

SECTION VI

Conclusions and Recommendations

Principally, we have used two analyses to evaluate the viability of the SAIP estimates for the ARC designation of distressed counties. We first evaluate the accuracy of the distressed status designation at the end of a decade, comparing the 1980 census with the 1989 SAIPE (using the 1990 census as the standard of accuracy). Then we examine the causes of status transitions that would occur in the early 1990s incorporating the SAIPE into the distressed county designation. Incorporating the SAIPE into the ARC distressed county designation formula is complicated by the threshold rather than continuous designation. The extent of error in the SAIP estimates, or any other estimates, cannot be known precisely. In a continuous funding allocation formula, error in the estimates might increase or reduce a county's funding, but in the case of a threshold formula the error might completely eliminate funding for a county (See National Research Council, 2000). Counties that meet the thresholds on the distress indicators are eligible for distress funding while those that do not are not eligible for the funding. Therefore, error in the estimates could result in a county unjustifiably being denied distressed status funding completely. These consequences must be considered carefully in assessing the impact of the SAIPE on the ARC distressed county designation.

The 1980s were an anomalous decade for distressed status in Appalachia and nationally with a significant increase in the number of distressed counties following two decades of decline. It is noteworthy that the distress trends for the U.S. as a whole were the same as those for Appalachia, with distress rising in the 1980s. So it was not that Appalachia was different, but that the decade was a break in the secular decline of distress nationally and regionally. This somewhat undermines the usefulness of comparing the accuracy of the SAIPE and the 1980 census in determining distressed status at the end of the decade. The SAIPE and decade old census results might not behave in the same manner during a more typical decade in which the number of distressed counties declines. With these caveats, the results from the 1980s demonstrate that as a decade progresses, the SAIP point estimates more accurately predict the status of both distressed and non-distressed counties than the poverty estimates from the previous census.

Both the SAIPE and the 1980 census categorized 1990 non-distressed counties very well (99.7

percent and 92.5 percent respectively), but they both largely failed to capture the increase in the number of distressed counties. The SAIPE incorrectly categorized one in five of the distressed counties and the 1980 census incorrectly categorized one in four. The SAIPE upper bound estimate with its higher estimates of poverty than the point estimate did very well in categorizing distressed counties with 97.1 percent accuracy. This would be expected in this decade of relatively increasing poverty in Appalachia. The upper bound performed worse than the other two measures in categorizing non-distressed counties but still correctly categorized 92.5 percent of them. Based on the available evidence, we would conclude that the SAIPE upper bound estimates most accurately categorize counties into the distressed status. However, this is a result of the dramatic and unprecedented shifts in poverty during the decade in Appalachia and may not hold true in future decades.

Although there will not be an independent confirmation of the accuracy of the SAIPE for determining distressed status prior to the release of the 2000 census poverty rates, the impact of the SAIPE on distressed status can be determined for 1994 and 1996, using the SAIP poverty estimates for 1993 and 1995. Using the SAIP estimates in assigning distressed status to counties during the 1990s did not independently account for the majority of status transitions. While it did independently account for between approximately 24 and 40 percent of the transitions (depending on the end year of the time period, 1994 or 1996), its greater utility was demonstrated in combination with the other indicators. To a considerable extent, changes in poverty follow the general patterns of economic change measured by unemployment and income. Of the three distress indicators, unemployment had the largest independent effect on change in distressed status between 1990 and 1994 (accountable for 12 of 42 transitions out of distressed status and both the transitions into distressed status), although poverty affected distressed status independently more frequently between 1990 and 1996 (accounting for 15 of 36 transitions out of distressed status). Income independently affected distressed status change for only a small number of counties. Therefore, during the early 1990s the ARC distressed county designation was affected more by independent changes in unemployment than by the substitution of the SAIPE for census-based poverty estimates. It should be noted that for the small number of counties moving from distressed to non-distressed status during the 1980s (12), changes in poverty alone accounted for nearly three quarters of them.

