The Macroeconomy, Social Policies, and Poverty:
Is the Relationship Different in Rural America?

Craig Gundersen – Iowa State University

Extended Abstract

The opportunities for economic progress among low-income households in rural and non-rural America have been dramatically transformed over the past fifteen years. During this time period, there have been two recessions which bookend the longest economic expansion in U.S. history. Alongside these economic forces, major policy changes were implemented including the transformation of the welfare system through the Personal Responsibility and Work Opportunity Reconciliation Act of 1996 and a large expansion of the Earned Income Tax Credit (EITC) Program. After an initial increase in poverty from 1988 to 1993, the combination of social policy changes and economic growth lead to a 25 percent decline in the poverty rate from a high of 15.1 percent in 1993 to a low of 11.3 percent in 2000. This fall was mirrored among those in highest danger of poverty. For example, the poverty rate of single mothers witch children fell from 38.7 percent to 28.5 percent over the same time period. The improvements in the well-being of low-income Americans over this time period has been ascribed to the strong macroeconomy at both the state and national level and the expansion of the EITC program (Gundersen and Ziliak, 2004). The importance of the macroeconomy in improving the well-being of low-income households has been found repeatedly in the large literature looking at the connection between the economy and poverty (e.g., Anderson 1964; Blank and Blinder 1986; Blank and Card 1993; Iceland 2003).

This research on the effects of the macroeconomy and social policies on poverty for the country as a whole has generally ignored whether the possibilities and constraints afforded by the macroeconomy and social policies differ between non-metropolitan (nonmetro) and metropolitan (metro) areas. If the determinants of poverty in nonmetro areas were similar to those in the rest of the country, this research gap would not be relevant. A reading of the extensive literature on poverty in rural areas would lead one, however, to believe the determinants of poverty are different in rural areas. As it pertains to the possible effects of macroeconomic forces on poverty, this literature has found that the economies of rural areas are less diverse than non-rural areas, leading to lower resiliency in response to sector-specific economic downturns; rural areas attract fewer of the high-paying service sector jobs, leading to a more limited ability to capture the returns to growth in the service sector; more rural residents are employed, making them more susceptible to the consequences of unemployment; and structural impediments such as limited child care options and longer commuting distances may make residents in rural areas less able to capitalize on the benefits of increased employment opportunities (McLaughlin, 2002; Cotter, 2002; Lichter, *et al.*, 1994). Conversely, other work has found nonmetro areas to be less influenced by macroeconomic changes in comparison to metro areas (Jensen, *et al.*, 1999). (For a review of the literature on poverty in rural areas, see Weber and Jensen, 2004.) There has also been research on how the changes in social policies may have different effects in rural areas. Of particular import in the new welfare system is the emphasis on work. Given the structural impediments facing low-income households noted above, in rural areas low-income households may face greater difficulties in obtaining work without the ability to as readily use the primary cash assistance program for low-income single mothers – the Temporary Assistance for Needy Families (TANF) program. (For examples of work on the effects of changes in welfare programs on rural areas, see Weber, *et al*., 2002; Brown and Lichter, 2004.)

This paper extends the research on the effects of the macroeconomy and social policies on rural areas in three primary ways. First, I use a 15-year panel of state-level data to incorporate the

substantial heterogeneity in poverty, social policies, and the macroeconomy across states and over time. This use of panel data at an annual basis is a departure from the previous research examining whether the macroeconomy has a different influence on poverty in rural areas. This previous research generally used cross-sections of household-level data or differences in poverty between decennial censi. The use of state-level data also allows for the identification of the major changes in social policies that have occurred at the state-level. In particular, it allows for the identification of the effects of pre-1996 welfare waivers and the Personal Responsibility and Work Opportunity Reconciliation Act of 1996.

