and Disabled Adult SSI Rates



B: Child SSI Rates and Aged Adult SSI Rates

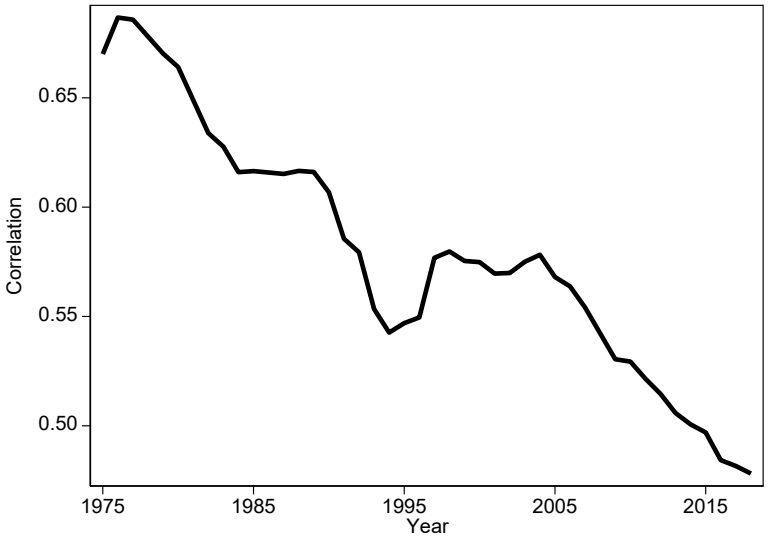
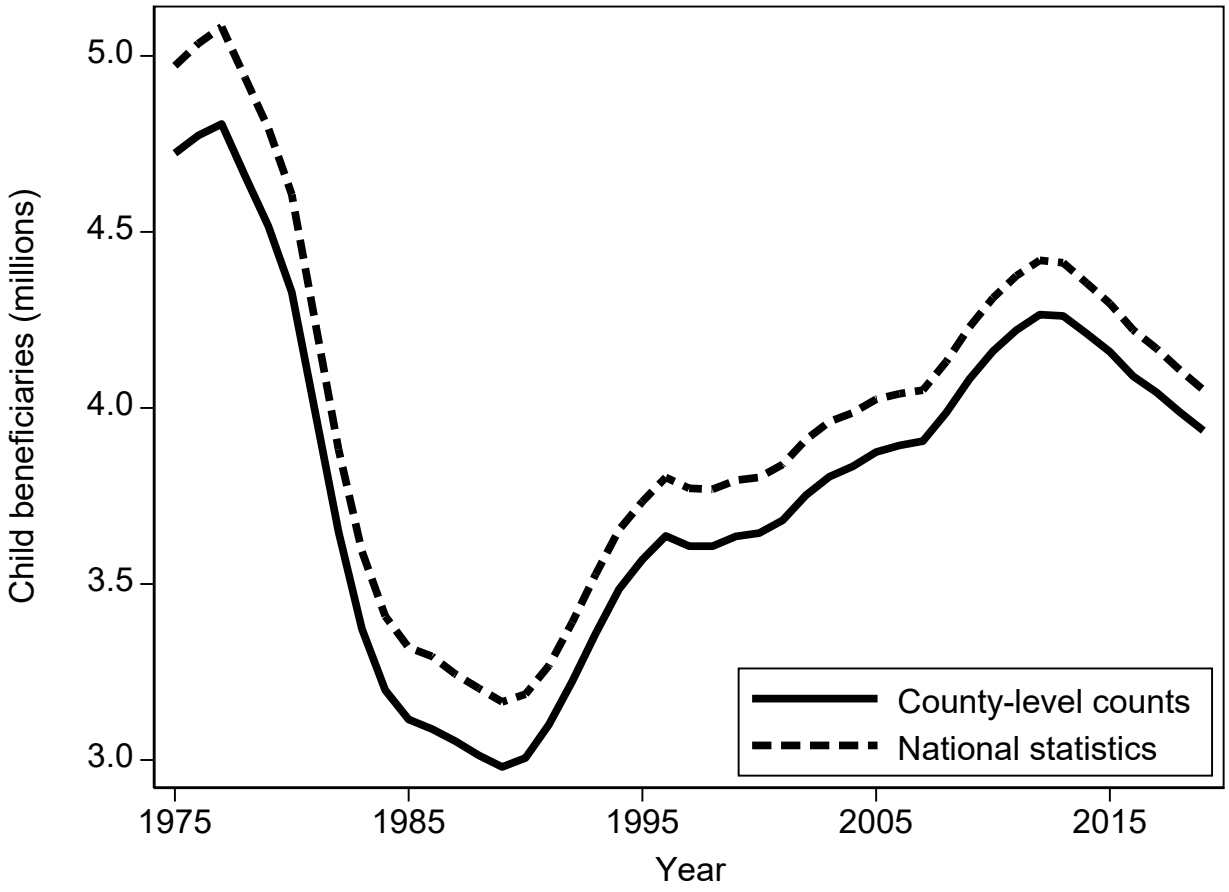


Figure 6. Comparison of Social Security Child Beneficiaries in County Data and National Statistics



Sources: Author's own calculations and SSA (2020b).

