

Development of the Wisconsin Poverty Measure: Methods and Findings for 2008

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Abstract

This paper describes efforts to develop a more accurate, comprehensive, and up-to-date measure of poverty in Wisconsin. The new measure targets areas of greatest need and reflects the effects of anti-poverty policies and programs within Wisconsin by encompassing state-specific taxes and transfers as well as federal program effects. Based on input from state and national experts, the Wisconsin model uses American Community Survey data and imputations to measure the level, depth, and trends in poverty. This session will also assess the ways in which the Wisconsin measure affects the demographic composition of those living in poverty, how this model compares to efforts in other parts of the country, and how it can be used to simulate the effects of policies and programs on poverty in Wisconsin.

Key Words: state poverty measurement

1. Introduction

For many years, researchers and policymakers in federal and state governments have called for a more complete picture of poverty in the United States. The official poverty measure, while useful, captures only pre-tax cash income. This approach is troubling because it does not help define who is living in poverty taking into account all resources available to the family, nor does it show the effectiveness of antipoverty policies. While the federal government is trying to provide a more useful national Supplemental Poverty Measure, several states and localities have tried to address these limitations by developing their own alternative poverty measures. The Wisconsin Poverty Project is building on the poverty measurement efforts of the federal government and New York City to learn more about how both federal and Wisconsin programs affect poverty.

This paper presents initial results for the new Wisconsin Poverty Measure, which reflects not only income, but the value of taxes and public benefits available to low-income Wisconsin residents as well.¹ The strengths of the Wisconsin Poverty Measure are its transparency and therefore its ability to be replicated, its ability to compare poverty

¹This paper presents key findings from our work on the Wisconsin Poverty Measure. Three related reports – *Wisconsin Poverty Report: New Measure, Broader View*; *Wisconsin Poverty Report: Methodology and Results for 2008*, and *Wisconsin Poverty Report: Technical Appendix* – are available on the IRP Web site at <http://www.irp.wisc.edu> and offer further details on methodology and results.

across different demographic subgroups *within* the state (in this paper we focus on children and the elderly) and also its ability to compare poverty across different counties and regions within the state. And finally, the measure reflects the specific policies and priorities of Wisconsin policymakers and residents as they make policy to reduce poverty and increase self-sufficiency.

2. Methods

All poverty measures require two components: a measure of economic need and a comparable and consistent measure of resources, such as income, to meet these needs. Our measure of resources includes cash income, plus major noncash benefits: tax credits and other tax provisions, food stamps (known as FoodShare in Wisconsin and as the Supplemental Nutrition Assistance Program or SNAP on the federal level), public housing, and energy assistance, less work expenses like child care and transportation. Our threshold is based on a threshold recommended by the National Academy of Sciences (Citro and Michael, 1995), but we make an adjustment for Wisconsin's lower cost of living relative to the nation. We also make adjustments to need for families within Wisconsin based on differences in housing tenure (renting versus owning), regional differences in cost of living within the state, differences in family size and composition, and differences in expected out-of-pocket medical expenses. These adjustments determine a level of need specific to each family unit, which is then compared to the family's available resources to determine poverty status.

To assess resources and needs, we used the U.S. Census Bureau's 2008 American Community Survey (ACS), supplemented with administrative data collected in the state of Wisconsin. The ACS collects sufficient data to allow us to report poverty rates for the 10 largest counties in Wisconsin (including six sub-county breakdowns within Milwaukee), as well as for 12 multicounty areas that encompass the rest of the state. In addition, the ACS includes a vast amount of information on housing costs, allowing us to bore down within the state to adjust for regional differences in housing costs across Wisconsin.

The detailed housing data and large sample size are strengths of the ACS; however, the survey also has drawbacks for our measure. For instance, the ACS asks respondents whether they receive food stamps, but not the amount of the benefit. With the help of detailed administrative data, we were able to impute FoodShare benefit amounts. For other in-kind benefits such as energy assistance and public housing we had to estimate both who received benefits and how much, based on ACS income data and on detailed state administrative data on program participation, age, and other characteristics of beneficiaries and amounts of benefits by local area.

To compare the resources families have to the needs they face, we grouped individuals into poverty units, which reflect patterns of income and consumption-sharing across families and individuals living within households. Our poverty unit is expanded beyond the Census Bureau family unit to include unmarried partners who cohabit, foster children, and unrelated minor children.

