

# IRP focus

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On March 20 to 21, 2018, the Rural Policy Research Institute (RUPRI)—a national center for research on policy affecting rural America—and the Institute for Research on Poverty at the University of Wisconsin–Madison co-sponsored a research conference on “Rural Poverty: Fifty Years After *The People Left Behind*” in Washington, D.C., in collaboration with the Stanford Center on Poverty and Inequality at Stanford University and the Center for Poverty Research at the University of Kentucky. Funding support was also provided by the National Institute of Food and Agriculture, the Annie E. Casey Foundation, and the U.S. Department of Health and Human Services, Office of the Assistant Secretary for Planning and Evaluation.

This issue features three articles that draw from the conference, all on the theme of the social safety net and poverty dynamics (poverty entries and exits). The articles explore what affects transitions into and out of poverty, and how the social safety net in the United States affects those experiencing such transitions in rural versus urban areas.

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Edited by Emma Caspar.

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One important finding that emerges from these articles is the importance of how poverty is measured when estimating poverty levels and evaluating safety net effects. The U.S. Census Bureau uses two primary poverty measures—the official poverty measure and the Supplemental Poverty Measure. The official poverty measure compares pre-tax cash income to a poverty threshold based on three times the cost of a nutritionally adequate diet in 1964, adjusted for inflation and family size. The Supplemental Poverty Measure—introduced in 2011 to provide a more complex statistic—provides an alternative view of poverty, comparing post-tax, post-transfer cash and near-cash income to a poverty threshold based on expenditures on food, clothing, shelter, and utilities, with adjustments for family size and composition and for geographic differences in housing costs. Using the official poverty measure, poverty typically is higher in rural areas compared to urban areas, while the opposite tends to be true using the Supplemental Poverty Measure. The studies described in these articles used various definitions of poverty, and different sets of data, to examine different aspects of poverty dynamics and how reliance on the social safety net compares across regional boundaries and over time.

José Pacas and Elizabeth Davis looked at poverty transitions among rural and urban families based on the Supplemental Poverty Measure, using two-year panels constructed from the 1996 to 2017 Current Population Survey Annual Social and Economic Supplement. They found that lower rural poverty rates compared to urban rates were driven by lower levels of rural residents remaining poor over time. Although they found that rates of entry into or exit out of poverty were similar across rural and urban areas, their findings also indicated that those just above the poverty line in rural areas were less likely to fall into poverty than urban residents in similar economic circumstances. They also found that changes in wages and salaries were most often the key factor in explaining poverty transitions, though this was less often true in rural than urban families.

Iryna Kyzyma explored how the length of poverty spells varied across urban and rural populations, using the official poverty measure and monthly data from the Survey of Income and Program Participation for May 2008 to November 2013. In contrast to Pacas and Davis (and using a different measure of poverty), she found that rural individuals had longer poverty spells on average than urban individuals. Kyzyma also notes that poverty rates calculated with monthly income data were much higher than those based on annual data, especially in rural areas, suggesting that rural residents were more likely than those in urban areas to experience frequent short-term spells of poverty.

David Rothwell and Brian C. Thiede examined the role of the U.S. social welfare system in reducing the poverty rates of families with children in urban and rural areas using Current Population Survey Annual Social and Economic Supplement data for 2005 to 2016. They used three poverty measures: the official poverty measure, an earnings poverty measure (sometimes called a market income measure, based solely on earnings and other private income), and an alternative poverty measure similar to the Supplemental Poverty Measure. They found that, during the Great Recession, rural families with children experienced greater declines in earnings and disposable household income than urban families with children, were more likely than their urban counterparts to fall below the official poverty line, and took longer to recover. Like Pacas and Davis, they identified changes in earnings as the most important factor in rising poverty rates, but unlike them, Rothwell and Thiede found that this effect was larger in rural than in urban areas for their sample of families with children. Using their alternative poverty measure based on post-tax, post-transfer cash and near-cash income, they found that the social safety net reduced poverty by a larger proportion for rural families than for urban ones. ■

## Moving into and out of rural poverty

José D. Pacas and Elizabeth E. Davis

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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.

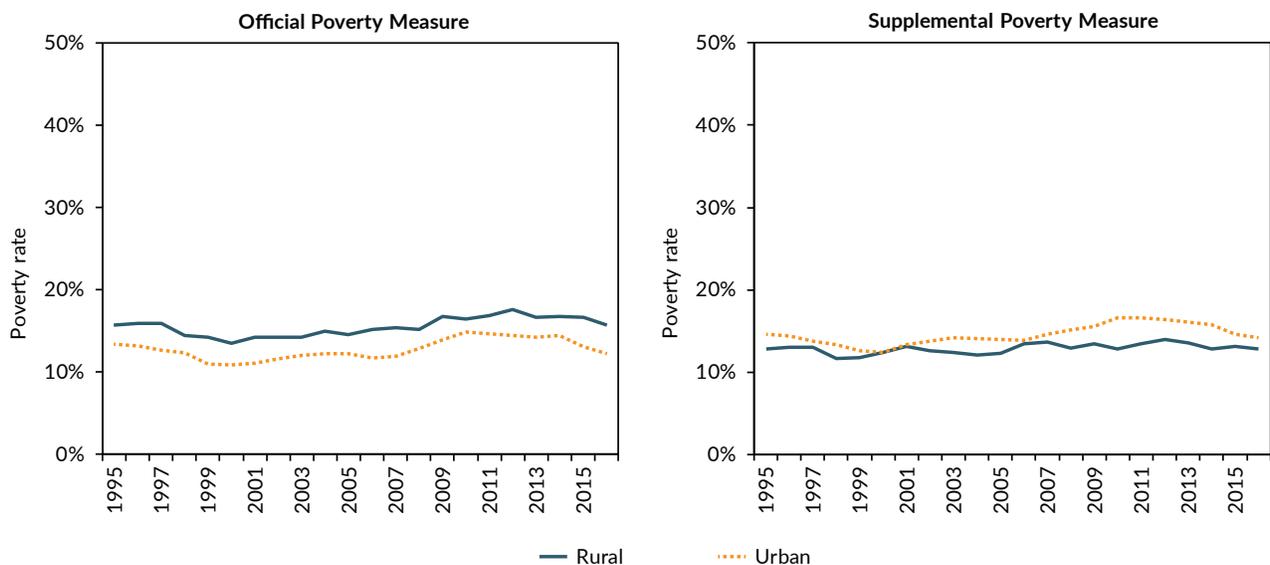
Among other differences, the measure of family resources to be compared to the poverty threshold also varies between the two measures. As shown in the measuring poverty text box, the official poverty measure uses total pre-tax cash income as a measure of resources. The Supplemental Poverty Measure, which 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.

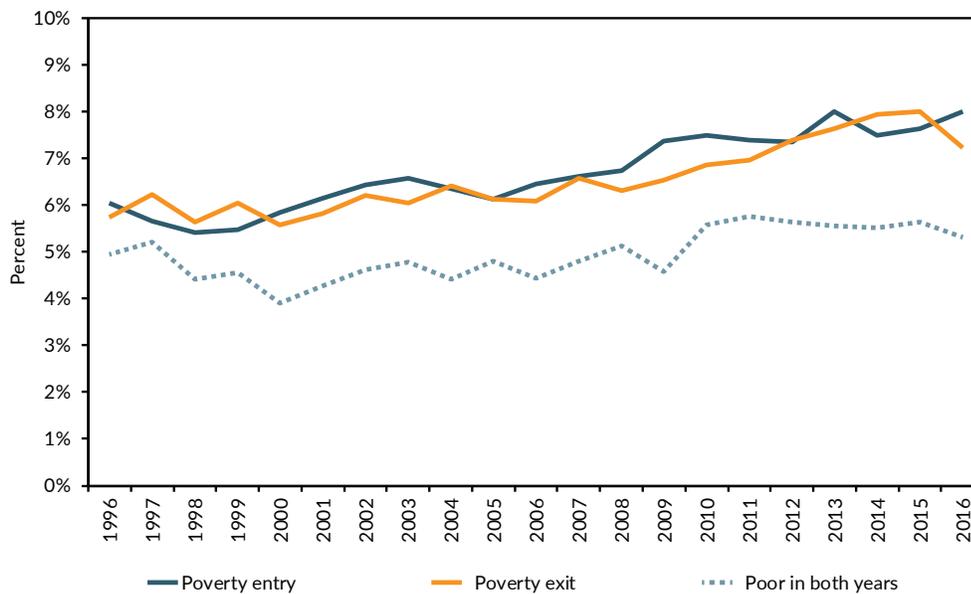
Differences in rural-urban poverty rate trends between the official poverty measure and the Supplemental Poverty Measure suggest the importance of the geographical adjustment for cost-of-living differences as well as the broader array of income sources included in the latter measure.

