

The Relationship Between Metropolitan and Non-Metropolitan Locations, Changing Welfare Policies, and the Employment of Single Mothers

by

Signe-Mary McKernan, Robert Lerman, Nancy Pindus, Jesse Valente

The Urban Institute
2100 M Street, NW
Washington, DC 20037

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I. Introduction

Moving recipients off welfare rolls and into employment was one of the primary goals of welfare reform, as enacted in the Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA) of 1996. Early evidence indicates that since welfare reform, caseload levels, unemployment rates for the working age poor, and child poverty rates have all declined, but that there are geographic differences: Non-metropolitan areas are faring worse than metropolitan areas (Bosley and Mills 1999, Rural Policy Research Institute 1999). With single mothers as the primary beneficiaries of welfare and with roughly twenty percent of working-age welfare recipients living in non-metropolitan areas,¹ an important research question is whether the employment responsiveness of single mothers differs in metropolitan and non-metropolitan areas (also referred to as metro and non-metro in the text).

This paper uses the nationally representative Current Population Survey to analyze the relationship between non-metro/metro locations, changing welfare policies, and the employment of single mothers. The paper's contributions to the rapidly growing welfare reform literature include:² a focus on the employment effects of welfare reform rather than the effects on caseloads, use of a difference-in-difference approach rather than the commonly used deviations from time trend approach, the use of monthly rather than annual data, and the analysis of the differential effect of welfare reform in non-metro and metro areas. We find that welfare reform is playing a major role in raising the employment rates of single mothers, and that the gains are approximately as high in non-metro as in metro areas.

The new rules built into PRWORA increase the focus on work by imposing a five-year lifetime limit on receiving federal welfare benefits (and permitting states to impose even shorter time limits), penalizing states that have too few recipients in work activities, and requiring recipients to participate in work activities within two years of receiving benefits. Within the framework of these rules, states have considerable flexibility in designing and operating their welfare programs. PRWORA replaced the federal program Aid to Families with Dependent Children (AFDC) with Temporary Assistance to Needy Families (TANF), which provides block grants to states that can be used for cash assistance, child care, and other services that support the goals of welfare reform.

PRWORA was passed in August 1996, and all state TANF plans had been approved by October 1997. Although variation in state welfare policies was already under way in the early to mid-1990s through a process that permitted waivers to federal welfare requirements for state experimental or pilot welfare reform programs, our focus is on the rules implemented under PRWORA. By 1998-99, state TANF programs were fully implemented and operating in accordance with their approved plans and the overall requirements of PRWORA. In response to the flexibility provided through waivers, and then under TANF, states made decisions concerning program features such as: eligibility and benefits, time limits, work participation requirements,

¹ Source: March 1998 Current Population Survey

² Important contributions to the welfare reform literature have been made by Grogger (2000), Meyer and Rosenbaum (2000), Moffitt (1999), Schoeni and Blank (2000), Wallace and Blank (1999), and Ziliak, Figlio, Davis, and Connolly (1997), among others.

and other aspects of personal responsibility including school attendance, immunization compliance for children, and family caps (no increase in benefits for children conceived while the mother is receiving cash assistance). For example, under TANF, nonexempt recipients are required to participate in work activities within 24 months, but states have the option to impose work requirements sooner. States also vary with respect to the sanctions imposed on recipients for noncompliance with state TANF rules, the amounts and types of assets that are exempt when determining eligibility, and the types and amounts of in-kind income—such as housing assistance and food stamps—that are counted in determining eligibility and benefits.³ These decisions all have implications for the employment focus of TANF programs.

Beyond rules for cash assistance programs, PRWORA provides states flexibility in funding and administering other services that support working parents. For example, the legislation eliminated federal child care entitlements and consolidated the major sources of federal child care subsidies for low-income children into a single block grant to states—the Child Care and Development Fund (CCDF). The block grant program gives states greater flexibility in designing their child care assistance programs (Long, Kurka, Waters, and Kirby 1998). Some states and localities are also expanding their transportation services to support welfare reform’s employment goals, using a combination of funding sources, such as TANF block grants, federal Department of Transportation grants, foundation grants, and state appropriations (Nightingale 1997).

Traditional views and some past research suggest several reasons to expect that employment rates of single mothers differ in non-metro and metro areas. Limited economic growth, fewer jobs, lower wages, lack of public transportation, and less access to child care may cause an employment shortfall in non-metropolitan areas relative to metropolitan areas. Geographic dispersion of the non-metro poor may limit access to social services that could assist in overcoming barriers to employment, finding a job, or obtaining supportive services needed to remain employed (Deavers, Hoppe, and Ross 1996, Rural Policy Research Institute 1999).

Different work incentives could also cause different employment rates of single mothers in non-metro and metro areas. Recent work by Lerman, Duke, and Valente (1999) finds slightly greater financial incentives to work in non-metro areas than in metro areas. Given that average incomes are lower in non-metropolitan areas and the federal Earned Income Tax Credit (EITC) and food stamps are the same throughout the country, families relying on earnings plus federal benefits achieve higher relative incomes in non-metro areas than in metro areas. All of these factors may affect the employment of single mothers. In fact, although both non-metro and metro unemployment rates have declined each year since 1992, the non-metro/metro gap has increased, with non-metropolitan unemployment falling more slowly than metropolitan areas (Economic Research Service 2000).

Because different contextual factors and employment barriers may exist in non-metro areas, welfare policy changes may affect non-metro and metro employment differently. Program rules may place greater hardships on non-metro welfare recipients. For example, vehicle exemptions may impose greater restrictions on non-metro residents who require reliable

³ Gallagher et al. (1998) provides detailed information on state TANF decisions as of October 1997.

automobiles for long commutes to work. The lack of public transportation or reliable private transportation may serve as a disincentive to employment or may restrict individuals to low-paying jobs close to home. Finding employment in some non-metro areas may take longer because there are a limited number of available jobs; consequently clients may risk losing benefits if they exceed time limits. Work activity requirements in areas of limited employment opportunities may be filled by part-time employment, community service, or skills training. Although these activities are expected to lead to full-time employment, this may not be the case in non-metro areas. In one of the few early studies of the impacts of welfare reform on non-metropolitan and metropolitan areas, Bosley and Mills (1999) find that non-metro Southwest Virginia has higher rates of unemployment and lower rates of female labor participation than metropolitan Northern Virginia.

