

The Effects of ACA on Income Eligibility for Medicaid and Subsidized Private Insurance Coverage:
Income Definitions and Thresholds across CPS and Administrative Data

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Abstract

The Affordable Care Act (ACA) bases the income definition of eligibility for health insurance subsidy or Medicaid coverage on poverty thresholds and income from tax returns. These definitions differ from those currently used for Medicaid eligibility and for the official measure of poverty. Modeling ACA is important for understanding how individuals, families, and firms might react to the new exchange framework. Researchers should be aware of the differences in income definitions and account for these differences in non-administrative data. This paper documents the differences in income-eligibility determinations using administrative tax data and the Current Population Survey (CPS), including how the CPS data can be adjusted to better match the ACA-legislated language. Results show that not accounting for the differences in family structure and income definitions between the official measure of poverty and the ACA measure of poverty leads to a substantial under-estimate of the share of the population below 138% of poverty (Medicaid income-eligibility) and over-estimate the share between 138% and 400% of poverty (income-eligibility for exchange subsidy). Adjusting the CPS data for ACA income-eligibility definitions reduces these differences greatly, but there still remains an under-estimate of the potential Medicaid-income-eligible population. The two most important adjustments to the CPS are: (i) adjusting CPS families into tax filing units; and (ii) adjusting incomes to match the ACA definition. The remaining differences between the data are likely due to well-known differences between survey and administrative data sources.

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I. Introduction

In March of 2010 President Obama signed into law the Affordable Care Act (ACA). The legislation requires each state to create, by 2014, an exchange for the buying and selling of subsidized private health insurance policies and obtaining Medicaid. For states that decide to fully expand their Medicaid program, citizens and eligible non-citizens with income below 138% of the Federal Poverty Line (FPL) will be eligible to receive Medicaid coverage.¹ Prior to ACA, states were granted the discretion to define their own income measure for determining Medicaid eligibility, and this 138% threshold is considerably higher than many pre-ACA state-determined Medicaid eligibility thresholds. The ACA legislation also subsidizes private health insurance purchases through the exchange via refundable tax credits for individuals with income between 138% and 400% of the FPL. ACA also specifies a uniform income definition for both Medicaid eligibility and health insurance subsidies. This income concept uses tax definitions and filings to determine eligibility. ACA income, also called modified adjusted gross income (MAGI), is adjusted gross income (AGI) from IRS Form 1040 plus: (i) income from tax-exempt bonds; (ii) excluded foreign-earned income; and (iii) non-taxable Social Security income.²

ACA's expansion of the FPL threshold for Medicaid eligibility and its redefinition of what (and how) income is counted toward eligibility could have a large effect on the number of people who are Medicaid eligible. However, researchers without access to administrative tax data know very little about the distribution of people by FPL in such data. In this paper we will compare estimates of the distribution of people by FPL using the well known Current Population Survey (CPS) and a nationally representative sample of tax returns to better understand the effects of the ACA legislation. We then explore how these changes might affect the number of people who are income eligible for Medicaid and health insurance subsidies by current health insurance status.

¹ The Supreme Court decided in June of 2012 that states could decide whether or not to expand their Medicaid programs as ACA legislated without losing funding for pre-ACA Medicaid funding. It remains to be seen how many states will expand their Medicaid programs.

² Modified adjusted gross income was redefined to include non-taxable Social Security income by the **XXXX Act of 2011**.

II. Data

We use two main data sources for our analysis: the Current Population Survey (CPS) Annual Social and Economic Supplements conducted by the U.S. Census Bureau and administrative tax data collected by the Internal Revenue Service's (IRS) Statistics of Income (SOI) group. We use CPS cross-section samples from 1991 through 2011, which correspond to calendar years 1990 through 2010. The CPS sampling scheme identifies specific living quarters and then conducts an interview survey asking about the employment and income of the households and families that live at each address. The CPS is used by the Census to estimate and publish the official annual U.S. poverty statistics (DeNavas-Walt, et.al. 2011).

The administrative tax data we use is the Individual and Sole Proprietorship (INSOLE) data collected annually by SOI for 1990 through 2009. The INSOLE is a stratified random sample of tax returns filed for a given year. A portion of the data is a random sample of Social Security Numbers based on a fixed set of four-digit endings. The remainder is comprised of a high-income oversample. Families are only part of the sampling frame if they filed a tax return. Thus, non-filing returns are not included in the INSOLE. Fortunately, SOI also collects the information returns (IRS form W-2's, 1099's, etc.) for all SSN endings that should be a part of the random portion of the sample, which means that non-filer incomes can be reconstructed. Information about non-filer family structure can be found by looking at previously filed tax returns to the extent they exist. Although the creation of a non-filer sample is time-consuming, the U.S. Department of the Treasury's Office of Tax Analysis (OTA) has done this for tax year 2007 for use with its Individual Tax Model (ITM). We use the 2007 non-filer sample to approximate the non-filer population by FPL for 1990 - 2009 under the assumption that the distribution of non-filers by FPL does not change over time.

One important difference between the two data sets is that the CPS is an interview survey while the SOI data is from administrative records. There is a well known under-reporting of income in interview survey data relative to administrative data (Meyer and Sullivan, 2003).

Definitional Considerations

The official U.S. measure of poverty is based upon the CPS data. In these official counts people are grouped into families to determine poverty status. These family structures include related subfamilies living in the same housing unit. Thus, a married couple with one child living with the husband's parents would be treated as a five person family, not two separate families. Tax units, on the other hand, are usually filed at the disaggregated family level. Thus, under ACA definitions, the above family would likely be observed as two separate tax units.³ As we document below, disaggregating a CPS family into two or more separate tax units can have a significant effect on poverty determinations. This is because poverty thresholds, although adjusted for family size, allow a relatively high poverty threshold for the first family member and small additional amounts for each additional person. CPS families can be disaggregated using the detailed family relationship codes.⁴ We use these codes to split families and related subfamilies into separate tax filing units. We also assign unrelated individuals to be their own tax filing units. Finally, we define related children over the age of 18 who are not students to be their own tax filing unit.

The official poverty rates use an income definition that differs from the definition legislated for use under ACA. ACA legislates the use of IRS data for determining income eligibility for Medicaid and exchange subsidies.⁵ Certain government transfers are included in the definition of income used for the official measure of poverty but are not taxed and are, as a result, not included on tax forms or included in ACA income. Table 1 summarizes the income definitions used for the official measure of poverty and for ACA Medicaid and insurance subsidy income eligibility. The biggest differences between the two

³ Health insurance coverage can cross both CPS family and tax unit structure.

⁴ See O'Hara (2005) for similar discussion.

⁵ As noted above, the Supreme Court ruled that states can choose whether or not to expand their Medicaid programs.

definitions are that the income measure used for the official poverty statistics includes workers' compensation benefits, certain public assistance (Temporary-Assistance for Needy Families (TANF) and food stamps), Veteran's payments, certain educational assistance, non-taxable pension and retirement benefits, financial assistance from outside the home (including child-support payments), and certain income excluded from taxation (such as retirement contributions, health insurance payments, etc.). Another difference between the official poverty and ACA definitions of income is the deduction for above-the-line adjustments in the ACA definition (such as self-employed payroll tax deductions, self-employed health insurance deductions, Individual Retirement Account (IRA) contributions, etc.). Other differences may occur due to response error by interviewees, including underreporting or misreporting of income

(Sources).

Poverty Thresholds

While there is no definitive measure of poverty, poverty thresholds gauge a family's ability to consume by comparing the family's resources (e.g., income) to a threshold judged to be sufficient. We use two different sets of poverty measures in our analysis. The first set is the poverty "thresholds" published by the U.S. Census Bureau and used to estimate the official poverty rate each year. These thresholds differ by the age of householder (under or over age 65), the number of people in the family unit, and the number of related children under 18 years old in the family unit. These thresholds were originally set in 1960's to measure poverty and have been indexed for inflation since (DeNavas-Walt, et. al. (2010)). The second set of poverty measures is the poverty "guidelines" published by the U.S. Department of Health and Human Services (HHS). These guidelines vary by the size of the family and are developed from the Census' poverty thresholds. The difference is that the HHS guidelines are prospective in the sense that they are created at the end of one year in the interest of using them for program eligibility decisions during the following year. The Census' poverty thresholds are retrospective in that they are determined at the end of a calendar year using observed inflation rates. Similar to other programs, ACA legislates the

use of the HHS poverty guidelines for the determination of income eligibility for Medicaid and exchange-subsidies. In addition, actual eligibility determinations for Medicaid and private health insurance subsidies (advance credits) will be made at the time of enrollment using available tax return information. This information is likely to be at least one year old in most cases and could be as much as two years old. For example, a person looking for subsidized private insurance for calendar year 2014 will enroll sometime at the end of calendar year 2013 using tax return data filed in April of 2013, corresponding to income and family status in calendar year 2012. Around April of 2015 (at the time of filing a tax return for calendar year 2014) the person will reconcile the advance subsidy received during 2014 with the actual credit deserved based upon 2014 income and family status.⁶ In this paper we ignore the timing issue and assume that eligibility is determined with perfect foresight – that is, the Federal government knows year t income and family status when making eligibility determinations for year t Medicaid and exchanged subsidies.

III. Measuring Poverty: Official Poverty vs. ACA Poverty

The ACA legislation directly ties eligibility for Medicaid and refundable tax credits to an individual's or family's income measured against multiples of the Federal Poverty Line (FPL). The ACA definition of income and the poverty measure it specifies are not the same as what is used for the official poverty statistics published by the U.S. Census Bureau. Table 2 presents the distribution of people in 2007 by multiples of the FPL using: (i) the official income and poverty definitions and CPS data (to match Census published poverty); and (ii) the ACA income and poverty definitions and administrative tax data. Tax data using ACA definitions shows a significantly larger portion of the population under 200% of poverty than the official poverty definitions – 39% versus 30.5%. A majority of this difference stems from the fact that ACA-defined poverty is 19.3% versus 12.5% using CPS data and official definitions. This

⁶ This reconciliation is somewhat tempered in the sense that people will only be asked to partially payback the excess subsidy. There is no reconciliation process for Medicaid enrollees. **For more information, see XXXX.**

difference amounts to more than 20 million people. Focusing on people under 65 years of age does not qualitatively affect the results (see appendix Table A1).

We have identified five reasons why the distribution of people measured by FPL multiples differs between the official poverty definitions and the ACA definitions of poverty. First, as discussed above, the ACA poverty guidelines are defined differently than the official poverty thresholds. Second, as discussed above, income is defined differently for the official poverty measure and the ACA measure. Third, the official poverty measure groups individuals into families as opposed to tax units, as is done when filing taxes. In the official poverty measure, families tend to be larger than tax units on average. Fourth, in the cross-section tax data we use we cannot identify income from dependents claimed on a tax return. This is because dependents file their own tax returns and are not generally a part of the cross-section sample. The ACA definition of income will include income from the primary and secondary tax payers and all dependents claimed on the return to extent that the dependent's income exceeded the filing threshold. To account for this difference, we adjust CPS data to include only income from primary and secondary filers. Fifth, there are distinct differences in how income is measured between the two data sources due to the fact that the CPS is an interview survey and the administrative tax data is straight from individual tax returns filed with the Internal Revenue Service (IRS).