Poverty status is determined by comparing resources to need. The poverty threshold is a "line" based on a number of factors to capture a floor amount of income that is needed to get by. The basic starting point is the current experimental federal poverty lines,

published by the Census Bureau (2009) and based on food, clothing, shelter, and other expenses set at roughly the 33rd percentile of national consumption for a two-child, two-adult family. In 2008, the national threshold for such a unit was \$27,043.² Our base poverty threshold without medical expenses was \$24,842 for Wisconsin due to the state's lower cost of living relative to many other parts of the United States. For comparison, the official U.S. poverty line for a two-child, two-adult family in 2008 was \$21,834.

We made additional adjustments to the poverty lines based on differences in housing costs (owners with mortgage, owners without mortgage, and renters); the cost of living around the state; family size and composition; and expected medical expenses (varying across families based on health insurance status, presence of elders, and health status). These measures of need were then compared to each poverty unit's available resources to determine poverty status.

In summary, the new poverty measure takes account of federal and state policies designed to increase incomes for low-income persons such as FoodShare, the Wisconsin Homestead Tax Credit, and the federal and state Earned Income Tax Credits (EITC). It also reflects state efforts to insure families and children under BadgerCare and therefore reduce out-of-pocket health care costs. And finally, it takes account of child care expenses, transportation costs, and other work expenses that reduce resources available for low-income workers to meet their family's basic needs. As we demonstrate in this paper, differences in benefits and expenses each have a large effect on poverty in Wisconsin.

3. Results

Our improved Wisconsin measure finds a somewhat higher poverty rate in Wisconsin in 2008, 11.2 percent, rather than 10.2 percent in the official measure.³ This increase of 1.0 percentage point is the net impact of many offsetting adjustments: noncash benefits and refundable tax credits that reduce poverty by increasing family resources, and adjustments for medical and work expenses that increase poverty rates. Other researchers also have found somewhat higher poverty rates under their improved measures (e.g., alternative poverty measures in New York City and Minnesota). Because each local measure has been done independently, we cannot compare poverty in Wisconsin under the Wisconsin measure to poverty in other parts of the country. Instead, the strength of the Wisconsin Poverty Measure is to compare poverty across different demographic subgroups *within* the state (in this paper we focus on children and the elderly) as well as across different counties and regions within the state. Poverty rates by age and region are presented below, followed by a discussion of the sensitivity of the poverty rates to various measurement decisions; that is, the extent to which poverty rates are sensitive to our treatment of homeownership, medical expenses, and within-state differences in cost of living.

²The Census Bureau has calculated four different versions of the threshold for 1999–2008, available at http://www.census.gov/hhes/www/povmeas/web_tab5_povertythres2008.xls. We used the version that included repayment of mortgage principal for owned housing but did not include medical expenses (which we add in separately below).

³We found a margin of error of 0.5 percent for the state poverty rate under the Wisconsin Poverty Measure.

3.1 Poverty by Age

Poverty rates under the Wisconsin Poverty Measure are higher than official poverty rates for both children and elderly sub-groups, as well as for the population overall (see Figure 1). The increase in measured poverty is particularly steep for the elderly, whose poverty rate increases from 7.1 percent to 10.4 percent. As discussed further below, a fair number of senior citizens are living with incomes just slightly above the official poverty threshold and are re-classified as poor when the threshold is increased slightly and adjusted for the high cost of medical-out-of-pocket expenses for the elderly, especially for those in poor health. Child poverty also increases, though by less, rising from 13.3 percent to 13.6 percent. Child poverty remains considerably higher than elderly poverty under the Wisconsin measure (13.6 percent compared to 10.4 percent).

