EMPLOYMENT PROSPECTS OF WELFARE RECIPIENTS: ANOTHER LOOK AT THE DATA

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The recently passed welfare reform act, formally known as the Personal Responsibility and Work Opportunity Reconciliation Act of 1966 or PRWORA, has been heralded as the "end of welfare" as it has been known for the last 30 years. PRWORA has eliminated Aid to Families with Dependent Children (AFDC) and created a new federal welfare program that differs from the old in three fundamental respects. First, the new program ends the federal entitlement provisions of the old program. Federal money will now be distributed to states in the form of block grants, called Temporary Assistance for Needy Families, and states may use this money as they see fit. Second, the new program has strong work requirements. By the year 2002, 50 percent of all women who receive aid will be required to work at least 30 hours per week. If states fail to meet this standard, they risk a reduction in the size of the federal block grant. Finally, the new legislation sets a five-year lifetime limit for individuals to receive federal block grant dollars.

Although all three aspects of the legislation may greatly affect the number and activities of welfare recipients, it is the work requirements that are the heart of the reform. The work requirements of PRWORA continue the trend in welfare reform that focuses on employment solutions, but the current law differs significantly from previous reform efforts. For example, the Jobs Opportunity and Basic Skills Training

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Program (JOBS) of the Family Support Act of 1988 required that 20 percent of women without children under three participate in a job-related program. Note that the law required participation in an activity related to work, but not work. Accordingly, many states successfully developed bureaucratic structures to meet the standards set by JOBS, but they achieved relatively modest success in moving welfare recipients into the labor market (Glazer 1995; Mead 1996; Friedlander and Burtless 1995; Main, Hill, and Kaestner 1996). In contrast, PRWORA sets a work standard and imposes penalties on both states and individuals for failure to meet the standard. States lose block grant dollars and individuals lose federal eligibility if they remain on welfare for more than five years.

Designers of the new welfare law view employment, and the work requirements, as a way to reduce the welfare caseload. The five-year lifetime limit on participation was presumably motivated by the belief that women on welfare are capable of supporting themselves through work. But what are the employment prospects of welfare recipients? Part of the answer to this question depends on whether women on welfare will be willing and able to find jobs. Kathleen Harris (1996) reports that 51 percent of all women on welfare work some fraction of the time they are on welfare, and shows that the probability of working is related to the duration of the welfare spell. For example, she reports that women who have been on welfare less than a year work between 25 and 38 percent of the time, while those who have been on welfare for more than two years participate in the labor market only 6 percent of the time. Furthermore, recent studies by Harris (1996) and LaDonna Pavetti (1993) show that many women exit welfare for employment. These figures may be cause for optimism, since they imply that women on welfare have a significant attachment to the labor market. In contrast, June and David O'Neill (1996) report that only 6 percent of women on welfare are working at a given point in time. Similarly, Harris (1996) and Pavetti (1993) report that many women who exit welfare due to employment frequently return to welfare after relatively brief periods in the labor market. Moreover, it is generally thought that the incentives of the current welfare system discourage women from voluntarily finding jobs. Welfare recipients are relatively low skilled and have poor earnings prospects, and the combined benefit income (AFDC, food stamps, Medicaid, housing) of being on welfare is usually thought to be greater than the income a recipient could earn through employment. Thus, most observers are pessimistic about the likelihood of women voluntarily finding work that will keep them off of welfare. In addition, critics of the new welfare law contend that the economy is not robust enough to absorb

the approximately 1.7 million individuals the Congressional Budget Office (1996) estimates would be required to work by the year 2002.[1]

The central role that employment plays in the new welfare reform law, and the potentially harmful consequences of the new law, make it essential to evaluate the employment and earnings prospects of women on welfare. Such information can be used to answer questions related to the likely effect of PRWORA on poverty rates and the reasonableness of the 50 percent work requirement standard of PRWORA. Most previous analysts have simply noted the generosity of the combined welfare income package and the relatively disadvantaged backgrounds of welfare recipients, and concluded that there is little incentive for welfare recipients to work.[2] While this simple exercise may be illustrative of the general nature of the work disincentives of the welfare program, it does not directly evaluate the employment and earnings prospects of welfare recipients. In contrast to earlier research, this study presents estimates of predicted employment and earnings of a sample of women on welfare.

