

## Moving into and out of rural poverty

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### TAKEAWAYS

**How poverty is measured affects findings:** using the official poverty measure, poverty is higher in rural areas compared to urban areas, whereas the opposite is true using the Supplemental Poverty Measure.

**Rates of entry into and exit out of poverty** as measured with the Supplemental Poverty Measure are similar in rural and urban areas, but rural areas have lower levels of “always poor.”

“Near poor” groups in rural areas are less likely to fall into poverty than those in urban areas.

**Wage and salary changes** are most often the key factor in explaining poverty transitions, though this is less common among rural than urban families.



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**This article seeks to shed new light on rural poverty.** Specifically, we look at poverty dynamics (poverty entries and exits) among urban and rural families over the past two decades, using newly available historical estimates of the Supplemental Poverty Measure beginning in 1995. While there are established literatures examining rural poverty and poverty dynamics, studies that combine the two are uncommon. In this article, we construct two-year panels over which we can identify poverty entries and exits. In exploring the causes of these short-term poverty transitions, we focus on the role of resource changes (that is, changes to the cash and noncash resources available for a family to spend on food, clothing, shelter, and utilities) rather than on family composition changes (that is, changes to family makeup such as through divorce, birth, death, or repartnering). We draw on recent work showing that poverty transitions are driven by the resource change that accompanies a family composition change rather than the family composition change itself.<sup>1</sup> That is, holding income constant, changes in family composition do not have a large effect on poverty transitions.

Our specific research questions for this analysis include:

- How do poverty rate trends in rural and urban areas vary over time using both the official poverty measure and the Supplemental Poverty Measure?
- How do poverty entry and exit rates compare in urban and rural areas?
- For families entering and exiting poverty, what is the frequency and importance of resource level changes for urban and rural families?

### Methods

To complete our analysis, we build on prior research by using linked individual- and family-level data for 1995 through 2016 from the Annual Social and Economic Supplement (ASEC) of the Current Population Survey (CPS). Linking the data allows us to construct panels with which we can identify poverty entries and exits for a given family.<sup>2</sup> Because each family participates in the CPS-ASEC for two years at most, our panels are two years in length.

### Poverty rates over time

There are various ways to measure poverty, each with its own set of advantages and disadvantages. The U.S. Census Bureau uses two measures to calculate poverty rates: the official poverty measure, and the Supplemental Poverty Measure. (See text box on measuring poverty later in article for a summary of the two poverty measures.) Both of these measures include three primary components:

1. sets of thresholds that specify the minimum income level required to meet a family’s basic needs that vary by family size and composition;
2. a definition of “family” to identify a distinct group of people who share resources, and

- family resources that are compared to the poverty threshold to determine whether a given family is above or below the threshold.

The official poverty measure thresholds are set at three times the cost of a minimum yet adequate diet in 1964, adjusted for inflation and for family size and the number of children under age 18. Poverty thresholds rise as family size increases, and, within a given family size, fall as the number of children increases.

For the Supplemental Poverty Measure, the poverty thresholds are set at the 33rd percentile of expenditures on food, clothing, shelter, and utilities, providing a more accurate estimate of the cost of living for a typical U.S. household. Like the official measure, the supplemental measure thresholds are adjusted for family size and composition, but unlike the official poverty measure, they are also adjusted geographically for differences in housing costs.