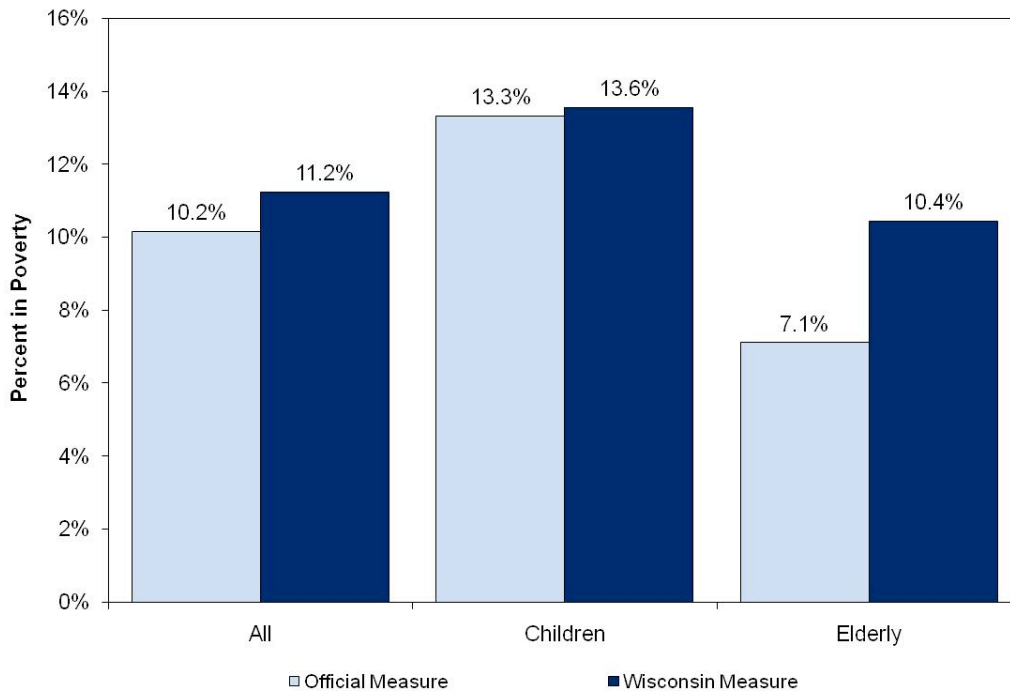


Figure 1: Wisconsin Poverty Rates in 2008 by Age under the Official Poverty Measure and Wisconsin Poverty Measure

3.2 Poverty by County or Multi-County Area

Consistent with our approach last year, we have generated estimated poverty rates for the 10 largest counties in Wisconsin, as well as for 12 multi-county areas that encompass the remaining areas of the state. The multi-county areas used in this paper were predetermined by the boundary lines for the Census Bureau’s Public Use Microdata Areas (PUMAs) and cannot be disaggregated further for single-year poverty estimates.⁴ While some of the multi-county areas comprise only two counties (e.g., Ozaukee and Washington), others require as many as seven to ten of the more rural counties in order to gain sufficient sample size to obtain reliable estimates.

⁴The ACS collects data on a continuous basis, and this year, the Census Bureau plans to release a five-year data file (2005–2009) that will allow estimates at the county level.

Under the Wisconsin measure, the poverty rate ranges from 18.8 percent in Milwaukee to 4.6 percent in the two-county area of Ozaukee/Washington, two of Milwaukee's most affluent suburbs. Under the official measure, the range was slightly smaller, from 17.4 percent in Milwaukee to 3.6 percent in Waukesha County (another wealthy Milwaukee suburb).

Most counties and multi-county areas have poverty rates that are roughly 0.5 to 2.5 percentage points higher under the Wisconsin measure than the official poverty rate.⁵ Some of the people classified as poor under the old measure are re-classified as above poverty under the new Wisconsin measure, because the poverty threshold is adjusted to reflect differences in cost of living (including lower costs of housing in much of rural Wisconsin).

3.3 Poverty Rates under Alternative Specifications

As discussed in the second section, the Wisconsin measure differs from the official measure in a number of different ways. In this section, we show the marginal impact of various specifications of the Wisconsin Poverty Measure. First, we discuss alternative definitions of the poverty unit and poverty universe. Then, we show the marginal impact of counting taxes and non-cash benefits, followed by the marginal impact on poverty of adjusting the threshold for medical expenses, work and child care expenses, homeownership, and geographic differences in the cost of living within Wisconsin. We conclude by showing how many people have resources slightly above the poverty threshold.

Our poverty units, while more inclusive than the usual Census practice of families and unrelated individuals, are less inclusive than households, where all members sharing the same basic unit (common areas like living room, kitchen, heating, lights, etc.) are treated as fully sharing income. The overall poverty rate would fall from 11.2 to 10.4 percent using households as the poverty unit. The biggest differences are in Milwaukee, Dane, and Rock counties.