Table 3 decomposes table 2 using the five differences between official and ACA definitions and data outlined in the previous paragraph. Focusing on the top panel, the first column replicates the distribution of people using official poverty definitions and data (see table 2). The second column shows the distribution of people by FPL multiples using official poverty income definitions and data but the HHS poverty guidelines. Changing to the poverty guidelines has only a small effect on the distribution of people by FPL, reducing the share of people under 100% of poverty by 0.3 percentage points (see "Decomposition Summary" in the bottom panel of the table). This is only about 4% of the total difference between the official poverty rate and the ACA-based poverty rates.

Column 3 shows the distribution after grouping individuals in the CPS data by tax units as opposed to families. This change increases the share of people under 100% of poverty from 12.2% (column 2) to 16.5%, accounting for most (63.5%) of the difference between the official poverty rate and the ACA-based poverty rates. Column 4 limits the tax unit income to only the primary and secondary filers. This increases the share of the population under 100% of poverty by 0.4 percentage points, from 16.5% to 16.9%, accounting for an additional 5.9% of the overall difference between official and ACA poverty. The fifth column shows the effect of moving from the official poverty definition of income to the ACA modified adjusted gross income definition. This increases the share of people under 100% of poverty from 16.9% to 18.7%, accounting for 25.6% of the difference between official and ACA poverty.

The final column replicates the distribution of people by FPL using the administrative tax data and the ACA definitions of income and poverty (see table 2). The remaining 0.6 percentage point difference in the share of people below 100% of poverty between columns 5 and 6 (9.2% of the total difference) is due to underlying data set differences. Given that the total population of the U.S. in 2007 was about 300 million, the 0.6 percentage point difference amounts to almost 2 million additional people under poverty using administrative tax data as opposed to CPS data. We suspect that much of it is due to differences in how income is measured in interview survey data versus administrative tax data. For example, certain income sources are excluded from taxation, such as certain retirement contributions and spending on employer-provided health insurance. Tax data will also include loss carry-forwards for capital gains and loss carry-forwards from certain flow-through business income that people would likely not report in survey data. Another potential source of difference is our imputation of non-filer-returns in the tax data. Given that these returns were constructed using IRS information returns for individuals who did not file, it is difficult to imagine that such individuals would have incomes substantially higher than 100% of FPL.

The bottom panel of table 3 shows a summary of the decomposition for three groups: (i) people under 100% of poverty (discussed above); (ii) people under 138% of poverty; and (iii) people under

200% of poverty. All three cases show that redefining the unit of observation in the CPS data from families to tax units accounts for 59.8% to 64.1% of the difference in the share of people below various FPL thresholds. An additional 18.9% to 25.6% of the difference is accounted for by adjusting the income definition used from the official income measure to MAGI. Between 9.2% and 20.2% of the difference is due to unexplained differences between the CPS and administrative tax data, which amounts to about 5 million additional people under 138% of poverty and about 4 million additional people under 200% of poverty.

Since most of the changes created by ACA relate to Medicaid and private insurance subsidies as opposed to Medicare, Table 4 replicates table 3 focusing on people under the age of 65. The results for the under-65 population are qualitatively similar to the results for the full population, except that a larger share of the difference in the share of people under 138% and under 200% of poverty is due to unexplained differences between the CPS data and the administrative tax data. Specifically, the administrative tax data has an additional 2.7% of people below 138% of poverty and an additional 4% under 200% of poverty relative to the CPS. These differences amount to 7 million additional people under 138% of poverty and 10.5 million additional people under 200% of poverty.

It is interesting to note that once the CPS data is adjusted for tax unit structure, ACA income definition, and the HHS poverty definition, there is little difference between the share of people between 200% and 400% of poverty relative to the administrative tax data (columns (5) and (6) of table 4). However, the adjusted CPS data shows a significantly larger share of people above 400% of FPL.

IV. Distribution of People by FPL Over Time: Official Poverty vs. ACA Poverty

Figure 1 graphs the share of the U.S. population under age 65 with incomes below 100% of FPL from 1990 to 2010 as measured by: (i) CPS data and official poverty and income definitions;⁷ (ii) IRS tax

⁷ Our calculations using the CPS data is virtually identical to official Census poverty rates before excluding the over-age-65 population. See DeNavas, et.al., 2011 for the official Census poverty rates over time.

data using the ACA modified AGI income definition; and (iii) CPS data adjusted for ACA-legislated definitions of family structure (tax units) and income (see section III). Over the past twenty years, the poverty rate for the under-65 population (i.e., share of people under 100% of FPL) has fluctuated between 11.2% and 16.0% following the business cycle. After the early 1990's recession, the poverty rate peaked at 15.5% in 1993 and then slowly declined over the next 7 years before bottoming out at 11.2% at the height of the tech-stock bubble in 2000. Post-recession, the poverty rate increased to 13.1% in 2004 and then bounced around this level until the Great Recession of 2008. Subsequently, the poverty rate has increased to 16.0% in 2010.

The share of the under-65 population with incomes under 100% of poverty as measured by administrative tax data using ACA income and poverty definitions follows a very similar pattern as the official poverty rate, but it is noticeably higher in all years (as documented for 2007 in section III above). The poverty rate as measured using ACA income and HHS poverty thresholds has fluctuated between 19.5% and 23.6% between 1990 and 2009. Figure 1 also shows that the CPS data adjusted for ACA family structure and income definitions matches the administrative data reasonably well during and after the Great Recession. Prior to the Great Recession, the adjusted CPS data understates the poverty shown in the administrative data by as much as 3.2 percentage points.

Figure 2 graphs the share of the U.S. population under the age of 65 with incomes below 138% of FPL from 1990 to 2010. Figure 2 documents differences for what will be the Medicaid income-eligible population as defined by ACA if all states choose to expand Medicaid coverage. Unlike figure 1, figure 2 shows that the CPS data adjusted for ACA family structure and income definitions substantially understates the share of the under-65 population below 138% of FPL relative to the administrative tax data even during and after the Great Recession. Similar to what we document in section III for 2007, the differences are about 3 percentage points each year in the late 2000s, which amounts to about 7 to 8 million additional people below 138% of FPL.

Figure 3 graphs the 1990-2010 time-series for the share of people under the age of 65 with income between 138% and 400% of poverty -- the group that will be income eligible for subsidized private health insurance coverage in the ACA-legislated exchanges. The figure shows that the share of people between 138% and 400% of poverty has slowly declined over time for the three different samples we graph. The CPS data adjusted for ACA-legislated changes has matched the administrative tax data reasonably well over time, with an average difference between the two of less than 1 percentage point.

For completion, Figure 4 graphs the share of people under age 65 with incomes above 400% of poverty. These are people who would not be eligible for either Medicaid or subsidized private health insurance coverage under ACA legislation. Between 1990 and 2010, the official poverty measurement shows that the share of people under age 65 with incomes above 400% of poverty has fluctuated between 32.6% and 40.6%. This share increased dramatically in the late 1990s, leveled out in the early-to-mid 2000s, and has declined in the Great Recession. The administrative tax data with ACA-legislated income and poverty thresholds yields a smaller share of people with incomes over 400% of poverty, although the trend over time is similar to the official poverty measurement. The CPS data adjusted for ACA-legislated definitional differences shows a substantially larger share of people under age 65 with income above 400% of FPL – from 1 to 4.9 percentage points over the time frame.

Taken together, figures 1 through 4 show that although official poverty and ACA-legislated poverty show different distributions by FPL (due to different measurement concepts and poverty definitions), the time-series trends are qualitatively very similar. Additionally, the figures also show that CPS data adjusted for ACA-legislated poverty measurement changes does a reasonably good job of measuring the share of people under age 65 who would be income eligible for the exchange-subsidy due to ACA legislation (between 138% and 400% of FPL). However, the adjusted CPS data understates for the share of people under age 65 who would be Medicaid-eligible as defined by ACA (below 138% of FPL) if all states choose to expand Medicaid coverage.

V. Effects of ACA on Medicaid and Subsidy Eligibility by Insurance Status

Section III highlighted the differences in the distribution of people by FPL that result from the use of administrative tax data and ACA income and poverty definitions as compared to official poverty measurements. In this section, we investigate what effects changing from the official income and poverty definitions to the ACA definitions has on the counts of people, by pre-ACA insurance status, who are likely to be: (i) income eligible for Medicaid after the ACA implementation (income below 138% of FPL); (ii) income eligible for exchange-subsidies after ACA implementation (between 138% and 400% of FPL); and (iii) unaffected by ACA (income above 400% of FPL). We use the CPS for these comparisons because the tax data does not yet contain insurance information. As section III shows, the income distribution after adjusting CPS data for tax unit structure and income definitions is similar to what administrative tax data shows, although the CPS shows slightly fewer people below 138% of poverty and slightly more people above 400% of poverty. The hope is that this will help us to better understand how the ACA legislation is likely to affect the size of the Medicaid and the exchange-subsidy eligible populations by pre-ACA health insurance status. Of course, there are likely to be many behavioral adjustments by individuals as a result of the ACA legislation which should affect the distribution of income. This could include changes in decisions to work, the number of hours worked, what type of health insurance to accept, and could (although not very likely) even affect marriage decisions. We use the pre-ACA distribution of income and insurance status to give a sense of the size of the static change we would expect the Medicaid and exchange-subsidy eligible populations prior to people changing their earnings behavior.

Figure 5 uses the official and ACA definitions of income and poverty to present the counts of uninsured people under age 65 in 2007 who would likely be: (i) Medicaid eligible under ACA rules; (ii) exchange-subsidy eligible under ACA rules; and (iii) unaffected by ACA. The first set of bars in figure 5 shows that about 5 million more uninsured people under age 65 would be income eligible for Medicaid

after ACA compared to what official income and poverty definitions would suggest.⁸ Figure 5 also shows that about 3 million fewer uninsured people would be eligible for exchange subsidies and about 2 million fewer uninsured people would be unaffected by ACA compared to what official income and poverty definitions would suggest. Figure 5 clearly suggests that analyses based upon CPS data, or any other similar data set, need to account for the specific eligibility criteria legislated by ACA, including the health insurance unit (we have chosen the tax unit), the definition of income, and the definition of poverty.

Figure 6 replicates figure 5 for people under age 65 covered by an employer-sponsored health insurance (ESI) plan in 2007. The first set of bars shows that almost 5 million more ESI-covered people under age 65 would be income eligible for Medicaid after ACA compared to what official income and poverty definitions would suggest (14.0 million versus 9.2 million). This difference underscores the importance of how people with ESI coverage respond to the ACA legislation. If people choose to decline their ESI offer and take-up Medicaid coverage instead, it could have a dramatic effect on the number of people enrolled in Medicaid and the cost of the program. Figure 6 also shows that both ACA and official poverty definitions of income suggest that about 68 million people who are currently covered by ESI would be income-eligible for exchange-based subsidies. ACA requires firms to offer health insurance coverage and individuals who are offered affordable coverage are not eligible to receive a subsidy in the exchange. This is known as the firewall because it is meant to block individuals who are offered ESI coverage from entering the exchange. Thus, only a small portion of the income-eligible population currently covered by ESI would be eligible to receive an exchange subsidy. Even if the firewall did not exist, there are benefits to receiving employer-sponsored health insurance that could outweigh the benefit of the exchange-subsidy. Most estimates of ACA predict only a small amount of attrition from ESI to the exchange (see for example OACT (2010) and CBO (2012)). However, the size and cost of the exchange if yet to be determined and would be substantially affected even if only a small fraction of people switch from ESI to the exchange.