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.

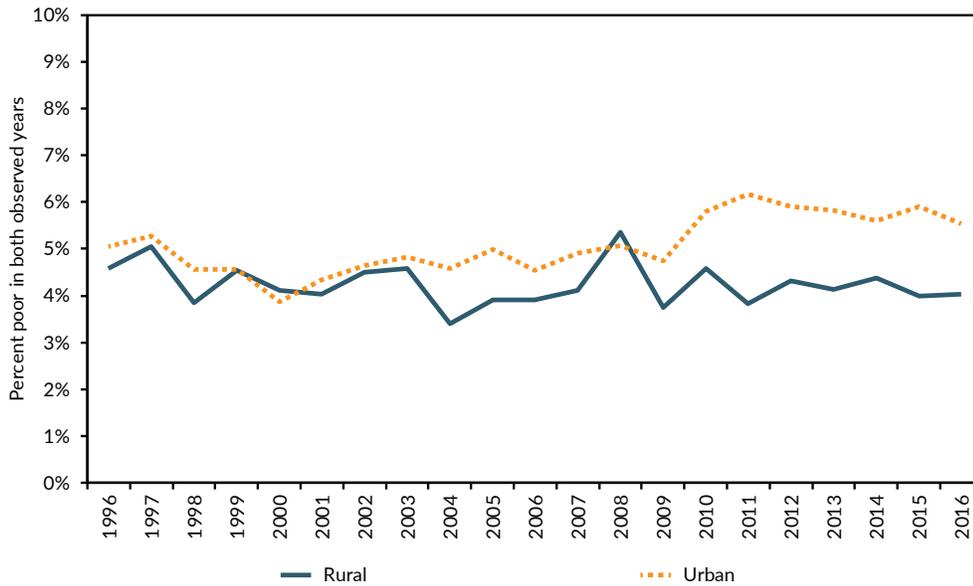
Figure 2. More families enter and exit poverty over a two-year period than stay poor for both years.



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:

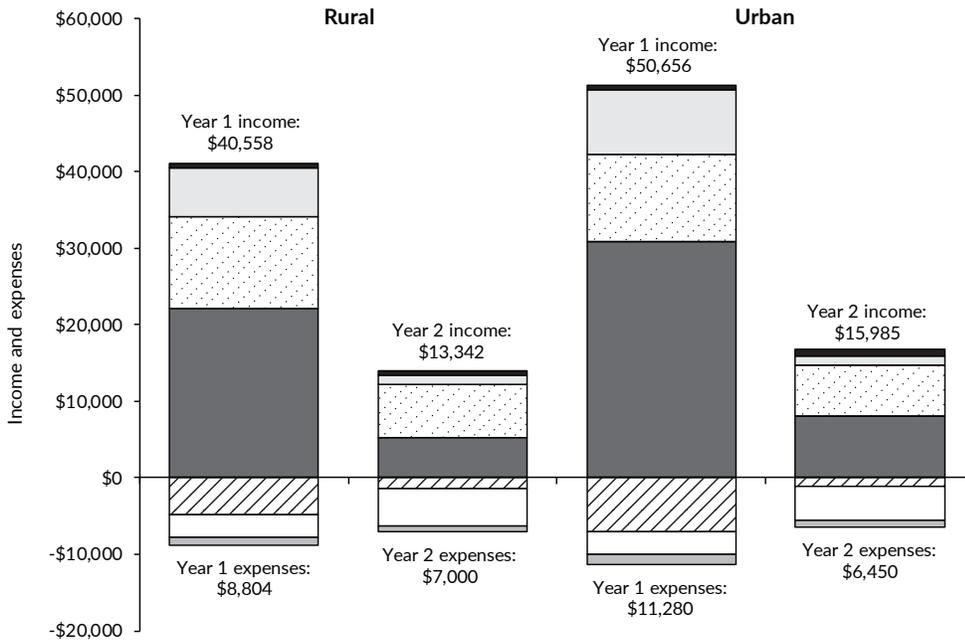
- **Income from employment:**
  - Wages and salary
  - Business and farm income
- **Public cash transfers** such as:
  - Social Security income
  - Temporary Assistance for Needy Families (TANF) cash assistance
  - Disability benefits
  - Survivor benefits
  - Unemployment compensation
- **Private cash 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.

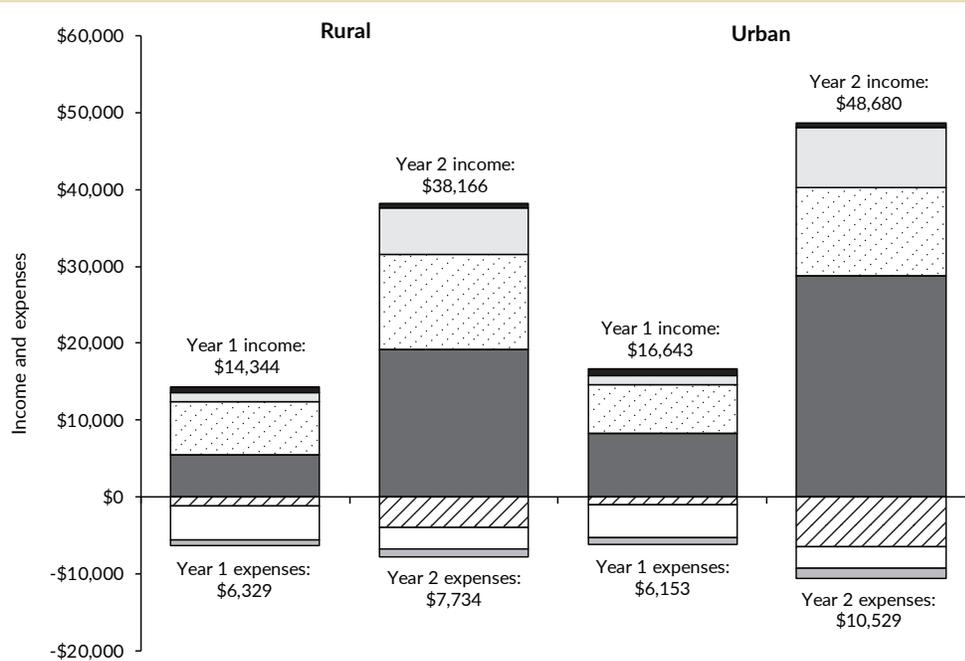
**Income:**

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

**Expenses:**

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

**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.

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.

## Rural-urban disparity in poverty persistence

Iryna Kyzyma

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### TAKEAWAYS

**In rural compared to urban areas, a larger proportion of residents experience poverty.**

**Poverty rates calculated from monthly income data are much higher than those based on annual data, especially in rural areas.** This suggests that people in rural areas tend to experience short-term poverty spells more frequently.

**On average, poverty spells last longer in rural compared to urban areas, whereas spells of nonpoverty are shorter, implying higher persistence of poverty in rural than urban areas.**

**The longer someone is out of poverty, the more likely he or she is to stay out.** However, this effect is much stronger in urban areas than in rural areas within the first two years after exiting poverty.



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**Extensive evidence shows that poverty is more prevalent in rural compared to urban areas.**<sup>1</sup> According to the U.S. Census Bureau, the 2016 official poverty rate in rural areas was almost 16 percent compared to just over 12 percent in urban areas. The study described in this article explores this poverty divide by looking at poverty persistence (that is, how long people remain below the poverty line), comparing the experiences of those living in rural areas to those in urban areas.

Most of the prior research in this area has examined whether the persistence of poverty varies between urban and rural areas at the county level. As a result, we know little about the dynamics of poverty at the person-specific (individual or family) level. For example, do the same people stay poor year after year, or do some people rise above the poverty line while others fall below it? My study seeks to add to the literature by analyzing urban-rural differences in the persistence of poverty at the person-specific level.

I address the following research questions:

- Does the amount of time that individuals spend below the poverty line differ between rural and urban areas?
- What is the probability of exiting (or reentering) poverty in rural and urban areas given the length of time spent poor (or nonpoor)?
- Which individual and family characteristics are associated with the amount of time that individuals remain below, or stay above, the poverty line?