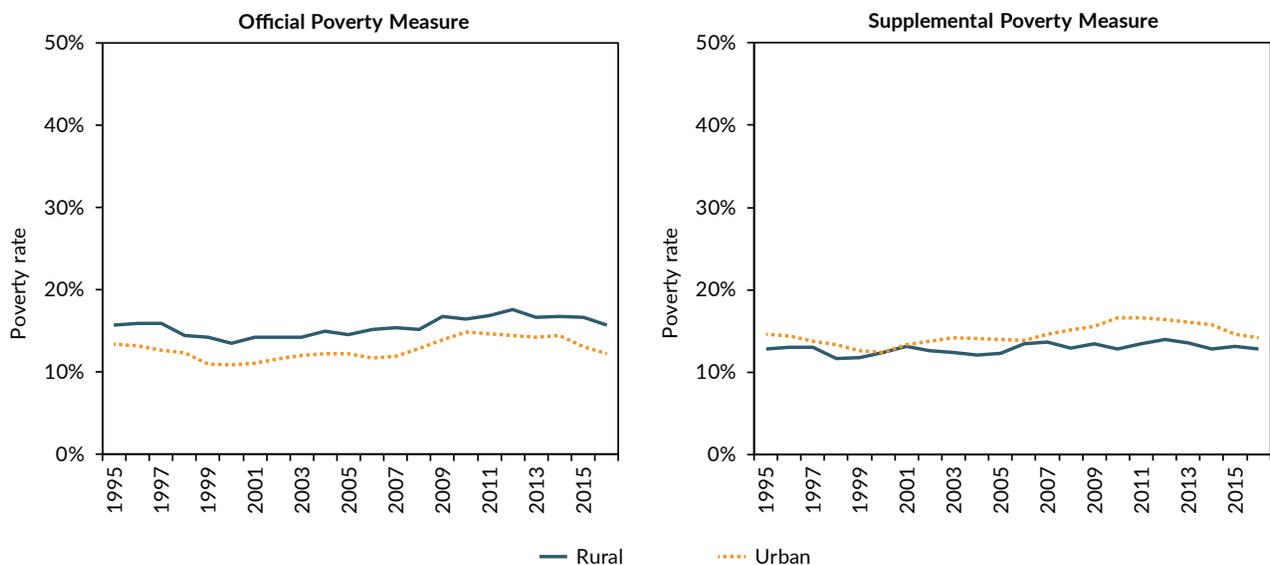
Among other differences, the measure of family resources to be compared to the poverty threshold also varies between the two measures. As shown in the measuring poverty text box, the official poverty measure uses total pre-tax cash income as a measure of resources. The Supplemental Poverty Measure, which we use in our analysis, begins with those resources, then adds near-cash in-kind benefits and tax credits, and subtracts taxes paid and nondiscretionary expenditures.

As Figure 1 shows, when the official measure is used, measures of poverty in rural counties consistently exceed those in urban counties, but when the supplemental measure is used, the reverse is true.

## Defining “urban” and “rural”

Note that determining which areas are urban and which are rural is challenging. The Current Population Survey (CPS) and federal data sources that use counties as their base geography do not permit identification of “urban” and “rural” areas. Instead, counties are divided into only “metro” and “nonmetro,” where each metro area must contain either a place with a minimum population of 50,000, or a Census Bureau-defined urbanized area and a total population of at least 100,000 (75,000 in New England). In this article, metro areas are called “urban” and nonmetro areas are called “rural.” While this is not a perfect match, it is the best possible choice given available data.

**Figure 1.** When poverty rates for 1995 to 2016 are measured with the official poverty measure, rural poverty consistently exceeds urban poverty, but when the Supplemental Poverty Measure is used, the reverse is true.



Source: CPS\_ASEC 1996–2017 from [cps.ipums.org](https://cps.ipums.org).

Note: The Supplemental Poverty Measure is available from the Census Bureau from only 2009 onwards; for 1995 through 2008 we use the historical measure developed by Wimer and colleagues in “Historical Supplemental Poverty Measure Data,” Columbia Population Research Center, 2017.

is true. For example, in 2016, the official poverty rate was almost 16 percent for those living in rural areas, compared to just over 12 percent for those in urban areas. In that same year, the supplemental measure was almost 13 percent in rural areas and around 14 percent in urban areas.

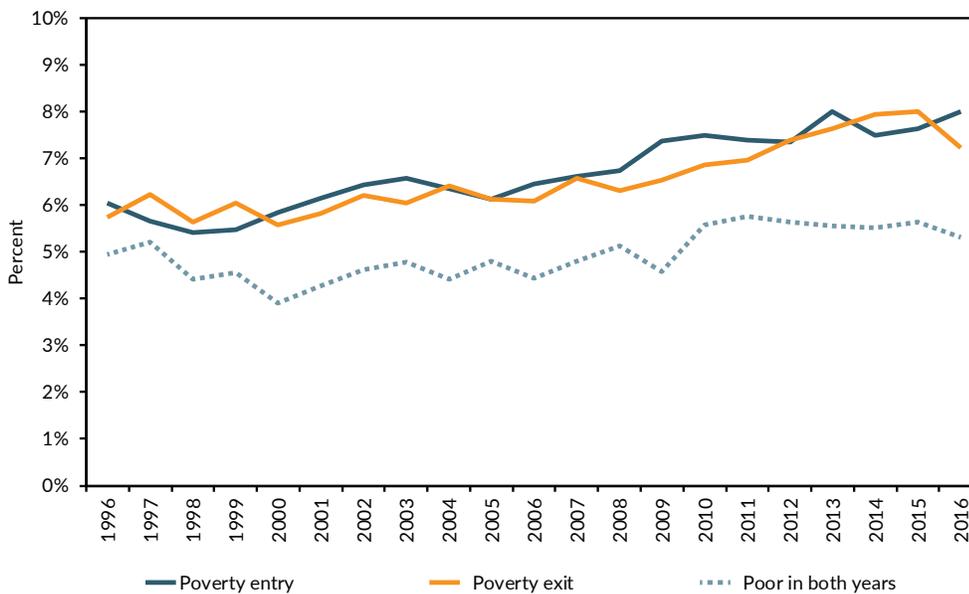
Differences in rural-urban poverty rate trends between the official poverty measure and the Supplemental Poverty Measure suggest the importance of the geographical adjustment for cost-of-living differences as well as the broader array of income sources included in the latter measure.