This paper uses field work and nationally representative data to further analyze the impact of TANF in non-metro and metro areas. Section II of the paper describes the field work and summarizes results from 10 non-metro site visits. While we do find important barriers to employment for welfare recipients in non-metro areas, the distinction between non-metro and metro areas is not as stark as anticipated. Sections III and IV describe the empirical models and data used to estimate the relationship. Section V presents the empirical results. We find virtually no difference in the effect of welfare reform in non-metropolitan and metropolitan areas for single mothers. Section VI presents our conclusions.

II. How Welfare Reform Differentially Affects Non-Metropolitan and Metropolitan Areas

The analysis in this paper is part of a broader study considering the effects of welfare reform on households in non-metropolitan areas. We use a combination of qualitative and quantitative research to analyze the complexities in program rules, the program implementation, and the effects of local economic factors on welfare recipients in non-metro areas. Preliminary findings from our field work have been used to formulate hypotheses, identify and categorize relevant variables for analysis, and assist in the interpretation of quantitative results.

Site visits were conducted in 12 localities in four states to examine the differences in the local conditions and implementation of program rules that shaped program operations. Site selection criteria included economic, geographic, demographic, and policy factors. Specific variables considered included the TANF benefit level, the unemployment rate, the percentage of families in poverty, the number of TANF recipients, the AFDC/TANF caseload change between 1993-1998, the percentage of the state's population that was foreign born, and transfer payments as a percentage of total personal income. We considered a variety of policy factors including those that would reflect the overall tone of the state's TANF policy, ranging from lenient to strict with respect to work activity requirements, sanctions, time limits, and exemptions.

The states selected were Arkansas, California, Maine, and Alabama. We intentionally over-sampled the south, because that was where the majority of the non-metro TANF and Food Stamp recipients lived. We included states from two other regions to further explore the differences and similarities between benefit receipt in the south and other areas of the country.

We selected two to four counties in each state for site visits. The 12 local sites provided variations across key dimensions that were important for the study. The sites included counties that were adjacent to large metropolitan areas and counties that were much more isolated. Unemployment rates in the selected counties ranged from 5.1 percent to 25.7 percent. The counties also reflected an income reliance on a range of industries: farming, government, services, and manufacturing. Four of the selected counties had an African-American population of more than 40 percent and two of the counties had populations that included a substantial proportion of Hispanics. These counties represent the diversity of rural America.

At the two-day site visits, we undertook interviews with the county welfare director, case managers, eligibility workers, and supervisors of welfare, food stamps, and work-related programs for welfare recipients. In addition to welfare office staff, site visit respondents included employment and training service providers, child care referral agency staff, and emergency service providers such as food banks and shelters. We also interviewed providers of other supportive services such as substance abuse treatment, mental health, and transportation. In addition, if there were local coalitions working on welfare reform, we met with the community representatives.

Emerging themes from the qualitative work improved our understanding of the relationship between non-metro/metro locations, changing welfare policies, and employment. Issues most frequently identified in our field visits related to service availability and accessibility, labor market conditions, and transitional benefits. Respondents reported that inadequate transportation and limited access to employment services presented barriers to employment. In fact, transportation was the issue mentioned most often on our site visits. Respondents noted problems associated with a lack of public transportation, lack of car ownership, and insufficient resources to maintain a car in operating condition. Because distances tend to be great in non-metro areas, transportation issues affected access not only to employment, but also to child care, health care, and other services (Rural Policy Research Institute 1999).

Many of the barriers cited in general studies of welfare populations appeared in our non-metro site visits. We found that a lack of affordable housing and a limited availability of mental health, substance abuse treatment, domestic violence, and emergency food and shelter services in non-metro communities meant little support for addressing personal difficulties—a concern for women obtaining employment and remaining employed.

Labor market conditions varied across the sites visited, but in general, employment opportunities, especially for women, were dominated by minimum wage service industry jobs with little opportunity for advancement. Contrary to traditional views, most of the local economies were not heavily dependent on agriculture, and seasonal employment was not a significant issue. However, many employment positions were part-time or intermittent in nature. The combination of low wages and less than full-time, year-round jobs meant that, depending on a state's income eligibility level, individuals could remain eligible for welfare even while employed. There appeared to be a difference between those counties adjacent to metropolitan areas and non-adjacent counties. Counties, such as Conway, Arkansas—adjacent to Little Rock—had better job

opportunities if an individual was willing to travel 30 miles. Particularly in the non-metro south, low education levels were a substantial barrier to employment.

The availability, duration, and ease of access to transitional benefits were important factors in employment decisions and moving toward self-sufficiency. Especially in the south, where income eligibility levels are low, families were no longer eligible for TANF once employed. Therefore, the ease of accessing transitional benefits and the availability of subsidized child care were noted as important factors for remaining off welfare. Alabama, Arkansas, and Maine provided one year of transitional child care. On site visits in these states, we heard about people going back on TANF after a year in order to obtain additional child care benefits. California provided two years of transitional child care. Most of the jobs obtained by welfare recipients did not provide health insurance or other benefits. The information reported was consistent with the predominance, in non-metro areas, of small employers who are less likely to provide health care insurance (Rural Policy Research Institute 1999). Transitional Medicaid or other subsidized health insurance are expected to have a positive impact on work decisions (Meyer and Rosenbaum 2000).

In addition to state policies regarding transitional benefits, the site visits revealed differences in state and local practices regarding the ease of accessing these benefits. For example, in some sites, when a client left cash assistance, their case was automatically transferred to a caseworker who handled transitional benefits; in other sites, the client had to take the initiative to apply for transitional benefits. The timing and method (e.g., in-person interview, mail-in form) for re-certification as well as for initial application could have been important factors in accessing these benefits.