Figure 7. Composition of Social Security Child Beneficiaries in the County Data

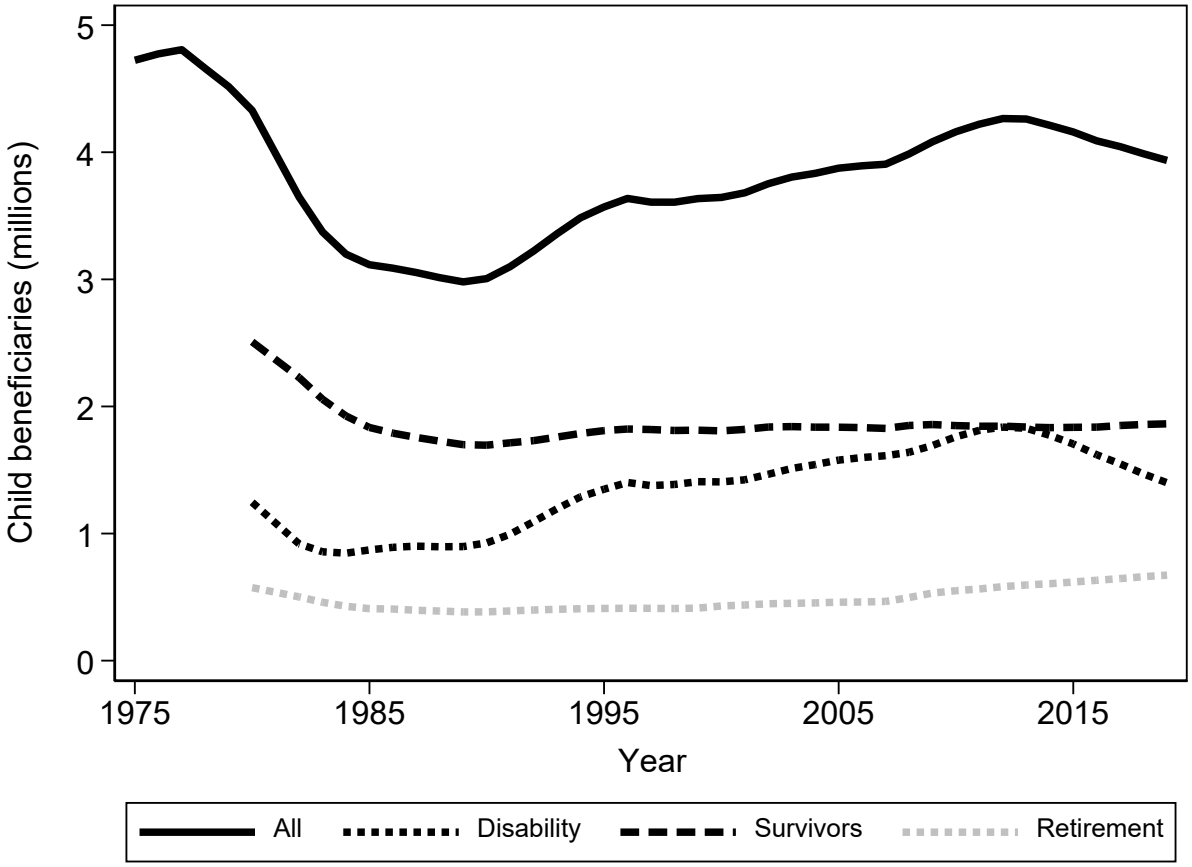
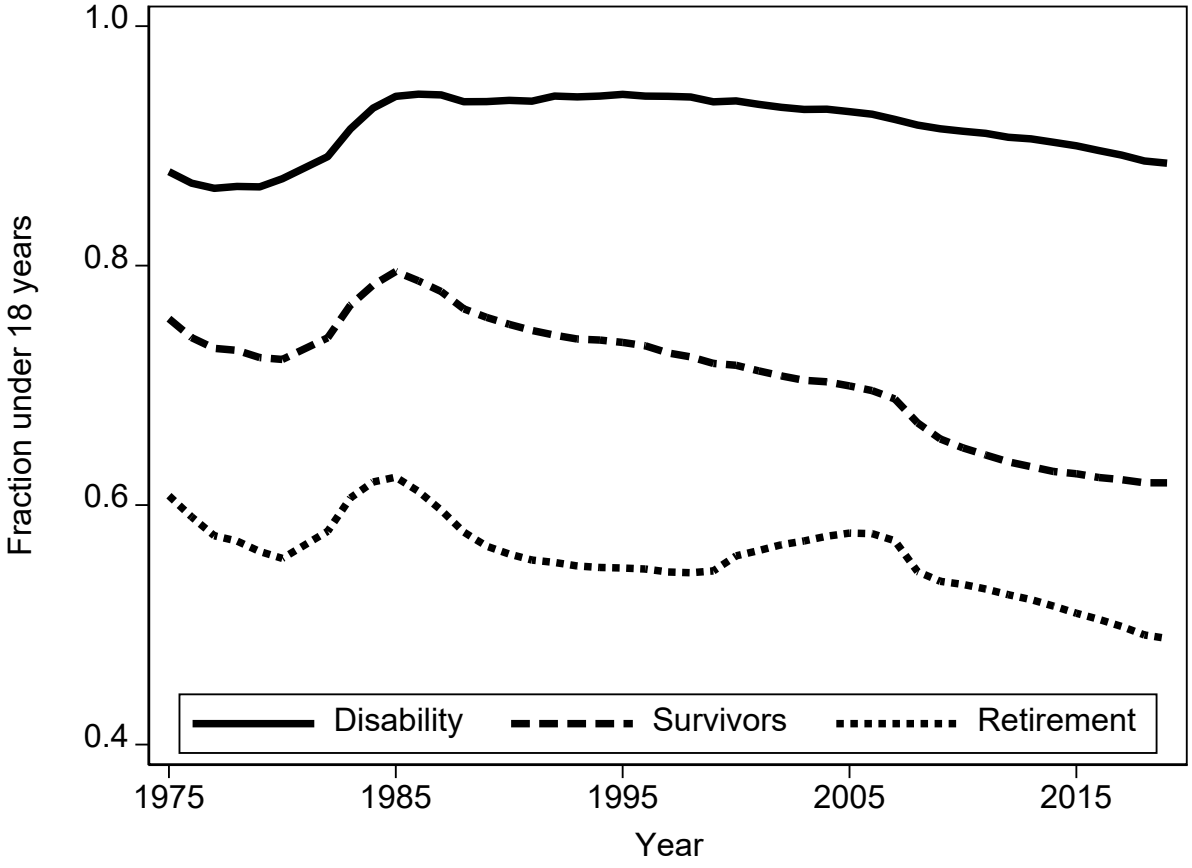
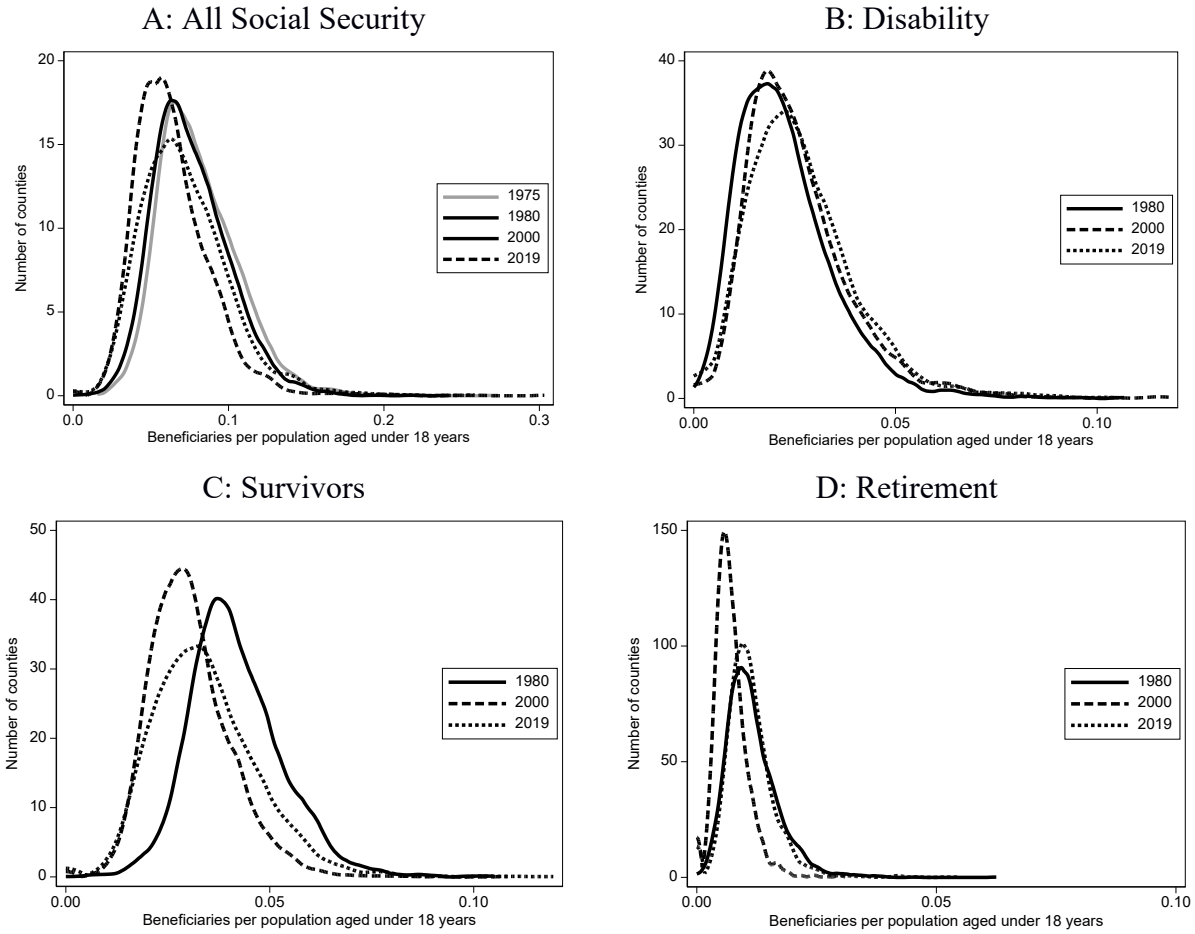


Figure 8. Proportion of Social Security Child Beneficiaries Aged Under 18 Years



Sources: Author's own calculations and SSA (2020b).

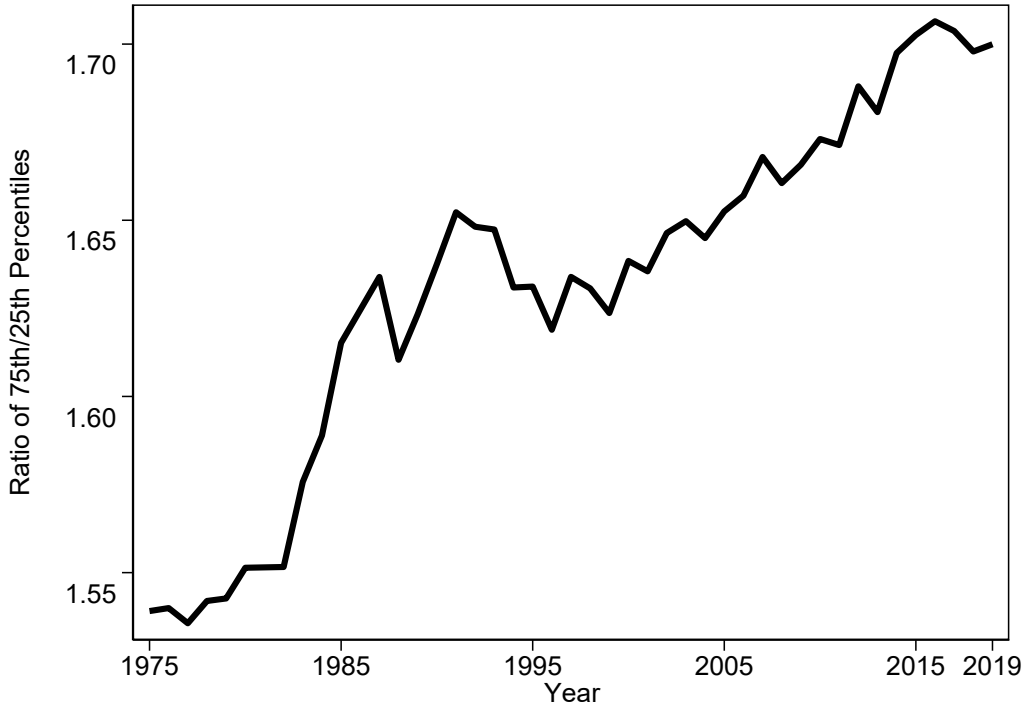
Figure 9. Distribution of Social Security Child Beneficiary Rates across Counties, Selected Years



Notes: These figures show the triangular kernel densities for the distribution of beneficiary rates in different years. This approximates the probability density functions of these data.