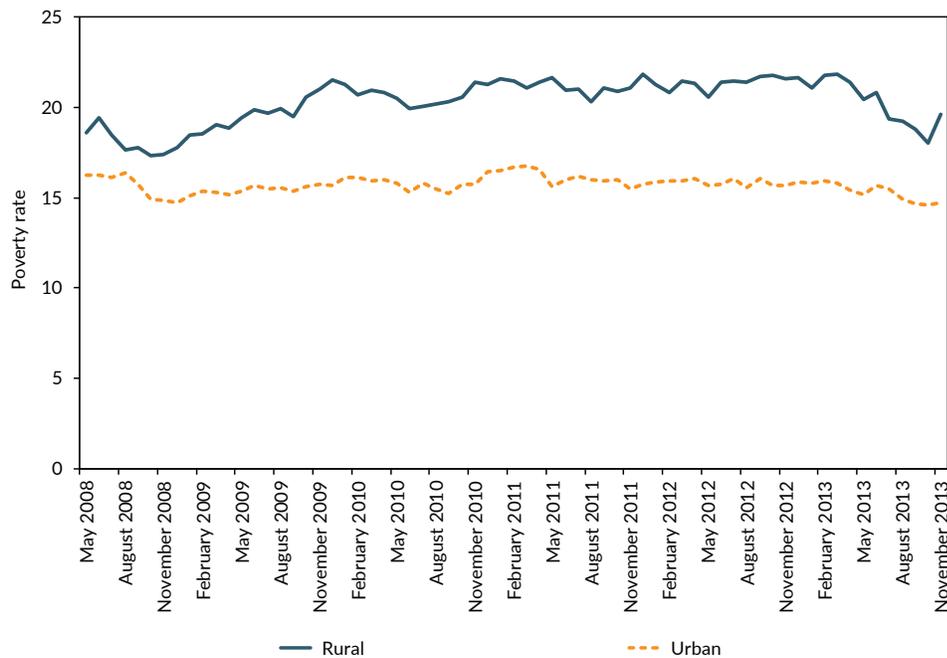
### Methods and analysis

This study uses over five years of monthly survey data from the 2008 Panel of the Survey of Income and Program Participation (SIPP). Family members were interviewed every four months from September 2008 through December 2013. At each interview, they were asked questions about their socioeconomic situation in each of the previous four months.

I use these data to assess family member poverty status using the Census Bureau's official poverty measure. By this measure, all members of a family are considered poor if the total family income is below an officially established poverty threshold. The threshold is established using the minimum amount needed to purchase food and other essential goods by family size. Although the official definition of poverty has shortcomings in terms of comprehensively measuring both needs and resources, the government still uses it for tracking poverty at the national level over time and as a starting point for defining eligibility of individuals for public transfer programs. (See text box on measuring poverty later in article for more information.)

I consider poverty spells to begin in the first month that family income falls below the poverty line, and to end in the first month that family income moves above that line. Similarly, nonpoverty spells begin with the first month above the poverty line and end in the first month below it. Since the length of time spent

Figure 1. Monthly poverty rates were consistently higher in rural compared to urban areas.



Source: 2008 SIPP Panel, weighted monthly estimates.

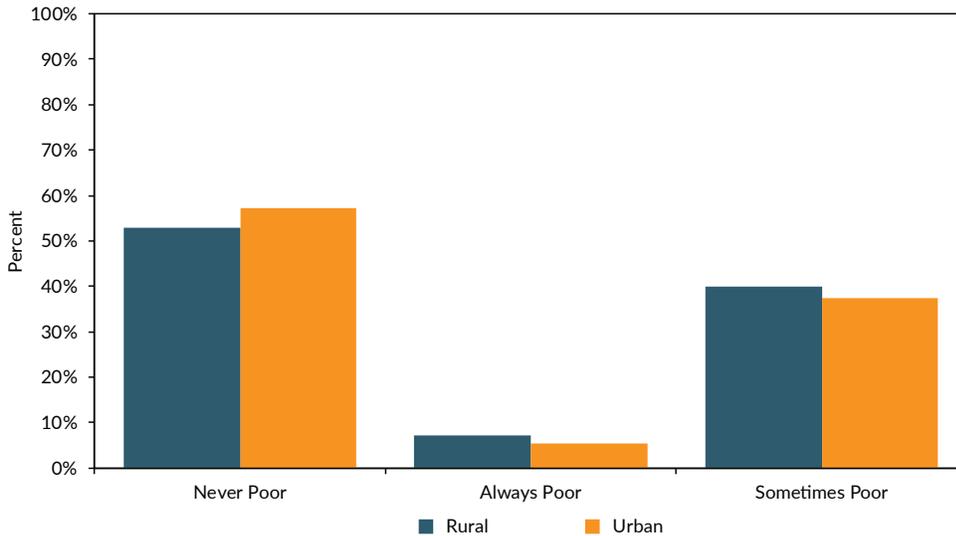
in poverty is an important variable in the analysis, when calculating length of spells, I included in the sample only spells (of either poverty or nonpoverty) that began during the data period, because without knowing when a spell began, it would be impossible to calculate its length.

The larger gap between monthly and annual poverty rates in rural compared to urban areas suggests that rural residents tend to experience short-term poverty spells more frequently.

#### Comparing rural and urban poverty rates

As Figure 1 illustrates, monthly poverty rates were consistently higher in rural compared to urban areas. While previous studies using annual data have found this gap, it is also notable that the monthly poverty rates shown in Figure 1 are considerably higher than corresponding annual poverty rates, particularly in rural areas.<sup>2</sup> For example, the average monthly poverty rate in rural areas was almost 4 percentage points higher than the annual poverty rate reported by the U.S. Census Bureau. The difference was less extreme in urban areas, where the average monthly poverty rate was just over 1 percentage point higher than the annual poverty rate reported by the Census Bureau. The larger gap between monthly and annual poverty rates in rural compared to urban areas suggests that rural residents tend to experience short-term poverty spells more frequently.

**Figure 2. More than half of all sample members were never poor during the research period, regardless of whether they resided in an urban or rural area.**



**Source:** Author's calculations using data from the 2008 SIPP Panel, weighted monthly estimates.

**Notes:** Figure shows poverty status in rural and urban areas, May 2008 to November 2013. N = 24,302 rural, 101,336 urban. All rural-urban differences are significant at the 0.001 level.

## Time spent in or out of poverty

Figure 2 shows that more than half of all sample members were never poor during May 2008 through September 2013, regardless of whether they resided in an urban or rural area. A relatively small proportion of people were poor over the entire research period. As expected given the trends shown in Figure 1, rural residents were more likely than urban residents to have been poor some or all of the time. On average, rural residents were in poverty for almost eight months out of the 64-month time period, compared to about six months for urban residents.

Table 1 shows the number, average length, and cumulative duration of poverty and nonpoverty spells. Note that the sample for this analysis includes only those spells for which the beginning occurs during the sample period, so all individuals in this sample

**Table 1. Rural and urban individuals experienced the same number of poverty and nonpoverty spells, but in rural areas poverty spells were longer, nonpoverty spells were shorter, and individuals spent more time in poverty overall.**

	Rural	Urban	Difference
<b>Poverty spells</b>			
Average number of spells per individual	1.8	1.8	0.0
Average spell duration (months)	7.0	6.4	0.6**
Average number of months an individual spends poor over multiple spells	11.4	10.1	1.3***
<b>Non-poverty spells</b>			
Average number of spells per individual	1.6	1.6	0.0
Average spell duration (months)	10.5	11.6	-1.2***
Average number of months an individual spends nonpoor over multiple spells	17.3	18.7	-1.3***

**Source:** Author's calculations using data from the 2008 SIPP, weighted monthly estimates.

**Notes:** N = 1,135,120 rural person-months and 311,348 urban person-months.

\*\*Significant at the 0.01 level; \*\*\*significant at the 0.001 level.

spent at least some time both in and out of poverty. The table shows that rural and urban residents experienced the same number of poverty and nonpoverty spells, but that poverty spells in rural areas were longer on average by about half a month, and nonpoverty spells were shorter by over a month. Looking at the total time that an individual spent in poverty over all observed spells, those in rural areas spent an average of over a month longer in poverty than those in urban areas.

Next, I look at rural-urban differences in the number of months that individuals spend in poverty without interruption. I found that in both rural and urban areas, the probability of exiting poverty fell the longer one stayed poor. On average, poor individuals in urban areas exited poverty more quickly than those in rural areas. The rural-urban gap in the likelihood of exiting poverty was statistically significant but small, ranging from 1 to 3 percentage points over time. A similar analysis on the probability of re-entering poverty based on time spent out of poverty found somewhat larger rural-urban differences. Half of those who had exited poverty in rural areas dropped back below the poverty line within nine months. In urban areas, it took 12 months for half of those who had exited poverty to return to poverty. The rural-urban gap in the likelihood of re-entering poverty over time was statistically significant, and large relative to the gap in the likelihood of exiting poverty over time.