In summary, site visits identified inadequate transportation and fewer services, labor market conditions, education levels, and transitional benefits as factors affecting employment in non-metro areas. Whether these obstacles to employment are more severe in non-metro than in metro areas requires further study. Using these hypotheses as the basis for our empirical models, we estimate the relationship between TANF and the employment of single mothers. As described below, the hypotheses were not born out in our national level empirical results.

III. Empirical Models

Our empirical model first uses difference estimators to measure the effect of TANF on the employment of single mothers and to measure how this effect differs in non-metropolitan and metropolitan areas. Next, our model uses employment equations to explore the role dissimilar demographic, economic, and policy factors in non-metro and metro areas play in any differences we find.

The relationship between non-metropolitan/metropolitan locations, TANF, and employment can be described by the linear probability model

$$(1) \quad P_{ijst} = \alpha_0 + \alpha_1 R_{js} + \alpha_2 C_{ijst} + \alpha_3 Post + \alpha_4 (R_{js} C_{ijst}) + \alpha_5 (Post C_{ijst}) + \alpha_6 (R_{js} Post) + \theta (R_{js} Post C_{ij})$$

where the probability that individual i living in area j of state s is employed in year t , P_{ijst} , is determined by whether area j is a non-metro area, R_{js} , whether individual i has a child under age 18, C_{ijst} , and so is potentially eligible for welfare, an indicator for whether it is a post-TANF year, $Post$, and interactions between these variables.⁴ Under varying assumptions, simple difference estimators provide us with a consistent estimate of the relationship TANF and living in a non-metro area as given by θ .

A. Difference Estimators

Let y_{ijst} represent an indicator variable whose value is equal to one if i is employed in t , and let Y_{post} and Y_{pre} represent the mean of y_{ijst} for post-TANF and pre-TANF years.

1. *Difference Estimator*

The expected difference between average post-TANF reform employment in non-metro and metro areas is given by

$$(2) \quad E [Y_{post} | R_{js}=1, C_{ijst}=1] - E [Y_{post} | R_{js}=0, C_{ijst}=1] = \theta + \alpha_1 + \alpha_4 + \alpha_6.$$

This estimator is an appropriate measure of differences in the relationship between TANF and employment in non-metro and metro areas under the following three conditions: (1) if the pre-TANF employment level is the same in non-metro and metro areas (α_1 equals zero), (2) if having a child under age 18 affects employment the same way in non-metro and metro areas (α_4 equals zero), and (3) if the growth rate or time trend in employment for non-metro and metro areas would be the same in the absence of TANF (α_6 equals zero).

2. *Difference-in-Difference Estimator*

Measuring the differential impact of TANF on non-metropolitan and metropolitan areas by comparing differences in pre-TANF and post-TANF employment rates for non-metro and metro areas yields

$$(3) \quad E [Y_{post} - Y_{pre} | R_{js}=1, C_{ijst}=1] - E [Y_{post} - Y_{pre} | R_{js}=0, C_{ijst}=1] = \theta + \alpha_6.$$

This equation controls for differing levels of pre-TANF employment rates in non-metro and metro areas. This difference-in-difference estimator is only appropriate, however, if the employment

⁴ This model describes the relationship between location, welfare reform, and employment with one year of pre-TANF data and one year of post-TANF data in mind. A model based on multiple year pre-TANF and post-TANF data might replace the *Post* indicator with an indicator variable for each year (year fixed effects), and the interaction between the non-metro and *Post* variables with an interaction between the non-metro variable and a year variable.

growth rates for metro and non-metro areas would be the same in the absence of TANF (α_6 equals zero).

3. *Difference-in-Difference-in-Difference Estimator*

We extend our difference-in-difference estimator to allow for employment growth rates to differ by comparing the pre-TANF to post-TANF employment growth of single mothers, our treatment group, with that of a comparison group that should experience a similar growth rate but not be affected by welfare reform—single females without children under age 18.⁵ We use single females without children under age 18 to control for the general growth in employment for single females because family status is unimportant to the general time trend of employment for single females: the trends of single females with and without children are comparable. However, family status is important for welfare law; single females with children under age 18 may be eligible, but single females without children under age 18 are ineligible. Thus TANF should affect the employment probability of single females with children under 18, but not those without.⁶

A potential concern arises from using single females without children under 18 as a comparison group if fertility decisions are affected by welfare policy changes. If so, then TANF could affect whether some females end up in the treatment group or the comparison group and potentially the employment probability of the comparison group. As a result, the difference-in-difference-in-difference model would understate the effect of welfare on the employment of single mothers by subtracting its effect on potential single mothers. Since the research evidence on the effects of welfare on fertility shows only insignificant or small significant effects, we expect any bias to be small or insignificant.⁷

By comparing pre-TANF and post-TANF differences in employment rates for single women with children under age 18, who may be eligible for welfare, and for single women without children under the age of 18, who are ineligible for welfare, we can control for differences in both the level and growth rates of employment in non-metro and metro areas:⁸

$$(4) \quad [E(Y_{\text{post}} - Y_{\text{pre}}) | R_{js}=1, C_{ijst}=1] - E(Y_{\text{post}} - Y_{\text{pre}}) | R_{js}=1, C_{ijst}=0] - [E(Y_{\text{post}} - Y_{\text{pre}}) | R_{js}=0, C_{ijst}=1] - E(Y_{\text{post}} - Y_{\text{pre}}) | R_{js}=0, C_{ijst}=0] = \theta.$$

⁵ The difference-in-difference-in-difference estimator assumes similar employment growth rates for single females with and without children under age 18, but does not assume similar levels of employment for the two groups. Different levels of employment for the two groups enter the model through the variable C_{ijst} in Equation (1).

⁶ Welfare reform could affect employment of single females without children if it affects the entire labor market for low-skilled workers. It might be that welfare recipients entering the labor force take low-skill jobs and increase unemployment for other low-skilled workers. However, this scenario is unlikely. Lerman, Loprest, and Ratcliffe (1999) project that on average metropolitan areas “will experience decreases in unemployment, even with the entry of welfare recipients into the labor force, largely because of growth in low-skill employment.”