Figure 10. Dispersion of Social Security Child Beneficiary Rates over Time

A: Ratios of 75th/25th percentiles



B: Ratios of 90th/10th percentiles

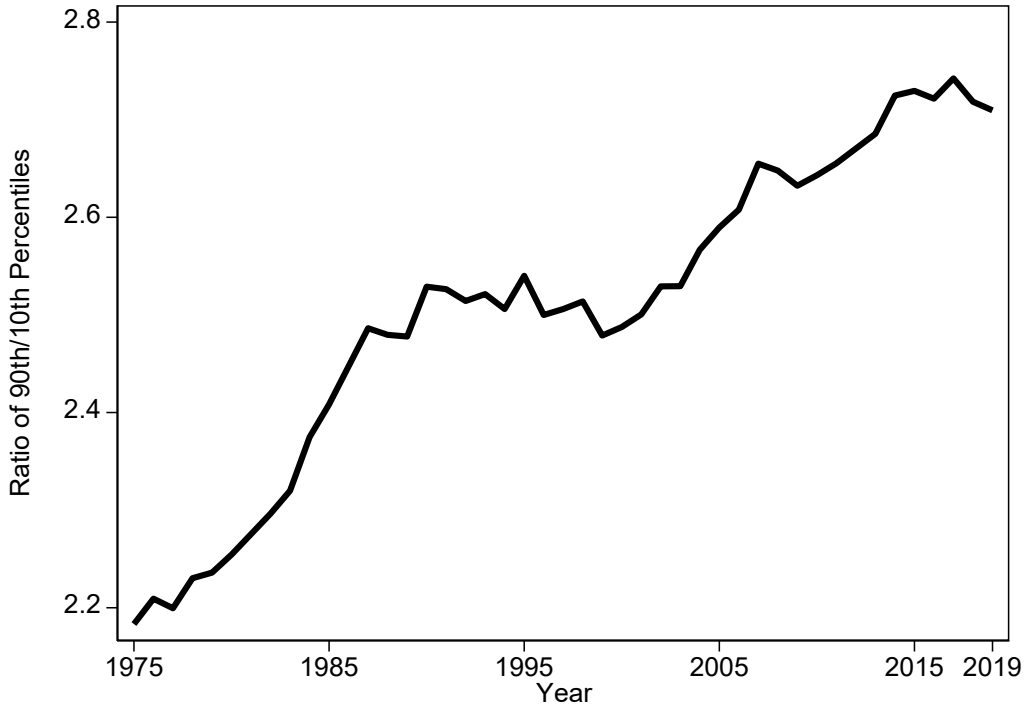
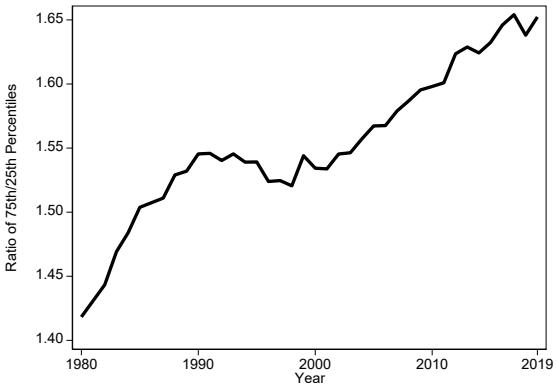


Figure 11. Dispersion of Social Security Child Beneficiary Rates over Time, by Program

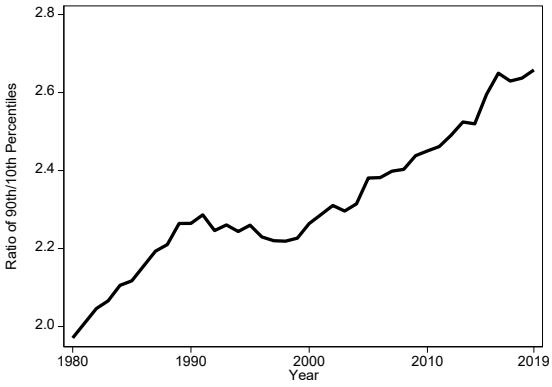
A: Disability – Ratios of 75th/25th percentiles

B: Disability – Ratios of 90th/10th percentiles

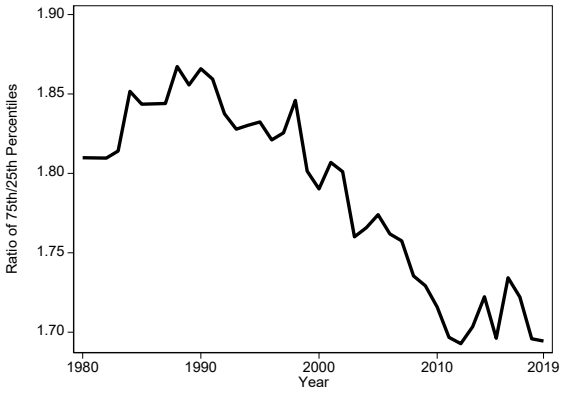
C: Survivors – Ratios of 75th/25th percentiles



D: Survivors – Ratios of 90th/10th percentiles



E: Retirement – Ratios of 75th/25th percentiles



F: Retirement – Ratios of 90th/10th percentiles

Figure 12. Proportion of Total Variation in Social Security Child Beneficiary Rates that is Cross-state Variation

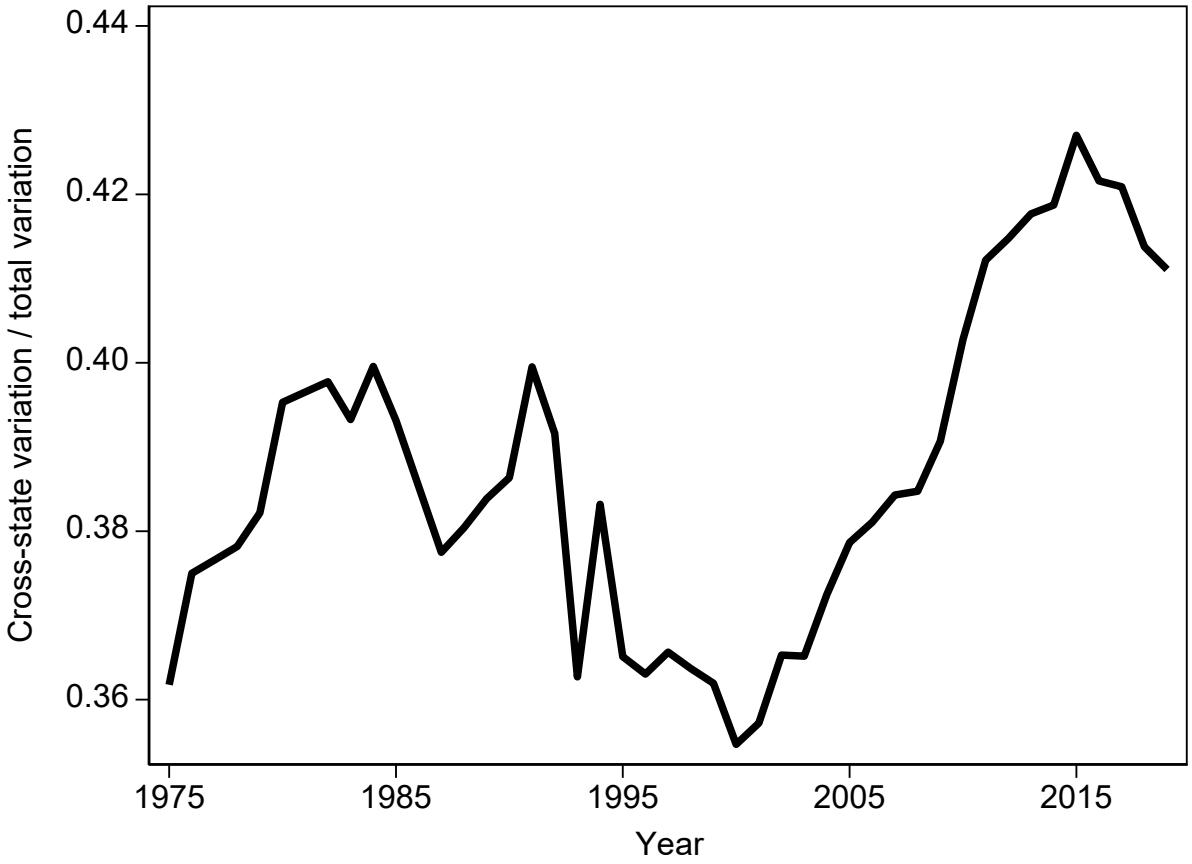


Figure 13. Proportion of Total Variation in Social Security Child Beneficiary Rates that is Cross-state Variation, by Program