## Demographic characteristics of individuals in rural and urban areas

A potential explanation for rural-urban differences in poverty trends is differences in individual characteristics of residents. Table 2 shows selected

### 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.

**Table 2. Rural and urban residents were notably different by race and ethnicity, and by educational attainment of the family head.**

Demographic characteristics	Rural	Urban	Difference
<b>Age</b>			
Below 18	24.3	24.2	0.1
18–24	9.2	9.9	-0.6*
25–54	37.7	41.7	-4.1***
55–64	13.3	11.7	1.6***
65+	15.5	12.5	3.0***
<b>Race and ethnicity</b>			
White non-Hispanic	77.1	61.4	15.8***
African-American non-Hispanic	6.9	13.3	-6.4***
Hispanic	10.6	17.8	-7.2**
Other	5.4	7.6	-2.2**
<b>Household type</b>			
Single	16.6	16.9	-0.3
Single parent	11.9	11.5	0.5
Couple	64.2	62.4	1.7
Other	7.3	9.2	-1.9***
<b>Educational attainment of household head</b>			
Less than high school	15.1	10.9	4.3**
High school diploma or GED	31.1	22.9	8.2***
Some college	35.9	34.4	1.5
4-year college graduate or more	17.9	31.9	-14.0***
Number of observations	1,008,084	4,066,018	

**Note:** The table shows proportions of individuals in each demographic subgroup. All numbers are weighted estimates; differences are tested for significance accounting for the SIPP survey design. \* Significant at the 0.05 level; \*\* significant at the 0.01; \*\*\* significant at the 0.001 level.

population-level demographic characteristics for rural and urban areas. In my sample and generally, rural and urban residents are notably different by race and ethnicity, with whites making up a larger share of rural residents than urban, and African Americans and Hispanics making up a much larger share of urban residents than rural. Another established large difference between rural and urban areas is in the educational attainment of the family head, which was borne out in my study, with nearly one-third of urban residents having at least a college degree, compared to only 18 percent of rural residents.

### Probabilities of exiting and reentering poverty

Next I conducted regression analyses to look at the associations between person-level characteristics and the probability of exiting or re-entering poverty by rural and urban status. The results indicate that characteristics typically associated with the probability of being poor, such as gender, age, ethnicity, family composition, and the level of education, were also associated with the length of time an individual spends in or out of poverty. On average, men were more likely than women to exit poverty and were less likely to reenter it regardless of where they live. A similar finding applied to households with more than one member compared to those who lived alone. In contrast, I found that children, older individuals, individuals of any race or ethnicity other than white, and members of households where the educational achievement of the household head was less than a college degree, on average faced longer episodes of poverty and shorter episodes of nonpoverty than their counterparts between the ages of 25 and 54, white, and highly educated.

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## There were notable rural-urban differences in the probability of exiting poverty for specific subgroups.

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In a comparison of rural and urban areas, I found that after controlling for demographic characteristics, the relationship between the amount of time spent in poverty and the likelihood of exiting poverty was the same in both areas. All else equal, the longer one was in poverty, the more difficult it was to exit. However, there were notable rural-urban differences in the probability of exiting poverty for specific subgroups. Individuals over the age of 55, Hispanics, and those in the “other” race and ethnicity category (that is, those who are not white, black, or Hispanic) were more likely to exit poverty (and thus less likely to experience long poverty spells) in rural than in urban areas. In contrast, single parents and those in couple-based families were more likely to experience long spells of poverty if they resided in rural areas.<sup>3</sup>

### 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. Resources are calculated as pre-tax cash income.

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, counting tax credits and near-cash in-kind benefits such as the Supplemental Nutrition Assistance Program (SNAP) and housing assistance. Non-discretionary expenditures such as medical out-of-pocket costs, child care, work expenses, and child support paid to another household are subtracted.

The study described in this article uses the OPM.

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

With respect to re-entering poverty, again, all else equal, the longer one was out of poverty, the more likely one was to stay out. However, this effect was much stronger in urban areas than in rural areas. Blacks and families where the household head did not have a four-year college degree were more likely to re-enter poverty if they resided in urban areas compared to rural areas.

## Conclusions

In my study of person-level poverty dynamics in rural versus urban areas, I found that a higher proportion of rural residents experienced poverty, and they stayed in poverty longer than those in urban areas. On average, in rural compared to urban areas, an uninterrupted episode of poverty was half a month longer, and an uninterrupted episode of nonpoverty was one month shorter. While statistically significant, these rural-urban differences in the average duration of poverty and nonpoverty episodes are relatively small. However, the rural and urban distributions of the total amount of time spent below or above the poverty line differed more substantially. For example, the median length of a nonpoverty spell over the 64 months included in the analysis was nine months in rural areas compared to 12 months in urban areas.

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A higher proportion of rural residents experienced poverty, and they stayed in poverty longer than those in urban areas.

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The regression results for probabilities of exiting or re-entering poverty, controlling for the amount of time spent above and below the poverty line and for the demographic characteristics of individuals, also reveal substantial differences between rural and urban areas. While individuals in both rural and urban areas were less likely to re-enter poverty the longer they stay out of it, this effect was much stronger in urban areas. All else equal, single parents and couple-based families were more likely to experience long episodes of poverty if they resided in rural areas. In contrast, older individuals and Hispanics are actually less likely to experience long poverty spells in rural areas. Blacks and those in families with a household head without a four-year college degree were much more likely to re-enter poverty if they resided in urban places compared to their rural counterparts.

Further research in this field is still needed. Although the research discussed in this article provides some evidence on the differences in the persistence of poverty between rural and urban areas, many questions remain open. As an example, one might think about the dependence of the results on the definition of poverty used in the analysis. In this article, I focus only on

the official poverty measure, which, among other things, does not take into account differences in the costs of living between various geographical regions of the United States, including rural and urban areas. Using an alternative measure of poverty that takes into account these differences might yield a completely different picture of the rural-urban divide in the persistence of poverty. Examining the factors lying behind the difference in the persistence of poverty between rural and urban areas in general, and in the length of time spent below the poverty line by various population sub-groups in particular, may also yield useful results. Is it the prevalence of these subgroups in certain areas that makes them more vulnerable in the face of poverty or the role of institutions which operate in those areas? I leave these questions for future research. ■

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<sup>1</sup>See, for example, J. L. Semega, K. R. Fontenot, and M. A. Kollar, “Income and poverty in the United States: 2016,” Current Population Reports. Washington, D.C.: U.S. Census Bureau, 2017.

<sup>2</sup>Note, however, that the study by José Pacas and Elizabeth Davis, summarized in this issue and using the Supplemental Poverty Measure and data from the Current Population Survey (CPS), finds that poverty rates in rural areas are lower than those in urban areas. For a 2005 summary of rural poverty research, see B. Weber, L. Jensen, K. Miller, J. Mosley, and M. Fisher, “A Critical Review of Rural Poverty Literature: Is There Truly a Rural Effect?” *International Regional Science Review* 28, No. 4 (2005): 381–414.

<sup>3</sup>“Other” race includes those who in census data do not identify as Hispanic and do identify as American Indian and Alaska Native, Asian, Native Hawaiian and Other Pacific Islander, or who identify as two or more races.

#### Type of analysis:

- Descriptive analyses of (1) the persistence of poverty in urban and rural areas, and (2) the amount of time spent in or out of poverty by area.
- Regression analysis of the probabilities of exiting and reentering poverty

**Data source:** 2008 Panel of the Survey of Income and Program Participation (SIPP). The SIPP is a representative survey of U.S. families. Family members are interviewed every four months; for the 2008 panel, families were interviewed 16 times, covering the period from September 2008 through December 2013. The SIPP provides longitudinal monthly data, making it possible to identify even short episodes of poverty.

**Type of data:** Survey

**Unit of analysis:** Individual

**Sample definition:** Spells where the beginning occurs during the sample period; all individuals in the sample spent at least some time both in and out of poverty.

**Time frame:** Data were collected from September 2008 through December 2013, covering the period May 2008 through November 2013

**Poverty definition used:** Official poverty measure (OPM)

**Limitations:** Metropolitan and non-metropolitan definitions do not line up perfectly with urban and rural. Individuals whose only poverty spell began before the sample period are excluded; since such spells are likely to be long, estimates of poverty persistence should be considered to be lower bounds.

## Child poverty in rural America

David W. Rothwell and Brian C. Thiede

*David W. Rothwell is Assistant Professor of Public Health at Oregon State University. Brian C. Thiede is Assistant Professor of Rural Sociology, Sociology, and Demography at Pennsylvania State University.*

### TAKEAWAYS

**From 2004 to 2015, poverty** (based on the official poverty measure thresholds and total household disposable income) increased for rural families with children, and fell for urban families.