Substituting the SAIP upper bound poverty estimates into the distressed status designation formula, further reduces the independent effect of poverty on distress. During the 1990 to 1994 period, the number of transitions out of distressed status solely due to changes in poverty would be reduced from 10 to 3 with a reduction in the total number of transitions out of distressed decreasing from 42 to 25. Likewise, during the 1990 to 1994 period, the number of transitions out of distressed status solely due to changes in poverty would be reduced from 15 to just 2 with a reduction in the total number of transitions out of distressed decreasing from 36 to 21. This substitution would also result in four net additional counties moving into the distressed designation in the 1990 to 1994 period and six net additional counties in the 1990 to 1996 period. In sum, use of the upper bound estimate significantly reduces the independent effect of poverty on distressed status during the early 1990s.

Overall, the analysis of the 1990s indicates that the number of distressed counties has declined in Appalachia during the decade. The *Small Area Income and Poverty Estimates* indicate a decline in poverty in Appalachia relative to the U.S. as a whole, which reflects a concomitant relative decline in unemployment and a relative increase in per capita market income. Determination of distressed status using the 2000 Census of Population and Housing poverty rates should confirm this decline.

The distressed status accuracy results from the end of the 1980s suggest that the SAIPE would provide a better determinant of distressed status than the poverty estimates derived from a decade old census. The magnitude and causes of distressed status transitions in the first half of the 1990s indicate that using the SAIP estimates would alter the counties that would be designated distressed by the ARC but not to a radical degree. However, both of these analyses demonstrate that a simple substitution of the SAIP point estimates for census poverty estimates may unjustifiably deny some counties distressed status recognition. As an antidote to this situation it might be more defensible to combine the SAIP point estimate and the SAIP upper bound estimate in the future determination of distressed status. This would accomplish the objective of utilizing more current estimates of poverty while reducing the negative consequences of utilizing an estimate of poverty with greater statistical variation than decennial census derived estimates. In effect, use of both the point and upper bound estimates would serve as a statistical hold-harmless provision under which counties would not lose their distressed designation unless their

poverty rate fell to a level below the distressed threshold with 95 percent confidence. More specifically, the SAIP point estimate initially could be substituted into the distressed designation. Then for counties designated as distressed at the beginning of the decade according to the census but moving out of distressed status later in the decade solely due to change in poverty according to the SAIPE (that is without concomitant changes in unemployment and/or per capita market income), the SAIP upper bound estimates could be substituted into the distressed designation. In this way, only counties for which the magnitude of the change in poverty responsible for removing their distressed status designation was statistically significant in the SAIPE would be negatively affected by the use of the SAIP estimates. This solution still would not benefit non-distressed counties with actual relative changes in poverty of a sufficient magnitude to move them into distressed status, yet undetected by the SAIPE. However, that is a problem that could only be addressed in hindsight, as in the analysis of distressed status at the end of the 1980s in this report.

During the next decade, the accuracy of the SAIPE program should improve significantly as new sources of income and poverty data, especially the American Community Survey (ACS), become available. When fully implemented in 2003, the ACS sample will include approximately 250,000 households each month compared to approximately 57,000 in the March CPS. The sampling design will also select households in each county across the country, unlike the CPS. The ACS will thus sample approximately three million households annually and 15 million households over a five-year period. Poverty estimates for small areas will be derived by taking multiple-year averages from the ACS, up to five years for the least populous counties. However, the ACS slightly modifies the measure of poverty with questions asking about income during the 12 months preceding the interview, rather than the preceding calendar year as in the census and the CPS. The ACS may provide an additional predictor variable in the SAIPE model or a substitute for the current CPS derived dependent variable. Continued funding is a critical issue for incorporating the ACS into the SAIPE program since insufficient funding would likely necessitate reducing the sample size and introducing other discontinuities (NRC 2000). However, the anticipated increased accuracy of the SAIPE will make them an increasingly viable option for the Appalachian Regional Commission's designation of distressed counties.