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ABSTRACT

An important question related to welfare reform is: "What has happened to the earnings and incomes of families who were receiving public assistance when the new policies took effect?" This question is addressed by examining the impacts of early state-level welfare waivers on the earnings and income growth of welfare recipients. Analysis of a detailed nationally representative data set (the Current Population Survey), shows that early work-related welfare reforms generally did not increase the earnings of welfare recipients, with minor exceptions, and that waivers often had a negative, but small, effect on the incomes of welfare recipients. In addition, waivers appear to have had a less detrimental effect on rural than on urban recipients. This is an interesting finding in light of research that shows that rural employment and earnings generally lag behind those in urban areas. It suggests that even though rural residents face greater barriers to employment, welfare reform has a smaller marginal effect on rural recipients. (Contains 4 tables and 21 references.) (Author/SLD)

The Effect of Welfare Reform on the Incomes and Earnings of Low-Income Families: Evidence from the Current Population Survey

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ABSTRACT

An important question surrounding welfare reform is "What has happened to the earnings and incomes of families who were receiving public assistance when the new policies took effect?" I address this question by examining the impacts of early state-level welfare waivers on the earnings and income growth of welfare recipients. Using a detailed nationally representative data set (the Current Population Survey), I find that 1) early work related welfare reforms generally did not increase the earnings of welfare recipients (with minor exceptions), and 2) waivers often had a negative (but small) effect on the incomes of welfare recipients. In addition, waivers appear to have had a less detrimental effect on rural than on urban recipients. This is an interesting finding in light of research that shows that rural employment and earnings generally lag behind those in urban areas. It suggests that even though rural residents face greater barriers to employment, welfare reform has a smaller marginal effect on rural recipients.

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I. Introduction

Many advocates of welfare reform have pointed to the dramatic drop in caseloads as evidence of the success of the newly designed programs.[1] However, the discussion has recently turned to the more difficult question of how former recipients are faring in the wake of welfare reform. This paper examines the effect of state-level welfare reform policies (which took place prior to the 1996 federal welfare reform legislation, PRWORA) on the incomes and earnings of those who were recipients of Aid to Families with Dependent Children (AFDC) and other cash benefits when the reforms were enacted.

Recently, a number studies in which former welfare recipients are interviewed at regular intervals have been undertaken.[2] These should provide valuable information, but will yield an incomplete picture of the status of those who have left the welfare rolls. By design, they will enhance our understanding of the situation in a specific geographical area under a specific set of policy and economic conditions, but will not be easily generalized. In addition, the expense and difficulty of following former recipients in rural areas make it likely that the information revealed by this type of study will focus primarily on the effects in urban areas. An alternative is to use longitudinal data from national surveys or administrative sources. The advantage of longitudinal data is the ability to follow the same recipient over a long period of time, thus documenting the dynamics of welfare use in addition to short term effects of welfare policy. However, there are some disadvantages of these data sets as well. For example, the recipients included in the National Longitudinal Survey of Youth (NLSY) are relatively younger than the recipient population as a whole (Cancian et. al. 1999). Administrative data may contain a more representative sample for a given state, but generally cannot be linked across states, so cannot as easily be used to generalize about welfare policy. In addition, administrative data from many states do not contain the wealth of demographic information contained in most national longitudinal data sets. I avoid some of these problems by creating a synthetic panel data set from the March supplements of the Current Population Survey (CPS). The main advantages of using the CPS are that it is a nationally representative data set, it contains very detailed information on demographics and income sources, and it allows me to examine the effects of welfare reform on the family incomes and earnings of former recipients living in both urban and rural areas.

Specifically, I use the CPS data to predict the change in family incomes and earnings over time, then use a difference-in-difference analysis to determine the effect of welfare reform and economic conditions on these changes. If proponents of welfare reform are correct in their assumption that work is the key to self-sufficiency, then families living in states that enacted reforms with strict work requirements or increased work incentives should have higher income and earnings growth than their counterparts living in states without such reforms, holding other relevant variables

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[1]Empirical evidence shows that much of the drop in caseloads has resulted from the strong economy rather than welfare reform. For example, see Ziliak et. al. (2000), U.S. Council of Economic Advisers (1998).

[2]For a recent survey, see Brauner and Loprest 1999.

constant. However, if welfare reform is making it more difficult for families to make ends meet, then the opposite should occur.

II. Model

The state level policies enacted before PRWORA were allowed under waivers from the federal rules regulating AFDC, hence they are frequently referred to simply as "waivers." The requirements and conditions imposed by these waivers varied substantially across states, and have been categorized in many ways (U.S. Council of Economic Advisers 1997, Crouse 1999, Ziliak, et. al. 2000). In this paper, I group them into three categories: those that require work (or participation in a job training or job search program) as a condition of eligibility, those that increase the incentives of current recipients to work (by increasing the earnings one can receive without losing AFDC benefits), and all other provisions. Because I am interested in the effect of waivers on earnings and incomes, I use this broad categorization to focus on the effect of the work-related waivers (work requirements and work incentives), both jointly and separately. I also examine the effect of all types of waivers combined.

Economic theory yields ambiguous predictions regarding the expected effect of work requirements on the earnings and income of welfare recipients.[3] Some work requirement waivers took the form of "workfare," meaning that the recipient works at a public job and is "paid" the welfare benefit in lieu of a wage. Because benefits are not counted as earned income, earnings would not change in the short run in such cases. Similarly, there will be no immediate effect for those who must participate in job search or job training activities instead of working at a publicly provided job. However, the assumption underlying many of the work requirements is that once welfare recipients gain work experience or training, they will move into higher paying, more stable jobs (and off the welfare rolls). If so, then the earnings of these individuals would be expected to rise after some period of time.

Work incentives, which may be combined with work requirements, also have ambiguous effects. These waivers allow a recipient to keep at least a portion of her benefit in addition to her wages, rather than decreasing benefits dollar-for-dollar as was usually done prior to the waivers.[4] While this would generally be expected to increase work effort among recipients, it will only do so if the additional income outweighs the extra costs of working. These costs, which include child care, transportation, clothing, and, in many cases, health insurance, can be substantial and often are not covered by the increased benefits (Edin and Lein 1997).

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[3]Simple models of the labor supply effect of work requirements and certain types of work incentives can be found in Ehrenberg and Smith (1994).