⁷ Alternative methods used to control for employment trends have other shortcomings. One approach is to capture trends with year fixed effects and an interaction between a time trend and state variable. However, this approach assumes linear employment trends and requires a longer time period of data.

⁸ The linear probability and difference models are based in part on similar models described by Card and Sullivan (1988) and Moffitt (1991).

The difference-in-difference-in-difference estimator compares the change in employment for women with and without children in non-metro areas with the change in employment for women with and without children in metro areas.

These difference techniques provide simple, consistent, and distributionally non-parametric estimates of the relationship between non-metro/metro areas, TANF, and employment under the assumptions mentioned above. However, estimates based on linear probability models have a number of shortcomings. A minor complication is that error terms are heteroscedastic in a way that depends on the parameters to be estimated. A more serious complication is that we cannot be assured that predictions from linear probability models that include continuous regressors will truly look like probabilities because they are not constrained to the zero-one interval (Greene, 1990). The most important shortcoming is that simple difference methods do not control for or identify the effects of additional demographic and economic factors that may affect our outcomes of interest. Moving to a non-linear regression framework as provided by probit or logit models takes care of these shortcomings, though at the cost of non-parametric assumptions about the distribution of the error term.

B. Employment Equations

In this section, we develop two models that incorporate a non-linear specification and that include demographic, economic, and policy variables to see whether any difference in non-metropolitan/metropolitan employment we observe is due to dissimilar demographic, economic, or policy characteristics between non-metropolitan and metropolitan areas.

In the first model, we change the linear probability model given by equation (1) to a probit model in order to incorporate non-linearity. We then expand the model to include vector of demographic characteristics, X_{ijst} , (such as age, education, race, and marital status) and a vector of local area characteristics, L_{jst} , (such as the unemployment rate). The new equation is given by

$$(5) \quad y^*_{ijst} = \alpha_0 + \alpha_1 R_{js} + \alpha_2 C_{ijst} + \alpha_3 \text{Post} + \alpha_4 (R_{js} C_{ijst}) + \alpha_5 (\text{Post} C_{ijst}) + \alpha_6 (R_{js} \text{Post}) \\ + \theta (R_{js} \text{Post} C_{ijst}) + X_{ijst} \beta + L_{jst} \delta + \epsilon_{ijst} \\ y_{ijst} = 1 \quad \text{if } y^*_{ijst} > 0 \\ y_{ijst} = 0 \quad \text{otherwise}$$

where y^*_{ijst} is latent employment, ϵ_{ijst} is an error term drawn from a normal distribution with zero mean and variance σ^2 , and α_0 - α_6 , θ , β , and δ are unknown parameters to be estimated.

In the second model, we examine the extent to which specific state welfare policies affect employment and have a different effect in non-metro and metro areas by estimating the employment equation—first with specific state welfare policy variables and second with interactions between non-metro status and the state welfare policy variables, W_{st} :

$$\begin{aligned}
(6) \quad y_{ijst}^* &= \alpha_0 + \alpha_1 R_{js} + \alpha_2 C_{ijst} + \alpha_3 Post + \alpha_4 (R_{js} C_{ijst}) + \alpha_6 (R_{js} Post) + X_{ijst} \beta + L_{jst} \delta \\
&+ W_{st} \psi_1 + (R_{js} W_{st}) \psi_2 + (W_{st} C_{ijst}) \psi_3 + (R_{js} W_{st} C_{ijst}) \psi_4 + \epsilon_{ijst} \\
y_{ijst} &= 1 && \text{if } y_{ijst}^* > 0 \\
y_{ijst} &= 0 && \text{otherwise.}
\end{aligned}$$

To control for any correlation between employment and welfare rules that would exist in the absence of a causal effect, we measure the effect of the rules on single mothers, ψ_3 and ψ_4 , relative to the effect of the rules on single women without children under age 18, ψ_1 and ψ_2 . We also include variables to control for differences in employment trends in non-metro and metro areas, $Post$ and $R_{js} Post$. Thus the model presented in Equation (6) measures the effect of changes in specific welfare rules on single mothers relative to women without children under 18 as deviations from non-metro-specific and metro-specific trends in employment.

IV. Data

We use data from the monthly outgoing rotation groups in the Current Population Survey to estimate the empirical models. The Current Population Survey (CPS) is a nationally representative monthly survey of approximately 50,000 households. To capture the employment situation in the year before TANF and in the most recent year after TANF, we use CPS data for the 11 month period before the welfare law (September, 1995 to July, 1996) and the 11 month period three years later (September, 1998 to July, 1999).⁹ As TANF was implemented in August of 1996, this time span allows up to three years for TANF to affect employment. Our CPS sample consists of 59,604 single (widowed, divorced, separated or never married) females living in non-metropolitan and metropolitan areas.

Data on welfare rules come from the Urban Institute Welfare Rules Database. The Welfare Rules Database (WRD) provides a longitudinal account of changes in state welfare rules, based on AFDC State Plans and Waiver Terms and Conditions prior to 1997 and on caseworker manuals and state regulations from 1997 to the present. We use state level data on 10 welfare rules for the 22 month period September, 1995 to July, 1996 and September, 1998 to July, 1999.

A. Variable Definitions

Employment, our dependent variable, is an indicator that takes on the value one if the respondent was employed in the survey week and zero otherwise. Metropolitan areas are, as defined by the census, areas with a large core population (such as a city with a population of 50,000 or more) and adjacent communities with a high degree of social and economic integration with the core (U.S. Census 2000).¹⁰ We would prefer a narrower definition of rural areas than non-metro areas provide, but none are available in the public use CPS data. Even with a narrower

⁹ August 1995 and August 1998 were dropped from the data because geographic variables necessary to identify non-metro and metro areas were not available in the August 1995 CPS data.

¹⁰ 157 respondents lived in areas that were geographically classified as “Not Identified” in the CPS. We dropped these respondents from the analysis.

definition, it is not clear that our conclusions would change. When we incorporate a measure of the percent of a state's population living in rural non-adjacent counties into the analysis, we find no significant difference between the effect of TANF on employment in rural non-adjacent and metropolitan areas. We define C_{ijt} (*child<18*) as a zero-one indicator variable equal to one if the female has a child under age 18, and *Post* as a zero-one indicator variable equal to one if the year is 1998 or 1999. Our vector of demographic variables includes age, age-squared, and indicators for race or ethnicity, education level completed, and non-US citizenship.