A Brief Review of the Literature and a Preliminary Look at Some Data

There have been two recent, and widely cited, evaluations of the effects of the new welfare law on poverty. These two studies are relevant to the present analysis because both studies make assumptions about the employment prospects of welfare recipients as part of their poverty estimates. Sheila Zedlewski et al. (1996) estimated that the new welfare reform law would increase the number of poor families (family income below Federal Poverty Level [FPL]) nationally by 13 percent. To obtain this prediction the authors assumed that 66 percent of the women affected by the new law's time limit would work, mostly part-time at a wage of $6.00 per hour. A similar study by Jane Waldfogel et al. (1997) for New York State predicted that the new welfare reform law would increase the number of poor families in New York State by 6 percent and the number of very poor (<75 percent of FPL) families by 54 percent. The authors assumed that 40 percent of women affected by time limits would work 20 hours per week at a wage of $6.38 per hour.

Are these two studies' assumptions about the employment and earnings prospects of women affected by the new law's time limit

[1] Blank (1995) examines the employment prospects for low-skilled women and generally concludes that the economy is robust enough to absorb a significant number of new entrants.

[2] For an exception see Burtless (1995), who examines the actual employment and earnings experiences of young women who received welfare between the ages of 18 and 22.

plausible? To investigate this question, I examined the employment experiences of a similar group of women. Using the 1992 Current Population Survey (CPS), I selected a sample of unmarried women with 12 or less years of education who had at least one dependent child under age 18 in the family. In addition to these selection criteria, I excluded any woman who was on AFDC. These selection criteria resulted in a sample of 2,317 women. I chose the year 1992 because it was a year in which the national economy was neither at the top or the bottom of the business cycle and the unemployment rate for that year was 7.4 percent.

Among this sample of women, 68.3 percent were working at the time of the CPS interview. Interestingly, those that worked were very committed to the labor market. In Figures 1 and 2, I present the distribution of hours worked per week and the weeks worked in the past year for women who were working at the time of the interview. The mean number of hours worked per week was 34 for this group and 65 percent worked 35 or more hours. Moreover, work was not intermittent for this group. The mean number of weeks worked in the past year was 44.6, and 73 percent of this group of women worked at least 50 weeks.

The data in Figures 1 and 2 indicate significantly better employment prospects than what was assumed in Zedlewski et al. (1996) and

FIGURE 1

HOURS WORKED PER WEEK BY UNMARRIED WOMEN WITH 12 OR FEWER YEARS OF EDUCATION AND DEPENDENT CHILDREN

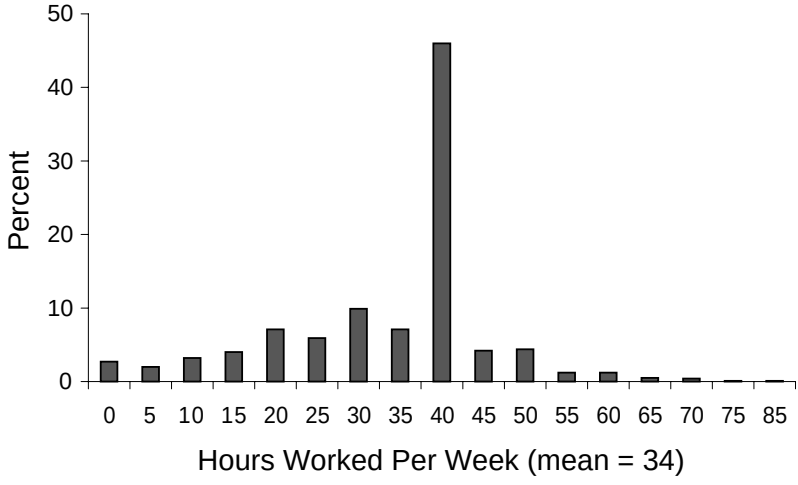
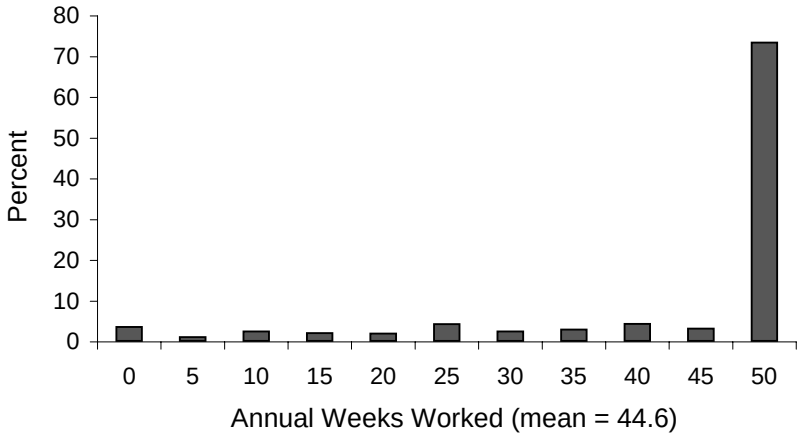