[4]Under the original AFDC program, the "30 and 1/3 rule" allowed the recipient to keep the first $30 plus 33% of any wages earned during the first four months on AFDC. After that, benefits were reduced by one dollar for each dollar of earnings.

While it is important to determine the effect on earnings, it is perhaps even more critical to understand what happens to incomes. After all, income from *all* sources contributes to a family's well-being. Due to the decrease in benefits resulting from increased earnings, incomes do not necessarily rise with work effort.[5] In addition, many non-work related waivers imposed sanctions for certain types of behaviors. When recipients were unable to comply with these provisions, their benefits were reduced, thereby reducing their incomes.

Empirical model

To empirically examine the question of whether earnings and incomes rise or fall as a result of work related waivers, it is first necessary to determine how the effect of the waivers can be identified. The date on which each state implemented its waivers is known (Crouse 1999), so a comparison of earnings before and after the waiver is possible. Although I do control for changes in state economic conditions, many other things may also have changed over the same period. Therefore, I use a difference-in-difference approach, which compares differences in earnings or income over time across different states. States that did not have waivers provide a control group.[6]

It is possible the effect remains only partially identified, so I also compare the state-level difference-in-difference coefficients for recipients with those of two alternative control groups: all nonrecipient families and families headed by nonrecipient single females (essentially defining a "difference-in-difference-in-difference" effect). Though the latter group may appear to constitute a better control group because of its similarities with the treatment group, it is not ideal because welfare reform may affect members of this group even though they were not recipients at the time of the reform. For example, some of these families may find welfare a more attractive option after a work incentive waiver is introduced. This would imply that their labor supply, and therefore their earnings, may *decrease* as a result. Similarly, a work requirement waiver that subsidizes job training may induce some nonrecipients to apply for AFDC if they believe that this training would

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[5]Non-cash assistance is also reduced, but this is not counted as income, so I will not address it here. For fascinating examples of ways in which the interactions among public assistance programs affect incomes at varying levels of work effort, see Blank 1997 (ch.3) and, especially, Tapogna and Witt (1998).

[6]States that never received a waiver may not be a perfect control because there may have been fundamental differences in political attitudes, the welfare population, or other factors that determined both the work behavior of the welfare population and the propensity of a state to apply for a waiver. However, the number of states with waivers grew dramatically, from 10 to 42, between 1993 and 1996, meaning that most states without waivers in 1993 or 1994 implemented waivers soon afterward. Thus, states without waivers in 1993 or 1994 will likely provide a reasonable control group for those with waivers in the same period.

lead to a better job than they currently hold.[7]

Finally, previous literature has shown that the impact of policies directed at alleviating poverty is often dissimilar in urban and rural areas.[8] Hence, I separate the sample into rural and urban residents and repeat the analysis. If the difference-in-difference coefficients are dissimilar, then welfare reform has a differential impact in the two areas.[9]

One problem with using the CPS for this type of analysis is that it follows a given household for only one year so it cannot directly be used to observe long term changes in family incomes or earnings. It is important to follow those families who were receiving cash assistance *before* welfare reform policies took effect, so it is not sufficient to examine the incomes and earnings of the set of families who are observed in the CPS in the years following the reforms. Instead, we need a longitudinal data set. To overcome this constraint, I construct a "synthetic" panel data set (Connolly and Segal 1999). This involves several steps. First, I estimate an income or earnings equation for post-reform years, using the March CPS survey containing data for those years. Next, I predict the post-reform income and earnings of families observed in the year immediately preceding reform by using their demographics and other relevant information in the estimated income and earnings equations. This process uses tobit estimation to account for the fact that income and (especially) earnings may be censored at zero. It also allows for correlation in the residuals of these equations across years (Moffitt and Gottschalk 1995). The synthetic panel allows me to predict the change in family earnings and incomes that is used in the difference-in-difference analysis discussed above.

Construction of the synthetic panel

The goal is to calculate the growth of family earnings or income over two (not necessarily

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[7]See Moffitt (1996) for a discussion of the incentive effects of these programs.

[8]This is due both to differences in labor force behavior and differences in labor demand conditions in rural and urban areas (e.g., Deavers and Hoppe 1992, Davis, Connolly, and Weber 1999, Findeis and Jensen 1998, Findeis, et. al. 1992).

[9]To identify rural and urban families, I use the U.S. Office of Management and Budget definition: rural means not living in a Metropolitan Statistical Area (MSA), urban is the opposite. This is not a perfect indicator of whether a person lives in a rural area because the county in which she lives may be included in an MSA even if many parts of the county are sparsely populated. This implies that treating all residents of MSAs as urban and everyone else as rural will undercount the number of rural residents in the sample. As a result, differences between the two types of residents will be obscured, so any differences that are found provide a strong indication that actual differences are at least as large. For a thorough discussion of alternative definitions of "rural" and "urban", see Weber, Acock, and Goetz (1991).

consecutive) points in time. Since the CPS has limited data on these variables for the same family over time, I use the family's actual earnings or income in the year in which they are observed, and predict their earnings or income in the second period to construct a synthetic panel instead. For ease of exposition, I will discuss the methodology in terms of earnings. The process is identical for the income estimation.

The second period earnings are predicted by first estimating a model of log family earnings for that period using data on families actually observed during that period:

$$\ln(earn_2) = X_2\beta_2 + e_2 \qquad (1)$$

where X_2 is a vector of demographic and state dummy variables.[10] A tobit specification is used to account for the censoring of the dependent variable at zero.[11] While only about 2 percent of the families in the sample report annual income of one dollar or less, approximately 22 percent report annual earnings of the same level in each year. Therefore, it is very important to use the tobit model for the earnings equations. I use the same model for income to ensure comparability.

Though equation (1) is estimated using families observed in year 2, it can be used to predict the earnings of the base (year 1) sample because each of the two samples is drawn from the same population using the same sampling methodology. This implies that the only difference between this estimated model and one based on the actual year 2 data for the base sample of families (were it available) is due to sampling error.[12]

If the error terms across the two years are uncorrelated, then the predicted log earnings simply equal $X_1\hat{\beta}_2$, where X_1 is the vector of demographics and state dummy variables for the year 1

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[10]The demographic variables are gender, veteran status, race, age, and education (including quadratic terms in age and education) of the householder, place of residence (urban, central city, or other), the number of children aged 18 or less, the number of adults (male and female), and marital status. State dummy variables are included to control for differences in economic conditions and other state-level characteristics.