Differences in rural-urban poverty rate trends between the official poverty measure and the Supplemental Poverty Measure suggest the importance of the geographical adjustment for cost-of-living differences as well as the broader array of income sources included in the latter measure. For this analysis, we chose to use the Supplemental Poverty Measure rather than the official poverty measure because it allows us to look in more detail at the resource changes that accompany poverty transitions.

### Poverty entry and exit rates

We begin by looking at overall rates of poverty entry and exit across each two-year panel, as well as the rate of families being poor in both years. As Figure 2 shows, the rates of poverty entry and exit are consistently higher than the rate of poverty persistence, and rise slightly over the time period studied.

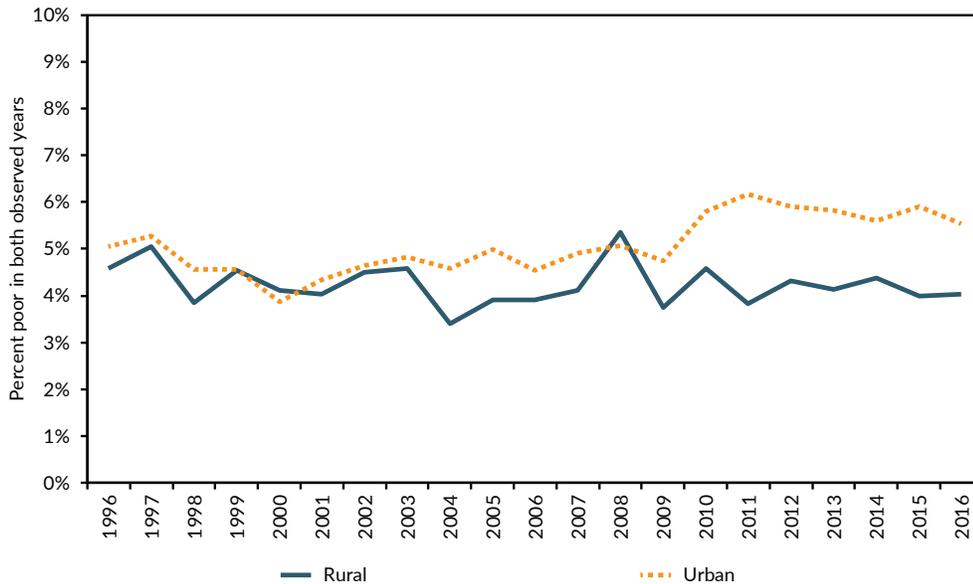
Figure 2. More families enter and exit poverty over a two-year period than stay poor for both years.



Source: 1996–2017 Annual Social and Economic Supplement (ASEC) of the Current Population Survey (CPS) from [cps.ipums.org](http://cps.ipums.org).

We found the largest rural-urban differences in the persistence of poverty, as measured by being poor in both Year 1 and Year 2. Results presented in Figure 3 show that rural families are less likely to be poor in both years, and the rural-urban gap in the percentage who are poor in both years has increased over the two-decade observation period.

**Figure 3. More urban families are poor in both observed years than rural families, and the gap between the two has increased over time.**



Source: 1996–2017 Annual Social and Economic Supplement (ASEC) of the Current Population Survey (CPS) from [cps.ipums.org](http://cps.ipums.org).