We use all rotations of the CPS monthly data for our 22 month period of interest to calculate two, area-specific (central city, balance MSA, non-metro, not identified), monthly average measures of the unemployment rate. To avoid including members of our study population in our independent measure of the unemployment rate, the first measure excludes single females from the weighted mean calculation. The second measure includes all respondents age 16 and over in the weighted mean calculation. Our results are not sensitive to the measure used.

We examine 10 specific rules from the Welfare Rules Database that could affect employment of single mothers:¹¹

Work requirements

- number of days of assistance allowed before work requirements are imposed
- number of hours of work required

Time limits

- maximum number of months one can receive AFDC or TANF

Sanctions

- percent of benefit lost upon the first sanction

Transitional benefits

- number of months of transitional child care available
- number of months of transitional Medicaid available

Asset limits

- value of the vehicle that does not count toward the asset limit
- total unrestricted asset limit

In-kind income

- indicator for whether the state counts some portion of housing assistance as unearned income in determining eligibility and benefits
- indicator for whether the state counts some portion of Food Stamps as unearned income in determining eligibility and benefits

¹¹ The rules apply to all recipients except two parent families and minor parents.

Some state-month-year observations were missing for five of the 10 welfare rule variables. We impute means for these missing observations and include indicator variables for the imputed observations in all regressions. As a result, in our final merged CPS–WRD sample, we have two to 13 percent imputed observations for four of the welfare rule variables, and 34 percent for the fifth variable—number of days of assistance allowed before work requirements are imposed. The weighted means and standard errors of all variables used in the analysis are presented in Appendix Table A1.

The combined CPS-WRD data provide pre- and post-TANF monthly data on the employment of women living in non-metropolitan and metropolitan areas as well as monthly data on specific state welfare rules that affect employment. Thus, these data enable us to estimate the relationship between non-metro/metro locations, changing welfare policies, and the employment of single females.

V. Empirical Results

To provide a context for our empirical results, Table 1 paints a national picture of employment, unemployment, and welfare caseloads before and after TANF. In the three years since TANF, all three indicators show a national trend of economic improvement: the employment-population ratio (hereafter called employment or employment rate) increased 1.4 percentage points, unemployment fell 1.2 percentage points, and welfare caseloads fell 43 percent.

Non-metropolitan and metropolitan areas both shared in the national improvement. However, non-metro areas were not doing as well prior to reform and saw less of an improvement after reform. Pre-TANF employment rates were lower in non-metro areas (61.3 percent) than metro areas (64.8 percent) and improved less over the three year period (0.5 percentage points non-metro, 1.4 percentage points metro). Similarly, pre-TANF unemployment rates were higher in non-metro areas (5.9 percent non-metro, 5.4 percent metro), though the improvement was similar (1.1 percentage points for non-metro and metro areas, respectively).

A. Difference Estimators

We use difference estimators to measure the effect of TANF on employment and to measure how this effect differs in non-metro and metro areas. We first estimate these effects for all single females age 19 to 45. Next, we split the sample based on education to measure the effect on less- and more-educated single mothers and based on race or ethnicity to measure the effect on White, Hispanic, and African-American single mothers. An interesting pattern of results emerges across groups.

Single females

Table 2 presents the differences in employment probabilities for all single females age 19 to 45 in non-metropolitan and metropolitan areas. The first column measures the pre-TANF level

of employment, the post-TANF level of employment, and the difference in the pre- and post-TANF levels of employment for two groups of single females living in non-metro areas. The first group, mothers with children under age 18, is our primary group of interest. For these potentially welfare-eligible women, average employment rates increased from a pre-TANF level of 64 percent to a post-TANF level of 72 percent, an eight percentage point (or 12 percent) increase. The second group, our comparison group of welfare-ineligible single females without children under age 18, started with a much higher pre-TANF level of employment, 71 percent,¹² but experienced no significant increase—employment remained close to 71 percent in the post-TANF period. TANF appears to have raised the employment of single mothers relative to that of their ineligible counterparts.

To control for any growth in employment that might have occurred in the absence of TANF, the final row in column (1) subtracts the comparison group's difference in post- and pre-TANF employment from the increase experienced by single mothers. Because there was little or no growth in employment for the comparison group, the effect of TANF on single mothers in non-metro areas remains large at over six percentage points.

The second column of Table 2 presents measures of the effect of TANF on the employment of single females in metro areas. Similar to non-metro areas, we find a large (nine percentage points or 15 percent) and significant difference in the pre- and post-TANF employment levels of single mothers, and no significant difference in the pre- and post-TANF employment levels of our comparison group. After controlling for the growth rate during the time period, the effect of TANF on single mothers in metro areas remains nine percentage points.

The final column of Table 2 presents non-metro/metro employment differences and highlights (in boldface) estimates of the differential effect of TANF in non-metro and metro areas. These estimates are measured by the three difference estimators described above in the Empirical Model section of the paper. All three estimator results are negative, but none are statistically different from zero at the 10 percent level. These results suggest that TANF may have had a slightly smaller effect on the employment of single mothers in non-metro areas than in metro areas, but we cannot reject the hypothesis that the effects in non-metro and metro areas were the same.

The first estimator, a simple difference of the post-TANF employment rate in non-metropolitan and metropolitan areas, is the first number highlighted in the second row of column (3). If non-metro and metro areas had the same level of employment for single mothers before TANF, then this simple difference provides us with a measure of the differential effect of TANF. We find a small, insignificant effect—non-metropolitan areas have lower employment by only one percentage point or two percent.

The second and third estimators find slightly larger, but still statistically insignificant, effects. The second estimator, difference-in-difference—which measures the differential impact of

¹² A higher pre-TANF level of employment for our comparison group does not pose a problem for our difference estimator. While our estimator assumes similar trends in employment for single females with and without children, it does not assume similar levels of employment; the levels are differenced away.