[11]I set the dependent variable (log earnings or log income) equal to zero for all observations of 1 dollar or less. Note that families with no earnings may have unearned income in the form of transfers, dividends, or interest, while those with no income may subsist on savings or other assets.

[12]Note that I use the entire sample, not just welfare recipients (for example), to estimate the second period earnings equation. This is because I do not want to restrict our first period families to any particular status in year 2 — some may continue to receive assistance in the second period, but others may have left the welfare rolls. The value of this methodology is that it does not restrict the second period observation to those with similar status in both periods.

sample and $\hat{\beta}_2$ is the vector of tobit estimates obtained using the year 2 sample. It is extremely unlikely that these errors are uncorrelated, however, because the first period residual includes any unobserved family characteristics that have been omitted from the regression.[13] To account for this, I assume that the errors, e_1 and e_2, have a bivariate normal distribution with zero means, standard deviations of σ_1 and σ_2, respectively, and correlation of ρ. Thus, the mean of e_2 conditional on e_1 is $E(e_2|e_1) = (\rho\sigma_2/\sigma_1)e_1$.[14]

Research by Moffitt and Gottschalk (1995) suggests that ρ is generally above 0.6, so I calculate the predicted earnings using 0.6 as a lower bound for ρ. The year 2 estimation provides an estimate of $\hat{\sigma}_2$. To obtain estimates of σ_1 and e_1, I estimate the log earnings equation for year 1:[15]

$$\ln(earn_1) = X_1\beta_1 + e_1$$

Finally, the estimate of the latent variable implied by the tobit specification may be negative, but observed earnings are not. Thus, the predicted earnings are:

$$\widehat{LNEARN_2} = \max\left(0,\ X_1\hat{\beta}_2 + \rho\frac{\hat{\sigma}_2}{\hat{\sigma}_1}\hat{e}_1\right) .$$

I calculate predicted log income in the same way. The synthetic panel consists of actual log

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[13]Moffitt and Gottschalk (1995) estimate the correlation of the residuals from a log annual earnings equation for white males. Their estimates vary depending on the cohort, averaging 0.76 for the 1986-1987 time span. The correlation for our sample is likely to be higher because we consider family, rather than individual, earnings and incomes.

[14]See Greene (1997, pp. 85-86), for example.

[15]For families with earnings greater than $1 in period 1 (log earnings greater than zero), the value of $\hat{e}_1$ is the difference between actual and predicted log earnings; for those with earnings of $1 or less (log earnings set equal to zero), I use the expected value of the error, conditional on the truncation, $\hat{e}_1 = \hat{\sigma}_1\frac{\phi(-X_1\hat{\beta}_1/\hat{\sigma}_1)}{\Phi(-X_1\hat{\beta}_1/\hat{\sigma}_1)}$. See Greene (1997, chapter 20) or Maddala (1983) for details.

earnings and income in year 1 ($LNEARN_1$ and $LNINC_1$) and predicted log earnings and income in year 2 ($\widehat{LNEARN_2}$ and $\widehat{LNINC_2}$).

Identification of the welfare reform effect

To determine the effect of welfare reform, I first use the synthetic panel to compute the difference between the predicted year 2 log earnings and the observed year 1 log earnings for each family. The difference approximates the growth of earnings over the period. Then I regress this variable on the welfare waiver variable (WAIVER, discussed in detail in section III) and on two variables to control for differences in economic growth across states: the change in the state unemployment rate between year 1 and year 2 (*DUR*), and the change in Gross State Product over the two years (*DGSP*):

$$(\widehat{LNEARN_2} - LNEARN_1)_{is} = \alpha_0 + \alpha_1 WAIVER_s + \alpha_2 DGSP_s + \alpha_3 DUR_s + u_s; \qquad s=1,...,51;\ i=1,...,N$$

where s indexes the states (including the District of Columbia) and i indexes individuals.

The coefficient on *WAIVER* measures the percentage point difference in predicted earnings growth for a family who lives in a state with a waiver compared to an otherwise similar family living in a non-waiver state with the same level of economic growth. Because I do not restrict attention to families who were receiving welfare in period two, the effect on those who left the rolls is implicitly included.

III. Data

Earnings, income, and demographics

Data on family earnings, incomes, and demographics are taken from various years of the March surveys of the Current Population Survey. The CPS is valuable for this type of study because it includes information on participation in a wide variety of public assistance programs, as well as detailed data on demographic characteristics and sources of income and earnings for a large, representative, sample of U.S. households. Indeed, Moffitt (1999) recently argued for the use of the CPS microdata for studying the effects of welfare reform on a variety of outcomes, including those examined here (earnings and incomes).[16]

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[16]There is some evidence that the amount of public assistance received is underreported in the CPS. This will cause measurement error in the income variable, but will not affect the dependent variable used here (the *change* in log incomes) unless underreporting is systematically different across years. It is also necessary that interviewees honestly report family participation in

(continued...)

Another important advantage of the CPS is that it provides information on family, not just individual, incomes and earnings. Welfare reform affects entire families, not just individuals, so it is important to determine how family level resources are affected.

Measures of welfare reform

Many states received waivers from federal regulations governing public assistance programs (especially AFDC) during the mid-1990s, allowing them to experiment with work requirements, time limits, and a number of other policies. The variables used here to measure welfare reform are based on information available from the U.S. Department of Health and Human Services website (Crouse 1999). I create a variable that equals the fraction of the year for which a given state had a waiver in effect. For example, if a state implemented a waiver in October of 1993, then this variable would equal 0 before 1993, 0.25 in 1993, and 1.0 thereafter for that state. There were many waivers that covered only small portions of the caseload, e.g., a single county, but I use only waivers that applied statewide because these are likely to have the greatest impact.[17] I estimate the model using four different definitions of the waiver variable: (1) any work-related waiver — combines all waivers that contain work requirements or provide additional incentives for work, (2) work requirement waivers only, (3) work incentive waivers only, and (4) any waiver — combines waivers of any type, whether work-related or not.[18]

IV. Results

Full sample, rural and urban residents pooled

Table 1 shows the coefficient estimates on the welfare waiver variable for all four waiver measures for three time periods. The 1993-94 and 1993-95 time periods capture the one- and two-year effects of waivers that were implemented before or during 1993, respectively. The

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[16](...continued)
assistance programs. I have no evidence to suggest that participation levels are underreported in the CPS.