⁸ It is important to note that our discussion focuses upon income eligibility for Medicaid only, and not other eligibility criteria or take-up of the program.

Figure 7 shows the income distribution of people under age 65 who are covered by non-group policies using both the official poverty and ACA income definitions. Using the ACA income definition only increases the income-eligible Medicaid population by about 1 million and the income-eligible exchange subsidy population by about 0.3 million relative to the official poverty definitions.

Next we focus on the CPS data adjusted for the ACA legislation to study changes in the counts of people over time by whether they would have been income-eligible for Medicaid, income-eligible for an exchange subsidy, or ineligible for an exchange subsidy based upon income. Figure 8 shows the number of uninsured people in the above categories between 2004 and 2010. The economic downturn in 2008 dramatically increased the number of uninsured that would be income-eligible for Medicaid coverage from around 21.6 million prior to 2008 to about 26.5 million in 2009 and 2010. Counter to the Medicaid eligibility trends, the number of uninsured people who would be income-eligible for an exchange subsidy remained fairly constant over the period, hovering around 18.5 million between 2006 and 2010.

Figure 9 and figure 10 replicate Figure 8 for the ESI (figure 9) and the non-group (figure 10) populations. The number of people with ESI that would be income-eligible for Medicaid is 15.6 million in 2004 and drops 13.8 million in 2006. After 2006 the number of people grows, hitting a high of 16.7 million in 2010. The number of people with ESI coverage that would be income-eligible for an exchange subsidy fluctuates with a high of 69.2 million in 2004 and a low of 64.4 million in 2010. The counts of people with non-group coverage that would be income-eligible for Medicaid is in the 3.2 to 4.0 million range between 2004 and 2010 while the count that would be income-eligible for an exchange subsidy is between 6.8 to 7.7 million. Figures 9 and 10 together show a wide variation in the number of people income-eligible for Medicaid and income-eligible for the exchange subsidy over the 2004 to 2010 period. The trends for each insurance status are interesting, but do not suggest anything about the likelihood of people moving from their current coverage to the new options ACA provides. For example, individuals who are covered by an ESI policy would probably be less inclined to take-up private non-group coverage in the exchange than a person who currently has a non-group policy. Furthermore, in the CPS data people

can have multiple sources of insurance coverage. Next, we will show the trends in coverage for Medicaid and exchange subsidy eligibility by mutually exclusive insurance coverage categories and what seems to be an increasing likelihood of taking-up new forms of ACA coverage.

Figure 11 shows a bar graph of people who would have been income-eligible for Medicaid using the ACA income thresholds by mutually exclusive insurance status groups. We expect that the uninsured and people with only private non-group coverage are the most likely candidates to switch their current coverage and take-up Medicaid due to the change in ACA legislation. Taken together, the number of people in those categories ranges from about 26 million in 2004 to about 31 million in 2010. A sizable portion of this group might be currently eligible for Medicaid, but did not enroll. However, the individual mandate may encourage them to enroll once ACA is implemented. The next groups of interest are the people with ESI only and people with coverage from multiple private plans. It is hard to know how likely people from these groups will be to take-up Medicaid because, on the one hand, they are covered by insurance unlike the uninsured but they choose an ESI policy which suggests that they value the higher benefits such policies provide.⁹ Similar to the uninsured, we do not simulate their current eligibility for Medicaid. The figure shows that the number of people the two groups had was fairly stable between 2004 and 2010 and ranged from 11.5 million to about 13.3 million. The remaining Medicaid eligible population is people with some form of public coverage. Taken together, if ACA was implemented in 2010 there would have been 43 million people that potentially could have switched their coverage to Medicaid.

Figure 12 repeats the exercise for the Medicaid income eligibility in Figure 11 for people that are income-eligible for the exchange subsidy. It is very clear from this graph that the ESI coverage only population is the dominant group in this income range. The number of ESI people who would be income eligible for an exchange subsidy starts at about 62 million people in 2004, hovers around the 61 million until 2008, and then drops to 59.6 million and 57.0 million in 2009 and 2010 respectively. As mentioned

⁹ In addition, states may not all expand their Medicaid coverage as ACA legislates to the full 138% FPL as a result of the Supreme Court decision.

earlier, most estimates of ACA predict only a small amount of attrition from ESI to the exchange. The number people income-eligible for the exchange subsidy that are currently uninsured or covered solely by a non-group policy stays somewhat stable between 2006 and 2010 at about 24.0 million.

The analysis above shows the historical trends of the distribution of income and health insurance status by FPL. How people, firms, and state governments will react to the ACA-legislated changes in Medicaid and exchange-based subsidies could be dramatic and is outside the scope of this paper.

VI. Conclusions

It is important for researchers and modelers of the 2010 ACA legislation to be aware of and account for the ACA income-eligibility definition differences relative to the official poverty measures when analyzing how individuals, families, and firms might react to the new exchange framework. Most researchers, however, do not have access to the administrative tax data that will be used to determine Medicaid and exchange-subsidy income-eligibility post-2013. This paper documents differences in income-eligibility determinations using administrative tax data and the Current Population Survey, including how the CPS data can be adjusted to better match the ACA-legislated language. The analysis is obviously based upon pre-ACA data and does not account for any dynamic impacts from the ACA legislation.

Our results show that not accounting for the differences in family structure and income definitions between official poverty and ACA poverty leads to a significant under-estimate of the share of the population below 138% of poverty and a over-estimate of the share of population between 138% and 400% of poverty. Adjusting the CPS data for ACA income-eligibility definitions reduces these differences substantially, but there still remains an under-count of the potential Medicaid-eligible population (the share under 138% of poverty) and a somewhat different distribution of people eligible for exchange-based subsidies (although roughly the same share of the population). We find that the two most important adjustments to the CPS are: (i) splitting families into tax units; and (ii) adjusting incomes to

match the ACA definition (MAGI). We suspect that the remaining unexplained differences between the two data sources are due to the fact that the CPS is an interview survey as opposed to administratively gathered.

The importance of the above results is demonstrated by our finding that shows that about 5 million more uninsured people under age 65 would be income eligible for Medicaid after ACA compared to what official income and poverty definitions would suggest. In addition, our results show that about 3 million fewer uninsured people under age 65 would be income eligible for an exchange subsidy compared to what the CPS suggests using official income and poverty definitions.

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Table 1
Comparison of Income Definitions used in Official Census Poverty and in PPACA Legislation

Official Poverty Income Definition (CPS)		ACA Income Definition (Tax-Based)	
	Earnings		Earnings
Plus	Unemployment compensation	Plus	Unemployment compensation
Plus	Workers' compensation		
Plus	Social Security benefits	Plus	Social Security benefits
Plus	Supplemental Security Income	Plus	Supplemental Security Income
Plus	Public assistance		
Plus	Veteran's payments		
Plus	Survivor benefits	Plus	Survivor benefits
Plus	Disability benefits	Plus	Disability benefits
Plus	Pension or retirement income	Plus	Pension or retirement income
Plus	Interest	Plus	Interest
Plus	Dividends	Plus	Dividends
Plus	Rents, royalties, and estates and trusts	Plus	Rents, royalties, and estates and trusts
Plus	Educational assistance		
Plus	Alimony	Plus	Alimony
Plus	Child support		
Plus	Financial assistance from outside the home		
Plus	Other income	Plus	Other income
		Plus	Taxable refunds (state and local income taxes)
		Plus	Capital gains (excluding loss carryforwards)
Equals	Cash income (CPS)	Equals	Gross Income
		Less	Non-taxable Social Security
		Less	Non-taxable pensions or retirement
		Less	Tax-exempt interest
		Less	Net operating loss carryforwards
		Less	Capital gains carryforwards
		Less	Excludable foreign earned income
		Equals	Total Income (Form 1040):
		Less	Adjustments to gross income
		Equals	Adjusted Gross Income (AGI Form 1040)
		Plus	Non-taxable Social Security
		Plus	Foreign earned income excluded
		Plus	Tax-exempt interest
		Equals	ACA Modified Income

Table 2
Distribution of People by Multiples of the Federal Poverty Line (FPL), 2007

	Official Poverty Definition using CPS		ACA Poverty Definition using Tax Data	
	People	Share	People	Share
Under 100%	37,265,354	12.5%	57,756,735	19.3%
100% to 138%	20,257,990	6.8%	24,107,010	8.1%
138% to 200%	33,506,233	11.2%	34,502,480	11.6%
200% to 250%	25,981,286	8.7%	23,505,920	7.9%
250% to 300%	25,106,153	8.4%	22,027,598	7.4%
300% to 400%	41,410,174	13.9%	38,088,882	12.8%
400% to 500%	31,876,169	10.7%	28,337,397	9.5%
Over 500%	83,295,640	27.9%	70,372,977	23.6%
Total	298,698,999	100.0%	298,699,000	100.0%

Note: Calculations by authors using 2007 CPS data and Insole data. The official poverty definition uses the poverty thresholds published by Census and CPS income measure. The ACA poverty definition uses the Federal poverty guidelines as defined by HHS and the ACA modified income measure.

Table 3
Decomposition of the Differences in the Distribution of People by Multiples of the FPL Between Official and ACA
Definitions, 2007

Poverty Definition	Official	HHS	HHS	HHS	HHS	HHS
Family Definition	CPS Family	CPS Family	Imputed Tax Unit	Imputed Tax Unit	Imputed Tax Unit	Tax Unit
Income Definition	CPS Cash Income	CPS Cash Income	CPS Cash Income	CPS Cash Income	ACA Income	ACA Income
Contributors	All	All	All	Primary/Secondary	Primary/Secondary	Primary/Secondary
Data Set	CPS	CPS	CPS	CPS	CPS	INSOLE
	(1)	(2)	(3)	(4)	(5)	(6)
Under 100%	12.5%	12.2%	16.5%	16.9%	18.7%	19.3%
100% to 138%	6.8%	6.6%	7.1%	7.3%	7.1%	8.1%
138% to 200%	11.2%	11.1%	11.7%	11.8%	11.9%	11.6%
200% to 250%	8.7%	8.5%	8.3%	8.3%	8.3%	7.9%
250% to 300%	8.4%	8.2%	7.9%	7.9%	7.6%	7.4%
300% to 400%	13.9%	13.7%	12.6%	12.5%	12.1%	12.8%
400% to 500%	10.7%	11.0%	9.9%	9.8%	9.4%	9.5%
Over 500%	27.9%	28.8%	26.0%	25.5%	24.9%	23.6%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Decomposition Summary						
	(6)-(1)	(2)-(1)	(3)-(2)	(4)-(3)	(5)-(4)	(6)-(5)
Under 100%						
Change in Share	6.9%	-0.3%	4.4%	0.4%	1.8%	0.6%
% of Total	100.0%	-4.2%	63.5%	5.9%	25.6%	9.2%
Under 138%						
Change in Share	8.1%	-0.5%	4.9%	0.6%	1.5%	1.6%
% of Total	100.0%	-5.6%	59.8%	6.8%	18.9%	20.2%
Under 200%						
Change in Share	8.5%	-0.6%	5.4%	0.6%	1.7%	1.3%
% of Total	100.0%	-6.9%	64.1%	7.6%	20.2%	15.0%