TANF on non-metro and metro areas by comparing differences in pre- and post-TANF employment in non-metro and metro areas—controls for differing levels of pre-TANF employment rates. The difference-in-difference estimator finds that TANF had a two percentage point or 19 percent smaller effect in non-metro areas than in metro areas. However, this estimate requires that the growth rate or change in employment rates for metro and non-metro areas would be the same in the absence of TANF.

The third estimator, difference-in-difference-in-difference, controls for the growth rate by subtracting the growth rate for our comparison group—single women with children under age 18 who are ineligible for welfare—from the difference-in-difference estimate. Because there was little difference in pre- and post-TANF employment for the comparison group, the third estimator finds results similar to the second: TANF appears to have had a two percentage point (or 24 percent) smaller effect in non-metropolitan areas than in metropolitan areas, though the effect is not statistically different from zero.

In sum, Table 2 indicates that TANF increased the probability of employment for single mothers with children under age 18, those eligible for welfare, by seven to nine percentage points in non-metro and metro areas.

Less-educated and more-educated single females

We expect that TANF affected single mothers with less education and more education differently, but potentially confounding effects make the direction of the difference unclear. On one hand, TANF should have a *greater* effect on the employment of less-educated women because they are more disadvantaged and more likely to be on welfare, which requires work activity participation. However, it is important to note that contrary to popular opinion, a significant proportion—nine to 26 percent—of welfare recipients are more-educated women.¹³ On the other hand, TANF should have a *smaller* effect on the employment of less-educated women because they are the least skilled and therefore have fewer employment opportunities.

The differential effect of TANF in non-metro and metro areas may also differ for less- and more-educated single mothers. For example, if there are fewer low-skilled and more high-skilled jobs available in non-metro areas than in metro areas, then we would expect TANF to have a smaller effect on the less-educated and a larger effect on the more-educated in non-metro areas. The results presented in Table 2 may mask these differences by aggregating the averages for less- and more-educated mothers.

¹³ A significant proportion of more educated welfare recipients are reported from both national-level and state-level data. At the national level, the U.S. Department of Health and Human Services (1995) reports that nine percent of mothers receiving AFDC in 1995 had more than a high school degree (though the education level was unknown for 43 percent of the sample); Ratcliffe (2000) finds that 26 percent of single mothers who received TANF in 1997 had more than a high school education; Loprest (1999) reports that 33 percent of former welfare recipients had more than a high school education; and Pavetti (1995) reports that 53 percent of all first-time AFDC recipients had at least 12 years of education. Using state administrative data, Howell (2000) finds that 14 percent of 1996 TANF recipients in Mississippi had more than a high school degree and that a significant number of recipients held college degrees.

To study any difference in the effect of TANF on less- and more-educated mothers, we divide our sample between women with a high school education or less and women with more than a high school education. The difference equation analysis by education group is presented in Table 3 and indicates that TANF affects less-educated and more-educated women somewhat differently in non-metropolitan and metropolitan areas.

A comparison of the employment level of less- and more-educated single mothers suggests that, indeed, these two groups have different employment experiences. Columns (1), (2), (4), and (5) of Table 3 measure the pre- and post-TANF levels of employment for less- and more-educated single females. Both before and after TANF, employment levels are much higher for the more-educated than for the less-educated. For example, prior to TANF, non-metro employment for those with a high school degree or less was 58 percent, while it was as much as 73 percent for those with more than a high school degree. The 15 percentage point disparity remains in the post-TANF period. The disparity is even larger in metro areas where it starts at 24 percentage points prior to TANF and falls to 20 percentage points afterwards.

Despite initial differences in job holding by education, TANF effects are similar among less- and more-educated single mothers. These results are presented in the last row of columns (1), (2), (4), and (5) in Table 3. The effects ranged from four¹⁴ to eight percentage points for less-educated mothers and from seven to nine percentage points for more-educated mothers. The finding of such a large and significant effect of TANF on the employment of more-educated single mothers suggests that more-educated women may not serve as a valid comparison group in measuring the effects of TANF as suggested by some authors (Schoeni and Blank 2000).

The size of the impacts by education varied between non-metropolitan and metropolitan areas. Differences in the effect of TANF on the less- and more-educated only begin to emerge when we compare within and between non-metro and metro areas. Within non-metro areas, TANF had a six percentage point *smaller* effect on the employment of less-educated mothers than on that of more-educated mothers (columns 1 and 4; difference significant at the 10 percent level). Whereas, within metro areas, TANF had a similar seven to eight percentage point effect on less-educated mothers and more-educated mothers (columns 2 and 5).

The final row of column (3) describes the difference in the effect of TANF on less-educated women between non-metro and metro areas. TANF appears to have had a four percentage point smaller effect on the employment of less-educated single mothers in non-metro areas than in metro areas, though this difference is not statistically different from zero at the 10 percent confidence level. A comparison of the levels of employment in non-metro and metro areas helps explain any difference and reveals a striking result: prior to TANF, less-educated non-metro single mothers were more likely to be employed than their metro counterparts. Post-TANF, the non-metro and metro levels of employment are similar. Any greater employment gains

¹⁴ Due to the large standard error on this estimate, we cannot reject the hypothesis that the four percentage point effect of TANF on low-education single mothers in non-metro areas is zero. However, we also cannot reject the hypothesis that the four percentage point effect in non-metro areas is the same as the eight percentage point effect in metro areas.

in metro areas only served to leave low-education metro single mothers with the same level of employment as their non-metro counterparts.

In contrast to the smaller TANF effect on less-educated women in non-metro areas, column (6) shows that TANF had a two percentage point larger effect on more-educated women in non-metro areas.¹⁵ Again, a comparison of the levels of employment reveals an interesting result: more-educated non-metro single mothers were less likely to be employed than their metro counterparts.

