Endnotes

1. In the text, "nonmetropolitan" and "metropolitan" are used interchangeably with "nonmetro" and "metro." "Rural" and "urban" for "nonmetro" and "metro" are also used.

2. Hipple (1999), p. 27-28.

3. Beneria (1998), no page number.

4. Leistritz and Root (1999), p. 40.

5. From Hipple (1999), p. 29: "The count of displaced workers includes, in addition to those who lost jobs, workers who left jobs in *anticipation* of losing them. Debriefing data collected as part of quality assessment research conducted on the February 1998 Displaced Worker Survey indicate that 79 percent of the displaced were job losers and 19 percent were job leavers. (One percent said they had retired.) Thus, the group referred to as job losers includes some workers who left or retired from their jobs prior to losing them."

6. Standard errors and confidence intervals were calculated for many of the statistics in table 1. The confidence intervals for the number of displaced workers (in thousands) are nonmetro, 500 ± 76; metro, 2,915 ± 152; and U.S. total, 3,415 ± 164. The confidence intervals for the percentage statistics were in the range of ± 4.0 to ± 7.6 for nonmetro; ± 0.9 to ± 2.6 for metro; and ± 0.8 to ± 2.4 for U.S. total.

7. I applied the 11 education and training categories from the Office of Employment Projections, BLS, to the CPS data. The categories are first professional degree, doctoral degree, master's degree, work experience plus bachelor's or higher degree, bachelor's degree, associate's degree, postsecondary vocational training, work experience in a related occupation, long-term on-the-job training, moderate-term on-the-job training, and short-term on-the-job training. The last three categories: long-term, moderate-term, and short-term on-the-job-training were combined to define low-skill occupations. For more information on the education and training categories, see U.S. Department of Labor, Bureau of Labor Statistics, *Monthly Labor Review*, Vol. 120, No. 11, Nov. 1997; and U.S. Department of Labor, Bureau of Labor Statistics, "Occupational Projections and Training Data," Bulletin 2501, Jan. 1998.

8. Displacement rates are usually calculated by dividing the number of displaced workers in a specified worker group by a tenure-adjusted (that is, 3 or more years of tenure with their employer) average over the displacement period (1995-97) of the number of employed workers in the specified worker group. Because of the reclassification of metro/nonmetro in 1993 and the phase-in of the new classification during 1994-95 into the CPS, a meaningful denominator cannot be estimated for 1995. Consequently, I used a tenure-adjusted estimate of each worker group from the February 1998 basic CPS. The February 1998 CPS includes supplemental information on job tenure. Because 1995-98 was a period of employment growth, using 1998 data may make the denominators larger and the displacement rates smaller than if a 1995-97 average could be calculated. Because only 1 month, February, is used, the denominators may be smaller than if the annual averages were used due to seasonal factors, making the displacement rates larger than if a 1995-97 average could be calculated.

9. There is some overlap of the three hardship groups:

    —30 percent of the age 55-64 group had less than a high school diploma;
    —12 percent of the age 55-64 group had household incomes less than $15,000;
    —16 percent of those with less than a high school diploma were age 55-64;
    —37 percent of those with less than a high school diploma had household incomes less than $15,000;
    —18 percent of those with household incomes less than $15,000 were age 55-64;
    —32 percent of those with household incomes less than $15,000 had less than a high school diploma;
    —roughly 5 percent of each group were in all three groups.

10. Each respondent was asked which income range their household income fell in and was not asked individual income level. Consequently, a median income cannot be calculated, and whether or not a household is below the poverty line cannot be determined. In addition, household income range is missing for some observations.

11. Labor-leisure choice theory describes the individual's decision to work and how much time to spend working. It is the decision between labor (work) and leisure (nonmarket activities). The pro-

bit models presented describe the factors that contribute to loss of a job, not the decision not to work. For an overview of labor-leisure choice theory, see Ehrenberg and Smith (1994), chapter 6.