[17]Schiller (1999) makes a compelling case that local discretion in county welfare offices can lead to wide variation in the degree to which particular provisions are implemented within a given state. This means that statewide waiver data may not provide accurate information about the ways in which welfare reforms actually affect recipients. Unfortunately, no data measuring implementation at the county level, especially in terms of the behavior of case workers, are available.

[18]Work requirement waivers include those that change the JOBS work exemption requirements, those that affect JOBS sanctions, and those that impose work requirements after some time limit is reached. Work incentive waivers are those that increase the earnings disregard.

1994-95 period indicates the one-year effect of all waivers implemented by the end of 1994. Throughout this table, I compare all recipients with all nonrecipients, regardless of the gender and marital status of the householder. In addition, residents of both rural and urban locations are pooled.

While many of the waiver variables appear to have a significant effect on earnings for both recipients and nonrecipients in each period, the difference-in-difference estimate is insignificant in most cases. This indicates that the welfare waivers did not have a significantly different effect on the earnings growth of recipients compared with nonrecipients. To understand this finding, note that the coefficient estimate in row 1 implies that the 1993-94 earnings growth of a recipient living in a state with a work-related waiver was 0.038 percentage points lower than that of a similar recipient living in a non-waiver state (though this estimate is insignificant).[19] However, the second row indicates that the earnings of a nonrecipient grew 0.043 percentage points faster in a work-related waiver state compared with a nonrecipient in a state without such a waiver. While some of the earnings growth for nonrecipients may be due to the fact that a few nonrecipients are affected by waivers, much of it is likely due to unobservable factors that are correlated with the existence of a work-related waiver (e.g., changing attitudes toward work and welfare). This is why the difference-in-difference approach is valuable — it allows us to isolate the effect of the waiver from the unobservables. The difference-in-difference estimate of 0.081 is not significant, meaning that most of the observed state-level difference in recipients' earnings growth is due to unobservables rather than the work-related waiver.[20]

As table 1 shows, the variable combining all work-related waivers had no significant effect on earnings for this sample in any of the three time periods. As discussed earlier, this is consistent with the fact that both work requirement and work incentive waivers have ambiguous theoretical effects on earnings. However, the difference-in-difference estimate corresponding to this combination variable did have a negative and statistically significant effect on incomes in all three periods. For example, the difference-in-difference estimate for this variable in the 1993-94 time period indicates that the family income of welfare recipients grew 0.068 percentage points more slowly than that of a nonrecipient family living in the *same* state over that period. While it may be disturbing to note a negative effect, it should be noted that the magnitude is quite small. Thus, work-related waivers as a group did not lead to increased earnings of welfare recipients in the full sample, but the incomes of these families decreased slightly, probably as a result of sanctions and other penalties.

The lack of effect of the combined work-related waivers could potentially be caused by a

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[19]For example, if a recipient's earnings grew at 5 percent (.05) in the non-waiver state, then this estimate (if it were significant) implies that earnings of an otherwise similar recipient living in a waiver state grew at 4.962 percent (.04962).

[20]Recall, however, that state economic conditions have been included as controls in the regression equations.

confounding of the influences of work requirement and work incentive waivers, so I also examine the effect of each of these separately. Interestingly, the work requirement waiver has a negative and significant effect on earnings when only waivers implemented by the end of 1993 are considered (the 1993-94 and 1993-95 results). The order of magnitude, while still small, is much greater than the effects discussed earlier. The estimates imply that work requirement waivers caused family earnings of welfare recipients to grow approximately 0.25 percentage points more slowly than those of nonrecipients in the same state. There are two possible explanations for this negative effect. First, some recipients may have worked at unreported jobs while receiving benefits.[21] When a workfare type of waiver is implemented, these recipients must report their work, so may no longer have time to work surreptitiously. This would result in an overall decrease in earnings.[22] The second explanation draws on the fact that many work requirement waivers allowed participation in a state-sponsored job training program in lieu of working. It may have been beneficial for some recipients who were originally working (whether reported or not) to participate in the job training program instead. The second explanation is consistent with the finding that the work requirement waiver had no significant effect on recipients' incomes since this implies that lower earnings growth was offset by increased growth in unearned income.

Turning to the work incentive waivers, we also see an interesting pattern. The work incentive waivers did have a positive and significant effect on earnings in the 1994-95 period, but simultaneously had a significant (but much smaller) negative effect on income. This pattern would be expected if the work incentive waivers helped recipients find paying jobs, but the increased wages triggered a large decrease in benefits. Although work incentive waivers were those that increased the earnings disregard, recipients still faced a steep phase-out period once their earnings exceeded the disregard.

Finally, I examine the effect of any type of waiver, whether work-related or not. These results are very similar to those of the variable that combines all work-related waivers. There is no significant impact on earnings and a statistically significant, but quite small, negative effect on incomes. Again, sanctions and penalties are the logical explanation for this drop. Note that the measure of the income growth rate allows for recipients to leave the caseload during the period in question for all reasons, not just as due to increased earnings. The decrease in income growth also reflects the fact that many waivers were designed to reduce caseload without necessarily

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[21]Edin and Lein (1997) report that this is relatively common.

[22]Working recipients have an incentive to hide earnings from unreported jobs, so it is possible that earnings for this group of families is underreported in the CPS. If so, this would strengthen the argument: since fewer recipients are likely to be working against AFDC rules after the work requirement is imposed, reported earnings in the second period are probably more accurate than first period earnings in waiver states. In this case, predicted earnings growth in waiver states would be overstated relative to that of nonwaiver states. Thus, the actual effect of the waiver on earnings would be at least as large (in magnitude) as my estimates indicate.

increasing earnings.[23]

Single female householders only, rural and urban residents pooled

One criticism of the foregoing analysis is that it compares AFDC recipients with all nonrecipients, which may not be the most appropriate control group. Table 2 presents the results of restricting the sample (of both recipients and nonrecipients) to single female heads of household only. Everything else is done exactly as before.

Compared with the full sample, there are no differences in the pattern resulting from the variable that combines all work-related waivers and only one in the effect of all waivers combined (the negative effect on income growth in the 1993-95 period is no longer significant). There are some interesting difference in the effects of each type of work related waiver when examined separately however.

The effect of the work requirement variable on earnings growth is now significant (at the .10 level) for the 1994-95 period in addition to the other two periods. The magnitude of the effect is now also similar to that of the other two periods. This indicates that the effect of the later work requirement waivers was obscured when the sample was not restricted.