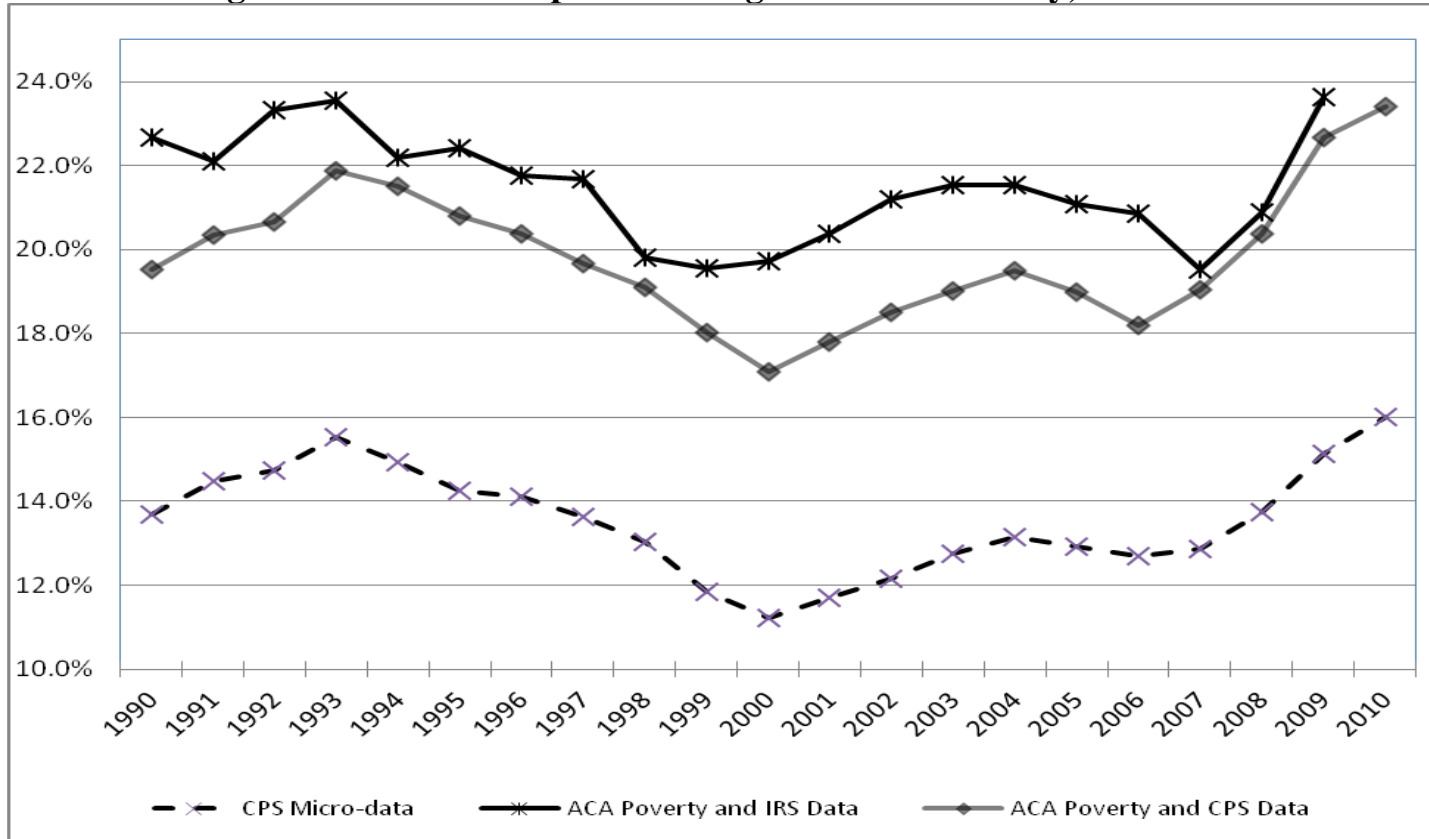
Note: Calculations by authors using 2007 CPS data and Insole data. The official poverty definition uses the poverty thresholds published by Census and CPS income measure. The ACA poverty definition uses the Federal poverty guidelines as defined by HHS and the ACA modified income measure. Table should be read left to right, with changes in definitions bolded in **red**.

Table 4
Decomposition of the Differences in the Distribution of People Under 65 Years Old by Multiples of the FPL Between Official and ACA Definitions, 2007

Poverty Definition	Official	HHS	HHS	HHS	HHS	HHS
Family Definition	CPS Family	CPS Family	Imputed Tax Unit	Imputed Tax Unit	Imputed Tax Unit	Tax Unit
Income Definition	CPS Cash Income	CPS Cash Income	CPS Cash Income	CPS Cash Income	ACA Income	ACA Income
Contributors	All	All	All	Primary/Secondary	Primary/Secondary	Primary/Secondary
Data Set	CPS	CPS	CPS	CPS	CPS	INSOLE
	(1)	(2)	(3)	(4)	(5)	(6)
Under 100%	12.9%	12.4%	16.8%	17.3%	19.0%	19.5%
100% to 138%	6.3%	6.0%	6.4%	6.5%	6.2%	8.4%
138% to 200%	10.5%	10.2%	10.6%	10.7%	10.7%	12.0%
200% to 250%	8.3%	8.1%	8.0%	8.0%	7.9%	8.0%
250% to 300%	8.3%	8.0%	7.8%	7.8%	7.6%	7.3%
300% to 400%	14.0%	14.0%	12.9%	12.9%	12.5%	12.4%
400% to 500%	11.0%	11.4%	10.4%	10.2%	9.9%	9.3%
Over 500%	28.7%	29.8%	27.1%	26.5%	26.1%	23.0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Decomposition Summary						
	(6)-(1)	(2)-(1)	(3)-(2)	(4)-(3)	(5)-(4)	(6)-(5)
Under 100%						
Change in Share	6.7%	-0.4%	4.4%	0.5%	1.7%	0.5%
% of Total	100.0%	-6.7%	66.4%	6.8%	25.9%	7.6%
Under 138%						
Change in Share	8.8%	-0.7%	4.8%	0.6%	1.5%	2.7%
% of Total	100.0%	-8.5%	54.3%	6.9%	16.5%	30.8%
Under 200%						
Change in Share	10.3%	-1.1%	5.2%	0.7%	1.4%	4.0%
% of Total	100.0%	-10.4%	50.8%	7.0%	13.4%	39.1%

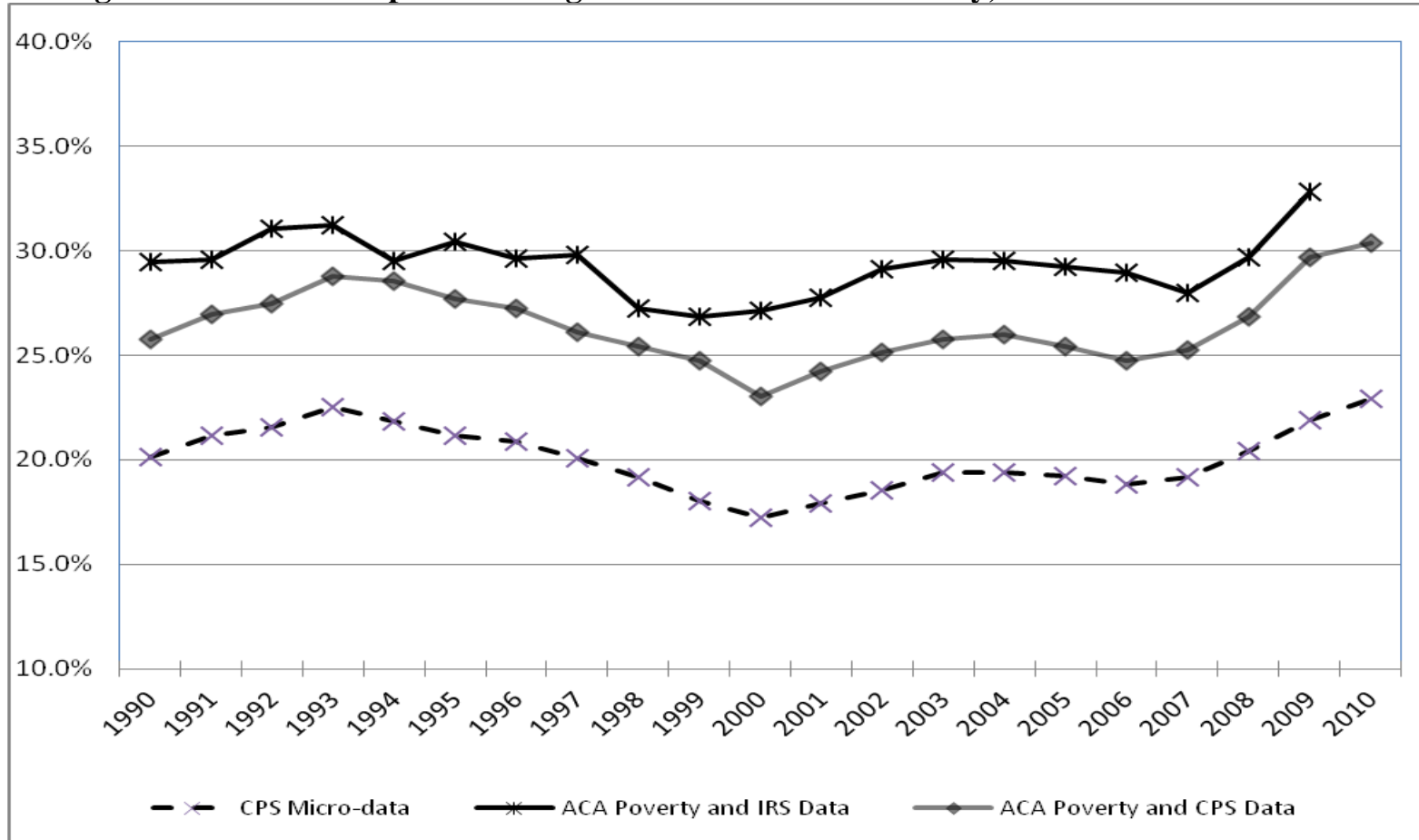
Note: Calculations by authors using 2007 CPS data and Insole data. The official poverty definition uses the poverty thresholds published by Census and CPS income measure. The ACA poverty definition uses the Federal poverty guidelines as defined by HHS and the ACA modified income measure. Table should be read left to right, with changes in definitions bolded in **red**.