12. Unemployment rates as percentages for 1995-97 were for nonmetro: 5.7, 5.5, 5.2 (average 5.5) and for metro: 5.6, 5.4, 4.9 (average 5.3). Source: ERS calculations using Current Population Survey data. The aggregate nonmetro and metro unemployment rates were unsuccessful in the probit models as they create a singular matrix, and consequently, an unsolvable equation. Future research may include more disaggregated unemployment rates or employment growth rates.

13. Estimates for probability of displacement and probability of employment after displacement were done in SAS, Vers. 6, using PROC MEANS and PROC PROBIT. With much help from Charlie Hallahan, I programmed the normalization transformation of the estimated probit coefficients. Diagnostic statistics were done in SAS, Vers. 6, using PROC LOGISTIC.

14. There are slight differences in the mean values reported in tables 9 and 10, and in table 1. Because the probit procedure does not use observations when any of the variable values are missing, the mean is calculated from a smaller sample than the means in table 1, resulting in slightly different means.

15. The values represent the effect of a change in an independent variable on F^{-1} (probability of displacement) where $F^{-1}(\cdot)$ is the inverse function of the normal cumulative density function. Consequently, the interpretation of probit estimates is not intuitive. To get the increase in the probability of displacement given a one-unit increase in an independent variable, one must instead look at the normalized estimates, which are given by the partial derivative of prob(y_i=displacement) with respect to β and then calculated at the mean values of the independent variables. That is, $\hat{\beta}\phi\left(\overline{X}\hat{\beta}\right)$ where $\hat{\beta}$ is the vector of estimated coefficients of the probit model, ϕ is the standard normal probability density function, and $\overline{X}$ is the vector of the means of the independent variables. The normalized estimates are then the marginal effects of the independent variables at the mean on the probability of displacement.

16. I also did analysis on the population of those displaced with 3 or more years of tenure on their lost job and those not displaced but working with 3 or more years of tenure on their current job, which yielded similar results (not shown).

17. The observations are paired up without pairing the observation with itself. Pairs that are both 1's or 0's for the dependent variable are ignored. For the remaining pairs, the predicted value of the observation with a 1 is compared with the predicted value of the observation with a 0. If the predicted value of the 1 observation is greater than the predicted value of the 0 observation, then the pair is *concordant*. If not, the pair is *discordant*, and if the predicted values in the pair are the same, then the pair is a tie. For more information, see Paul D. Allison, *Logistic Regression Using the SAS System: Theory and Application*, Cary, NC: SAS Institute Inc., 1999.

18. Some of the unemployed workers would have "incomplete spells" of unemployment at the time of the survey; that is, they were unemployed when surveyed but found a job after the survey. These incomplete unemployment spells create a downward bias in the results in that probabilities of employment would be larger if all unemployment spells were completed at the survey. Future research will try to adjust for this bias. However, because jobless duration for those who were employed at the survey was about the same for nonmetro and metro (table 2), there is no reason to think that the bias is different for nonmetro displaced workers than for metro displaced workers.

19. Human capital theory describes the labor market investment decisions individuals make in education and training, migration, and job search. The theory includes explanation of how different characteristics, such as education level, contribute to earnings. For an overview of human capital theory, see Ehrenberg and Smith (1994), chapter 9.

20. Estimates were done using PROC REG in SAS, Vers. 6.

21. For a discussion of the reservation wage and search unemployment, see Ehrenberg and Smith (1994), pp. 590-591.

22. See Podgursky and Swaim (Fall 1987).

23. Future research may use a tobit truncated regression model of earnings loss to include those who were not employed at the survey.

24. Kletzer (1998), p. 133.

25. Information on the Federal programs assisting displaced (dislocated) workers and their employers is available on the Internet. For more information see U.S. Department of Labor, Employment and Training Administration, *http://www.doleta.gov*. For more information on the Trade Adjustment Assistance Program technical assistance to employers, see U.S. Department of Commerce, *http://www.doc.gov*, and look under Economic Development Administration. For more information on ERISA, COBRA, and HIPAA, see U.S. Department of Labor, Pension and Welfare Benefits Administration, *http://www.dol.gov/dol/pwba*.