We also look at differences by race for those who were persistently poor and whether those differences are consistent across urban and rural families. Table 1 shows our analysis of race and ethnicity for the full sample, and for those who are poor in both years. Both African Americans and Hispanics are overrepresented in the persistently poor group compared to the full sample. Specifically, the share of blacks in the persistently poor group is more than twice as large as their share of the urban full sample and two and a half times as large in the rural full sample. Similarly, Hispanic families are overrepresented in the persistently poor category, although this is more pronounced in urban rather than in rural areas for Hispanics.

**Table 1. While blacks and Hispanics are disproportionately likely to be poor in both rural and urban areas, this inequality is higher for blacks in rural areas, and for Hispanics in urban areas.**

Race/ethnicity	Full sample		Poor in both years	
	Rural	Urban	Rural	Urban
White	86%	73%	69%	41%
African American	7	10	18	21
Hispanic	4	12	7	29
American Indian	1	0	4	1
Asian	1	4	1	6
Other	1	1	1	1

## Changes in resources for families entering and exiting poverty

To better understand how changes in specific resources affect poverty transitions, we first look at the changes in income sources and expenses for families before and after they entered or exited poverty. To do this, we look at resources for all the families that had a poverty transition over the two-year panel, across the full time period from 1995 to 2016. Figures 4 and 5 illustrate the changes from Year 1 to Year 2 for all the resources included in the Supplemental Poverty Measure definition (see text box on this page). The figures show both income sources and expenses, with expenses shown as negative dollar amounts. As expected, for those entering poverty (Figure 4), total income declines in Year 2 and, for those exiting poverty (Figure 5), total income increases in Year 2. As families move into and out of poverty, some expenses grow while others shrink. We are most interested, however, in the shifts within resource categories. Specifically, we examine which of the resources increase and which decrease as families experience poverty transitions, and how these changes compare between rural and urban areas.

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Rural families that entered poverty saw their total cash and noncash resources drop by 80 percent, with urban families experiencing a slightly smaller drop.

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For families entering poverty, Figure 4 shows the average amounts of each category of income and expense in Year 1 (when they were above the poverty threshold) compared to income and expenses in Year 2 (when they were below the poverty threshold) for both rural and urban families. Rural families that entered poverty saw their total cash and noncash resources drop by 80 percent, with urban families experiencing a slightly smaller drop. Income from wages and salary dropped by about three-quarters for both rural and urban families, while public cash transfers (such as Social Security, disability benefits, and unemployment compensation) dropped by about 40 percent.

Families that entered poverty saw their medical expenses increase by 64 percent in rural areas and 48 percent in urban areas in Year 2. Other necessary expenses such as work-related expenses and childcare decreased by about one-quarter for both rural and urban families who became poor. Net taxes paid also decreased substantially, by about 70 percent for rural families and over 80 percent for urban families. These changes are not surprising, as a reduction in wage or salary income (due to unemployment, for example) would typically result in

## Measuring poverty

The U.S. Census Bureau uses two primary poverty measures—the official poverty measure (OPM) and the Supplemental Poverty Measure (SPM). For each measure, analysts calculate the poverty rate by comparing family resources to the established poverty threshold.

OPM poverty thresholds are calculated as three times the cost of a nutritionally adequate diet in 1964, adjusted for inflation and family size.

OPM resources are calculated as pre-tax cash income and include the following:

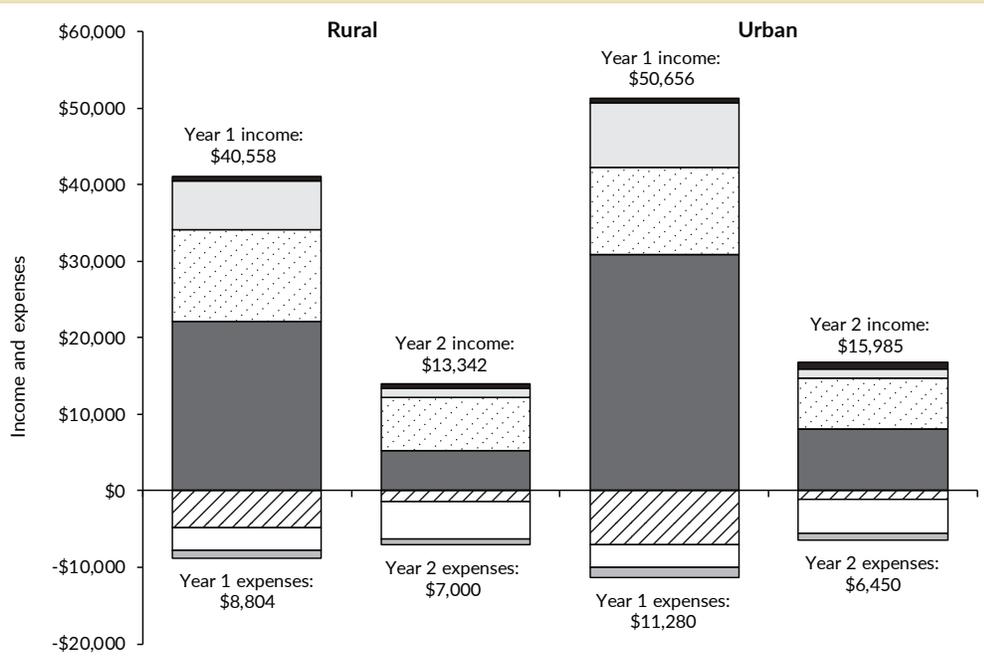
- **Income from employment:**
  - Wages and salary
  - Business and farm income
- **Public cash transfers** such as:
  - Social Security income
  - Temporary Assistance for Needy Families (TANF) cash assistance
  - Disability benefits
  - Survivor benefits
  - Unemployment compensation
- **Private cash transfers** such as:
  - Pension and retirement income
  - Income from rents, royalties, estates, and trusts
  - Financial assistance from outside the household
  - Child support

SPM thresholds are based on expenditures on food, clothing, shelter, and utilities, with adjustments for family size and composition, and for geographic differences in housing costs. Resources are measured as post-tax, post-transfer cash income, and include all of the OPM resources listed above, plus the following:

- **Near-cash in-kind benefits:**
  - Supplemental Nutritional Assistance Program (SNAP)
  - National School Lunch Program
  - Supplementary Nutrition Program for Women, Infants and Children (WIC)
  - Housing subsidies
  - Low Income Home Energy Assistance Program (LIHEAP)
- **Tax credits:**
  - Earned Income Tax Credit
  - Child Tax Credit
  - Additional Child Tax Credit
- **Non-discretionary expenditures** (subtracted from total resources):
  - Federal income tax
  - State income tax
  - Annual property taxes
  - Federal Insurance Contributions Act (FICA)
  - Federal retirement payroll deduction
  - Work-related expenses
  - Child care
  - Child support paid to another household
  - Medical out-of-pocket costs and Medicare Part B premiums

To learn more about the official and alternative poverty measures, see: <https://www.irp.wisc.edu/resources/how-is-poverty-measured/>.

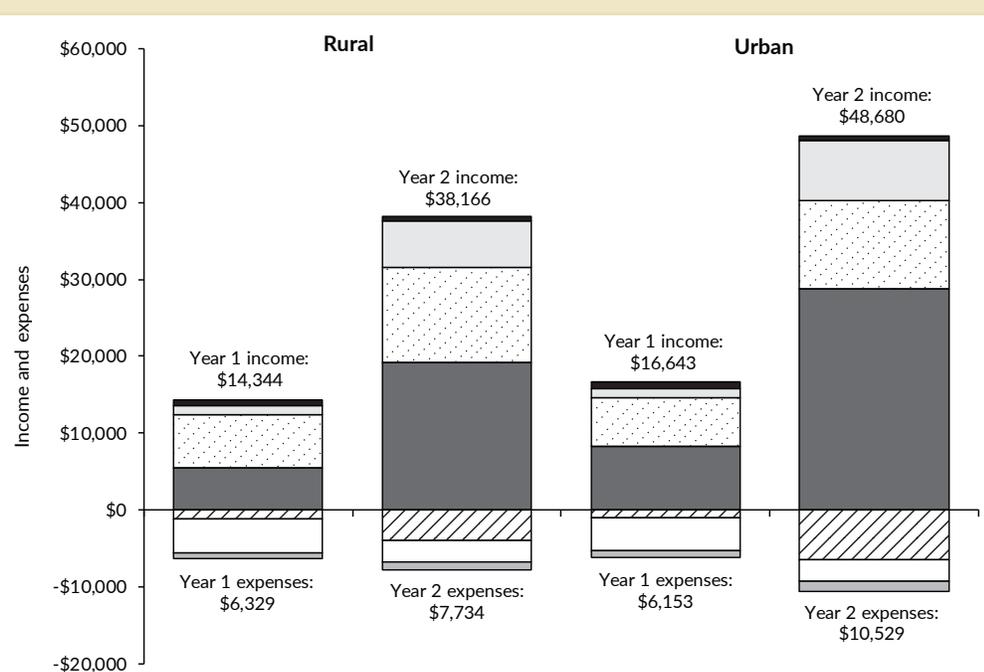
**Figure 4. For families entering poverty, total cash and noncash resources fall precipitously; income from employment drops by nearly three-quarters, while public cash transfers decrease by 40 percent or more.**