FIGURE 2

ANNUAL WEEKS WORKED BY UNMARRIED WOMEN WITH 12 OR FEWER YEARS OF EDUCATION AND DEPENDENT CHILDREN



Waldfogel et al. (1997), although these two studies were focusing on a potentially more disadvantaged group than the sample of women represented in Figures 1 and 2. Nevertheless, the data underlying Figures 1 and 2 raise the possibility that the employment prospects of unmarried, less educated women with children may be better than most observers appear to think.

The most widely referenced article in the economics literature on the labor supply effects of welfare is Moffitt (1992). In that article, Moffitt summarizes the past econometric evidence and concludes that the AFDC (welfare) program reduced hours of work of welfare recipients by an average of between 1 and 10 hours per week. At the time, Moffitt reported that welfare recipients averaged about 9 hours of work per week. Thus, these numbers imply that welfare recipients would work an average of between 10 and 19 hours per week if welfare were ended. These figures also tend to be more pessimistic than the data in Figures 1 and 2. To make the data in Figures 1 and 2 comparable to Moffitt's, it is necessary to multiply the hours and weeks worked by 0.683, the proportion of the Current Population Survey sample that works. These calculations yield estimates of 23 (68.3 percent of 34) hours per week and 30.5 weeks per year. These figures represent averages for all unmarried women with 12 or less years of education and a dependent child. The 23 hours per week figure is approximately 50 percent greater than the midpoint of 15 hours per week found by Moffitt.

It is somewhat surprising that most observers are so pessimistic about the employment prospects of welfare recipients. The negative view of these women's employment prospects appears inconsistent with simple descriptive information about the employment experiences of unmarried, relatively low-educated women with children. These observers' pessimism must stem from the belief that women on welfare are very different from similar women not on welfare. For example, the sample represented in Figures 1 and 2 had similar levels of education and similar family living arrangements as the typical welfare recipient, but there may be other differences between the two groups that would render the relatively optimistic picture of Figures 1 and 2 misleading. In the next part of the paper, I present a more extensive analysis of the employment prospects of welfare recipients in which I control for many observable differences between women on welfare and those not on welfare. I also address the issue of unmeasured differences between these two groups of women.

Methods

To assess the employment prospects of welfare recipients, I predict the labor market experiences of women on welfare using the actual labor market experiences of former welfare recipients. Essentially, this empirical strategy evaluates the effect of ending welfare completely since it attempts to simulate the employment and earnings prospects of women currently on welfare. The empirical strategy is straightforward. First, I estimate multivariate regression models of employment and earnings using a sample of former welfare recipients. Then, I use the estimates obtained from these regressions to predict the employment and earnings potential of women currently on welfare. An advantage of the regression methodology is that it controls for many observable differences between former and current welfare recipients, including differences in family background, past labor market experience, years of AFDC program participation, and cognitive ability.[3]

This simple empirical strategy has one important limitation. It assumes that there are no unmeasured differences between former