Our poverty universe includes everyone except individuals living in group quarters. One possible adjustment would be to exclude undergraduate students living in off-campus housing (those in dormitories are already excluded) under the rationale that they may have low income but their basic living expenses are met through assistance from parents or financial aid. Such student populations can be significant in cities such as Madison. A preliminary estimate suggests that the Wisconsin poverty rate would drop by one percentage point overall and by more in Dane, La Crosse, and other counties with large student populations, if we were to exclude individuals 18–23 year of age who are enrolled in school and not living with family members from our poverty estimates. We plan to continue investigating ways to define students and the merits of including or excluding them on various grounds as we continue to improve our poverty estimates.

If we had not counted taxes or non-cash benefits in our resource measure, the overall poverty rate in Wisconsin would have been 13.2 percent, or 2.0 percentage points higher than the 11.2 percent in our Wisconsin measure. Stated another way, current policies on

⁵ Due to the smaller sample sizes of these within-state areas, the margins of error are larger than those for the statewide poverty rate. For some counties and multicounty areas, there is no statistically significant difference in poverty between the official measure and the Wisconsin Poverty Measure.

taxes, food stamps, public housing and energy assistance serve to reduce poverty in Wisconsin by 2.0 percentage points (see Table 1).

Most of this poverty reduction comes as a result of taxes and food stamps. As shown in Table 1, the marginal impact of taxes alone is 0.9 percentage points, and that of FoodShare (SNAP) is slightly more than 0.9 percentage points. Many poor people, especially those with children, receive tax credits that are larger than their owed taxes, as a result of the federal Earned Income Tax Credit (EITC), the Wisconsin EITC, and the Wisconsin Homestead Credit, and thus the net impact of federal and state income and payroll taxes is a reduction in poverty rates. SNAP benefits have an even greater poverty impact, reflecting the size of the program (one out of ten people in Wisconsin received at least one month of SNAP benefits between July 2007 and June 2008) and its focus on providing assistance to low-income populations.

Housing and energy assistance provide assistance to fewer households and have less of a marginal effect on poverty; the existence of these programs (and the inclusion of their value in our poverty measure) reduces poverty by approximately 0.2 percentage points each. As noted above, the combined effect of all four changes is 2.0 percentage points. Also note that, as discussed above and in the technical appendix, we needed to impute the value of taxes, food stamps, public housing, and energy assistance using methods pioneered by the Census Bureau and one of the authors of this paper (Smeeding, 1982).

The marginal antipoverty effects of taxes and SNAP are much larger for children than for the elderly, as shown in Table 1, which shows the marginal increase in poverty rates by age if not for taxes, SNAP benefits, housing assistance, LIHEAP, and the combined impact of all four policies. Taxes and SNAP benefits each reduce child poverty by approximately 2 percentage points or 15 percent, on the margin. The large impacts of taxes and SNAP benefits on child poverty are not unexpected, given that the Earned Income Tax Credit is largely restricted to families with children, and families with children have a particularly high participation rate in the SNAP program. The elderly do gain a net benefit from tax credits, however, which is likely a reflection of the Wisconsin Homestead Credit. Housing and low-income home energy assistance (LIHEAP) benefits do more to reduce elderly poverty than child poverty. In the case of housing assistance, the outcome is expected because several housing programs are targeted on the elderly and disabled.

While adding in the value of taxes and non-cash benefits reduces poverty rates, the next adjustment—adjusting for medical expenses—increases poverty rates, particularly for the elderly. The overall poverty rate increases by 1.7 percentage points, from 9.6 to 11.2 percent, when taking into account people's need to reserve part of their income for out-of-pocket medical expenses such as insurance premiums, co-payments on medical services, prescription and over-the-counter drugs, and uninsured medical expenses. The marginal effect of the medical expense adjustment is highest for the elderly, whose poverty rate increases from 6.6 percent (before the adjustment) to 10.4 percent under the full Wisconsin measure. Adjusting for such expenses also increases poverty among children, but not by as much. As noted in the methods section, we adjust the thresholds to take into account higher average medical expenses by age, health status, and type of insurance; our results might have differed somewhat if we had adjusted for medical expenses by estimating and subtracting actual medical expenses from income, as is proposed in the federal Supplemental Poverty Measure.

We also adjust for work expenses among families with earnings, with an additional adjustment for child care expenses for working families with children under age 12. Subtracting such expenses from family income has a relatively large impact on overall rates (increasing them by 2.1 percentage points) and an even larger impact on child poverty rates (increasing them by 3.9 percentage points). It also has a modest impact on poverty rates for the elderly, because some elderly individuals have earnings and thus work expenses, and others are living with family members with work expenses. As with medical expenses, we used typical expenses for different groups of low-income families, but without attempting to capture the full variation in actual amounts families spend in child care and other work related expenses. In this early version of the model, we have not fully captured the reduction in out-of-pocket child care expenses for those families receiving public subsidies and paying modest co-payments, but we hope to do so in future versions.