**Source:** Authors' calculations from 1996–2017 Annual Social and Economic Supplement (ASEC) of the Current Population Survey (CPS) from cps.ipums.org.

**Note:** See text box on measuring poverty for detail of resources and expenses.

**Figure 5. For families exiting poverty, income from employment more than triples, and public cash transfers also increase significantly.**



**Source:** Authors' calculations from 1996–2017 Annual Social and Economic Supplement (ASEC) of the Current Population Survey (CPS) from cps.ipums.org.

**Note:** See text box on measuring poverty for detail of resources and expenses.

**Income:**

- Near-cash in-kind benefits
- Private cash transfers
- ▨ Public cash transfers
- Employment income

**Expenses:**

- ▨ Taxes paid (net of tax credits)
- Medical expenses
- Necessary expenses

a decline in work-related expenses and a decrease in taxes paid. Note that, because we do not currently have separate estimates of tax credits, taxes net of credits are included as an expense.<sup>3</sup>

For families that were below the poverty line in the first year and rose above it in the second, we see the opposite story, as shown in Figure 5. From Year 1 when families are in poverty to Year 2 when families are out of poverty, income from employment more than triples for both urban and rural families. Social Security and other public transfer income grows for families in both areas, though they represent nearly half of second-year resources for rural families exiting poverty, compared to less than 40 percent of urban families. Medical expenses decrease for families exiting poverty by approximately one-third, while net taxes increase greatly, reflecting the increase in taxable income like wages and salary.

While some individual resource changes appear large, with many simultaneous changes it is not immediately evident which resources are most relevant for poverty transitions. We turn to this question in the next section.

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For those entering poverty, fewer than half of rural families experienced a decline in wages and salary, compared to more than half of urban families. Of families experiencing this earnings decrease, it was large enough by itself to cause poverty entry for over half of rural families, compared to over 60 percent of urban families with an earnings drop.

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Which resource changes are most important for poverty transitions?

While Figure 4 and 5 illustrate how the share of resources change over time as families go into and out of poverty, they do not indicate each resource's relative importance for poverty transitions. To better identify key resource changes, we identify those changes that were large enough to cause a poverty transition in the absence of any other resource changes. That is, we estimate the percentage of poverty entries and exits for which the poverty transition would not have occurred in the absence of that resource change, holding other resources constant.

For those entering poverty, fewer than half of rural families experienced a decline in wages and salary, compared to more than half of urban families. Of families experiencing this earnings decrease, it was large enough by itself to cause poverty entry for over half of rural families, compared to over 60 percent of urban families with an earnings drop. For the small proportion of rural families that experienced a decline in farm income (under 5 percent of rural families), that decline was large enough to put net income below the poverty line for about half of the families experiencing that income drop. Note that, unlike wages and salary, farm and business income can be negative—that is, business or farm losses are subtracted from total family resources. Medical expenditure increases accompanied poverty entry for over half of all families, but were large enough to result in poverty entry on their own for only about one out of every ten families incurring these additional expenses.

Families exiting poverty were also very likely to experience changes in wage or salary income (in this case, increases)—around 40 percent of rural families and 50 percent of urban families exiting poverty saw their earnings rise. For families that had a wage or salary increase, that income change was large enough on its own to pull families out of poverty for over half of rural families, and over 60 percent of urban families. Business income increased for around one out of ten families, but was large enough to cause a poverty exit for fewer than half of those families. An increase in farm income was sufficient to bring families above the poverty line for fewer than 2 percent of rural families, which was half of those who saw their farm income rise. Increases in Social Security or retirement income occurred in about half of all poverty exits, but those increases were large enough to lift families above the poverty line for only about one in ten families.

Overall, we find that the importance of specific resource components or necessary expenses are similar for the two groups, although changes in Social Security, farm income, and medical expenses play a larger role in poverty entries and exits for rural compared to urban families. Earnings changes are the most likely of all the components to be large enough to cause a poverty transition, though they are somewhat less important for rural compared to urban families.