[3]In studies similar to this, Burtless (1995) and O'Neill and O'Neill (1996) examine the labor market experiences of past welfare recipients to make inferences about the potential labor market outcomes of current welfare recipients. Burtless (1995) uses a sample of women who received welfare when they were between the ages of 18 and 21 as a comparison group and does not control for observed differences between this group and current welfare recipients. O'Neill and O''Neill (1996) use a sample of former welfare recipients between the ages of 26 and 33. O'Neill and O'Neill (1996) control for observed differences in education.

and current welfare recipients. While this is obviously a strong assumption, and likely to be violated to some extent, intuition suggests that women who have been on welfare in the past, but who have not recently been on welfare, are a reasonable comparison group. Many women currently on welfare will exit and return to welfare, although some will exit permanently and others will remain on welfare continuously for a long period.[4] The only current welfare recipients not well represented by former welfare recipients are those who experience long, continuous welfare spells, although some women in the comparison group had been on welfare for as long as 14 years.[5] As documented by Bane and Ellwood (1994) and Pavetti (1993), however, relatively few women have long, continuous welfare spells because of the significant amount of ''cycling'' on and off welfare that typically occurs. Thus, the sample of former welfare recipients will include a significant number of women who may return to welfare. These considerations suggest that the predicted employment and earnings of welfare recipients derived using former welfare recipients may be quite accurate. Indeed, former welfare recipients are a particularly good comparison group because differences in the cumulative amount of prior welfare receipt between this group and women currently on welfare are observable and this information can be incorporated into the analysis.

To address the problem of unmeasured differences more formally, I use Heckman's (1979) sample-selection procedure. This is a two-stage procedure. In the first stage, estimates of the determinants of the probability of not currently being on welfare among all women with children are obtained. Next, these estimates are used to calculate a selection correction factor (i.e., inverse Mills ratio) that is used in second-stage regressions of employment and earnings for the ''selected'' sample of women not on welfare. Finally, estimates from the second-stage regressions are used to predict the employment and earnings of women who are on welfare.[6] As noted by Leung and Yu (1996), estimates of the Heckman two-stage procedure are quite sensitive to the specification of the first-stage model. When there is significant overlap between the set of variables included in the first and second stages, the model tends to perform poorly. Accordingly,

[4]See the work of Pavetti (1993), Blank and Ruggles (1994), and Harris (1996) for evidence of welfare spell dynamics.

[5]While women who have been on welfare in the past may include some women with relatively long past spells of welfare receipt and lengthy amounts of cumulative time spent on welfare, they will consist disproportionately of women with shorter welfare durations than those currently on welfare.

[6]We predict labor force participation for the sample of women on welfare using the appropriate $(-\phi/1-\Phi)$ selection correction factor.

different specifications of the first-stage model are incorporated into the analysis.

Data

The data used in the analysis comes from the National Longitudinal Survey of Youth (NLSY). The NLSY is a national probability sample of young adults who were between the ages of 14 and 21 in 1979, the first year of the survey (Center for Human Resources 1994). The respondents have been interviewed on a yearly basis since that time. The NLSY is a large, nationally representative sample, originally comprising 12,686 youths, approximately half of whom are women. The retention rate for the survey has been extremely high, and as of 1993, the retention rate was 91 percent of the eligible population. The NLSY contains data on all the variables of interest including welfare participation, labor market experiences, and extensive demographic and socioeconomic information.

I select two groups of women for the analysis: all current welfare recipients and a comparison group of former welfare recipients. In order to increase the age range of the sample, I selected women from the 1984 and 1992 survey years. In 1984, women in the NLSY were between the ages of 19 and 27, and by 1992, they were between the ages 27 and 35. Thus, by selecting these two years, the sample consists of women who are between the ages of 19 and 35. This age range better reflects the age distribution of all welfare recipients than would be the case if only one year of the NLSY were used to select the sample.