Figure 1: Share of People Under Age 65 Below Poverty, 1990- 2010



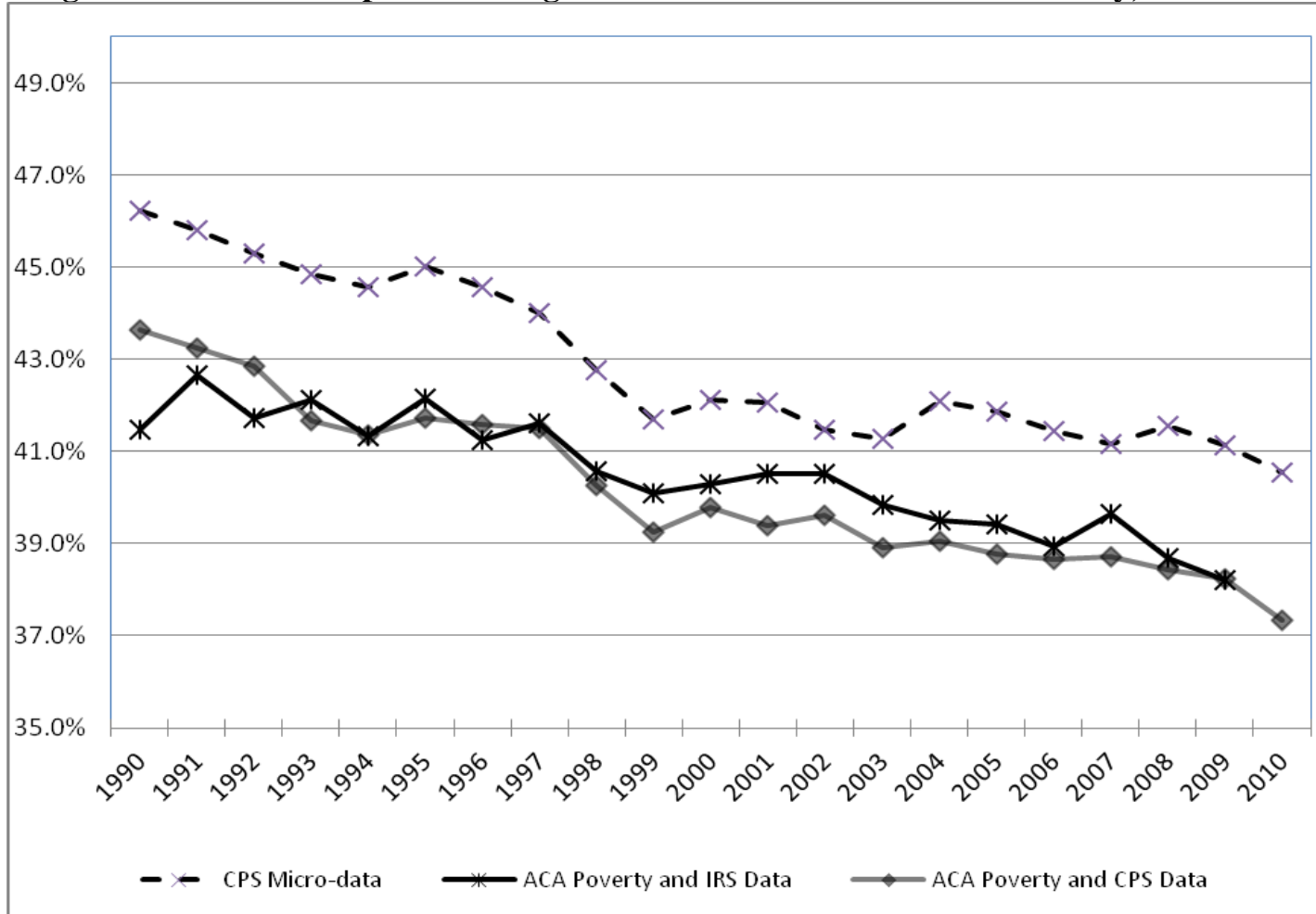
Note: Calculations by authors using 1991-2011 CPS data and 1990-2009 Insole data. The official poverty definition uses the poverty thresholds published by Census and CPS income measure. The ACA poverty definition uses the Federal poverty guidelines as defined by HHS and the ACA modified income measure.

Figure 2: Share of People Under Age 65 Below 138% of Poverty, 1990- 2010



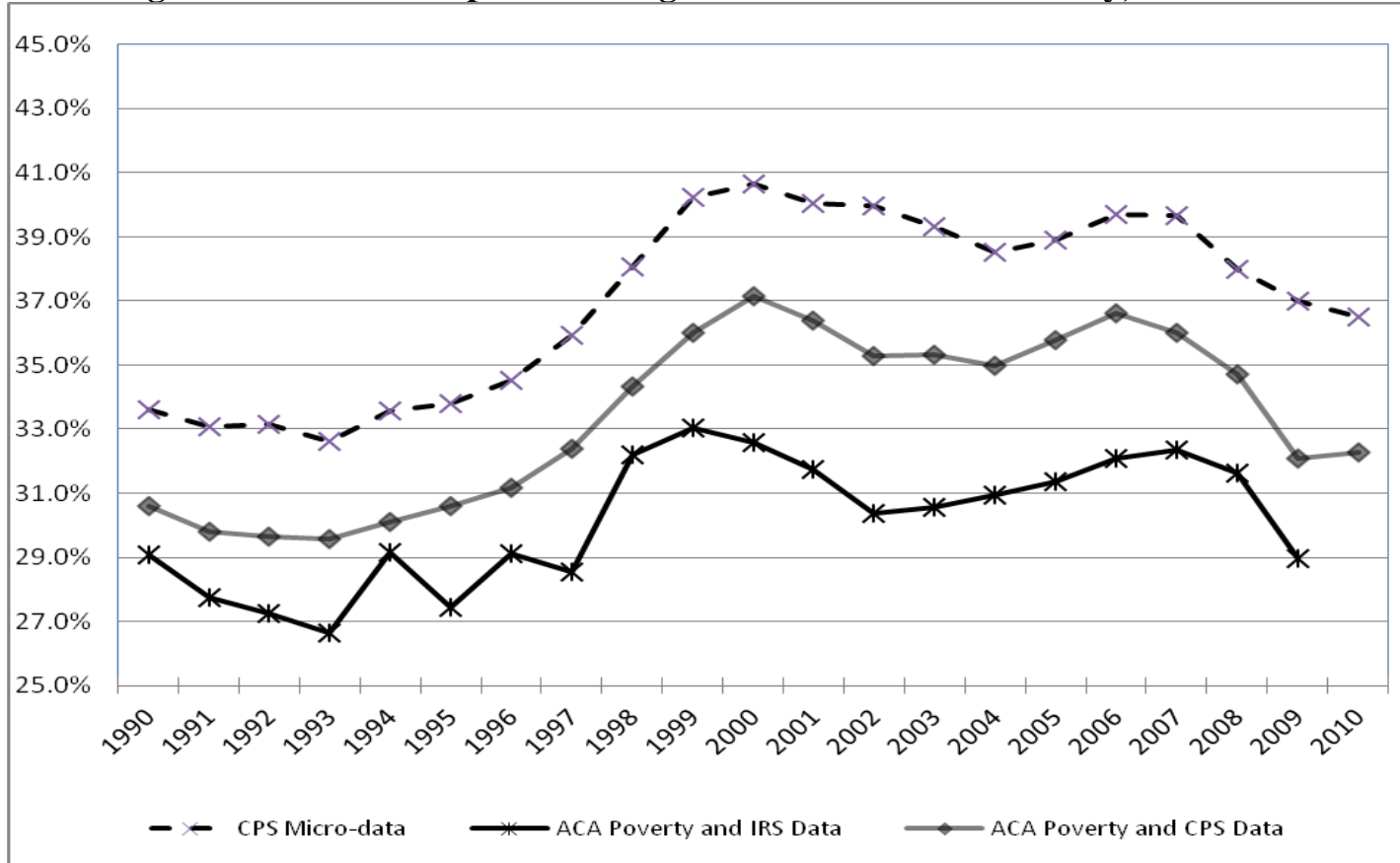
Note: Calculations by authors using 1991-2011 CPS data and 1990-2009 Insole data. The official poverty definition uses the poverty thresholds published by Census and CPS income measure. The ACA poverty definition uses the Federal poverty guidelines as defined by HHS and the ACA modified income measure.

Figure 3: Share of People Under Age 65 Between 138% and 400% Poverty, 1990- 2010



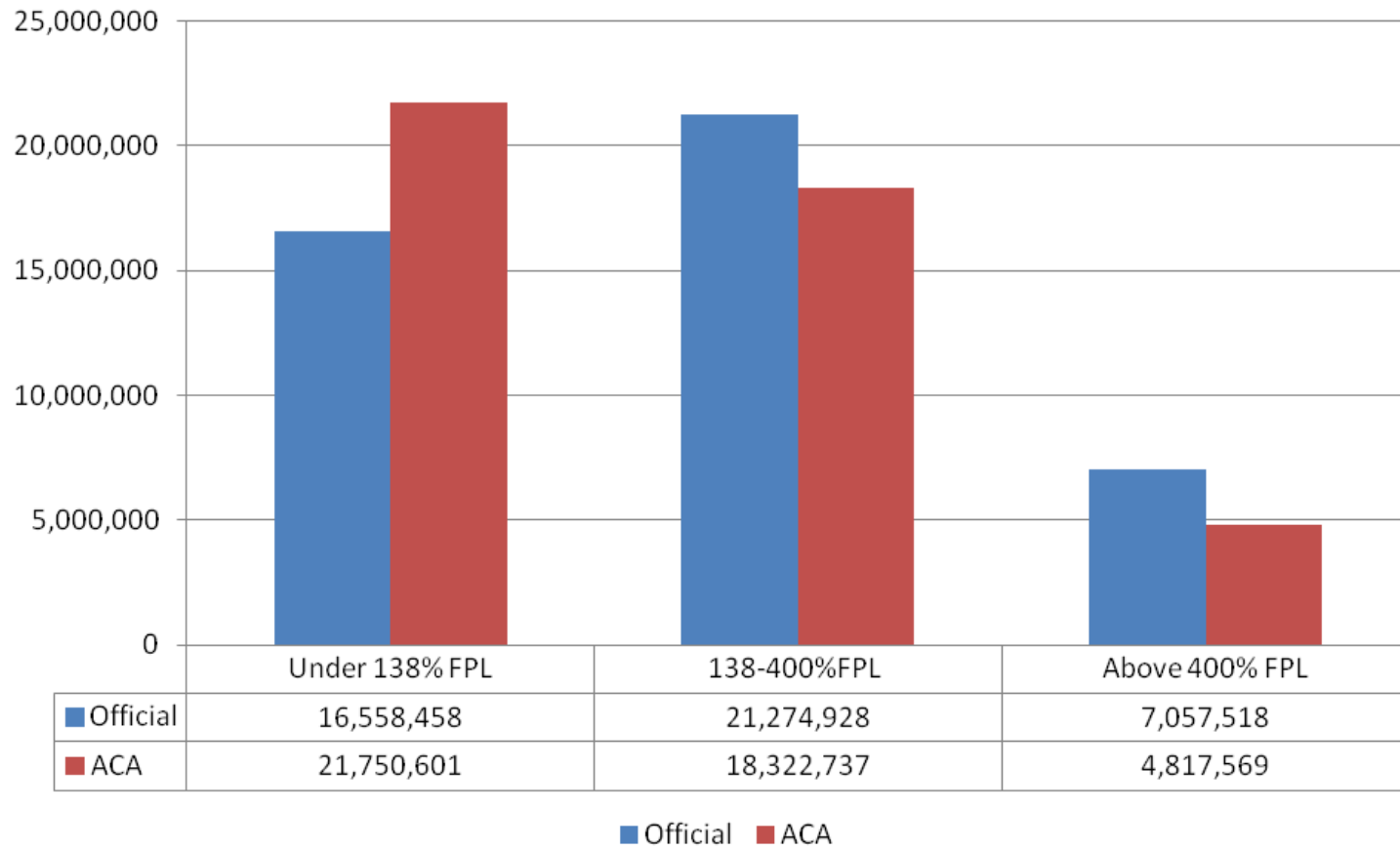
Note: Calculations by authors using 1991-2011 CPS data and 1990-2009 Insole data. The official poverty definition uses the poverty thresholds published by Census and CPS income measure. The ACA poverty definition uses the Federal poverty guidelines as defined by HHS and the ACA modified income measure.