There are two major changes in the estimated effect of the work incentive variable. First, the positive effect on earnings growth in the 1994-95 period is about the same magnitude, but is not significant in the restricted sample. Thus, when we focus only on families headed by single females, the apparent earnings benefit of the work incentive waivers disappears. This suggests that the benefits accrue mainly to families with single male heads and/or two parents.[24]

The second difference in the effect of the work incentive waiver is that the significant negative effect on incomes disappears. It appears that families headed by single females were less likely to have earnings growth high enough to incur benefit reductions.

Full sample, rural and urban residents separate

Labor market opportunities in rural areas often differ substantially from those in urban areas, so I repeat the analysis separately for rural and urban residents to see if welfare reform had the same

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[23]See Ziliak, et. al. (2000) for an analysis of the effect of waivers on caseload.

[24]Recipients are identified by answering "yes" to the question "At any time during [year], even for one month, did anyone in this household receive any public assistance or welfare payments from the State or local welfare office?" Thus, the sample includes AFDC-UP families and families receiving cash benefits from programs other than AFDC as well.

impact in both areas. Table 3 shows the findings for the full sample. For urban residents, the effects of all types of waiver look very similar to that of the pooled sample. However, the differences in magnitudes of the effects for urban residents suggest that in general, waivers had a more negative (or less positive) effect on urban recipients than on all recipients as a group.[25]

In contrast to the findings for urban residents, none of the difference-in-difference estimates is significant for any type of waiver for rural residents.[26] In fact, this is also true for 1994-95 earnings and income growth in rural areas. Thus, it appears that the state-level welfare reform policies that had been approved by the end of 1994 had no effect — good or bad — on the earnings or incomes of rural residents, but had a small detrimental effect on urban residents.

Single female householders only, rural and urban residents separate

Finally, I examine the effect separately for rural and urban residents using the sample of single female householders only. As table 4 indicates, the results for urban residents look even more like those of the pooled rural/urban sample than was the case when we did not restrict attention to families headed by single females.

The results differ a little for rural residents. Two of the effects are now significant for rural recipients. First is the effect of a work requirement waiver on income growth in 1993-94, which is negative and significant at the .10 level. This estimate is not significant in any other sample. Thus, it appears that recipient families headed by single females and living in rural areas may have been somewhat more likely to incur sanctions or leave the welfare caseload as a result of work requirement waivers approved by the end of 1993. However, this effect does not appear to persist: the effect of a work requirement waiver on the incomes of this group is insignificant in the other two time periods.

The other difference for rural recipients is a positive effect of work incentive waivers on earnings in the 1994-95 period. We saw a similar effect in the unrestricted sample for urban residents alone and with urban and rural residents pooled. The effect is also similar in magnitude to the effect for rural residents in the unrestricted sample, but it is not significant in the latter case. The

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[25]The pattern of significance is the same for both the urban and pooled samples. Of the significant variables, the only one with a positive effect is the impact of the work incentive waiver on earnings in the 1994-95 time period. This effect is somewhat smaller for the urban sample than the pooled sample. For all of the other significant variables, the effect is more negative in the urban sample than in the pooled sample.

[26]Perhaps this is not surprising, since a large fraction of the pooled population consists of urban residents. However, rural residents comprise about 25 percent of the sample for both recipients and nonrecipients, so the lack of significance for rural residents is not purely an artifact of small sample size. (There are 730 rural recipients in the 1993 sample and 591 in the 1994 sample.)

positive effect implies that work incentive waivers were helpful for rural families headed by single females in earning additional income in the 1994-95 period.

Summary

The analysis in this section suggests that overall, early welfare waivers had little effect on earnings and a negative, but small, impact on incomes of recipients. The impacts appear to have been somewhat more detrimental for urban recipients than for those living in rural areas. Most research on differences between urban and rural areas indicates that rural residents fare worse than their urban counterparts, so this result is somewhat surprising. It suggests that although rural residents in general may realize in fewer economic gains, rural welfare recipients are somewhat insulated from the negative effects of welfare reform.[27]

V. Conclusion

Designers of welfare reform policies frequently argue that their policies will increase recipients' self-sufficiency. If so, then the policies should lead to higher earnings and income growth for former recipients. In this paper, I estimate the effect of pre-PRWORA state level welfare waivers on earnings and income growth of recipients compared with nonrecipients over three time periods, using two different samples from the Current Population Survey. I use two variables that combine waivers of various types: one combining work-related waivers only and another combining waivers of all types. Neither of these variables had any significant effect on earnings growth, regardless of the time period and sample used. Both waivers show a negative and (usually) statistically significant (but small) effect on income growth for a sample containing urban recipients only as well as one in which pools urban and rural recipients. There is no significant effect of either variable on the incomes of rural recipients.

I also separate the work-related waiver variable into two components: work requirements and work incentives. With two exceptions, the effect of the work requirement waiver on earnings is negative, though it is not always significant. In the two cases in which it is positive, it is insignificant. The negative effect may result from recipients who were previously working quitting their jobs in order to participate in job training programs or, for those who were working in violation of AFDC rules, in order to work at an approved job.

The work requirement waiver had a significant effect (at the .10 level) on income growth in only two cases. Recipient families headed by single females living in rural areas of states with a work requirement saw lower income growth during the 1993-94 period than similar families in rural areas of states without such a waiver. Similarly, there was a negative impact on the income

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[27]Schiller (1999) argues that implementation varies widely across jurisdictions. He does not present evidence to suggest systematic variation across urban and rural jurisdictions, but it is possible that this does occur. If so, this could explain the lack of impact on rural recipients.

growth of urban recipient families headed by single females in the 1994-95 period. These negative effects are likely due to sanctions and families leaving the caseload.

The significance of work incentive waivers on earnings varies, but in cases where it is significant it is always positive. However, they have a significant (but small) negative effect on incomes in several instances.

While the results presented here cover only the effects of waivers approved by the end of 1993 and 1994, they are suggestive of the impacts that may have occurred in later years as well. Most of the later waivers, as well as PRWORA, have similar provisions as those studied here. In order to determine whether these trends continued, I am extending the analysis to cover waivers approved in 1995 and 1996. I am also examining the longer term effects. For example, I can predict the 1996 and 1997 earnings of a family observed in 1993 and estimate the effect of waivers implemented by the end of 1993 on the earnings growth over the more extended period.