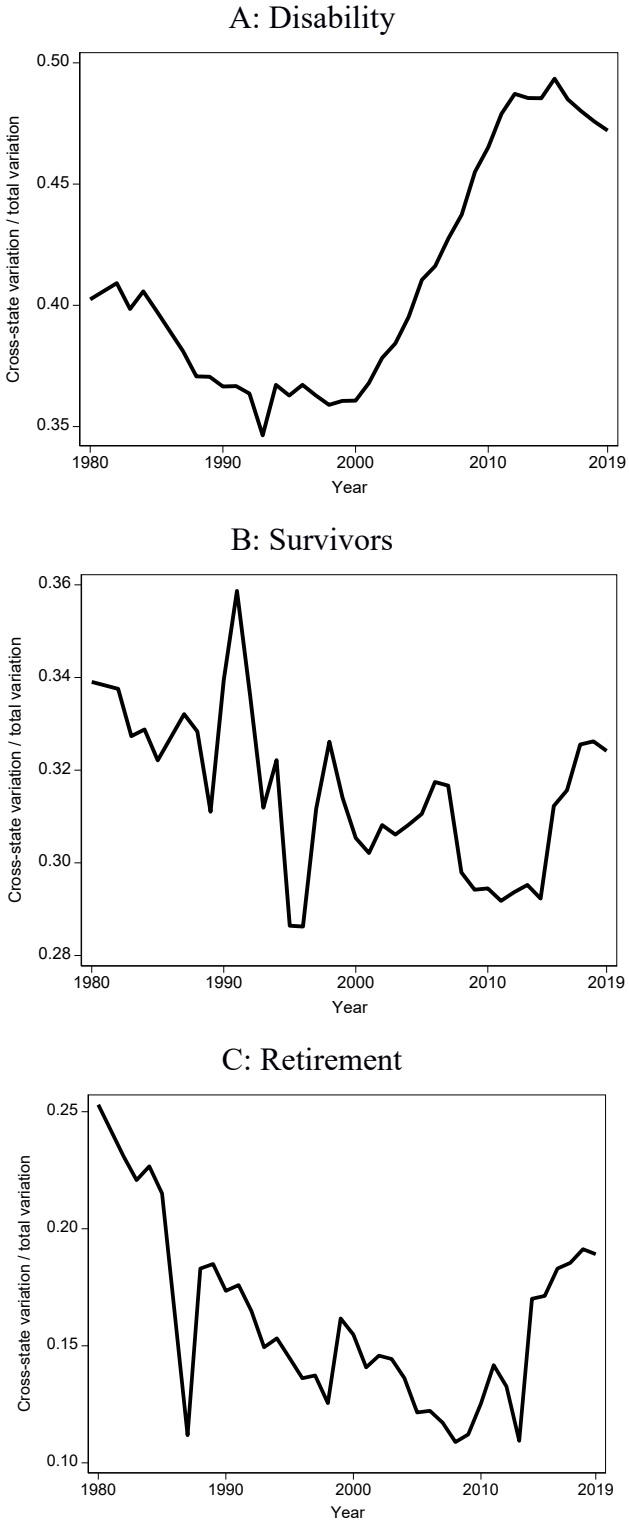
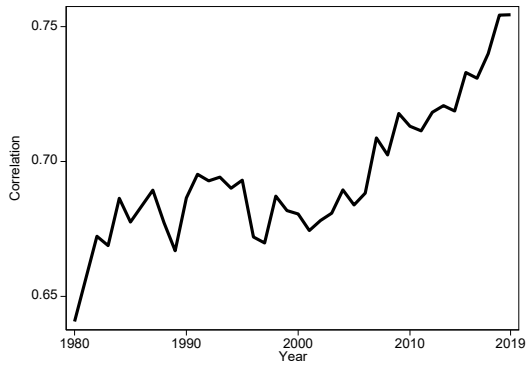
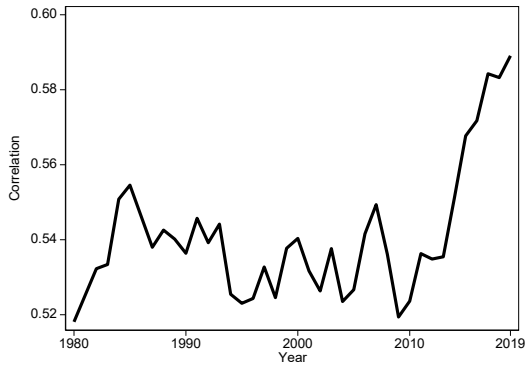


Figure 14. Correlation between Social Security Child Rates and Other Beneficiary Groups

A: Child Disability and Child Survivor Rates

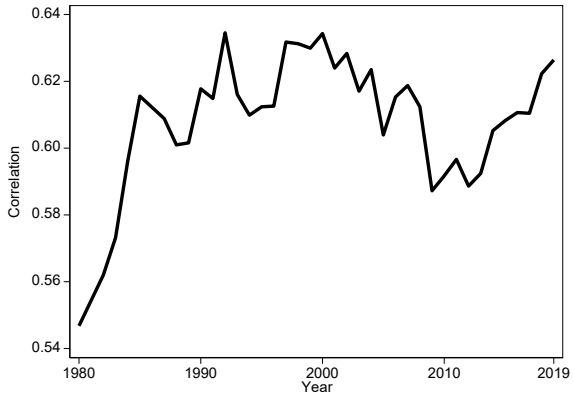


B: Child Disability and Child Retirement Rates

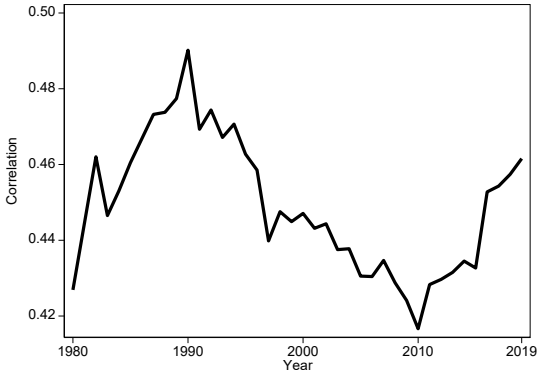


C: Child and Adult Disability Rates

D: Child Survivor and Child Retirement Rates



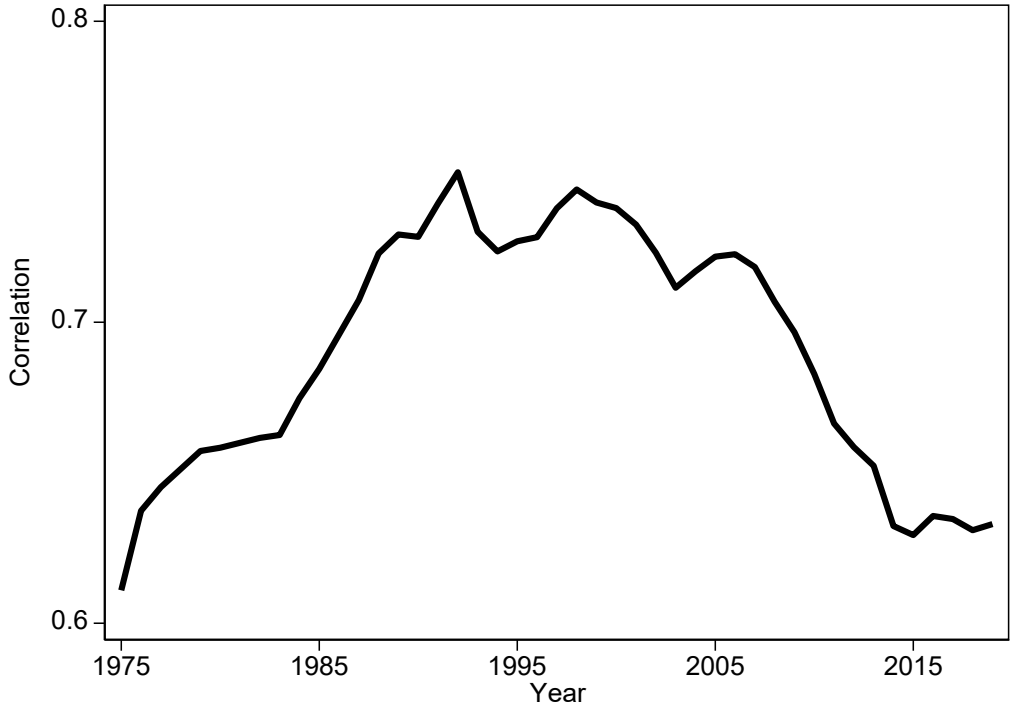
E: Child and Adult Survivor Rates



F: Child and Adult Retirement Rates

Figure 15. Correlation between Social Security Child Beneficiary and SSI Child Recipient Rates

A: Social Security Child Beneficiary Rates and SSI Child Recipient



B: Disability Insurance Child Beneficiary and SSI Child Recipient Rates

Table 1. Summary Statistics for SSI Children Recipient Data Set

Variable Name	Observations	Mean	Std. Dev.	Min	Max
Identifiers					
Year	142,156	--	--	1974	2019
State FIPS codes	142,156	--	--	1	56
County FIPS codes	142,156	--	--	1001	56045
SSI Recipients					
SSI recipients – Total	141,829	1,969	10,224	0	425,991
SSI recipients – Aged <18	141,829	236	1,109	0	49,939
	Monthly payments				
Pay – Total ($000s)	141,829	794.10	5,202	0	268,785
Pay – Aged <18 ($000s)	141,829	7.22	65.16	0	6,381
	Other measures				
County population – Total	141,861	87,949	312,377	0	10,100,000
County population – Aged <18	141,861	22,376	78,891	0	2,669,621
Rate of SSI Recipients – Total	141,515	0.025	0.0187	0	0.633
Rate of SSI Recipients – Aged <18	141,515	0.010	0.0108	0	0.882