**After the Great Recession of 2007 to 2009,** earnings recovery was slow, and particularly so in rural America.

**Declines in earnings were the most important factor in rising poverty rates,** and this effect was twice as large for rural families.

**Social welfare system transfers reduced poverty for rural families** by an average of about 35 percent more than for urban families.



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### More than one in four rural children lived in a family with

income below the official poverty line in 2013, compared to one in five in 1999. Possible reasons for this rise in rural child poverty include changes in family composition, educational attainment, labor markets, and changes to social welfare policies. The social welfare system in the United States, comprising the full array of income transfers, tax credits, and other benefits available to those in need, was designed to offset economic hardship. While researchers have thoroughly documented the changing nature of the social welfare system including how it responded to the Great Recession, most of this work has not examined differences between rural and urban areas. In particular, relatively little is known about how the social welfare system functions for rural families with children. With the study described in this article, we seek to add to this knowledge by assessing whether current social welfare programs are effectively protecting rural families with children from poverty.

Our research questions include:

- How did earnings, total income, and poverty change from 2004 through 2015?
- How did trends in earnings, income transfers, and poverty vary across different types of families?
- How much of the changes in child poverty were accounted for by changes in earnings and transfers, respectively?

In addressing these questions, we consider how observed trends for rural families compare to those for urban families.

### Child poverty in rural America

Our study looks at poverty among families with children, particularly rural families. This population is of interest for three reasons. First, children who experience poverty and associated forms of disadvantage are at an increased risk of experiencing negative outcomes as they age, including dropping out of high school, early pregnancy, poor health, and low socioeconomic status.<sup>1</sup> Even if a person becomes more advantaged later in life, the negative effects of childhood economic adversity may persist. Policies that reduce childhood poverty may thus also have positive effects on economic attainment in adulthood.

Second, child poverty is of interest because children, and particularly rural children, experience disproportionately high poverty rates compared to working-age adults. For example, in 2016 about one in four rural children and one in five urban children were poor, compared to only about one in eight working-age adults. We focus especially on rural children because they are more likely than urban children to live in areas with high rates of poverty, and therefore live in both poor families and poor places.<sup>2</sup>

Third, rural families with children are of particular interest because current demographic trends could increase child

poverty, particularly in rural areas, including changes in family structure amid decreasing marriage rates, increased racial and ethnic diversity, and declines in parents' post-high school educational attainment.<sup>3</sup> The extent to which these demographic changes will indeed increase child poverty, and the effects of that poverty throughout an individual's life, could be mitigated by the U.S. social welfare system.

## The social welfare system

The social welfare system in the United States comprises all the income transfers, tax credits, social insurance policies, and other benefits available to families and individuals. The components of this system fall into the following three categories:

- Universal benefits for which eligibility does not depend on income, including Social Security and Unemployment Insurance;
- Safety net programs generally targeted to the poor and near-poor, which include Medicaid, housing subsidies, the Supplemental Nutrition Assistance Program (SNAP; formerly known as Food Stamps), and cash assistance such as Temporary Assistance for Needy Families (TANF); and
- Work supports provided through employers and the tax system, including the Earned Income Tax Credit (EITC), and employer-sponsored health insurance.

The U.S. social welfare system largely relies on safety net programs that provide work supports instead of cash benefits to offset family economic hardship. The system began in 1935 with two universal programs and a safety net program. The universal programs, Social Security and Unemployment Insurance, are available to all workers who have been employed and made sufficient contributions through payroll taxes. The means-tested safety net program, Aid to Families with Dependent Children (AFDC, intended to provide assistance to children in poor families), would eventually become TANF. The 1960s and 1970s saw the arrival of most of the other major social welfare programs that currently exist, including Food Stamps (now SNAP), Medicaid and Medicare, Supplemental Security Income, and the EITC.

Three major trends characterize the social welfare system in the United States. First, total spending on the system has increased steadily since the 1960s.<sup>4</sup> Second, over the past 25 years, there has been a shift in policy away from guaranteed income support and towards a work-based system.<sup>5</sup> The 1996 Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA)

## 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.

## Income sources

For this analysis, we use the following income sources when calculating poverty (see “Measuring Poverty” box):

**Earnings**, including wages, salaries, self-employment income (including farm income), and property income.

**Other private income sources**, including pension or retirement income, and private transfers such as child support payments.

All **transfers** that are counted as family income when calculating the **official poverty measure**, specifically:

- Social Security income
- TANF cash assistance
- Supplemental Security Income
- Unemployment Insurance
- Workers' compensation
- Veterans' payments
- Survivor benefits
- Disability benefits

All **transfers** that are counted as family income when calculating the **Supplemental Poverty Measure**, specifically:

- Near-cash in-kind benefits such as the Supplemental Nutrition Assistance Program (SNAP) and the National School Lunch Program; and
- Tax-related transfers such as the Earned Income Tax Credit (EITC).

replaced AFDC with TANF and eliminated the benefit as an entitlement, added time limits, and expanded work requirements. The PRWORA also made large expansions in the work-based EITC and childcare subsidy program. Third, the social welfare system, which began with a focus largely on redistributing income to single-mother families with children, now focuses on older adults, the disabled, married-parent families, and the working poor.<sup>6</sup>

## Methods and analysis

We use repeated cross-sectional data from the 2005 to 2016 Annual Social and Economic Supplement (ASEC) to the Current Population Survey (CPS), which provide detailed information on employment and income for 2004 through 2015.<sup>7</sup> This time period allows us to describe poverty trends before, during, and after the Great Recession of December 2007 through June 2009.

We look at income composition and poverty for families with children. The income components we use to measure family resources are all cash and near-cash income (see text box for more detail about measuring income). We use three poverty measures, all based on official poverty measure (OPM) thresholds, but using three alternate resource measures:

- Earnings only;
- Earnings, other private income sources, and transfers included in the official poverty measure; and
- Total disposable income, including transfers and tax credits counted in the Supplemental Poverty Measure (see text box for more information about measuring poverty).

We also look at results separately for four combinations of family structure and employment status during the prior year:<sup>8</sup>

- Married couples where both parents work;
- Married couples where one parent works;
- Single parents who work; and
- Single parents who do not work.

### How did earnings and total income change during the study period?

Across the families with children in our sample, average total income stayed roughly the same from 2004 until 2015, as did the composition or mix of income sources by our three types of resource categories, as shown in Figure 1. However, there are several notable differences between rural and urban areas. First, average disposable

## 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.

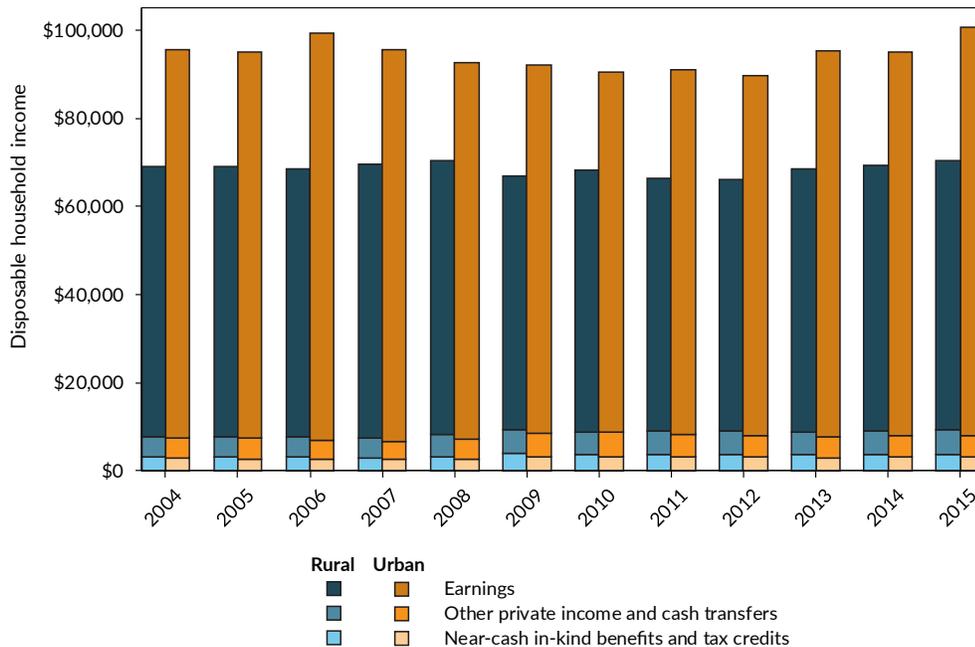
OPM poverty thresholds are calculated as three times the cost of a nutritionally adequate diet in 1964, adjusted for inflation and family size. Resources are calculated as pre-tax cash income.