The purpose of much welfare reform legislation was to reduce the number of recipients. While it may have succeeded in that respect, it is important to understand what has happened economically to those who relied on welfare at the time of the new policies, whether or not they continued to receive benefits. This analysis suggests that those families are generally no better off, and are potentially worse off, as a result of welfare reform.

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Table 1. Effect of welfare waivers on earnings and income growth, by time period (full sample).[a]

				Dependent variable							
				Change in predicted earnings				Change in predicted income			
Time period	Waiver variable	Recipiency status	N	Coeff	S.E.	Difference-in-difference		Coeff	S.E.	Difference-in-difference	
						estimate	p-value			estimate	p-value
1993-94	Any work-related	Yes	3065	-0.038	0.067			-0.072***	0.016		
		No	57440	0.043***	0.013	-0.081	0.23	-0.004	0.007	-0.068***	0.00
	Work requirement	Yes	3065	-0.299**	0.116			-0.040	0.027		
		No	57440	-0.066***	0.022	-0.233**	0.05	-0.023**	0.011	-0.017	0.55
	Work incentive	Yes	3065	0.109	0.085			-0.061***	0.020		
		No	57440	0.089***	0.017	0.020	0.82	0.005	0.009	-0.066***	0.00
	Any waiver	Yes	3065	-0.034	0.060			-0.043***	0.014		
		No	57440	0.009	0.011	-0.043	0.48	-0.002	0.006	-0.041***	0.01
1993-95	Any work-related	Yes	3065	-0.045	0.070			-0.044***	0.017		
		No	57440	0.059***	0.013	-0.104	0.15	0.030***	0.007	-0.074***	0.00
	Work requirement	Yes	3065	-0.219*	0.121			-0.036	0.029		
		No	57440	0.032	0.022	-0.251**	0.04	-0.009	0.011	-0.027	0.39
	Work incentive	Yes	3065	0.073	0.090			-0.033	0.022		
		No	57440	0.060***	0.017	0.013	0.88	0.038***	0.009	-0.071***	0.00
	Any waiver	Yes	3065	-0.063	0.062			-0.026*	0.015		
		No	57440	-0.018	0.011	-0.045	0.48	0.013**	0.006	-0.039**	0.02

[a]Control variables in all models: change in Gross State Product and change in state unemployment rate. Demographics and state level dummies controlled for in the first stage prediction of earnings and income.

Table 1 (continued). Effect of welfare waivers on earnings and income growth, by time period (full sample).[a]

Time period	Waiver variable	Recipiency status	N	Dependent variable: Change in predicted earnings Coeff	S.E.	Difference-in-difference estimate	p-value	Change in predicted income Coeff	S.E.	Difference-in-difference estimate	p-value
1994-95	Any work-related	Yes	2774	0.127*	0.069			-0.025	0.018		
		No	57434	0.034***	0.012	0.093	0.18	0.038***	0.006	-0.063***	0.00
	Work requirement	Yes	2774	0.126	0.122			-0.005	0.032		
		No	57434	0.142***	0.020	-0.016	0.90	0.027**	0.011	-0.032	0.34
	Work incentive	Yes	2774	0.221**	0.103			-0.022	0.027		
		No	57434	-0.021	0.018	0.242**	0.02	0.037***	0.010	-0.059**	0.04
	Any waiver	Yes	2774	0.060	0.060			-0.019	0.016		
		No	57434	-0.007	0.010	0.067	0.27	0.018***	0.006	-0.037**	0.03

[a]Control variables in all models: change in Gross State Product and change in state unemployment rate. Demographics and state level dummies controlled for in the first stage prediction of earnings and income.

Table 2. Effect of welfare waivers on earnings and income growth, by time period (single female householders only).[a]

				Dependent variable							
				Change in predicted earnings				Change in predicted income			
Time period	Waiver variable	Recipiency status	N	Coeff	S.E.	Difference-in-difference		Coeff	S.E.	Difference-in-difference	
						estimate	p-value			estimate	p-value
1993-94	Any work-related	Yes	2107	-0.009	0.068			-0.066***	0.020		
		No	16735	0.034	0.028	-0.044	0.56	-0.009	0.015	-0.057**	0.02
	Work requirement	Yes	2107	-0.604***	0.119			-0.076**	0.035		
		No	16735	-0.364***	0.048	-0.240*	0.06	-0.063**	0.025	-0.013	0.76
	Work incentive	Yes	2107	0.285***	0.086			-0.032	0.025		
		No	16735	0.226***	0.036	0.059	0.53	0.024	0.019	-0.056	0.93
	Any waiver	Yes	2107	-0.022	0.061			-0.043**	0.018		
		No	16735	-0.029	0.024	0.007	0.92	-0.006	0.012	-0.037*	0.09
1993-95	Any work-related	Yes	2107	0.023	0.072			-0.068***	0.018		
		No	16735	0.055**	0.028	-0.032	0.67	-0.013	0.015	-0.055**	0.02
	Work requirement	Yes	2107	-0.419***	0.126			-0.021	0.032		
		No	16735	-0.110**	0.048	-0.309**	0.02	-0.044*	0.025	0.023	0.57
	Work incentive	Yes	2107	0.256***	0.092			-0.068***	0.024		
		No	16735	0.132***	0.036	0.124*	0.09	0.001	0.019	-0.069	0.64
	Any waiver	Yes	2107	-0.032	0.064			-0.041**	0.016		
		No	16735	-0.065***	0.024	0.033	0.63	-0.010	0.012	-0.031	0.14

[a]Control variables in all models: change in Gross State Product and change in state unemployment rate. Demographics and state level dummies controlled for in the first stage prediction of earnings and income.

Table 2 (continued). Effect of welfare waivers on earnings and income growth, by time period (single female householders only).[a]

				Dependent variable							
				Change in predicted earnings				Change in predicted income			
Time period	Waiver variable	Recipiency status	N	Coeff	S.E.	Difference-in-difference estimate	p-value	Coeff	S.E.	Difference-in-difference estimate	p-value
1994-95	Any work-related	Yes	1928	0.074	0.071			-0.050**	0.020		
		No	16539	0.010	0.026	0.064	0.40	0.007	0.014	-0.057**	0.02
	Work requirement	Yes	1928	-0.081	0.128			-0.052	0.037		
		No	16539	0.142***	0.043	-0.223*	0.10	0.003	0.024	-0.055	0.21
	Work incentive	Yes	1928	0.281***	0.104			-0.034	0.030		
		No	16539	-0.018	0.038	0.299	0.53	-0.003	0.021	-0.031	0.67
	Any waiver	Yes	1928	-0.024	0.062			-0.048***	0.018		
		No	16539	-0.038*	0.022	0.014	0.83	-0.004	0.012	-0.044**	0.04

[a]Control variables in all models: change in Gross State Product and change in state unemployment rate. Demographics and state level dummies controlled for in the first stage prediction of earnings and income.