Figure 4: Share of People Under Age 65 Above 400% of Poverty, 1990- 2010



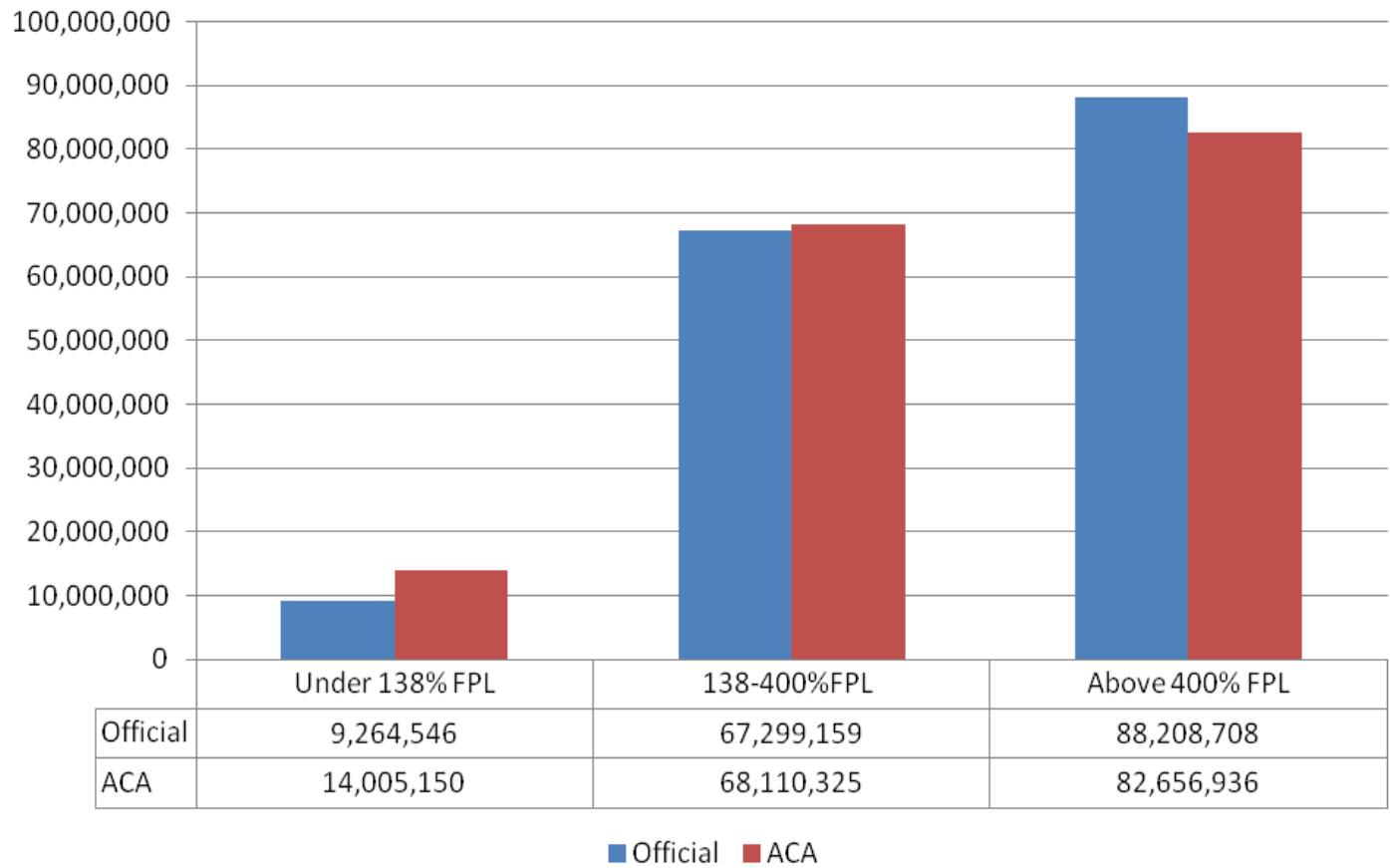
Note: Calculations by authors using 1991-2011 CPS data and 1990-2009 Insole data. The official poverty definition uses the poverty thresholds published by Census and CPS income measure. The ACA poverty definition uses the Federal poverty guidelines as defined by HHS and the ACA modified income measure.

Figure 5: Uninsured People Under Age 65 by Official and ACA Income Definitions, 2007



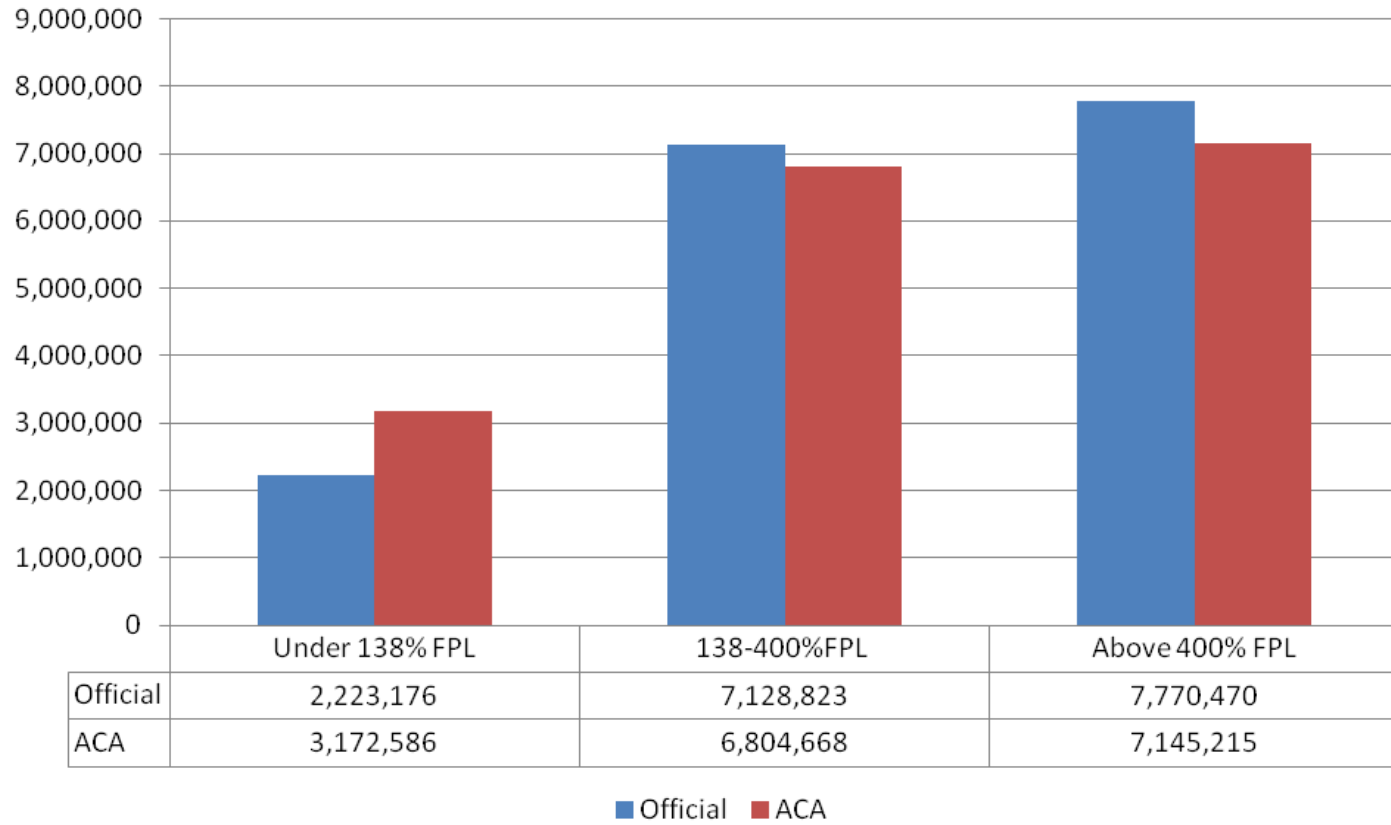
Note: Calculations by authors using 2007 CPS data. The official poverty definition uses the poverty thresholds published by Census and CPS income measure. The ACA poverty definition uses the Federal poverty guidelines as defined by HHS and the ACA modified income measure.

Figure 6: ESI Covered People Under Age 65 by Census and ACA Income Definitions, 2007



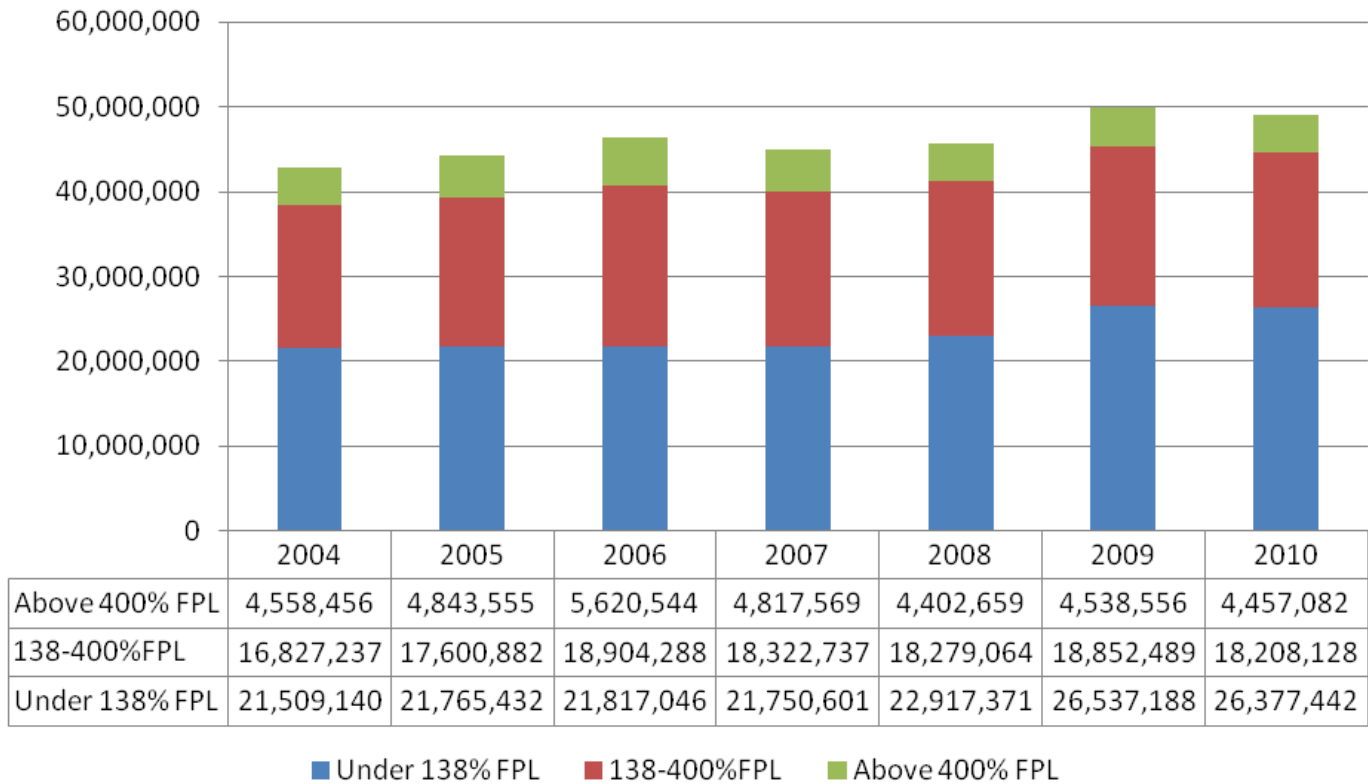
Note: Calculations by authors using 2007 CPS data. The official poverty definition uses the poverty thresholds published by Census and CPS income measure. The ACA poverty definition uses the Federal poverty guidelines as defined by HHS and the ACA modified income measure.