## Conclusions and directions for future research

The causes and consequences of poverty differ across geographic regions, as access to jobs and other income sources vary along with the cost of living. Understanding what drives poverty trends and transitions in a wealthy nation such as the United States requires reliable and valid data. This study examines differences in urban and rural poverty transitions between 1995 and 2016. Based on the Supplemental Poverty Measure, the poverty rate in rural areas is lower than in urban areas, in contrast to the official poverty measure, which shows the reverse pattern. Despite differences in overall poverty rates, the rates of entry into and exit out of poverty are similar for urban and rural families. To better understand these poverty transitions, we looked at how much different income sources and expenses changed with a poverty entrance or exit, and determined how often a given resource change was large enough on its own to result in a poverty transition.

Overall, we find that the urban-rural differences are relatively small. This may reflect the inadequacy of the data to identify rural areas, since we can only tell whether a county is “metropolitan” or “non-metropolitan,” or it may indicate that the economic, social, and policy factors causing poverty are, on average, similar in urban and rural areas.

This initial work describing poverty transitions and resource changes sets the stage for future work to analyze poverty in rural America. The linked data, creating two-year panels with large sample sizes, has unexplored potential in the study of rural poverty. The recent release of Supplemental Poverty Measure estimates extending back to 1995 also provides new opportunities for analysis. In the future, we intend to look more specifically at how particular life events (such as job loss, retirement, death, and divorce) are associated with poverty entries and exits. We also intend to explore whether there have been changes in the relative importance of certain resource components in pre- and post-Great Recession periods. A thorough exploration into the economic circumstances of families will help inform policy to reduce the chances of falling into or remaining in poverty in both rural and urban areas.

Using the Supplemental Poverty Measure to analyze poverty transitions demonstrates how public cash and near-cash transfers help families escape from or avoid poverty. The size and importance of resource changes associated with poverty transitions can help guide policymakers in setting policy parameters, including program eligibility rules and

benefits levels, to assist families in both rural and urban areas. Moreover, our analysis sheds light on the economic conditions of the economically vulnerable populations that do not qualify for government assistance, and helps to answer the question of who is being left behind. Lastly, these results inform policy by highlighting those consistently in poverty and identifying the characteristics of the families most likely to remain poor. ■

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<sup>1</sup>J. Pacas, 2017, “Innovative Methods for Using Census Data to Study Poverty, Labor Markets, and Policy,” Ph.D. dissertation, University of Minnesota.

<sup>2</sup>In the CPS, physical dwellings rather than a particular set of people living at that dwelling are selected for inclusion in the survey in a given month. Once a dwelling is selected for participation, information is collected on all members of the household; typically, one respondent responds for the entire household. The survey is administered to this household in four consecutive months in each of two consecutive years. For example, a household selected for the CPS in January of 2017 will be interviewed in January through April of 2017, and then again in January through April of 2018. Because a household will only participate in the CPS-ASEC in two years, the data can be linked to create at most two-year panels.

<sup>3</sup>If tax credits exceed taxes paid, the net change will be a positive contribution to the family’s resources.

## Sources & Methods

**Type of analysis:** Descriptive

**Data source:** Individual- and family-level data from the Annual Social and Economic Supplement (ASEC) of the Current Population Survey (CPS). The ASEC is the official source of government statistics on poverty and inequality.

**Type of data:** Survey

**Unit of analysis:** Families

**Sample definition:** Families included in the 1996–2017 CPS-ASEC; over 4 million families in the total sample, but only about 1 million in the linked sample with two observations.

**Time frame:** Calendar years 1995–2016

**Poverty definition used:** Supplemental Poverty Measure (SPM). The Supplemental Poverty Measure is available from the Census Bureau from only 2009 onwards; for 1995 through 2008, we use the historical SPM developed by Wimer and colleagues in “Historical Supplemental Poverty Measure Data,” Columbia Population Research Center, 2017.

### Limitations:

- The division of counties into “nonmetropolitan” and “metropolitan” (referred to here as “rural” and “urban”) is not ideal for studying rural populations, as about half of all people living in rural areas live in metropolitan counties.
- Since households are observed at most twice, these data cannot be used to study long-term poverty transitions, and can only assess annual changes in resources and poverty.
- The analysis is descriptive and not causal, and can only assess annual changes in resources and poverty transitions.