Table 3. Effect of welfare waivers on earnings and income growth, by time period and location of residence (full sample).[a]

Time period	Location of residence	Waiver variable	Recipiency status	N	Dependent variable: Change in earnings over time period — Coeff	S.E.	Difference-in-difference estimate	p-value	Change in income over time period — Coeff	S.E.	Difference-in-difference estimate	p-value
1993-94	Rural	Any work-related	Yes	730	-0.076	0.146			-0.031	0.035		
			No	14474	0.068**	0.030	-0.144	0.33	-0.001	0.015	-0.030	0.44
		Work requirement	Yes	730	-0.293	0.223			-0.114**	0.053		
			No	14474	-0.038	0.043	-0.255	0.26	-0.049**	0.021	-0.065	0.25
		Work incentive	Yes	730	0.086	0.200			0.029	0.048		
			No	14474	0.141***	0.045	-0.055	0.79	0.031	0.021	-0.002	0.97
		Any waiver	Yes	730	-0.041	0.131			-0.020	0.031		
			No	14474	0.044*	0.025	-0.085	0.52	0.004	0.012	-0.024	0.48
	Urban	Any work-related	Yes	2335	-0.025	0.075			-0.080***	0.018		
			No	42966	0.037**	0.015	-0.062	0.42	-0.006	0.008	-0.074***	0.00
		Work requirement	Yes	2335	-0.346**	0.136			-0.034	0.032		
			No	42966	-0.084***	0.026	-0.262*	0.06	-0.017	0.014	-0.017	0.61
		Work incentive	Yes	2335	0.136	0.095			-0.071***	0.022		
			No	42966	0.085***	0.018	0.051	0.60	-0.001	0.010	-0.070***	0.00
		Any waiver	Yes	2335	-0.028	0.067			-0.046***	0.016		
			No	42966	0.000	0.013	-0.028	0.68	-0.005	0.007	-0.041***	0.01

[a]Control variables in all models: change in Gross State Product and change in state unemployment rate. Demographics and state level dummies controlled for in the first stage prediction of earnings and income.

Table 3 (continued). Effect of welfare waivers on earnings and income growth, by time period and location of residence (full sample).[a]

Time period	Location of residence	Waiver variable	Recipiency status	N	Dependent variable: Change in earnings over time period — Coeff	S.E.	Difference-in-difference estimate	Difference-in-difference p-value	Dependent variable: Change in income over time period — Coeff	S.E.	Difference-in-difference estimate	Difference-in-difference p-value
1993-95	Rural	Any work-related	Yes	730	-0.037	0.152			-0.021	0.038		
			No	14474	0.113***	0.031	-0.150	0.34	0.019	0.015	-0.040	0.33
		Work requirement	Yes	730	-0.181	0.233			-0.107*	0.058		
			No	14474	0.076*	0.044	-0.257	0.28	-0.021	0.021	-0.086	0.16
		Work incentive	Yes	730	0.063	0.212			0.028	0.053		
			No	14474	0.101**	0.046	-0.038	0.86	0.022	0.022	0.006	0.92
		Any waiver	Yes	730	-0.055	0.137			-0.013	0.034		
			No	14474	-0.006	0.025	-0.049	0.73	0.007	0.012	-0.020	0.57
	Urban	Any work-related	Yes	2335	-0.042	0.079			-0.048**	0.019		
			No	42966	0.045***	0.015	-0.087	0.28	0.031***	0.008	-0.079***	0.00
		Work requirement	Yes	2335	-0.300**	0.143			-0.032	0.034		
			No	42966	0.005	0.026	-0.305**	0.04	-0.007	0.014	-0.025	0.50
		Work incentive	Yes	2335	0.104	0.101			-0.037	0.024		
			No	42966	0.055***	0.019	0.049	0.63	0.038***	0.010	-0.075***	0.00
		Any waiver	Yes	2335	-0.060	0.070			-0.027	0.017		
			No	42966	-0.021*	0.013	-0.039	0.59	0.013*	0.007	-0.040**	0.029

[a]Control variables in all models: change in Gross State Product and change in state unemployment rate. Demographics and state level dummies controlled for in the first stage prediction of earnings and income.

Table 3 (continued). Effect of welfare waivers on earnings and income growth, by time period and location of residence (full sample).[a]

Time period	Location of residence	Waiver variable	Recipiency status	N	Dependent variable: Change in earnings over time period — Coeff	S.E.	Difference-in-difference estimate	Difference-in-difference p-value	Change in income over time period — Coeff	S.E.	Difference-in-difference estimate	Difference-in-difference p-value
1994-95	Rural	Any work-related	Yes	591	0.231	0.157			0.022	0.041		
			No	14009	0.009	0.026	0.222	0.16	-0.010	0.013	0.032	0.46
		Work requirement	Yes	591	0.163	0.223			0.049	0.057		
			No	14009	0.121***	0.035	0.042	0.85	-0.008	0.017	0.057	0.35
		Work incentive	Yes	591	0.226	0.250			-0.022	0.064		
			No	14009	-0.163***	0.042	0.389	0.12	-0.027	0.021	0.005	0.94
		Any waiver	Yes	591	-0.117	0.130			-0.005	0.033		
			No	14009	-0.072***	0.022	-0.045	0.73	-0.025**	0.011	0.020	0.56
	Urban	Any work-related	Yes	2183	0.098	0.077			-0.038*	0.020		
			No	43425	0.037***	0.014	0.061	0.45	0.051***	0.008	-0.089***	0.00
		Work requirement	Yes	2183	0.074	0.145			-0.018	0.038		
			No	43425	0.135***	0.024	-0.061	0.68	0.041***	0.013	-0.059	0.14
		Work incentive	Yes	2183	0.224*	0.116			-0.038	0.031		
			No	43425	0.007	0.021	0.217*	0.07	0.053***	0.011	-0.091***	0.01
		Any waiver	Yes	2183	0.098	0.067			-0.024	0.018		
			No	43425	0.014	0.012	0.084	0.22	0.031***	0.006	-0.055***	0.00

[a]Control variables in all models: change in Gross State Product and change in state unemployment rate. Demographics and state level dummies controlled for in the first stage prediction of earnings and income.