Table 1 contains the means of the variables used in the analysis for the sample of welfare recipients and the comparison group of former welfare recipients. The figures in Table 1 indicate that there are differences between the two groups of women. Current welfare recipients tend to be younger, have lower Armed Forces Qualifications Test (AFQT) scores and less education, have younger children, and are more likely to be never married than former welfare recipients. Current welfare recipients also have less labor market experience and more cumulative years of AFDC program participation. Both groups of women, however, are relatively disadvantaged. For example, 77 percent of former welfare recipients have 12 or less years of education, and 79 percent have AFQT scores below the 40th percentile. Finally, given the federal five-year time limit on welfare participation, it is notable that the sample of current welfare recipients has an average of 4.7 years of cumulative welfare participation. Thus, the average woman in this sample of welfare recipients is the person who will

TABLE 1
MEANS OF VARIABLES FOR COMPARISON GROUPS AND WOMEN ON WELFARE

Variable	Past Welfare Recipients Not Currently on Welfare	Current Welfare Recipients
Black	0.496	0.551
Hispanic	0.164	0.194
Age 19–20	0.032	0.116
Age 21–23	0.121	0.246
Age 24–26	0.146	0.210
Age 27–29	0.231	0.151
Age 30–32	0.260	0.176
Age 33–35	0.210	0.101
AFQT 0–20 Percentile Score	0.515	0.702
AFQT 21–40 Percentile Score	0.274	0.189
AFQT 41–60 Percentile Score	0.123	0.079
AFQT 61–80 Percentile Score	0.073	0.023
AFQT 81–100 Percentile Score	0.015	0.007
0–11 Years of School	0.262	0.432
12 Years of School	0.506	0.442
13–15 Years of School	0.203	0.122
16+ Years of School	0.029	0.004
Years of Labor Market Experience	4.811	1.950
Health Limits Type or Amount of Work	0.101	0.106
Never Married	0.284	0.579
Married	0.439	0.151
Separated/Divorced	0.277	0.270
Number Children Ages 0–3	0.295	0.550
Number Children Ages 4–5	0.288	0.356
Number Children Ages 6–17	1.514	1.206
Mother's Education	9.331	8.619
Two-Parent Household at Age 14	0.619	0.530
Local Unemployment Rate	8.371	8.931
Northeast Region	0.123	0.132
North-Central Region	0.260	0.319
South Region	0.442	0.323
West Region	0.175	0.191
Central City	0.155	0.234
Urban Not Central City	0.598	0.523
Rural	0.247	0.243
Years of Past Welfare Receipt	2.481	4.714
Number of Observations	1,031	909

NOTE: Mother's education and family structure at age 14 include zero values for those missing information.

most likely be affected by the new federal law and is an appropriate person to focus on for policy purposes.

Results

Labor Force Participation

The first analysis is of labor force participation. In this analysis, estimates of a labor force participation model are obtained using the sample of former welfare recipients. Estimates from this model are then used to predict the probability of labor force participation for women who are on welfare. The labor force participation model is estimated by an ordinary least squares procedures that adjusts the standard errors for heteroscedasticity using the procedure suggested by White (1980).[7] The model includes a variety of independent variables including age, education, past labor market experience, an indicator of whether work is limited due to health, cognitive ability as measured by the AFQT, marital status, the number of children, the county unemployment rate, and geographic region. All variables are allowed to enter the model in a relatively flexible way (e.g., as dummy variables), and marital status is interacted with the number of children. In addition, there are two measures of family background included in the model: whether the woman had two parents at age 14 and her mother's education.

For the most part, the estimates are unsurprising and in line with intuition.[8] They indicate that labor force participation tends to increase with cognitive ability, years of schooling, and past labor market experience, and decreases with age and increases in the unemployment rate. Labor force participation for Black and Hispanic women is the same as for non-Black, non-Hispanic women, and women with no health problems participate more than do women with a health limitation. In addition, estimates of the effect of children and marital status on labor force participation indicate that women who are not married participate more than those who are married and that greater numbers of children decrease labor force participation. Finally, the effect of past welfare receipt is not statistically significant.

[7]To test whether the results were sensitive to the methodology, I also obtained estimates of the labor force participation model using a maximum likelihood probit procedure. The results obtained from that analysis were very similar to those reported in the text. Given the similarity of the results, I report the ordinary least squares (OLS) estimates. The OLS methodology also facilitates the use of the sample-selection model and provides estimates that are readily interpretable.

[8]Estimates of this model and all other models discussed in the paper are available upon request.