White, Hispanic, and African-American single females

To study whether TANF affected race or ethnic groups differently in non-metropolitan and metropolitan areas, Table 4 presents the difference analysis separately for whites, Hispanics, and African-Americans. We might expect different effects if, for example, minority groups face additional barriers (such as language or discrimination) to employment. The bottom row of the table shows that TANF increased employment by a similar six to 10 percentage points for all groups in both non-metro and metro areas, but with one clear exception. TANF had an insignificant one percentage point effect on Hispanic employment in non-metro areas. When compared with the nine percentage point increase in Hispanic employment in metro areas, the small effect in non-metro areas suggests that TANF had an eight percentage point smaller effect on Hispanic employment in non-metro areas than in metro areas, though this difference is not significant at the 10 percent confidence level.

Why should TANF affect non-metropolitan Hispanics differently? Our site visit findings suggest that English language resources are not as readily available in some non-metro areas, making it more difficult for non-metro Hispanics to obtain the English language skills necessary for employment in some positions. Many Hispanics are thus limited to entry-level service jobs such as hotel housekeeper. If there are fewer such jobs in non-metro areas and most less-educated women work, there may be fewer job opportunities for Hispanics. This situation may be exacerbated by the fact that non-metro areas have smaller Hispanic communities which means a smaller network to help find or provide employment.

All together, our difference results indicate that TANF increased the probability of employment for potentially welfare eligible single mothers—those with children under age 18—by seven to nine percentage points in non-metro and metro areas. This increase was shared by less- and more-educated single mothers, and by white, metro Hispanic, and African-American single mothers.

The employment situation was improving for the nation as a whole during the three year period of interest following TANF. National employment increased by 1.4 percentage points. Our estimates control for this national trend by subtracting the change in employment experienced by a similar but welfare ineligible group of women—single females without children under age 18—from the employment change of single mothers with children younger than 18. Overall, the

¹⁵ Though neither difference is statistically different from zero at the 10 percent confidence level, the two differences are statistically different from one another at the 10 percent confidence level.

employment probability of welfare ineligible single females increased a statistically insignificant 0.8 percentage points—0.6 percentage points less than the national average; their unemployment rate fell 0.9 percentage points, and their labor force participation rate increased a statistically insignificant 0.1 percentage points (not shown in tables). In contrast, the employment probability of single mothers increased 9.0 percentage points—7.6 percentage points more than the national average; their unemployment rate fell two percentage points, and their labor force participation rate increased by eight percentage points (not shown in tables).

TANF had similar effects in non-metropolitan and metropolitan areas for most demographic groups: any non-metro/metro difference in the effects was no more than two percentage points and statistically insignificant. The TANF non-metro/metro differences were greater for less-educated single mothers (-4 percentage points) and Hispanic single mothers (-8 percentage points), but these differences were not statistically significant at the 10 percent confidence level.

B. Employment Equations

To explore whether TANF's effects in non-metro and metro areas are due to dissimilar demographic or economic characteristics in non-metro and metro areas, we estimate an employment equation that controls for these characteristics. Further, to explore the extent to which specific state welfare policies differentially affect non-metro and metro areas, we estimate a second employment equation that includes interactions between non-metro status and specific state welfare policy variables. We present these results in Tables 5 and 6.

As a benchmark, column (1) of Table 5 presents results from a linear regression that replicates the difference estimators. The results are identical to those presented above. Coefficients from our two key variables of interest, *Post-TANF*Child<18* and *Non-metro*Post-reform*Child<18*, indicate that TANF increased employment by nine percentage points for metro single mothers, two percentage points more than for non-metro single mothers, though the difference is not statistically significant at the 10 percent level. The next two variables indicate that, between the pre- and post-TANF period measured, our comparison group—single females without children under age 18—experienced no statistically significant change in employment in metro and non-metro areas (*Post-TANF* and *Non-metro*Post-TANF*). The last two variables show that there is a 12 percentage point difference between the pre-TANF level of employment of single females in metro areas with and without children under age 18 (*Child<18*) and a seven percentage point difference between these two groups of women in non-metro areas (*Non-metro*Child<18*).

To incorporate a non-linear framework for our zero-one dependent variable, employment, we estimate a probit model with identical variables. The results from this estimation—presented in column (2) of Table 5—are very similar in magnitude to the linear results presented in column (1) and we find no significant difference between the effects of TANF in non-metro and metro areas. In an additional specification (not shown) we incorporate a measure of the percent of a state's population living in rural non-adjacent counties into the analysis. Our basic conclusion

does not change. We find no significant difference between the effect of TANF on employment in rural non-adjacent and metropolitan areas.

Adding controls for demographic characteristics in specification (3) does not affect our estimates of the effect of TANF in non-metro and metro areas. The demographic controls themselves have interesting, though not surprising, interpretations. First, older single females are more likely to be employed than younger single females. Second, all racial and ethnic groups are less likely to be employed than whites. Third, each successive education degree increases the probability of employment. Last, single females who are not U.S. citizens are less likely to be employed than females who are U.S. citizens. Similarly, adding a measure of the monthly unemployment rate—an important determinant of employment—in specification (4) has little effect on the magnitude or significance of our TANF estimates.

Effect of specific welfare policies

Measuring the effect of TANF on employment by changes in monthly, state-specific welfare rules confirms our overall finding that TANF significantly affects the employment of single mothers. In Table 6, we turn to these estimates of the effects of specific welfare rules (in column (1)) and how these effects differ between non-metropolitan and metropolitan areas (in column (2)). To control for any correlation between employment and welfare rules that would exist in the absence of a causal effect, we measure the effect of the rules on single mothers relative to the effect of the rules on single women without children under age 18.

The effects of the specific welfare rules presented here should not be strictly interpreted because the rules are difficult to define and are not necessarily implemented the same way in non-metropolitan and metropolitan areas. The results described below may reflect differences in implementation. We use these rules to further investigate our general findings. We find that changes in eight of the 10 specific rules affect the probability of employment for single mothers and that the effects differ between non-metro and metro areas for changes in three of the rules: increases in the hours of work requirements, the months of transitional child care benefits offered, and the value of a vehicle that is not included in the asset limit.