Table 4. Effect of welfare waivers on earnings and income growth, by time period and location of residence (single female householders only).[a]

					Dependent variable							
					Change in earnings over time period				Change in income over time period			
Time period	Location of residence	Waiver variable	Recipicncy status	N	Coeff	S.E.	Difference-in-difference estimate	Difference-in-difference p-value	Coeff	S.E.	Difference-in-difference estimate	Difference-in-difference p-value
1993-94	Rural	Any work-related	Yes	450	0.109	0.157			0.069	0.047		
			No	3868	0.039	0.071	0.070	0.69	0.035	0.034	0.034	0.54
		Work requirement	Yes	450	-0.256	0.238			-0.170**	0.070		
			No	3868	-0.196*	0.101	-0.060	0.81	-0.014	0.048	-0.156*	0.07
		Work incentive	Yes	450	0.295	0.212			0.185***	0.063		
			No	3868	0.290***	0.108	0.005	0.99	0.082	0.052	0.103	0.65
		Any waiver	Yes	450	0.128	0.139			0.065	0.042		
			No	3868	0.001	0.056	0.127	0.39	0.029	0.027	0.036	0.46
	Urban	Any work-related	Yes	1657	-0.014	0.076			-0.086***	0.022		
			No	12867	0.027	0.031	-0.041	0.62	-0.015	0.016	-0.071***	0.01
		Work requirement	Yes	1657	-0.735***	0.137			-0.069*	0.040		
			No	12867	-0.427***	0.056	-0.308**	0.04	-0.078***	0.029	0.009	0.86
		Work incentive	Yes	1657	0.319***	0.094			-0.056**	0.028		
			No	12867	0.223***	0.039	0.096	0.14	0.020	0.020	-0.076	0.41
		Any waiver	Yes	1657	-0.036	0.068			-0.058***	0.020		
			No	12867	-0.038	0.027	0.002	0.98	-0.012	0.014	-0.046*	0.06

[a]Control variables in all models: change in Gross State Product and change in state unemployment rate. Demographics and state level dummies controlled for in the first stage prediction of earnings and income.

Table 4 (continued). Effect of welfare waivers on earnings and income growth, by time period and location of residence (single female householders only).[a]

Time period	Location of residence	Waiver variable	Recipiency status	N	Dependent variable: Change in earnings over time period — Coeff	S.E.	Difference-in-difference estimate	p-value	Change in income over time period — Coeff	S.E.	Difference-in-difference estimate	p-value
1993-95	Rural	Any work-related	Yes	450	0.126	0.173			-0.020	0.046		
			No	3868	0.099	0.069	0.027	0.89	-0.009	0.033	-0.011	0.85
		Work requirement	Yes	450	-0.043	0.262			-0.119*	0.069		
			No	3868	-0.084	0.099	0.041	0.88	-0.032	0.048	-0.087	0.30
		Work incentive	Yes	450	0.201	0.238			0.026	0.063		
			No	3868	0.258**	0.106	-0.057	0.51	-0.011	0.051	0.037	0.79
		Any waiver	Yes	450	0.080	0.155			0.012	0.041		
			No	3868	-0.041	0.055	0.121	0.47	0.024	0.026	-0.012	0.82
	Urban	Any work-related	Yes	1657	0.014	0.079			-0.076***	0.020		
			No	12867	0.048	0.031	-0.034	0.69	-0.010	0.016	-0.066***	0.01
		Work requirement	Yes	1657	-0.545***	0.143			0.003	0.037		
			No	12867	-0.141**	0.056	-0.404***	0.01	-0.040	0.029	0.043	0.36
		Work incentive	Yes	1657	0.289***	0.100			-0.083***	0.026		
			No	12867	0.129***	0.039	0.160*	0.07	0.006	0.021	-0.089	0.41
		Any waiver	Yes	1657	-0.044	0.071			-0.049***	0.018		
			No	12867	-0.070***	0.027	0.026	0.72	-0.017	0.014	-0.032	0.15

[a]Control variables in all models: change in Gross State Product and change in state unemployment rate. Demographics and state level dummies controlled for in the first stage prediction of earnings and income.

Table 4 (continued). Effect of welfare waivers on earnings and income growth, by time period and location of residence (single female householders only).[a]

Time period	Location of residence	Waiver variable	Recipiency status	N	Dependent variable: Change in earnings over time period — Coeff	S.E.	Difference-in-difference estimate	p-value	Change in income over time period — Coeff	S.E.	Difference-in-difference estimate	p-value
1994-95	Rural	Any work-related	Yes	392	0.122	0.170			-0.073	0.049		
			No	3703	-0.008	0.058	0.130	0.47	-0.035	0.030	-0.038	0.52
		Work requirement	Yes	392	-0.138	0.263			-0.047	0.076		
			No	3703	0.076	0.082	-0.214	0.44	-0.086**	0.042	0.039	0.65
		Work incentive	Yes	392	0.315	0.244			-0.052	0.071		
			No	3703	-0.104	0.092	0.419*	0.10	0.025	0.048	-0.077	0.91
		Any waiver	Yes	392	-0.167	0.140			-0.084**	0.040		
			No	3703	-0.065	0.048	-0.102	0.49	-0.031	0.025	-0.053	0.26
	Urban	Any work-related	Yes	1536	0.067	0.079			-0.044*	0.023		
			No	12836	0.017	0.029	0.050	0.55	0.020	0.016	-0.064**	0.02
		Work requirement	Yes	1536	-0.071	0.146			-0.043	0.042		
			No	12836	0.154***	0.051	-0.225	0.15	0.041	0.029	-0.084*	0.10
		Work incentive	Yes	1536	0.276**	0.117			-0.049	0.034		
			No	12836	0.001	0.043	0.275	0.69	-0.009	0.024	-0.040	0.70
		Any waiver	Yes	1536	0.011	0.069			-0.041**	0.020		
			No	12836	-0.027	0.025	0.038	0.60	0.002	0.014	-0.043*	0.08

[a]Control variables in all models: change in Gross State Product and change in state unemployment rate. Demographics and state level dummies controlled for in the first stage prediction of earnings and income.

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