Table 2. Summary Statistics – Rate of SSI Child Recipients per Population

Year	Mean	Standard Deviation	Min	25th Percentile	50th Percentile	75th Percentile	Max
1975	0.002	0.003	0	0.001	0.002	0.003	0.043
1976	0.003	0.003	0	0.001	0.002	0.004	0.039
1977	0.003	0.003	0	0.001	0.003	0.004	0.042
1978	--	--	--	--	--	--	--
1979	0.004	0.003	0	0.002	0.003	0.005	0.042
1980	0.004	0.003	0	0.002	0.003	0.005	0.041
1981	0.004	0.003	0	0.002	0.003	0.005	0.038
1982	0.004	0.003	0	0.002	0.004	0.005	0.039
1983	0.004	0.003	0	0.002	0.004	0.005	0.041
1984	0.004	0.003	0	0.003	0.004	0.006	0.042
1985	0.005	0.003	0	0.003	0.004	0.006	0.042
1986	0.005	0.003	0	0.003	0.004	0.006	0.042
1987	0.005	0.003	0	0.003	0.005	0.007	0.041
1988	0.005	0.003	0	0.003	0.005	0.007	0.043
1989	0.005	0.003	0	0.003	0.005	0.007	0.045
1990	0.006	0.004	0	0.004	0.005	0.008	0.048
1991	0.008	0.005	0.001	0.005	0.007	0.01	0.06
1992	0.011	0.008	0.001	0.006	0.009	0.014	0.088
1993	0.014	0.010	0.001	0.008	0.011	0.016	0.104
1994	0.015	0.011	0.001	0.009	0.013	0.019	0.107
1995	0.016	0.011	0.001	0.009	0.014	0.02	0.107
1996	0.017	0.011	0.001	0.01	0.014	0.021	0.107
1997	0.014	0.009	0.001	0.008	0.012	0.018	0.073
1998	0.015	0.010	0.001	0.008	0.012	0.018	0.075
1999	0.014	0.009	0.001	0.008	0.011	0.017	0.068
2000	0.014	0.009	0.001	0.008	0.011	0.017	0.077
2001	0.014	0.009	0	0.008	0.012	0.018	0.072
2002	0.015	0.010	0	0.008	0.012	0.019	0.081
2003	0.015	0.012	0	0.008	0.013	0.019	0.084
2004	0.016	0.011	0	0.009	0.013	0.02	0.089
2005	0.017	0.011	0.001	0.01	0.014	0.021	0.098
2006	0.018	0.011	0.001	0.01	0.015	0.022	0.097
2007	0.018	0.012	0.001	0.011	0.015	0.023	0.091
2008	0.019	0.012	0.001	0.011	0.016	0.024	0.094
2009	0.019	0.012	0.001	0.011	0.017	0.024	0.099
2010	0.020	0.013	0.001	0.012	0.017	0.025	0.104
2011	0.021	0.013	0.001	0.012	0.017	0.026	0.105
2012	0.021	0.013	0.001	0.012	0.018	0.026	0.103
2013	0.021	0.013	0.001	0.013	0.018	0.026	0.104
2014	0.020	0.012	0.001	0.012	0.018	0.025	0.106
2015	0.020	0.012	0.001	0.012	0.017	0.025	0.108
2016	0.019	0.011	0.001	0.011	0.017	0.024	0.106
2017	0.019	0.011	0.001	0.011	0.016	0.024	0.107
2018	0.018	0.011	0.001	0.011	0.016	0.023	0.102
2019	0.018	0.011	0.001	0.011	0.016	0.023	0.104

Table 3. Spearman Rank Correlations of SSI Child Recipient Rates

Year pairs	1975	1985	1995	2005	2019
1975	1	--	--	--	--
1985	0.7061	1	--	--	--
1995	0.5662	0.7512	1	--	--
2005	0.5786	0.7067	0.8683	1	--
2019	0.5398	0.6616	0.7958	0.8822	1

Table 4. Spearman Rank Correlations of *Annual Changes* in SSI Child Recipient Rates

Year pairs	1975-1976	1985-1986	1995-1996	2005-2006	2018-2019
1975-1976	1	--	--	--	--
1985-1986	0.0026	1	--	--	--
1995-1996	-0.0029	0.0101	1	--	--
2005-2006	0.0407	0.0453	0.0021	1	--
2018-2019	-0.0361	-0.0568	-0.0032	-0.0335	1

Table 5. Relationship between SSI Child Recipient Rates and Other County Characteristics, 1980-2014

	Baseline	County fixed effects	Removing state factors
	(1)	(2)	(3)
Fraction female	0.0433**	-0.0076	0.0026
	(0.0079)	(0.0114)	(0.0102)
Fraction aged under 18 years	-0.0120**	-0.0416**	-0.0572**
	(0.0041)	(0.0060)	(0.0066)
Fraction white	0.0034	0.0002	-0.0094
	(0.0022)	(0.0066)	(0.0071)
Fraction black	0.0261**	0.0487**	0.0361**
	(0.0024)	(0.0109)	(0.0100)
Mortality risk for ages 5-25 (per million residents)	-0.0028*	-0.0119**	-0.0098**
	(0.0012)	(0.0027)	(0.0025)
Mortality risk for ages 25-45 (per million residents)	0.0026**	0.00361**	0.00168
	(0.0007)	(0.00125)	(0.00114)
Mortality risk for ages 45-65 (per million residents)	0.0001	-0.00440**	-0.00336**
	(0.0002)	(0.000407)	(0.000447)
Mortality risk for ages 65+ (per million residents)	0.00034**	0.0019**	0.0017**
	(0.00005)	(0.0001)	(0.0001)
Housing Price Index ($ million)	1.546*	-0.973	-3.612**
	(0.601)	(0.602)	(0.925)
Average Net Earnings ($ million)	-0.326**	-0.0469*	-0.0937**
	(0.0221)	(0.0198)	(0.0186)
Jobs per capita (x 1,000)	1.659**	-2.476*	-5.396**
	(0.578)	(1.079)	(1.032)
Constant	-0.0323**	-0.0205*	-0.00662
	(0.0052)	(0.0097)	(0.0094)
Number of observations	56,351	56,351	56,312
R-squared	0.658	0.886	0.918
Year fixed effects	X	X	X
County fixed effects		X	X
State-by-year fixed effects			X

Standard errors in parentheses
* p<0.05 ** p<0.01

Table 6. Summary statistics for the Social Security Child Beneficiary Data Set

Variable Name	Observations	Mean	Std. Dev.	Min	Max
Identifiers					
Year	150,528	--	--	1970	2019
State FIPS codes	150,528	--	--	1	56
County FIPS codes	150,528	--	--	1001	56045
Beneficiaries in current payment status					
Total beneficiaries – All Social Security	150,528	13,859	4,2501	10	1,392,425
Child beneficiaries – All Social Security	135,168	1,238	3,677	0	148,634
Child beneficiaries – Disability	119,808	442	1,157	0	37,930
Child beneficiaries – Survivors	119,808	602	1,826	0	72,914
Child beneficiaries – Retirement	119,808	157	540	0	20,370
Monthly payments					
Payments – Total beneficiaries ($000s)	150,528	247,009	2,945,229	2	34,000,000
Payments – Child Social Security ($000s)	135,168	23,940	250,062	0	2,230,000
Payments – Child Disability ($000s)	119,808	115	338	0	12,310
Payments – Child Survivors ($000s)	119,808	346	1,049	0	32,063
Payments – Child Retirement ($000s)	119,808	70	270	0	13,686
Population					
Population – Total	150,528	86,571	309,907	61	10,100,000
Population – Aged under 18 years	150,528	22,423	79,406	8	2,669,621
Rate of child beneficiaries per population aged under 18					
Rate – Social Security child beneficiaries	135,168	0.068	0.027	0	0.352
Rate – Disability child beneficiaries	119,808	0.026	0.016	0	0.228
Rate – Survivors child beneficiaries	119,808	0.032	0.011	0	0.246
Rate – Retirement child beneficiaries	119,808	0.008	0.005	0	0.188

Table 7. Summary Statistics – Rate of Child Social Security Beneficiaries per Population Under 18