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 and near-cash income, counting tax credits and in-kind benefits such as the Supplemental Nutrition Assistance Program (SNAP) and housing assistance. Nondiscretionary expenditures such as medical out-of-pocket costs, childcare, work expenses, and child support paid to another household are subtracted.

The study described in this article uses three poverty measures based on the official poverty measure thresholds and three alternate-resource measures: (1) earnings poverty, which includes earnings and other private income sources only; (2) the official poverty measure, which adds in cash transfers; and (3) an alternative poverty measure based on disposable household income, which adds in post-tax, post-transfer cash and near-cash income included in the Supplemental Poverty Measure, but not considering all nondiscretionary expenses, and not adjusting for family unit composition or geography. None of the measures account for taxes.

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

**Figure 1. Average disposable household income for rural families was lower in each year 2004–2015 than that for urban families, although rural families nearly always received more transfers from the social welfare system.**



**Source:** The Annual Social and Economic Supplement (ASEC) of the Current Population Survey (CPS) for calendar years 2005–2016.

**Note:** Amounts are shown in 2016 dollars.

household income (the full column height in Figure 1) was always lower in rural areas. Second, while total income did not immediately return to pre-recession levels after the Great Recession ended in 2009, the recovery was even slower in rural areas. Over the 12-year period, average income increased by only 2.1 percent in rural areas, compared to 5.5 percent in urban areas. Finally, public transfers accounted for a larger proportion of household income for rural families (over 10 percent) compared to urban families (about 6 percent).

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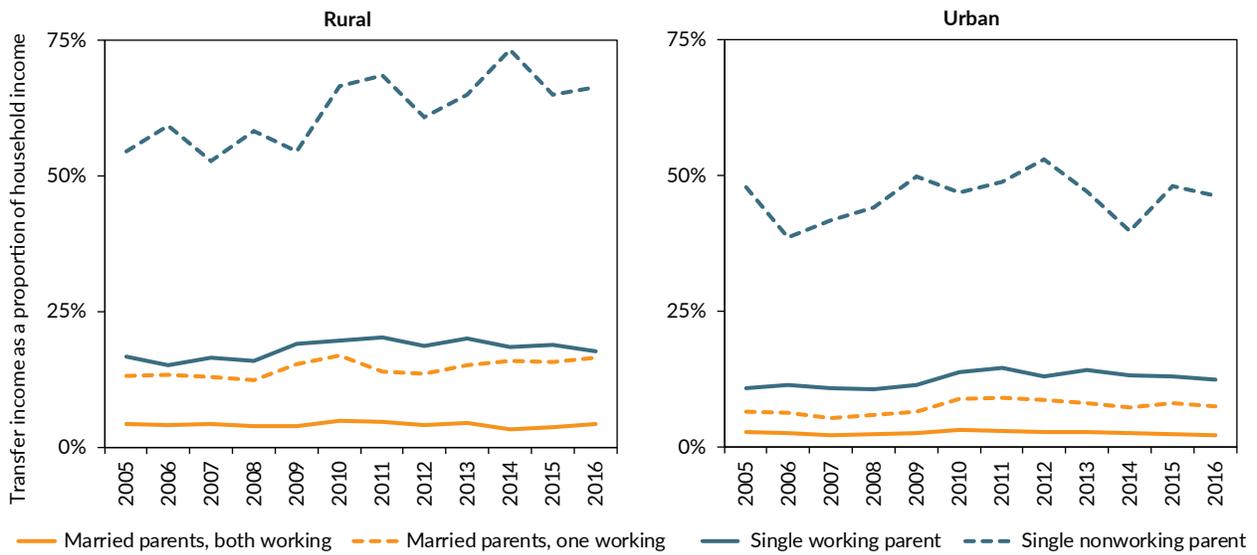
While total income did not immediately return to pre-recession levels after the Great Recession ended in 2009, the recovery was even slower in rural areas.

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Next, we look at the proportion of disposable income accounted for by public transfers by rural-urban status for our four combinations of family structure and employment status, as shown in Figure 2. We find that the rural-urban gap in transfers as a proportion of income persists across family-work structures, with a particularly large gap for families with only one worker, married or single.

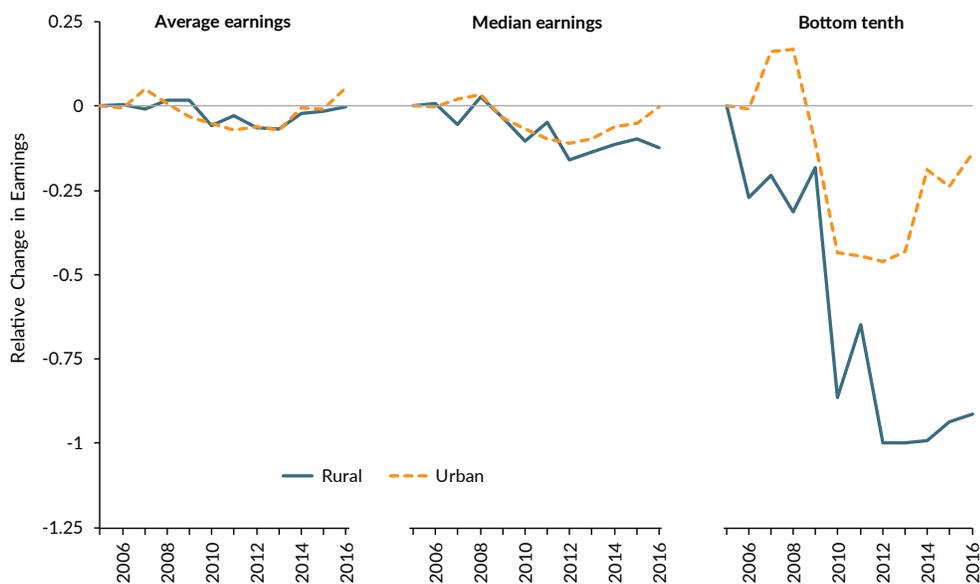
Figure 3 shows the change in earnings over time across different points in the income distribution. Trends in average earnings, shown on the left side of the figure, are fairly similar between rural and urban families. However, as shown in the center of the figure, median earnings (that is, the amount that divides the distribution into two equal groups,

**Figure 2. Social welfare system transfers make up a substantially larger proportion of disposable income among rural families compared to urban families for all types of family-work structure, but particularly for families with only one worker.**



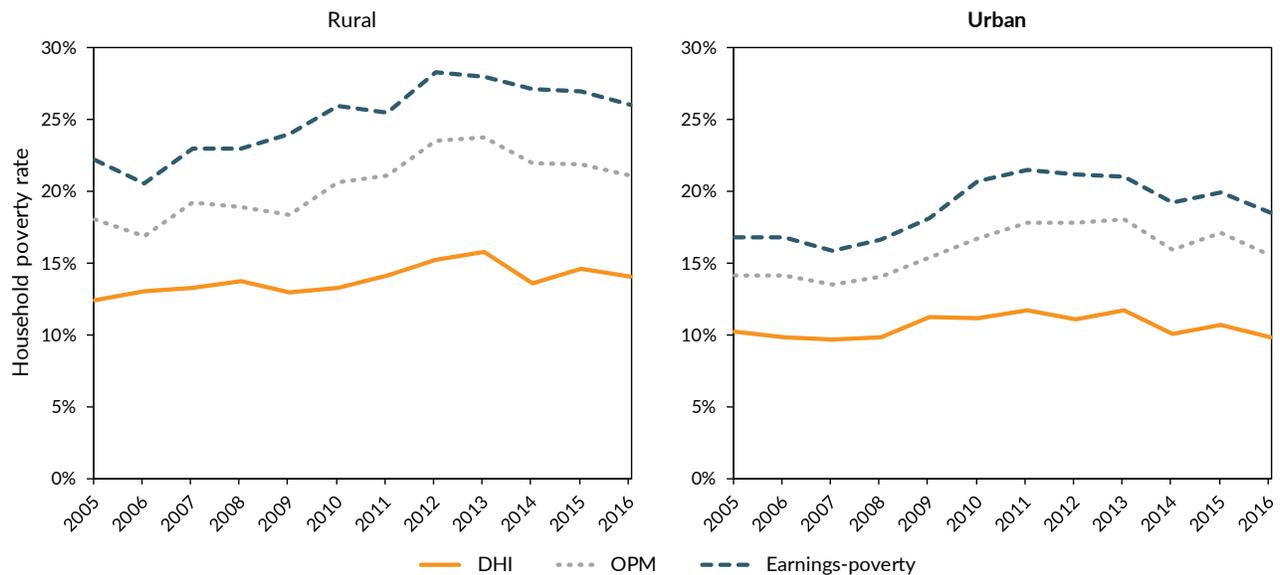
Source: The Annual Social and Economic Supplement (ASEC) of the Current Population Survey (CPS) for calendar years 2005–2016.