The first two coefficients in column (1) show mixed effects of work requirement policies. As expected, a stricter requirement—an increase in the hours of work activity required—significantly raises the likelihood of employment for single mothers relative to single females without children under age 18. However, a more lenient policy—an increase in the number of days that welfare assistance is available before a work requirement is imposed—also raises the likelihood of employment. Column (2) shows that increases in the hours of work activity required has a greater effect on employment in non-metro areas than in metro areas, but there is no significant difference in the effect of increases in the number of days that welfare assistance is available in non-metro and metro areas.

Time limits—the maximum number of months a household can receive welfare assistance—have a negative and significant effect on employment. Increases in the number of months that a household can receive welfare decreases the likelihood of employment for single

mothers relative to single females without children under age 18. See Grogger (2000) for a detailed analysis of time limits and welfare use. Sanctions, as measured by the percent of benefits lost upon the first sanction, increase the likelihood of employment.

Transitional benefits—as measured by the number of months the benefit is available—have mixed effects on employment. Column (1) shows that overall, additional months of transitional child care benefits increase the probability of employment, while additional months of transitional Medicaid benefits have no significant effect. The different effects are surprising at first, but may be explained by two factors. First, child care and Medicaid transitional benefits are administered separately in many states. If welfare Medicaid rules are poorly implemented, then changes in the rules will have no effect on employment. Second, Medicaid participation rates tumbled from 1995 at least through 1998, partly as a result of TANF (Ku and Garrett 2000). If single mothers are not enrolled in Medicaid, then additional months of transitional Medicaid does not affect them.

Column (2) shows interesting non-metro/metro differences behind the overall transitional child care effect. Additional months of transitional childcare increases employment in metro areas but not in non-metro areas. Non-metropolitan women may lack access to child care that can be paid for with transitional benefits. Non-metro site visits found a lack of available night and weekend child care. Though day care is available, it may be difficult to access due to longer work commutes and lack of public transportation. Non-metro women may also rely more heavily on child care provided by relatives regardless of transitional benefits. If so, then we would expect no effect of transitional benefits on employment in states that do not pay for relative care.

Overall, vehicle asset limits and total asset limits have opposite effects on the employment of single mothers. Increases in the value of the vehicle that does not count toward the asset limit increase the probability of employment, while increases in the total asset limit, conditional on increases in the vehicle asset limit, decrease the probability of employment. Column (2) indicates that increases in the value of the vehicle that does not count toward the asset limit has a smaller effect on employment in non-metro areas than in metro areas. This finding runs counter to our expectations based on our non-metro case studies.

Changes in the way states count in-kind income toward eligibility have either positive or insignificant effects on the employment of single mothers, depending on the type of in-kind income. Counting some portion of housing subsidies as unearned income in determining eligibility and benefits decreases employment, while counting some portion of Food Stamps has no significant effect on employment. The effects do not significantly differ between non-metropolitan and metropolitan areas. However, there is little variation among states before and after TANF for these in-kind income variables, thus they should be interpreted with caution.

In summary, measures of the effects of specific welfare rules on the employment of single mothers confirm our findings on the overall effect of TANF: welfare rule changes associated with TANF affect the employment of single mothers. Analysis of the effect of specific welfare rules also suggest that there may be some differences in how the rules affect employment in non-metro and metro areas. However, these findings are far from conclusive. Additional research is needed to further analyze the effects of specific welfare rules and their implementation.

VI. Conclusion

On the basis of traditional views about non-metropolitan areas, past evidence, and site visits, one might expect that work oriented welfare reforms would be much harder to implement and yield worse outcomes in non-metropolitan areas than in metropolitan areas. Low population density appears to make travel and connections with services and employment difficult in non-metropolitan areas. Indeed, Bosley and Mills (1999) find worse employment outcomes in non-metropolitan areas for a small sample of females in Virginia. In contrast, Lerman, Duke, and Valente (1999) find greater work incentives in non-metropolitan areas than in metropolitan areas.

Contrary to expectations, we find that the employment level of single mothers was similar in non-metropolitan and metropolitan areas prior to TANF and gained almost as much in non-metropolitan areas as in metropolitan areas after TANF; the estimated effects of TANF for single mothers in non-metropolitan and metropolitan areas are virtually identical. Within the group of single mothers, we find some differences by education. Despite the higher unemployment rate in non-metropolitan areas, less-educated single mothers are more likely than their metropolitan counterparts to have worked prior to TANF. Although metropolitan areas have since caught up, there are gains in non-metropolitan areas as well. On the other hand, the level of employment for more-educated non-metropolitan single mothers falls slightly short of their metropolitan counterparts. But the level is high in both areas and the non-metropolitan gains are as solid as the metropolitan gains. Apparently, the obstacles to employment are not so severe. Non-metropolitan areas seem to allow as large a commitment to work as metropolitan areas.

Estimates based on concrete welfare policies generally confirm the finding that TANF is playing a major role in raising the employment rates of single mothers. However, they provide some evidence that specific welfare rules affect non-metropolitan and metropolitan areas differently. Considered together with Lerman, Duke, and Valente (1999), our empirical findings contribute to a growing body of evidence that suggests, contrary to traditional views and our site visit results, that the aggregate effects of obstacles to employment are not greater in non-metropolitan areas than in metropolitan areas. Non-metropolitan areas are becoming more diverse, and many issues related to low-wage service economies are relevant for both non-metropolitan and metropolitan areas.

Yet how do we reconcile the empirical findings with the differences we saw in our site visits? Two possibilities emerge: One is that the differences reflect dissimilarities in the health of 12 local economies, not genuine non-metropolitan/metropolitan differences. A second possibility is that the differences reflect pockets of poverty in non-metropolitan areas that are different from metropolitan areas. However, these pockets do not define all non-metropolitan areas, just as pockets of poverty in metropolitan areas do not define all metropolitan areas. If no differences exist, or if the differences exist only in small pockets of non-metropolitan and metropolitan areas, then they will not be borne out in a national-level empirical analysis.

The results presented in this paper analyze only the level and gains in employment of single mothers, not their absolute or relative earnings. Though women in non-metropolitan areas may be as likely to be employed, they may be employed in low paying or part-time jobs. In

subsequent analysis, we plan to examine whether non-metropolitan areas do as well as metropolitan areas in raising the earnings of single mothers.

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