26. Kletzer (1998, p. 131) provides a short survey of the literature on trade and displacement in this article.

27. Data on the Trade Adjustment Assistance Program certifications are from Employment and Training Administration (ETA), U.S. Department of Labor. Data are for certifications dated January 1994-September 1999, and the data were prepared by ETA on September 21, 1999. Because the certification process takes time, and also because there are amendments and reconsiderations to applications, the number of certifications is dynamic. For example, ETA reported that as of April 14, 2000, the Department of Labor issued certification for 6,593 worker groups under TAA and 1,433 worker groups under NAFTA-TAA.

28. 19.2 percent of the 6.7 million establishments in the United States are in nonmetro areas. Source: ERS calculations from the Enhanced County Business Patterns Data, 1996. Excluded from the data are self-employed persons, domestic service workers, railroad employees, agricultural production workers, most government employees, and employees on ocean-borne vessels or in foreign countries. An establishment is defined as a single physical location at which business is conducted or services or industrial operations are performed. For more information on the County Business Patterns data, see the U.S. Census Bureau website, *http://www.census.gov/*.

29. The estimated number of workers affected is based on total employment at the plants where the petitioning workers worked and is not necessarily the number of workers laid off. In addition, the data were sometimes missing, and about 50 of the certifications did not have an estimated number of workers. For these reasons, the focus is on the number of certifications and not the estimated number of workers affected.

30. See Karen S. Hamrick, "Rural Labor Markets Often Lead Urban Markets in Recessions and Expansions," *Rural Development Perspectives*, Vol. 12, No. 3, June 1997, pp. 11-17; Karen S. Hamrick, "Rural Unemployment Sensitive to Exchange Rates," *Rural Conditions and Trends*, Vol. 3, No. 2, Summer 1992, pp. 10-11.

31. Data on the NAFTA-Transitional Adjustment Assistance Program certifications are from Employment and Training Administration, U.S. Department of Labor. Data are for certifications dated January 1994-January 1999; the data were prepared by ETA on January 29, 1999.

32. The estimated number of workers affected is based on total employment at the plants where the petitioning workers worked. It is not necessarily the number of workers laid off. In addition, a large number of the data are missing, as ETA did not record the estimated number of workers for multiple certifications of one company. For these reasons, the focus is on the number of certifications and not the estimated number of workers affected.

33. State of Hawaii Department of Labor and Industrial Relations website, *http://dlir.state.hi.us/index.html*, on the Business Closing Down or Laying Off page, *http://dlir.state.hi.us/closing.html*.

34. Statistics on establishment size are ERS calculations from the Enhanced County Business Patterns Data, 1996. Excluded from the data are self-employed persons, domestic service workers, railroad employees, agricultural production workers, most government employees, and employees on ocean-borne vessels or in foreign countries. An establishment is defined as a single physical location at which business is conducted or services or industrial operations are performed. For more information on the County Business Patterns data, see the U.S. Census Bureau website, *http://www.census.gov/*.

35. The majority of workers are at firms with fewer than 100 employees. (Note that a firm may contain more than one establishment.) Nationwide in 1996, 57 percent of all employed were at firms with fewer than 100 employees. Source: U.S. Small Business Administration, Office of Advocacy, based on U.S. Department of Commerce, Census Bureau data. See *http://www.sba.gov/advo/*.

36. State of Hawaii Department of Labor and Industrial Relations website, *http://dlir.state.hi.us/index.html*, on the Rapid Response page, *http://dlir.state.hi.us/wdd/kaneohe/rapid_resp.html*.

37. The list of Substate Area Coordinators is from *The National Association of Counties 1999-2000 Job Training Partnership Act and Workforce Investment Act Directory*. SSA's in the Federated States of Micronesia, Puerto Rico, and the Virgin Islands were not included in this analysis.

38. Frenzen (1995), p. 24.

39. 1998 CPS Displaced Worker Survey data.