Year	Mean	Standard Deviation	Min	25th Percentile	50th Percentile	75th Percentile	Max
1975	0.081	0.026	0.016	0.062	0.077	0.096	0.273
1976	0.082	0.026	0.012	0.063	0.078	0.097	0.274
1977	0.082	0.026	0.012	0.064	0.079	0.098	0.285
1978	0.080	0.026	0.014	0.062	0.077	0.096	0.254
1979	0.078	0.025	0.013	0.061	0.075	0.094	0.253
1980	0.076	0.025	0.000	0.059	0.073	0.091	0.241
1981	--	--	--	--	--	--	--
1982	0.066	0.022	0.000	0.050	0.062	0.078	0.199
1983	0.061	0.021	0.000	0.047	0.058	0.073	0.184
1984	0.059	0.020	0.000	0.045	0.056	0.071	0.176
1985	0.058	0.020	0.000	0.043	0.055	0.070	0.195
1986	0.056	0.027	0.000	0.040	0.054	0.071	0.188
1987	0.057	0.021	0.007	0.042	0.054	0.069	0.214
1988	0.057	0.021	0.000	0.043	0.054	0.069	0.206
1989	0.056	0.021	0.000	0.042	0.053	0.068	0.229
1990	0.057	0.022	0.000	0.042	0.053	0.068	0.237
1991	0.058	0.022	0.000	0.042	0.054	0.070	0.216
1992	0.060	0.023	0.000	0.044	0.056	0.072	0.228
1993	0.062	0.024	0.000	0.045	0.057	0.075	0.352
1994	0.063	0.024	0.000	0.046	0.059	0.076	0.268
1995	0.064	0.025	0.000	0.047	0.060	0.077	0.294
1996	0.065	0.025	0.000	0.048	0.061	0.077	0.295
1997	0.064	0.025	0.000	0.047	0.060	0.076	0.292
1998	0.063	0.025	0.000	0.046	0.060	0.076	0.293
1999	0.064	0.025	0.000	0.047	0.060	0.076	0.299
2000	0.064	0.025	0.000	0.047	0.060	0.077	0.303
2001	0.064	0.025	0.000	0.047	0.061	0.077	0.301
2002	0.066	0.026	0.000	0.048	0.062	0.079	0.301
2003	0.067	0.026	0.000	0.048	0.063	0.080	0.307
2004	0.067	0.026	0.000	0.049	0.063	0.081	0.302
2005	0.068	0.027	0.000	0.049	0.064	0.082	0.306
2006	0.068	0.027	0.000	0.050	0.064	0.082	0.317
2007	0.069	0.027	0.000	0.050	0.064	0.083	0.307
2008	0.070	0.028	0.000	0.051	0.066	0.085	0.292
2009	0.072	0.029	0.000	0.052	0.068	0.087	0.284
2010	0.074	0.029	0.000	0.054	0.069	0.090	0.286
2011	0.075	0.030	0.000	0.054	0.070	0.091	0.284
2012	0.076	0.030	0.000	0.055	0.071	0.093	0.281
2013	0.076	0.030	0.000	0.055	0.072	0.093	0.266
2014	0.076	0.030	0.000	0.054	0.072	0.092	0.265
2015	0.075	0.030	0.000	0.054	0.071	0.092	0.264
2016	0.074	0.030	0.000	0.053	0.070	0.090	0.272
2017	0.073	0.029	0.000	0.053	0.070	0.090	0.271
2018	0.073	0.029	0.000	0.052	0.069	0.089	0.266
2019	0.072	0.029	0.000	0.052	0.068	0.088	0.258

Table 8. Spearman Rank Correlations of Social Security Child Beneficiary Rates

Year pairs	1975	1985	1995	2005	2019
1975	1	--	--	--	--
1985	0.8552	1	--	--	--
1995	0.7950	0.8592	1	--	--
2005	0.7493	0.8107	0.8753	1	--
2019	0.6697	0.7512	0.8000	0.8727	1

Table 9. Spearman Rank Correlations of *Annual Changes* in Social Security Child Beneficiary Rates

Year pairs	1975-1976	1985-1986	1995-1996	2005-2006	2018-2019
1975-1976	1	--	--	--	--
1985-1986	0.0211	1	--	--	--
1995-1996	0.0097	-0.0319	1	--	--
2005-2006	0.0080	0.0025	-0.0113	1	--
2018-2019	0.0134	-0.0143	0.0306	-0.0235	1

Table 10. Relationship between Social Security Child Beneficiary Rates and Other Characteristics, 1980-2014

	Baseline	County fixed effects	Removing state factors
	(1)	(2)	(3)
Fraction female	0.189**	0.123**	0.138**
	(0.0138)	(0.0182)	(0.0162)
Fraction aged under 18 years	-0.245**	-0.203**	-0.247**
	(0.00739)	(0.0103)	(0.00994)
Fraction white	0.0293**	0.0466**	-0.0101
	(0.00478)	(0.0122)	(0.0120)
Fraction black	0.0272**	0.0653**	0.0241
	(0.00468)	(0.0147)	(0.0141)
Mortality risk for ages 5-25 (per million residents)	0.0183**	0.0328**	-0.000229
	(0.00255)	(0.00376)	(0.00380)
Mortality risk for ages 25-45 (per million residents)	0.00315*	0.000755	-0.00336
	(0.00158)	(0.00170)	(0.00199)
Mortality risk for ages 45-65 (per million residents)	0.000925**	-0.000955	0.00309**
	(0.000345)	(0.000648)	(0.000641)
Mortality risk for ages 65+ (per million residents)	0.000860**	0.000347*	0.000603**
	(0.000104)	(0.000176)	(0.000174)
Housing Price Index ($ million)	-3.814**	-4.236**	-5.462**
	(1.427)	(1.180)	(1.673)
Average Net Earnings ($ million)	-0.710**	-0.313**	-0.227**
	(0.0472)	(0.0317)	(0.0315)
Jobs per capita (x 1,000)	-6.926**	-0.390	0.568
	(1.219)	(1.457)	(1.418)
Constant	-0.0684**	-0.0312*	0.00249
	(0.00945)	(0.0158)	(0.0150)
Number of observations	67970	67970	67931
R-squared	0.704	0.935	0.952
Year fixed effects	X	X	X
County fixed effects		X	X
State-by-year fixed effects			X

Standard errors in parentheses
* p<0.05 ** p<0.01

Table 11. Relationship between Disability Insurance Child Beneficary Rates and Other Characteristics, 1980-2014

	Baseline	County fixed effects	Removing state factors
	(1)	(2)	(3)
Fraction female	0.0992**	0.0503**	0.0506**
	(0.00864)	(0.0113)	(0.00927)
Fraction aged under 18 years	-0.119**	-0.0824**	-0.106**
	(0.00457)	(0.00664)	(0.00598)
Fraction white	0.0301**	0.0520**	0.0148*
	(0.00329)	(0.00752)	(0.00665)
Fraction black	0.0203**	0.0519**	0.0248**
	(0.00320)	(0.00893)	(0.00789)
Mortality risk for ages 5-25 (per million residents)	0.00874**	0.0165**	-0.00470*
	(0.00168)	(0.00237)	(0.00209)
Mortality risk for ages 25-45 (per million residents)	0.00144	0.00164	-0.00161
	(0.00106)	(0.00104)	(0.00110)
Mortality risk for ages 45-65 (per million residents)	0.000373	-0.00188**	0.00130**
	(0.000225)	(0.000396)	(0.000353)
Mortality risk for ages 65+ (per million residents)	0.000693**	0.000537**	0.000550**
	(0.0000668)	(0.000105)	(0.0000942)
Housing Price Index ($ million)	0.860	-2.797**	-4.102**
	(0.863)	(0.733)	(0.961)
Average Net Earnings ($ million)	-0.377**	-0.180**	-0.133**
	(0.0283)	(0.0196)	(0.0185)
Jobs per capita (x 1,000)	-6.137**	-1.893*	-1.422*
	(0.775)	(0.861)	(0.709)
Constant	-0.0687**	-0.0510**	-0.0222**
	(0.00600)	(0.00976)	(0.00839)
Number of observations	67970	67970	67931
R-squared	0.641	0.919	0.945
Year fixed effects	X	X	X
County fixed effects		X	X
State-by-year fixed effects			X

Standard errors in parentheses
* p<0.05 ** p<0.01

Table 12. Relationship between Survivors Insurance Child Rates and Other Characteristics, 1980-2014

	Baseline	County fixed effects	Removing state factors
	(1)	(2)	(3)
Fraction female	0.0678**	0.0403**	0.0552**
	(0.00616)	(0.00827)	(0.00820)
Fraction aged under 18 years	-0.0916**	-0.0809**	-0.0995**
	(0.00303)	(0.00452)	(0.00500)
Fraction white	-0.000849	0.00275	-0.0166**
	(0.00220)	(0.00589)	(0.00602)
Fraction black	0.00599**	0.0183**	0.00292
	(0.00219)	(0.00701)	(0.00696)
Mortality risk for ages 5-25 (per million residents)	0.00695**	0.0113**	0.00229
	(0.000935)	(0.00173)	(0.00201)
Mortality risk for ages 25-45 (per million residents)	0.00149**	-0.000772	-0.00170
	(0.000549)	(0.000888)	(0.00110)
Mortality risk for ages 45-65 (per million residents)	0.000530**	0.00118**	0.00164**
	(0.000141)	(0.000312)	(0.000336)
Mortality risk for ages 65+ (per million residents)	0.000225**	-0.000103	0.000129
	(0.0000452)	(0.0000843)	(0.0000886)
Housing Price Index ($ million)	-5.515**	-2.100**	-2.618**
	(0.641)	(0.519)	(0.809)
Average Net Earnings ($ million)	-0.202**	-0.0788**	-0.0632**
	(0.0184)	(0.0146)	(0.0155)
Jobs per capita (x 1,000)	-0.0783	2.616**	2.879**
	(0.628)	(0.701)	(0.734)
Constant	-0.00705	0.00571	0.0144
	(0.00430)	(0.00755)	(0.00772)
Number of observations	67970	67970	67931
R-squared	0.631	0.894	0.906
Year fixed effects	X	X	X
County fixed effects		X	X
State-by-year fixed effects			X