**Figure 3. Families at the bottom of the earnings distribution experienced the largest income declines, particularly those in rural areas.**



Source: The Annual Social and Economic Supplement (ASEC) of the Current Population Survey (CPS) for calendar years 2005–2016.

Figure 4. Following the Great Recession of December 2007 to June 2009, official poverty rose faster for rural families than urban families; however, one-quarter of the rural-urban poverty gap closes when noncash transfers and tax credits are included in the measure of poverty.



Source: The Annual Social and Economic Supplement (ASEC) of the Current Population Survey (CPS) for calendar years 2005–2016.

Notes: OPM is poverty rate based on the official poverty measure; Earnings-poverty is poverty rate based on earnings from employment; and DHI is poverty rate based on an alternative poverty measure that counts total disposable household income including noncash transfers and tax credits.

with half of all families earning more and half earning less) diverged beginning in 2011. In urban areas, median earnings had returned to pre-recession levels by the end of the study period, 2015, but in rural areas, they were more than 10 percent lower in 2015 than in 2004. Finally, families in the bottom tenth of the earnings distribution, shown on the right side of the figure, have experienced the largest declines. In rural communities, the lowest earners in 2015 made about 85 percent less than the same group in 2004. This is in stark contrast to those families in the top tenth of the earnings distribution (not shown in the figure), who saw little change in earnings over the period, regardless of rural-urban status. The large earnings drop over time in rural communities was mostly explained by more families being out of work and more families with zero earnings.

A similar analysis of changes in disposable household income over time—that is, earnings plus public transfers—shows smaller rural-urban gaps at all points in the distribution, suggesting that income transfers may have a larger effect for rural families than they do for urban families.

### What were the trends in poverty rates?

Figure 4 shows our three poverty measures over time for rural and urban families. Looking first at the official poverty measure, the center line in each panel, we see that poverty rates increase from 2005 through 2013. Following the end of the recession in 2009, rural poverty rates continued to rise at a higher rate than those for urban families, up to a high of 24 percent in 2013.

Earnings-poverty rates (that is, poverty based on official poverty measure thresholds but accounting for only earnings), the top line in each panel, are consistently higher than official poverty rates, but the shape of the line is very similar, showing that trends in earnings are correlated with trends in the official poverty measure. As expected given rural-

urban earnings trends, earnings-poverty is significantly higher in rural areas than in urban areas.

Finally, our alternative poverty measure based on disposable household income (which includes post-tax, post-transfer cash and near-cash income relative to official poverty thresholds) is shown in the bottom line in each panel. This poverty rate is consistently much lower than the official poverty rate, and fluctuates less, indicating less sensitivity to changes in the national economy. The figure also shows that the additional transfers and tax credits included in the alternative poverty measure close the rural-urban poverty gap substantially, by nearly 25 percent.

Comparing earnings-poverty to a measure that includes all disposable household income indicates the extent to which the social welfare system counteracts poverty in the United States. Our findings are similar to those of the Council of Economic Advisors, which found that rural child poverty in 2015 would have been about 70 percent higher in the absence of the social welfare system during the Great Recession.<sup>9</sup>

These poverty trends also varied across family structure and employment status. Considering only rural families with children, and using our alternative poverty measure, which includes noncash transfers and tax credits, we find that married couple families with two working parents had a very low risk of poverty, under 1 percent. When only one parent in a married-couple family works, the poverty rate rises to 10 percent. For working single-parent families, the rate averages about 15 percent, around 50 percent higher than the rate for two-parent families with one worker. For non-working single-parent families, the poverty rate was extremely high, with an average of about two-thirds of all such families in poverty over the period.

How much of the change in rural child poverty was accounted for by changes in earnings and transfers?

Among rural families with children, our alternative poverty measure increased by 1.7 percentage points over the study period, compared to a decrease of 0.2 percentage points for the entire sample of families with children. When we look at the contribution of the various income components to this increase in rural poverty, as shown in Figure 5, we find that changes in earnings were particularly important in explaining the increase in rural poverty. In fact, if the other components had not changed at all during the study period, declines in earnings alone would have increased the alternative poverty measure rate by about 3 percentage points rather than 1.7 percentage points. Other private income sources such as pensions and private transfers also declined, but accounted for relatively small increases in the alternative poverty measure rate.

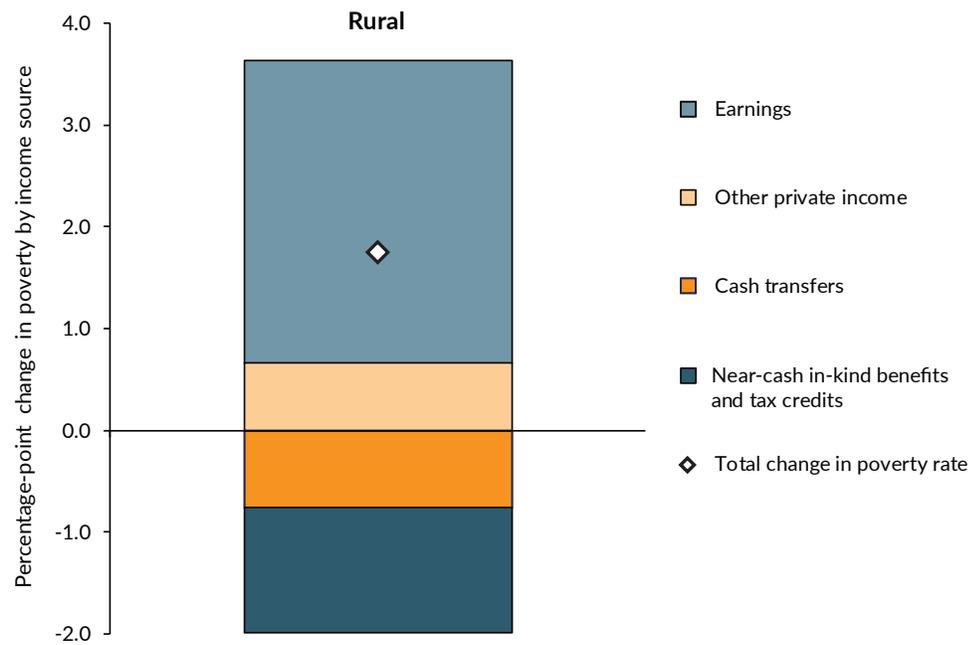
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## Changes in earnings were particularly important in explaining the increase in rural poverty.

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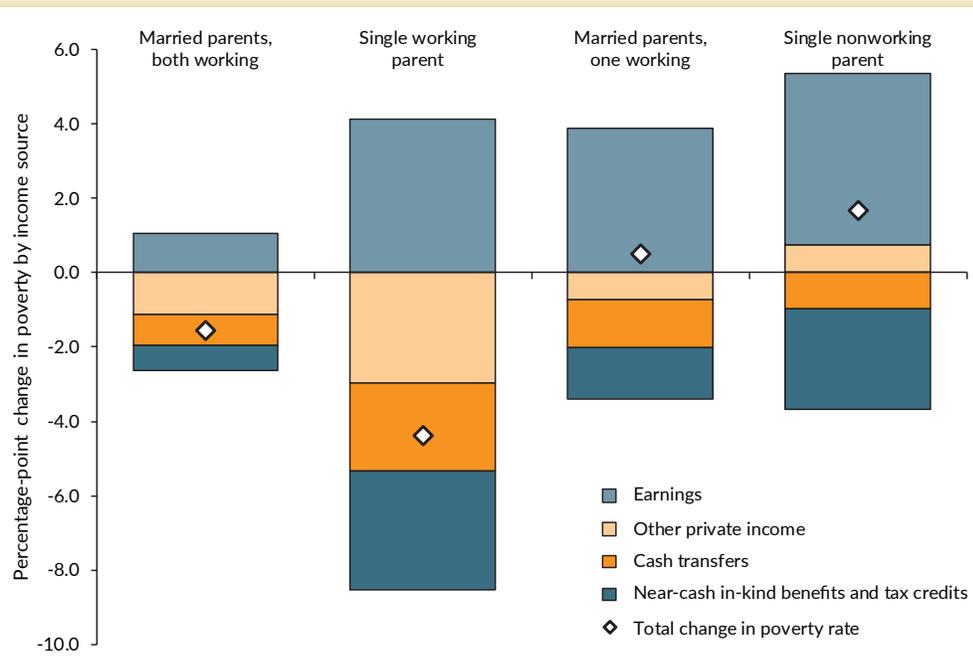
While earnings were decreasing during the study period, income from public transfer income increased for those living in rural settings. Transfers that are counted as resources for the official poverty measure, including TANF, Supplemental Security Income (SSI), and Unemployment Insurance reduced poverty by 0.8 percentage points. The additional transfers included in our alternative poverty measure, including the EITC and SNAP, reduced poverty even more, by 1.2 percentage points.