Figure 7: Non-Group Covered People Under Age 65 by Census and ACA Income Definitions, 2007



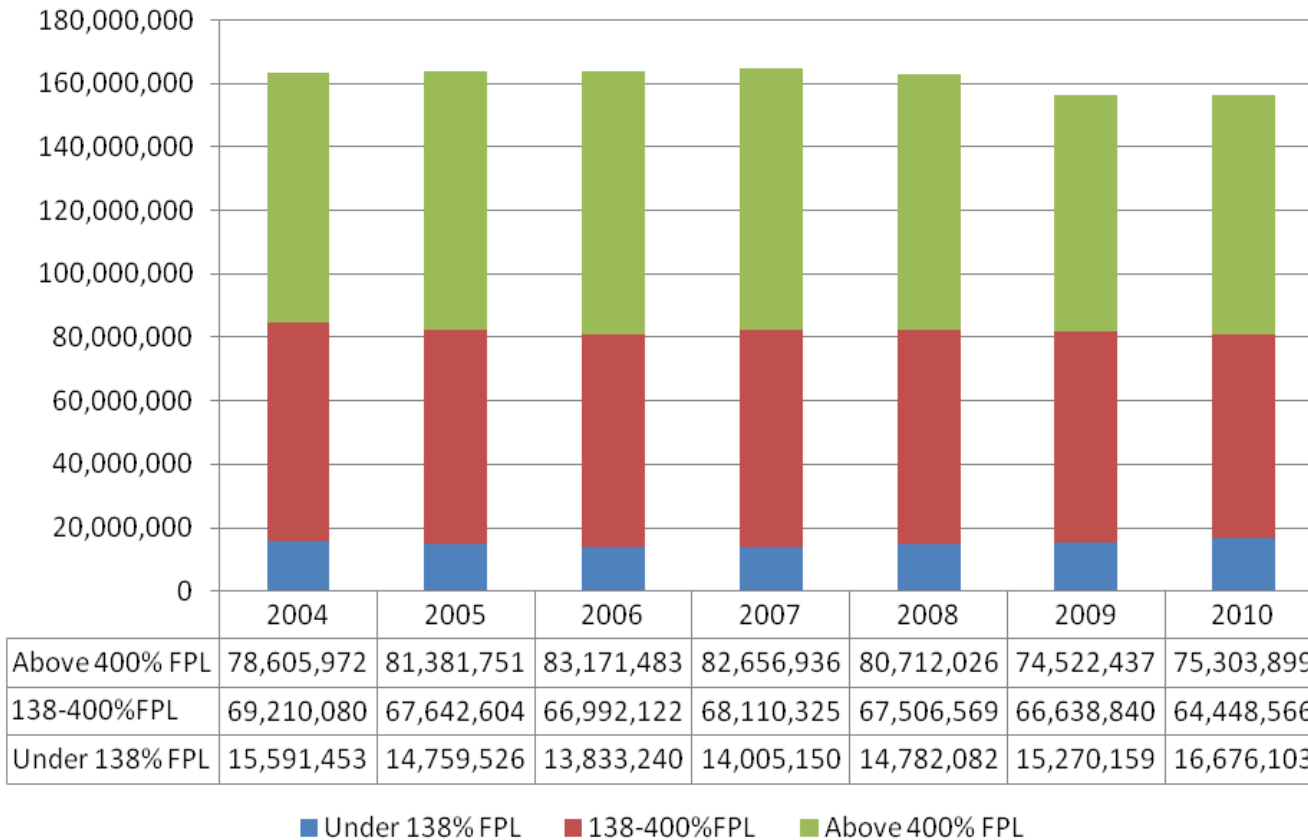
Note: Calculations by authors using 2007 CPS data. The official poverty definition uses the poverty thresholds published by Census and CPS income measure. The ACA poverty definition uses the Federal poverty guidelines as defined by HHS and the ACA modified income measure.

**Figure 8: Uninsured People Under 65 By ACA
Income Definitions,
2004-2010**



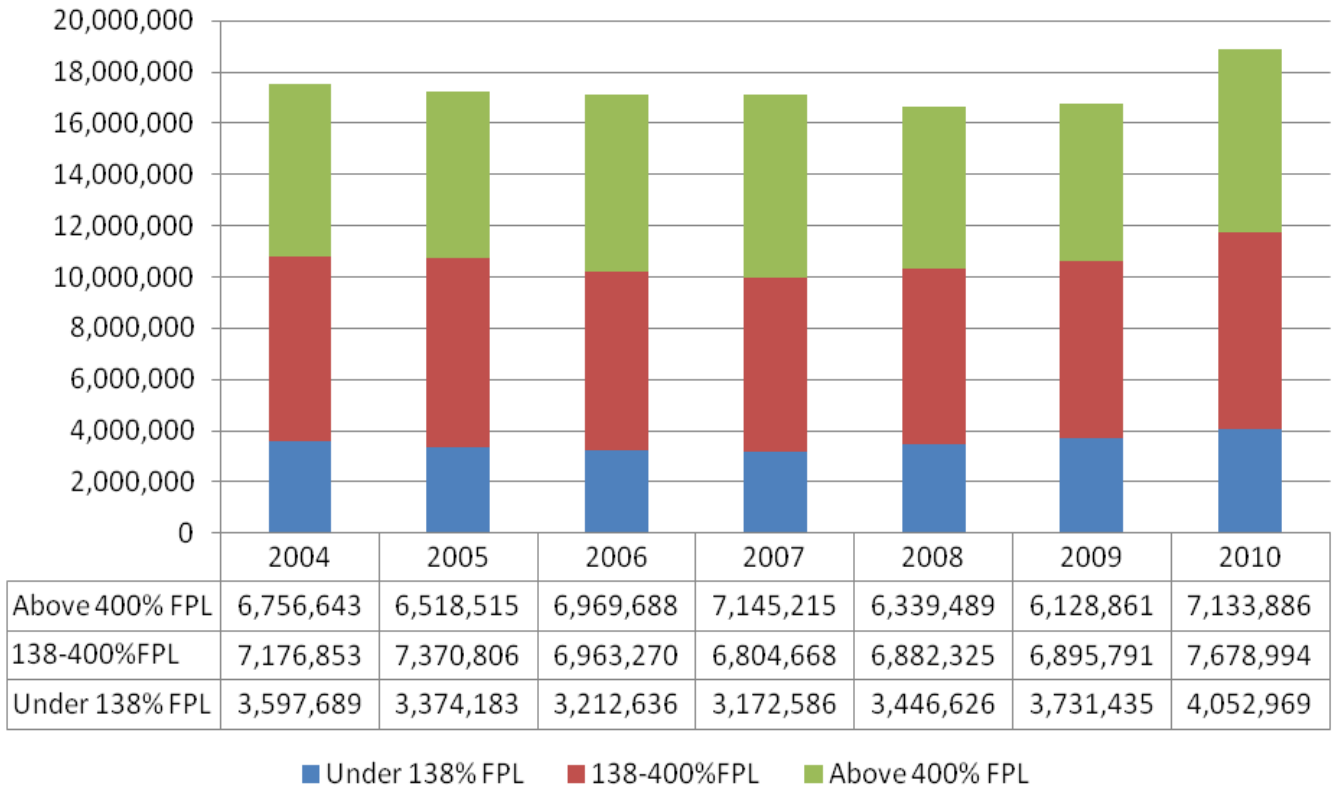
Note: Calculations by authors 2005-2011 CPS data. The ACA poverty definition uses the Federal poverty guidelines as defined by HHS and the ACA modified income measure.

Figure 9: ESI Covered People Under Age 65 By ACA Income Definitions, 2004-2010



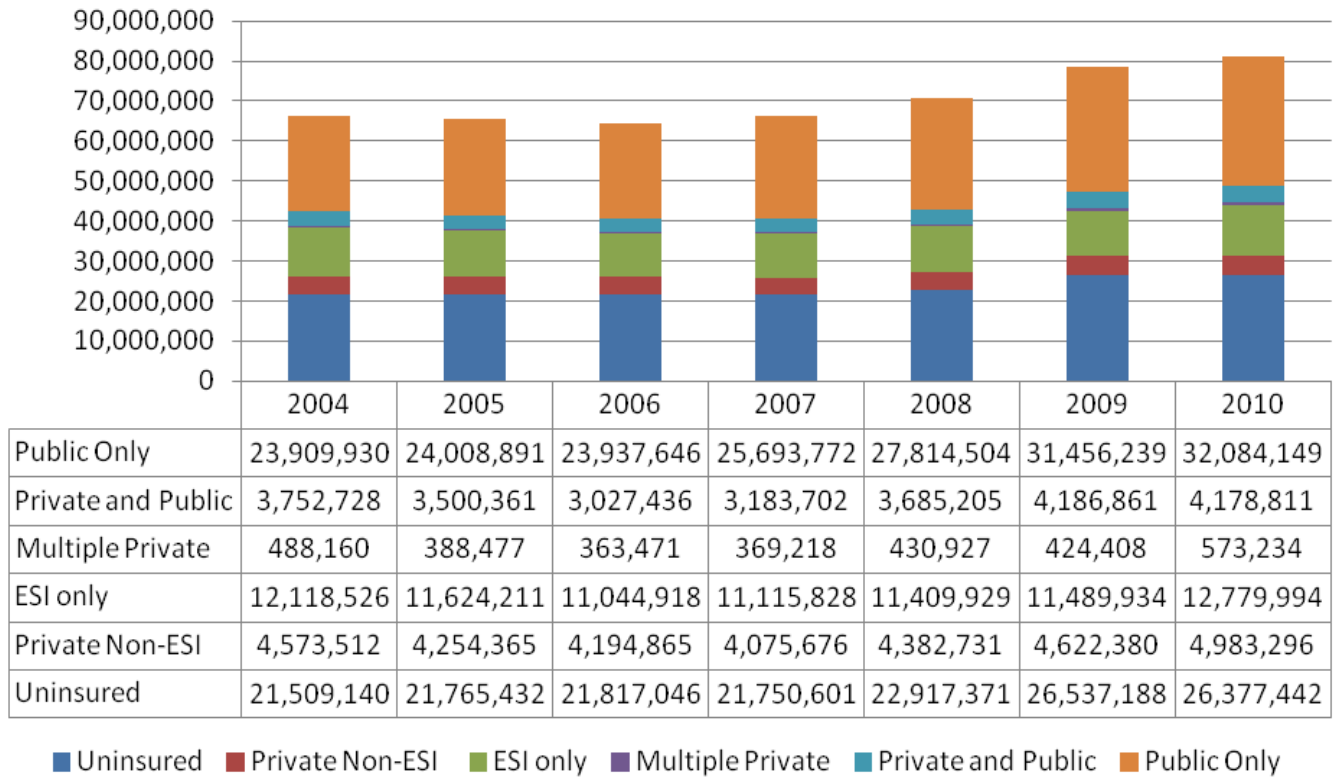
Note: Calculations by authors 2005-2011 CPS data. The ACA poverty definition uses the Federal poverty guidelines as defined by HHS and the ACA modified income measure.