Standard errors in parentheses
* p<0.05 ** p<0.01

Table 13. Relationship between Retirement Insurance Child Rates and Other Characteristics, 1980-2014

	Baseline	County fixed effects	Removing state factors
	(1)	(2)	(3)
Fraction female	0.0224**	0.0320**	0.0319**
	(0.00239)	(0.00391)	(0.00388)
Fraction aged 18-30	-0.0348**	-0.0397**	-0.0418**
	(0.00156)	(0.00222)	(0.00246)
Fraction white	0.0000169	-0.00813**	-0.00820*
	(0.000856)	(0.00273)	(0.00336)
Fraction black	0.000857	-0.00490	-0.00361
	(0.000900)	(0.00310)	(0.00374)
Mortality risk for ages 5-25 (per million residents)	0.00258**	0.00504**	0.00218*
	(0.000416)	(0.000804)	(0.000863)
Mortality risk for ages 25-45 (per million residents)	0.000220	-0.000116	-0.0000481
	(0.000224)	(0.000340)	(0.000374)
Mortality risk for ages 45-65 (per million residents)	0.0000213	-0.000260	0.000150
	(0.0000632)	(0.000142)	(0.000159)
Mortality risk for ages 65+ (per million residents)	-0.0000576**	-0.0000868*	-0.0000766
	(0.0000210)	(0.0000398)	(0.0000453)
Housing Price Index ($ million)	0.840**	0.660**	1.258**
	(0.269)	(0.234)	(0.443)
Average Net Earnings ($ million)	-0.131**	-0.0537**	-0.0310**
	(0.00941)	(0.00713)	(0.00749)
Jobs per capita (x 1,000)	-0.711**	-1.112**	-0.888**
	(0.210)	(0.327)	(0.335)
Constant	0.00743**	0.0141**	0.0103**
	(0.00168)	(0.00355)	(0.00378)
Number of observations	67970	67970	67931
R-squared	0.408	0.800	0.816
Year fixed effects	X	X	X
County fixed effects		X	X
State-by-year fixed effects			X

Standard errors in parentheses
* p<0.05 ** p<0.01

Table 14. Variable List for Social Security Dataset – Main Variables

Variable	Description
year	Year
stfips	State code – Federal Information Processing Standard (FIPS)
fips	County code – Federal Information Processing Standard (FIPS)
Beneficiaries	
ben_ss_all	Social Security – All beneficiaries
ben_ss_spouse	Social Security – Spouses who are dependents
ben_ss_kids	Social Security – Child dependents
ben_ret_surv_all	Retirement & Survivors – All beneficiaries
ben_ret_primary	Retirement – Primary beneficiaries
ben_ret_spouse	Retirement – Spouses who are dependents
ben_ret_kid	Retirement – Child dependents
ben_surv_primary	Survivors – Primary beneficiaries
ben_surv_kid	Survivors – Child dependents
ben_di_all	Disability – All beneficiaries
ben_di_primary	Disability – Primary beneficiaries
ben_di_spouse	Disability – Spouses who are dependents
ben_di_kid	Disability – Child dependents
ben_65plus	Social Security beneficiaries, aged 65+
ben_65plus_men	Social Security beneficiaries, males aged 65+
ben_65plus_women	Social Security beneficiaries, females aged 65+
Monthly Payments ($000s)	
ben_ss_all	Social Security – All beneficiaries
ben_ss_spouse	Social Security – Spouses who are dependents
ben_ss_kids	Social Security – Child dependents
ben_ret_surv_all	Retirement & Survivors – All beneficiaries
ben_ret_primary	Retirement – Primary beneficiaries
ben_ret_spouse	Retirement – Spouses who are dependents
ben_ret_kid	Retirement – Child dependents
ben_surv_primary	Survivors – Primary beneficiaries
ben_surv_kid	Survivors – Child dependents
ben_di_all	Disability – All beneficiaries
ben_di_primary	Disability – Primary beneficiaries
ben_di_spouse	Disability – Spouses who are dependents
ben_di_kid	Disability – Child dependents
ben_65plus	Social Security beneficiaries, aged 65+
ben_65plus_men	Social Security beneficiaries, males aged 65+
ben_65plus_women	Social Security beneficiaries, females aged 65+
Population	
pop_all	Population
pop0_17	Population aged under 18 years
pop18_99	Population aged 18+ years
pop18_62	Population aged 62+ years
pop65_99	Population aged 65+ years
pop18_fra	Population aged 18 years to the Full Retirement Age
popfra_99	Population aged Full Retirement Age+

Table 15. Variable list for Social Security Dataset – Less Frequent Variables

Variable	Description
ben_0_20	Social Security beneficiaries, aged 0-20
ben_18_21	Social Security beneficiaries, aged 18-21
ben_22_59	Social Security beneficiaries, aged 22-59
ben_60_61	Social Security beneficiaries, aged 60-61
ben_62_64	Social Security beneficiaries, aged 62-64
ben_65_71	Social Security beneficiaries, aged 65-71
ben_60plus	Social Security beneficiaries, aged 60+
ben_62plus	Social Security beneficiaries, aged 62+
ben_72plus	Social Security beneficiaries, aged 72+
ben_18plus_men	Social Security beneficiaries, adult males
ben_18plus_women	Social Security beneficiaries, adult females
ben_60plus_men	Social Security beneficiaries, males aged 60+
ben_60plus_women	Social Security beneficiaries, females aged 60+
ben_62plus_men	Social Security beneficiaries, males aged 62+
ben_62plus_women	Social Security beneficiaries, females aged 62+
Monthly Payments ($000s)	
pay_18plus_men	Social Security payments, adult males
pay_18plus_women	Social Security payments, adult females
pay_62plus	Social Security payments, aged 62+
pay_62plus_men	Social Security payments, males aged 62+
pay_62plus_women	Social Security payments, females aged 62+
Population	
pop_all	Population
pop0_17	Population aged under 18 years
pop18_99	Population aged 18+ years
pop18_64	Population aged 18 to 64 years
pop65_99	Population aged 65+ years

Table 16. Years that the Social Security Variables are Available

#	***Social Security variables***	**1970-1974**	**1975-79**	**1980, 1982-1984**	**1985-2019**
Main variables:					
Beneficiaries					
1	ben_total	X	X	X	X
2	ben_ret_surv_all			X	X
3	ben_ret_primary	X	X	X	X
4	ben_surv_primary		X	X	X
5	ben_ret_spouse			X	X
6	ben_65plus	X	X		X
7	ben_65plus_men				X
8	ben_65plus_women				X
Monthly Payments ($000s)					
9	pay_total	X	X	X	X
10	pay_ret_surv_all			X	X
11	pay_ret_primary	X	X	X	X
12	pay_surv_primary		X	X	X
13	pay_ret_spouse			X	X
14	pay_65plus		X		X
15	pay_65plus_men				X
16	pay_65plus_women				X
Population					
12	pop_all	Not AK,HI	Not AK,HI	X	X
13	pop18_99	Not AK,HI	Not AK,HI	X	X
14	pop65_99	Not AK,HI	Not AK,HI	X	X
Other variables:					
Beneficiaries					
17	ben_18_21	X			
18	ben_22_59	X			
19	ben_60_61	X			
20	ben_62_64	X			
21	ben_65_71	X	X		
22	ben_60plus	X			
23	ben_62plus	X		X	
24	ben_72plus	X	X		
25	ben_18plus_men		X		
26	ben_18plus_women		X		
27	ben_60plus_men	X			
28	ben_60plus_women	X			
29	ben_62plus_men			X	
30	ben_62plus_women			X	
Monthly Payments ($000s)					
31	pay_62plus			X	
32	pay_18plus_men		X		
33	pay_18plus_women		X		
34	pay_62plus_men			X	
35	pay_62plus_women			X	