Second, I use two measures of poverty – the poverty rate and a poverty index which allows one to measure both the extent and depth of poverty. In contrast, previous research on poverty in rural areas has tended to concentrate exclusively on the poverty rate. While the poverty rate (i.e., the fraction of households with incomes below the poverty line) is oft-used and has the advantage of easy interpretation, it treats all households below the poverty line identically, whether they are one dollar below the poverty line or are far below the poverty line. In response, I use the squared poverty gap along with the poverty rate as measures of poverty. The relevance of using multiple poverty measures is found in Gundersen and Ziliak (2004), where the influence of the macroeconomy and social policies differed depending on choice of poverty measure. As it pertains to poverty in nonmetro areas, Jolliffe (2003) demonstrates that the differences in poverty between nonmetro and metro areas depends on the choice of poverty measure.

Third, unlike previous research on either all families or single parent families, I consider the effects of the macroeconomy and social policies on all families, families headed by a single parent, and families headed by a married couple. Given the differences in poverty by family type (e.g., families headed by a single parent have higher poverty rates than families headed by a married couple), one would imagine that the macroeconomy may have differential impacts on poverty across these groups. These differences are especially relevant for nonmetro areas which have a higher proportion of low-income families headed by a married couple in comparison to metro areas.

This paper also contributes to the broader literature on the effects of the macroeconomy and social policies on poverty. As noted above, this literature has concentrated on the U.S. as a whole, neglecting the differences by metro status. If there are differences by metro/nonmetro status, this will cause a reexamination of the effects of these factors.

To examine whether there are differences between metro and nonmetro areas, I estimate the following model for (a) households in metro areas and (b) households in nonmetro areas:

$$\ln(P_{\alpha,t}^{j,s}) = \rho^j \ln(P_{\alpha,t-1}^{j,s}) + \sum_{k=1}^{K} \beta_k^j E_{k,t}^s + \sum_{m=1}^{M} \gamma_m^j R_{m,t}^s + \lambda_t^j + \mu^{j,s} + \varepsilon_t^{j,s}$$

where j denotes family type (all families, female-headed families, married-couple families); s denotes a state; t denotes year; P_α is the poverty measure (defined below); E_k is the macroeconomic indicator k; R_m is the public policy indicator m; λ_t is a year fixed effect, μ^s is a state fixed effect and ε is a random error term. To see if the macroeconomy and social policies have differential effects in metro and nonmetro areas, I compare the coefficients estimated for the metro and the nonmetro areas.

The two measures of poverty in this paper can be portrayed by the Foster, Greer, and Thorbecke (Foster, *et al.*, 1984) class of poverty measures:

$$P_{\alpha t}^s = \frac{1}{n_t^s} \sum_{q=1}^{Q_t^s} \left(\frac{z_t - y_t^q}{z_t} \right)^\alpha$$

where n is the population, Q is the number of poor families, z is the family-size specific poverty threshold, and y is income. The choice of α defines the poverty measure. As α increases there is a corresponding increase in the weight ascribed to the poorest households. When $\alpha \rightarrow \infty$, all weight is given to the poorest family. In this paper, I use two values of α: α=0 (the poverty rate) and α=2 (the squared poverty gap). The squared poverty gap meets two appealing axioms – the monotonicity axiom (all else equal, a reduction in a poor family's income increases the poverty measure) and the transfer axiom (all else equal, a transfer of income from a poor family to a poor family with a higher income must increase the poverty measure). The head count meets neither of these axioms.

The primary data source for the following analyses is the 1989 to 2002 waves of the CPS. These refer to calendar years 1988 to 2001. On the CPS there is a variable indicating whether a household lives in a metro or a nonmetro area. I use this variable to construct the two samples used in this paper. By state and by metro/non-metro status, I obtain data on total income and wages for all families and further break these down by the marital status of the household head. With this information, I then construct, by state, the poverty rate, the squared poverty gap, the median wage, the median wage squared, and the 80th to 20th percentile of wages. The wage measures are deflated by the Consumer Price Index-All Urban Consumers. Consistent with the official definitions of poverty, I restrict the sample to families which are defined as two or more persons living together who are related by birth, marriage, or adoption. For information on unemployment and per-capita employment growth rates, I use data from the Bureau of Labor Statistics (BLS).

Due to the small sample sizes of many states, especially nonmetro states, annual state estimates derived from income and wage information are susceptible to measurement error. In response, I construct three year moving averages of these variables. This is the method used in the official reports about poverty in the United States to make state-by-state comparisons (Proctor and Dalaker, 2003; Table 4).