Figure 5. Declines in earnings between 2004 and 2015 were the most important income component in explaining the 1.7 percentage point increase in the rural poverty rate.



Source: The Annual Social and Economic Supplement (ASEC) of the Current Population Survey (CPS) for calendar years 2005–2016.

Figure 6. Among rural families, increases in transfers outweighed declines in earnings for married families where both parents work and single-parent working families, resulting in poverty decreases for those families.



Source: The Annual Social and Economic Supplement (ASEC) of the Current Population Survey (CPS) for calendar years 2005–2016.

We also looked at the contribution of the various income components to the change in the rural poverty rate, using our alternative poverty measure, for our four categories of family structure and employment status. As shown in Figure 6, the overall poverty rate for married rural families with two working parents fell by 1.6 percentage points during the study period. Although declines in earnings alone would have resulted in a poverty rate increase of 1.1 percentage points, increases in the other income components were together large enough to counter the drop in earnings. A similar but even more dramatic result is found for working rural single-parent families; declines in earnings alone would have raised the poverty rate by 4.1 percentage points, but increases in other income sources resulted in the largest net decline in poverty among rural families.

Rural married families with only one parent working saw a slight increase in poverty of 0.5 percentage point, the net effect of a large decrease in earnings (accounting for a 3.9-percentage-point poverty increase) that was not quite outweighed by the poverty-reducing effects of increases in transfers and other income sources.

Finally, for nonworking rural single-parent families, the poverty rate rose by 1.7 percentage points. These families experienced a very large decrease in earnings—possibly reflecting relatively recent changes in their work status, or loss of earnings from other household members who worked—accounting for a 4.6 percentage point increase in poverty. Other private income also declined. Much of this loss was offset by transfers that together reduced the poverty rate by 3.6 percentage points. Note that there is a very large difference in the social welfare supports that are available to single working parents compared to single nonworking parents, in particular in the set of transfers that are included in the official poverty measure (the second column from the right in each set in the figure). These transfers reduced poverty by 2.4 percentage points for working single parents, but only by 1 percentage point for single parents that did not work.

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Changes in transfers over the study period reduced rural poverty by a greater proportion for single compared to married parents.

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### Conclusions and directions for future work

During our study period of 2004 through 2015, including the recession-affected period of 2007 to 2009, poverty increased for rural families while it fell for urban families overall. Declines in earnings were particularly important in explaining the increase in the rural poverty rate. At the beginning of the study period, poverty based solely on earnings—without regard to income transfers provided through the social welfare system—was around 5 percentage points higher in rural compared to urban areas. While earnings-poverty in urban areas began to fall in 2011, it continued to rise steeply in rural areas until 2013. In order to understand the extent to which the social welfare system in the United States offset earnings declines, we estimated an alternative poverty measure based on disposable household income, which includes noncash benefits such as SNAP and tax credits such as the EITC, which are not included in the official poverty measure. We find that in rural compared to urban areas, social welfare transfers as a whole account for a larger proportion of disposable household income and have a larger poverty-reducing effect. Overall, we find evidence that the social welfare system cushioned to some extent the major changes in earnings that were observed during the Great Recession of 2007 to 2009.

Married families with two workers are at the least risk of falling into poverty of all family-work structures we examined, but the proportion of families in this category has fallen steeply in the past decade, while the proportion of families with a single parent has risen. We find that changes in transfers over the study period reduced rural poverty by a greater proportion for single compared to married parents, suggesting that the social welfare system may reduce market inequality across family structures.

While our results demonstrate the importance of the social welfare system as a whole, more work is still needed to isolate the relative contributions of specific policies such as SNAP and the EITC. Our finding that families at the bottom of the earnings distribution, particularly those in rural areas, experienced the largest earnings declines while those at the top of the distribution remained relatively insulated suggests a need to better understand income inequality in rural America.<sup>10</sup> Finally, a combination of qualitative and quantitative work is called for to better understand how the social welfare system works in rural areas, and how it can be improved. ■

<sup>1</sup>See, for example, G. W. Evans and M. A. Schamberg, “Childhood Poverty, Chronic Stress, and Adult Working Memory,” *Proceedings of the National Academy of Sciences* 106, No. 16 (2009): 6545–6549.

<sup>2</sup>J. P. Ziliak, “Are Rural Americans Still Behind?” *Focus* 34, No. 2 (2018): 13–24. <https://www.irp.wisc.edu/wp/wp-content/uploads/2018/11/Focus-34-2b.pdf>

<sup>3</sup>Ziliak, “Are Rural Americans Still Behind?”

<sup>4</sup>R. A. Moffitt, “The Deserving Poor, the Family, and the U.S. Welfare System,” *Demography* 52, No. 3 (2015): 729–749. <https://doi.org/10.1007/s13524-015-0395-0>

<sup>5</sup>L. M. Berger, M. Cancian, and K. Magnuson, “Anti-Poverty Policy Innovations: New Proposals for Addressing Poverty in the United States,” *RSF: The Russell Sage Foundation Journal of the Social Sciences* 4, No. 2 (2018): 1–19. <https://doi.org/10.7758/RSF.2018.4.2.01>

<sup>6</sup>Moffitt, “The Deserving Poor, the Family, and the U.S. Welfare System.”

<sup>7</sup>S. Ruggles, K. Genadek, R. Goeken, J. Grover, and M. Sobek, *Integrated Public Use Microdata Series: Version 6.0 [dataset]*. Minneapolis, MN: University of Minnesota, 2015. Retrieved from <http://doi.org/10.18128/Do10.V6.0>

<sup>8</sup>Our original analysis also included a fifth category—married couples where neither parent works. Due to small sample sizes, the results for this group are less reliable and are not reported in this article, but are included in the full paper on which this article is based: D. W. Rothwell and B. C. Thiede, “Earnings, the Social Safety Net, and Poverty Among Rural American Families,” Working paper submitted for the 2018 Rural Policy Research Institute conference on “Rural Poverty Fifty Years After *The People Left Behind*,” March 19–20, 2018, Washington, DC.

<sup>9</sup>“Opportunity for All: Fighting Rural Child Poverty,” Council of Economic Advisors, Domestic Policy Council, and Office of Management and Budget, May 2015. Retrieved from [https://obamawhitehouse.archives.gov/sites/default/files/docs/rural\\_child\\_poverty\\_report\\_final\\_non-embargoed.pdf](https://obamawhitehouse.archives.gov/sites/default/files/docs/rural_child_poverty_report_final_non-embargoed.pdf)

<sup>10</sup>Note that the data used for this analysis are not panel data, and thus do not provide information on changes over time for a given household.

**Type of analysis:** Descriptive

**Data source:** The Annual Social and Economic Supplement (ASEC) of the Current Population Survey (CPS) for calendar years 2005–2016 (providing information on employment and income during the prior calendar year).

**Type of data:** Household survey

**Unit of analysis:** Families with children. The Census Bureau’s definition of family for the purposes of measuring poverty was used.

**Sample definition:** Families with children in annual datasets pooled across the 11-year period, excluding members of the fifth through eighth rotation groups in the 2006–2016 samples to account for the rotating sampling structure of the CPS, and excluding observations from the three-eighths experimental sample of the 2014 CPS.

**Time frame:** 2004 to 2015

**Poverty definition used:** Official poverty measure (OPM); in addition, we created two measures of poverty, which use the OPM thresholds but alternative measures of family resources: an earnings poverty measure that considers earnings from wages, salaries, self-employment income (including farm income), and property income; and an alternative poverty measure that reflects transfers such as the Earned Income Tax Credit and the Supplemental Nutrition Assistance Program.

**Limitations:** Metro and nonmetro definitions do not line up perfectly with urban and rural. Analysis does not take into account state variation in welfare policy. Family categories used in analysis count cohabitating family heads as single parents; since cohabitating couples are likely somewhat better off than single adults, the results likely underestimate the economic penalty of growing up in a single-parent family. CPS data has some missing data for earnings because of nonresponse and some have shown the value of transfers to be underreported in the CPS. Risk factors such as race and ethnicity are not included in the analysis. The decomposition methods used do not assume or consider any behavioral responses to the changes in the economy and transfers.

# IRP focus

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