Note: AK = Alaska, HI = Hawaii

Table 17. Variable List for SSI Data Set

Variable	Description
Identifiers	
year	Year
state_name	State abbreviation
stfips	State code – Federal Information Processing Standard (FIPS)
fips	County code – Federal Information Processing Standard (FIPS)
county_name	County name
SSI recipients	
recip_total	All recipients
recip_age0_17	Recipients aged under 18 years
recip_age18_64	Recipients aged 18-64 years
recip_age65plus	Recipients aged 65+ years
recip_disability	Recipients based on disability
recip_blind_adults	Recipients based on blindness – adults
recip_dis_adults	Recipients based on disability – adults
recip_blind_dis_adults	Recipients based on disability or blindness – adults
recip_aged	Recipients based on being aged 65+
recip_ssi_oasdi	Recipients receiving both SSI and OASDI
SSI payment units	
units_blind_dis_indiv	Payment units based on disability or blindness – individuals
units_blind_dis_coup	Payment units based on disability or blindness – couples
units_aged_indiv	Payment units based on age – individuals
units_aged_coup	Payment units based on age – couples
SSI monthly payments ($000s)	
pay_total	Monthly payments – All recipients
pay_blind_dis_indiv	Monthly payments based on disability or blindness – individuals
pay_blind_dis_coup	Monthly payments based on disability or blindness – couples
pay_aged_indiv	Monthly payments based on age – individuals
pay_aged_coup	Monthly payments based on age – couples

Table 18. Years that the SSI Variables are Available

	Years covered				
SSI variables	**1974-1977**	**1978**	**1979-1990**	**1991-1996**	**1997-2019**
recip_total	X	X	X	X	X
recip_age0_17	X	X	X	X	X
recip_age18_64				X	X
recip_age65plus				X	X
recip_disability	X	X	X	X	X
recip_blind_adults			X	X	
recip_dis_adults	X		X	X	
recip_blind_dis_adults	X		X	X	
recip_aged	X	X	X	X	X
recip_ssi_oasdi					X
units_total	X		X		
units_blind_dis_indiv			X		
units_blind_dis_coup			X		
units_aged_indiv			X		
units_aged_coup			X		
pay_total	X	X	X	X	X
pay_blind_dis_indiv			X		
pay_blind_dis_coup			X		
pay_aged_indiv			X		
pay_aged_coup			X		

APPENDICES

A1. Data notes from *Social Security/OASDI Beneficiaries by State and County*

Information is for Social Security beneficiaries in current payment status in December. Other key notes from the publications:

- The data in this report are derived from the Master Beneficiary Record, the principal administrative file of Social Security beneficiaries. The 1986 publication is based on a 10% extract; the other years are based on the full data.
- The monthly benefit is the amount payable after any reductions.
- Some Social Security beneficiaries have a representative payee—a person designated by the Social Security Administration to receive their monthly benefit when such action is in the beneficiary's best interest. About three percent of all adult beneficiaries and virtually all child beneficiaries under age 18 have representative payees. For most children, the representative payee is the parent with whom the child resides. For beneficiaries with representative payees, the state and county designations are those of the representative payees, not those of the beneficiaries.
- State totals do not necessarily represent the sum of the county totals.
- All suppressed values are coded to missing (see below for rules).

Years	***Disclosure procedures***
1970-1985	No disclosure restrictions.
1986	Rounds to 10 because it is scaled up from a 10 percent sample.
1987	To avoid disclosure of information about individuals, counties with small number of beneficiaries is coded to missing (replaced with an asterisk in the document). If the total benefit amount for any payment category is less than $500, the amount is rounded to zero.
1988-2019	County data on the number of beneficiaries is rounded either to the next higher multiple of 5 or the next lower multiple of 5, in such a way that the difference between each rounded and unrounded cell value, each rounded and unrounded row total, and each rounded and unrounded column total is less than 5. After the numbers in Table 4 have been rounded, the dollar amounts in Table 5 are proportionately adjusted upward or downward, as appropriate.

A2. Data notes from *SSI Recipients by State and County*

Information is for federally administered payments (i.e., federal and federally administered state payments) to people receiving SSI in December. Other key notes from the publications:

- All suppressed values are coded to missing (see below for rules).
- State totals do not necessarily represent the sum of the county totals.
- At least for the first few years, recipients are excluded if their "adult unit designation" changes in the December quarter (i.e., they become adults) or county coding is inconsistent. Numbers are provided in the 1970s – this does not seem to affect large numbers.
- Additional notes around coverage for specific years:
  - In 1974, county data are missing for Alaska, Massachusetts and Texas, while blind and disabled children are combined with blind and disabled adults for Michigan
  - In 1975, county data are missing for Alaska and Massachusetts
  - In 1976 and 1977, county data are missing for Massachusetts

Years	***Disclosure procedures***
1975	Payment information is "truncated" (rounded down) rather than rounded to the nearest thousand dollars
1976-1990	Use "controlled random rounding." If the number of recipients, individuals or couples is odd, it is rounded to the next lowest or next highest even number with equal probability. Even numbers are not changed. After this rounding, the dollar amounts of the payments are proportionately adjusted.
1991-2002	Total numbers of recipients are always reported, although eligibility categories are suppressed for counties with less than 15 recipients. Payment information is not shown for counties with less than four recipients.
2003	Total number of recipients and eligibility categories are suppressed whenever there are less than 15 recipients.
2004	Total numbers of recipients are reported except when there is only one recipient. Eligibility categories are suppressed for counties with less than 15 recipients or when there is only one recipient in a category. Payment information is not shown for counties with less than one recipient.
2005-2009	Total numbers of recipients are reported except when recipients are below a "predetermined threshold." Eligibility categories are suppressed for counties with less than 15 recipients or when the recipients in a category are below than a "predetermined threshold." Payment information is not shown for counties when the recipients are below than a "predetermined threshold."
2010-2019	Total numbers of recipients are reported except when recipients are below a "predetermined threshold." Eligibility categories are suppressed for counties with less than ten recipients or when the recipients in a category are below than a "predetermined threshold." Payment information is not shown for counties when the recipients are below than a "predetermined threshold."

A3. Creating a consistent set of counties using Census boundary changes

A consistent set of counties is based on Census information on changes and data checks; key information is available here: https://www.census.gov/geo/reference/county-changes.html

State	New Identifier	Original FIPS	County names
Alaska	2010	2010	Aleutian Islands
		2013	Aleutians East
		2016	Aleutians West
	2030	2030	Angoon
		2105	Hoonah-Angoon
		2230	Skagway
		2231	Skagway-Yakutat-Angoon
		2232	Skagway-Hoonah-Angoon
		2282	Yakutat
	2040	2040	Barrow
		2140	Kobuk
		2185	North Slope
		2188	Northwest Arctic
	2050	2050	Bethel
		2068	Denali
		2080	Cordova-McCarthy
		2160	Kuskokwim
		2240	Southeast Fairbanks
		2250	Upper Yukon
		2260	Valdez-Chitina-Whittier
		2261	Valdez-Cordova
		2290	Yukon-Koyukuk
	2070	2070	Dillingham
		2164	Lake and Peninsula
	2120	2120	Kenai-Cook Inlet
		2122	Kenai Peninsula
		2210	Seward
	2130	2130	Ketchikan Gateway
		2190	Outer Ketchikan
		2195	Petersburg
		2198	Prince of Wales-Hyder
		2200	Prince of Wales
		2201	Prince of Wales-Outer Ketchikan
		2275	Wrangell
		2280	Wrangell-Petersburg
	2158	2158	Kusilvak
		2270	Wade Hampton
Arizona	4012	4012	La Paz
		4027	Yuma
Colorado	8001	8001	Adams
		8013	Boulder
		8014	Broomfield
		8059	Jefferson
		8123	Weld

Florida	12025	12025	Dade
		12086	Miami-Dade
Montana	30031	30031	Gallatin
		30067	Park
		30113	Yellowstone
New Mexico	35006	35006	Cibola
		35061	Valencia
South Dakota	46071	46071	Jackson
		46131	Washbaugh
	46102	46102	Oglala Lakota
		46113	Shannon
Virginia	51005	51005	Alleghany
		51560	Clifton Forge city
	51015	51015	Augusta
		51790	Staunton city
		51820	Waynesboro city
	51019	51019	Bedford
		51031	Campbell
		51680	Lynchburg city
	51053	51053	Dinwiddie
		51149	Prince George
		51730	Petersburg city
	51059	51059	Fairfax
		51600	Fairfax city
	51081	51081	Greensville
		51595	Emporia city
	51083	51083	Halifax
		51780	South Boston city
	51095	51095	James City
		51830	Williamsburg city
	51123	51123	Nansemond city
		51800	Suffolk city
	51143	51143	Pittsylvania
		51590	Danville city
	51153	51153	Prince William
		51683	Manassas city
		51685	Manassas Park city
	51161	51161	Roanoke
		51770	Roanoke city
	51165	51165	Rockingham
		51660	Harrisonburg city
	51177	51177	Spotsylvania
		51630	Fredericksburg city
	51191	51191	Washington
		51520	Bristol city
	51199	51199	York
		51700	Newport News city
		51735	Poquoson city

A4. Population data

Population data are taken from Census Bureau intercensal single-year-of-age county-level population estimates downloaded from the Cancer SEER website:

http://seer.cancer.gov/popdata/download.html

Population data are provided at the county-year level for ages 0-17 years, 18-64 years and 65+ years. The county merges outlined in #4 are also applied to these data. Additional merges are required here:

https://gis.cancer.gov/tools/seerstat_bridge/fips_vars/

Note: In the early years, population counts are not available at the county level for Alaska and Hawaii.