I find that the unemployment rate leads to increases in poverty (as measured by the squared poverty gap and the poverty rate) for metro and nonmetro households. The effect is especially large for the poverty rate for married-couple households in nonmetro areas. While the unemployment rate has relatively similar effects in metro and nonmetro areas, the other cyclical measure of the economy in this paper, employment growth per-capita, has a differential impact. For example an increase in employment growth per-capita leads to a decline in the poverty rate among female-headed families in nonmetro areas but not in metro areas. The effect of a more secular measure of the economy – the median wage – is similar across metro and nonmetro areas. In both areas, increases in the median wage lead to decreases in poverty. However, when accompanied by increases in inequality, the effect of increases in the median wage are diminished in both areas.

The effects of social policies also differed across metro and nonmetro areas. For example, in nonmetro areas residents in states implementing welfare waivers earlier saw larger increases in their poverty rates. For the squared poverty gap, female-headed households in nonmetro areas in states implementing welfare waivers earlier saw increases but there were no increases among female-headed households in metro areas I also found that the influence of previous poverty rates and squared poverty gaps (as measured by lagged poverty) differed in nonmetro areas. As an example, for all families, the magnitude of the coefficient on the lagged poverty variable was much larger in metro areas for both the poverty rate and the squared poverty gap. This is one indication that poverty is more persistent in metro areas.

References:

Anderson, L. 1964. "Trickling Down: The Relationship Between Economic Growth and the Extent of Poverty Among American Families." *The Quarterly Journal of Economics* 78(4): 511-524.

Blank, R. and A. Blinder. 1986. "Macroeconomics, Income Distribution, and Poverty." Pp. 180-208 in *Fighting Poverty*, edited by S. Danziger and D. Weinberg. Cambridge, MA: Harvard University Press.

Blank, R., and D. Card. 1993. "Poverty, Income Distribution, and Growth: Are They Still Connected?" *Brookings Papers on Economic Activity* 2: 285–339.

Brown, J. and D. Lichter. "Poverty, Welfare, and the Livelihood Strategies of Nonmetropolitan Single Mothers." *Rural Sociology*. Forthcoming.

Cotter, D. "Poor People in Poor Places: Local Opportunity Structures and Household Poverty." *Rural Sociology*, v67(4), 534-555. 2002.

Gundersen, C. and J. Ziliak. "Poverty and Macroeconomic Performance: A View from the States in the Welfare Reform Era." *Demography*, v41(1), 61-86. 2004.

Iceland, J. 2003. "Why Poverty Remains High: The Role of Income Growth, Economic Inequality, and Changes in Family Structure, 1949–1999." *Demography*, Forthcoming

Jensen, L., J. Findeis, W. Hsu, and J. Schachter. "Slipping Into and Out of Underemployment: Another Disadvantage for Nonmetropolitan Workers?" *Rural Sociology*, v64(3), 417-438. 1999.

Jolliffe, D. "On the Relative Well-Being of the Nonmetropolitan Poor: An Examination of Alternative Definitions of Poverty During the 1990s." *Southern Economic Journal*, 70(2), 295-311. 2003.

Lichter, D., G. Johnston, and D. McLaughlin. "Changing Linkages Between Work and Poverty in Rural America." *Rural Sociology*, v59(3), 395-415. 1994.

McLaughlin, D. "Changing Income Inequality in Nonmetropolitan Counties, 1980 to 1990." *Rural Sociology*, v67(4), 512-533. 2002.

Proctor, B. and J. Dalaker. 2003. *Poverty in the United States: 2002. Current Population Reports, Series P60-222*. U.S. Bureau of the Census: Washington, DC.

Weber, B. and L. Jensen. *Poverty and Place: A Critical Review of the Rural Poverty Literature*. Rural Poverty Research Center Working Paper 04-03. 2004.

Weber, B., G. Duncan, and L. Whitener (Editors). *Rural Dimensions of Welfare Reform*. Kalmazoo, Michigan: W.E. Upjohn Institute for Employment Research. 2002.