Table 2 contains the predicted labor force participation of women on welfare. The predicted labor force participation rate for the sample of welfare recipients is 0.68.[9] Thus, 68 percent of women with observed characteristics similar to those of women on welfare, but who are not on welfare, participate in the labor force. This result suggests that welfare significantly reduced the labor force participation of unmarried women with children (i.e., AFDC recipients). O'Neill and O'Neill

TABLE 2

PREDICTED ANNUAL LABOR FORCE PARTICIPATION FOR WOMEN ON WELFARE

	Predicted Using Past Welfare Recipients
All Women	0.680
Age 19–23, Less than 12 Years of Schooling, Never Married	0.646
Age 24–29, Less than 12 Years of Schooling, Never Married	0.567
Age 30–35, Less than 12 Years of Schooling, Never Married	0.590
Age 24–29, 12 or More Years of Schooling, Separated/Divorced	0.754
Age 30–35, 12 or More Years of Schooling, Separated/Divorced	0.715
Age 19–23, Young Child in Household	0.720
Age 24–29, Young Child in Household	0.621
Age 24–29, No Young Children in Household	0.708
Age 30–35, Young Child in Household	0.614
Age 30–35, No Young Children in Household	0.682
Number of Observations	909

[9]The predicted labor force participation rates were derived using unemployment rates of 1984 and 1992 depending on the survey year of the individual record. In both 1984 and 1992, the unemployment rate was higher in most locales than it is currently. Thus, these estimates of labor force participation will be lower than they would if the true unemployment rate had been used. To test the sensitivity of the results to this error, the 1984 and 1992 unemployment rates were replaced with the average for 1996 (5.5 percent). The results were very similar to those reported.

(1996) reported that approximately 6 percent of women on welfare work at any point in time. Therefore, estimates in Table 2 indicate that welfare appears to decrease dramatically the labor force participation of unmarried women with children.

The figures in Table 2 also indicate that there is significant within-sample variation in predicted labor force participation rates of women on welfare. For example, the predicted labor force participation of women who are 30 to 35 years old, who have never been married, and who have less than 12 years of schooling is only 0.59. In contrast, the predicted labor force participation rate of women who are over 30, who are separated or divorced, and who have at least 12 years of education is 0.72. This variation suggests that the government should target certain types of welfare recipients to work. Surprisingly, the results in Table 2 indicate that the predicted labor force participation of young women (age 19–23) with children in the household is 0.72, one of the highest predicted rates of participation in Table 2. This result is due to the fact that this group of women has not been on welfare that long, and therefore they have not lost a significant amount of labor market experience. On the other hand, older (30–35), never married women with little education are less likely to participate: their predicted participation rate is 0.59. The current results suggest that it is not children per se that are the greatest impediment to working, but rather the lack of prior labor market experience and low levels of education. Thus, as Bane and Ellwood (1994) argue, it may be preferable to target young women.

What about the "selection" issue? Are there significant unobserved factors that have been omitted from the analysis that may have biased predictions? To address this question, I use Heckman's two-stage, sample-selection procedure to estimate the model. In this approach, the labor force participation model is expanded to include a "selection" term that accounts for unmeasured factors related to welfare participation that also affect labor force participation. The "selection" term is derived from estimates of a welfare participation model that includes all the variables listed in Table 2, plus the following: a dummy variable indicating the woman's attitude toward welfare in 1979 (i.e., stigma), a dummy variable indicating occurrence of a teen birth, and a dummy variable indicating infrequent attendance at religious services in 1979.[10] While these three variables may belong in the labor force

[10] The question on welfare stigma asked whether the respondent would participate in welfare if they could not support their family. In addition to the exclusion of these variables, the specification of age, education, and AFQT percentile score was altered in the first stage model. Age, education, and AFQT percentile score were specified as quadratic terms. In the second stage, these are entered as a series of dummy variables.

participation model, a reasonable story can be told to justify their exclusion. For example, holding constant the number of children of various ages, the occurrence of a teen birth may account for little variation in labor force participation, but it may predict current welfare participation because of its effect on prior welfare participation.