Figure 10: Non-Group Covered People Under Age 65 for ACA Income Definition, 2004-2010



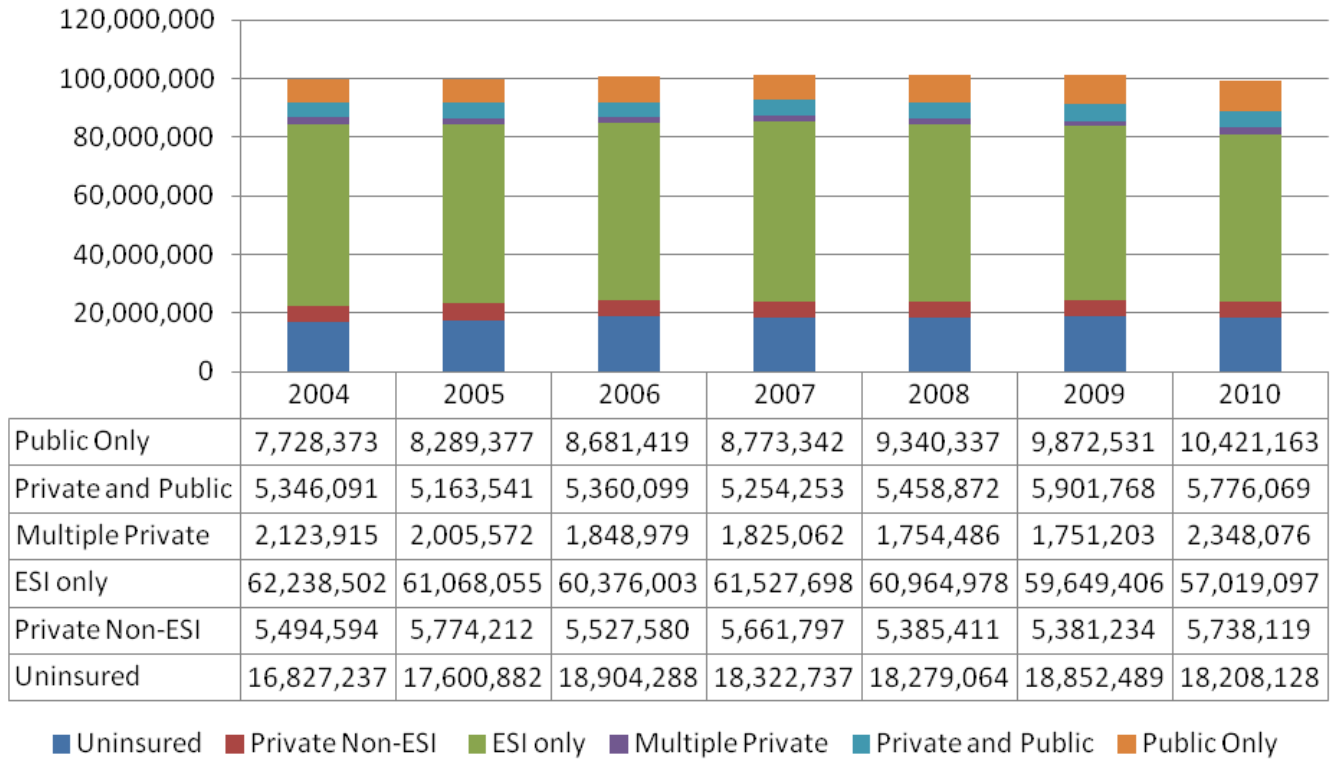
Note: Calculations by authors 2005-2011 CPS data. The ACA poverty definition uses the Federal poverty guidelines as defined by HHS and the ACA modified income measure.

Figure 11: Number of People Under Age 65 by Coverage type Under 138% FPL using ACA Income Definition, 2004-2010



Note: Calculations by authors 2005-2011 CPS data. The ACA poverty definition uses the Federal poverty guidelines as defined by HHS and the ACA modified income measure.

**Figure 12: Number of People Under Age 65
Between 138-400% FPL By Coverage Type using
ACA Income Definition, 2004-2010**



Note: Calculations by authors 2005-2011 CPS data. The ACA poverty definition uses the Federal poverty guidelines as defined by HHS and the ACA modified income measure.

Table A1
Distribution of People Under 65 Years Old by Multiples of the Federal Poverty Line (FPL), 2007

	Census Poverty Definition using CPS		ACA Poverty Definition using Tax Data	
	People	Share	People	Share
Under 100%	33,709,816	12.9%	51,171,234	19.5%
100% to 138%	16,506,758	6.3%	22,128,074	8.4%
138% to 200%	27,556,909	10.5%	31,363,282	12.0%
200% to 250%	21,824,576	8.3%	20,923,264	8.0%
250% to 300%	21,732,091	8.3%	19,045,467	7.3%
300% to 400%	36,687,628	14.0%	32,522,907	12.4%
400% to 500%	28,829,444	11.0%	24,431,146	9.3%
Over 500%	75,061,939	28.7%	60,323,785	23.0%
Total	261,909,161	100.0%	261,909,159	100.0%

Note: Calculations by authors using 2007 CPS data and Insole data. The official poverty definition uses the poverty thresholds published by Census and CPS income measure. The ACA poverty definition uses the Federal poverty guidelines as defined by HHS and the ACA modified income measure.

Table A2

Decomposition of the Differences in the Distribution of People by Multiples of the FPL Between Official and ACA Definitions, 2007

Poverty Definition	Official	HHS	HHS	HHS	HHS	HHS
Family Definition	CPS Family	CPS Family	Imputed Tax Unit	Imputed Tax Unit	Imputed Tax Unit	Tax Unit
Income Definition	CPS Cash Income	CPS Cash Income	CPS Cash Income	CPS Cash Income	ACA Income	ACA Income
Contributors	All	All	All	Primary/Secondary	Primary/Secondary	Primary/Secondary
Data Set	CPS	CPS	CPS	CPS	CPS	INSOLE
Under 100%	37,265,354	36,399,081	49,402,474	50,621,685	55,867,060	57,756,735
100% to 138%	20,257,990	19,752,628	21,296,672	21,721,690	21,087,251	24,107,010
138% to 200%	33,506,233	33,133,098	34,820,920	35,098,933	35,603,480	34,502,480
200% to 250%	25,981,286	25,380,504	24,873,115	24,905,983	24,880,795	23,505,920
250% to 300%	25,106,153	24,361,363	23,560,729	23,702,222	22,730,339	22,027,598
300% to 400%	41,410,174	40,983,008	37,614,894	37,467,384	36,120,453	38,088,882
400% to 500%	31,876,169	32,788,791	29,585,383	29,123,842	27,966,482	28,337,397
Over 500%	83,295,640	85,900,524	77,544,810	76,057,258	74,443,137	70,372,977
Total	298,698,999	298,698,997	298,698,997	298,698,997	298,698,997	298,699,000
Under 100%	12.5%	12.2%	16.5%	16.9%	18.7%	19.3%
100% to 138%	6.8%	6.6%	7.1%	7.3%	7.1%	8.1%
138% to 200%	11.2%	11.1%	11.7%	11.8%	11.9%	11.6%
200% to 250%	8.7%	8.5%	8.3%	8.3%	8.3%	7.9%
250% to 300%	8.4%	8.2%	7.9%	7.9%	7.6%	7.4%
300% to 400%	13.9%	13.7%	12.6%	12.5%	12.1%	12.8%
400% to 500%	10.7%	11.0%	9.9%	9.8%	9.4%	9.5%
Over 500%	27.9%	28.8%	26.0%	25.5%	24.9%	23.6%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Note: Calculations by authors using 2007 CPS data and Insole data. The official poverty definition uses the poverty thresholds published by Census and CPS income measure. The ACA poverty definition uses the Federal poverty guidelines as defined by HHS and the ACA modified income measure. Table should be read left to right, with changes in definitions bolded in **red**.

Table A3

Decomposition of the Differences in the Distribution of People Under 65 Years Old by Multiples of the FPL Between Official and ACA Definitions, 2007

Poverty Definition	Official	HHS	HHS	HHS	HHS	HHS
Family Definition	CPS Family	CPS Family	Imputed Tax Unit	Imputed Tax Unit	Imputed Tax Unit	Tax Unit
Income Definition	CPS Cash Income	CPS Cash Income	CPS Cash Income	CPS Cash Income	ACA Income	ACA Income
Contributors	All	All	All	Primary/Secondary	Primary/Secondary	Primary/Secondary
Data Set	CPS	CPS	CPS	CPS	CPS	INSOLE
Under 100%	33,709,816	32,542,075	44,130,635	45,311,152	49,840,923	51,171,234
100% to 138%	16,506,758	15,715,256	16,665,164	17,075,410	16,347,874	22,128,074
138% to 200%	27,556,909	26,728,031	27,844,541	28,136,593	27,947,087	31,363,282
200% to 250%	21,824,576	21,270,307	21,014,729	21,053,899	20,741,139	20,923,264
250% to 300%	21,732,091	21,030,210	20,330,600	20,472,607	19,908,720	19,045,467
300% to 400%	36,687,628	36,632,196	33,840,572	33,697,308	32,767,944	32,522,907
400% to 500%	28,829,444	29,852,162	27,125,011	26,674,604	25,964,531	24,431,146
Over 500%	75,061,939	78,138,925	70,957,911	69,487,589	68,390,944	60,323,785
Total	261,909,161	261,909,162	261,909,163	261,909,162	261,909,161	261,909,159
Under 100%	12.9%	12.4%	16.8%	17.3%	19.0%	19.5%
100% to 138%	6.3%	6.0%	6.4%	6.5%	6.2%	8.4%
138% to 200%	10.5%	10.2%	10.6%	10.7%	10.7%	12.0%
200% to 250%	8.3%	8.1%	8.0%	8.0%	7.9%	8.0%
250% to 300%	8.3%	8.0%	7.8%	7.8%	7.6%	7.3%
300% to 400%	14.0%	14.0%	12.9%	12.9%	12.5%	12.4%
400% to 500%	11.0%	11.4%	10.4%	10.2%	9.9%	9.3%
Over 500%	28.7%	29.8%	27.1%	26.5%	26.1%	23.0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Note: Calculations by authors using 2007 CPS data and Insole data. The official poverty definition uses the poverty thresholds published by Census and CPS income measure. The ACA poverty definition uses the Federal poverty guidelines as defined by HHS and the ACA modified income measure. Table should be read left to right, with changes in definitions bolded in **red**.