The Wisconsin Poverty Measure includes a homeowner adjustment not done in earlier poverty measures, though it is planned to be made in the federal supplemental measure. The adjustment primarily affects elderly poverty rates, which fall after taking into account the lower monthly income needed to meet basic expenses if one owns one's house outright and no longer has to pay rent or mortgage payments every month. If we had not made this adjustment, we would have had an elderly poverty rate of 12.5 percent, 2.1 percentage points higher than our 10.4 percent.

Finally, the Wisconsin measure is subject to two cost-of-living adjustments. First, the threshold was adjusted for lower costs in Wisconsin compared to the nation. Without this adjustment, poverty rates in Wisconsin would have been higher (data not shown). Second, the threshold was adjusted for cost-of-living differences within the state. In particular, the threshold was adjusted downward in more rural areas and adjusted upward for some suburban areas outside the city limits of Milwaukee, reflecting rents for moderate-income families in the state. These adjustments had a relatively modest impact on poverty rates. Without them, poverty rates in Milwaukee County would have been slightly lower, and poverty rates outside Milwaukee would have been slightly higher.

Table 1: Effects of Taxes, Public Benefits, and Threshold Adjustments on Wisconsin Poverty Rates, by Age

| <i>Resource or Threshold Adjustment</i> | <i>Poverty Rate Under Wisconsin Poverty Measure</i> | | |
|--|---|-----------------|----------------|
| | <i>All Individuals</i> | <i>Children</i> | <i>Elderly</i> |
| Taxes and credits | -0.9 points | -2.3 | -0.6 |
| FoodShare (SNAP) | -0.9 | -2.0 | -0.3 |
| Housing Programs | -0.2 | -0.2 | -0.4 |
| Energy Assistance (LIHEAP) | -0.2 | -0.1 | -0.4 |
| Taxes and credits, FoodShare, Housing Programs, and Energy Assistance combined | -2.0 | -4.5 | -1.7 |
| Medical expenses | +1.7 | +1.8 | +3.8 |
| Child care and other work expenses | +2.1 | +3.9 | +0.4 |
| Housing tenure | 0.0 | +0.8 | -2.1 |
| Within-state geographic adjustment | -0.5 | +0.4 | -0.6 |

4. Conclusion

Using a more complete measure of the resources and needs of Wisconsin residents, we found higher overall poverty rates than under the official poverty measure. The Wisconsin measure also allowed us to look within the state at variation by age and region, as well as at the effects of Wisconsin's policies that help individuals and families meet their basic needs.

This paper describes the broad outlines of our efforts to date at developing the Wisconsin Poverty Measure to reflect the needs and concerns of Wisconsin citizens and the effects of its policies on poor people. In describing our model, we have tried to explain the choices made to construct a Wisconsin Poverty Measure and to highlight the effects of our choices so that other states can also replicate the Wisconsin Poverty Measure and change it to fit their needs. Our model's components reflect choices based on expert research, including the 1995 National Academy of Sciences panel and the work of other states and localities on alternative poverty measures, and are based on discussions with Wisconsinites who communicated priorities specific to this state. We also were influenced by the opportunities and challenges of the ACS data and our state's administrative data.

Within Wisconsin, we hope that our model will reflect the Wisconsin Idea, offering a service to the State of Wisconsin by providing a more complete picture of who is living in poverty, and a tool for estimating how antipoverty policies are affecting those they target. We also hope that the Wisconsin model, both now and as it is refined further, can serve as a national model so that other states and localities can follow our lead and create their own measure, substituting their own state and local data and their own choices for poverty measurement, given state and local needs.

As we move forward, we plan to continue improving the model, including new work on the modules for child care and work expenses and out-of-pocket health care costs. In the coming year as new data are made available, we plan to report on poverty in 2009, a period when the state and nation were more strongly affected by the recession. In addition to refining the model, we will expand capacity for simulating the effects of recent and proposed policy changes at the federal and state levels, such as the effect of the 2009 American Recovery and Reinvestment Act provisions, including higher levels of tax credits and higher FoodShare benefits, on poverty within Wisconsin. In following years, we will also mimic the new federal Supplemental Poverty Measure as its details are determined.

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