The estimates obtained using the Heckman procedure predict much lower labor force participation than the figures in Table 2 suggest. Using this alternative method, the predicted labor force participation rate of current welfare recipients is 0.47—i.e., 47 percent of the women on welfare are predicted to work. This is an unconditional predicted labor force participation rate since I did not use the selection term to calculate the predictions. Several different specifications of the Heckman model always produced similar results, although all of the models were plagued by severe collinearity between the selection correction factor and the other regressors. Typically, the R-squared from an auxiliary regression of the selection correction factor on the other right-hand side variables was 0.75, indicating serious collinearity problems. In addition, the coefficient associated with the selection factor was small in magnitude (e.g., 0.005) and never statistically significant. Given these results and the results presented by Leung and Yu (1996), I am cautious in placing too much emphasis on these estimates. Moreover, accounting for unmeasured differences resulted in a 21 percentage point (68-47) change in predicted labor force participation. This appears to be an extremely large effect, possibly too large to be credible, considering that the combined effect of an extensive set of measured variables was 12 percentage points.[11] Nevertheless, these estimates are significantly lower than those presented in Table 2 and raise the possibility that there are significant unmeasured differences between former and current welfare recipients that confound predictions in Table 2.

The estimates in Table 2 may also be used to partly evaluate the prospects for states and municipalities to meet the work requirements of PRWORA. In general, the predicted participation rates are well above the 50 percent required by the new welfare legislation. Indeed, if only the predicted rates of participation among women with no young children are examined, the lowest rate observed in Table 2 is 0.52. Thus, most states and municipalities should be able to meet the work requirements of the new welfare law. Indeed, the evidence presented thus far suggests that the work requirements could be met without a significant expansion of public-sector employment (e.g.,

[11] The 12 percentage point figure is derived by subtracting the predicted labor force participation rate of 68 percent from the unadjusted mean of 80 percent.

workfare). The problem may be to find the appropriate ways to encourage women to voluntarily find employment. Timothy Besley and Stephen Coate (1992) suggest that a workfare program may be an effective sorting device that can overcome this problem. Their results suggest that a workfare program can be designed so that women capable of success in the labor market will find it better to work in the market than work off their benefits. In addition, changes in program parameters such as lowering both the income guarantee and the benefit reduction rate may be another possible solution to this problem. A drawback to this strategy, however, is that it would make 32 percent of the women on welfare who are not expected to work financially worse off.

Weeks and Hours Worked per Year

Annual labor force participation is just one aspect of a woman's attachment to the labor market. It may be the case, however, that women on welfare would be predicted to work at some point in the year if welfare were ended, but that work would be sporadic and intermittent. If this were the case, five-year time limits would do significant financial harm. To investigate this question, the predicted number of weeks and hours per year a woman on welfare would be expected to work if she was not on welfare are examined. In this analysis the sample of former welfare recipients is restricted to those that worked in the previous year and regression models are estimated on this sample and used to predict hours and weeks worked per year for women currently on welfare.[12]

The estimates from the weeks and hours model indicate that past labor market experience and years of schooling are positively related to the number of weeks and hours worked per year. Women with health limitations work fewer weeks and hours per year than those without health problems, and Black and Hispanic women tend to work more weeks and hours per year than non-Black, non-Hispanic women. In addition, estimates of the effect of children on weeks and hours worked per year indicate that women with children work fewer weeks and hours per year than do those without children. Surprisingly, years of prior welfare participation has a positive effect on the number of weeks and hours worked per year for most values observed in the sample. Welfare participation has a negative effect on hours worked per year only after eight or more years of past welfare participation.

[12] I ignore the potential selection issue due to nonparticipation in the labor force. One factor mitigating the severity of this problem is that approximately 80 percent of the sample worked at some point in the past year.

The predicted weeks and hours worked per year for women on welfare are listed in Table 3. In general, the results suggest that among those women, who are predicted to work, they would be full-time employees and work most of the year. The mean predicted weeks worked per year is between 38.7 and the mean hours per year are 1,444. These figures imply weekly hours of approximately 37. These results are consistent with earlier findings that welfare has a significant adverse effect on labor supply.

TABLE 3

PREDICTED WEEKS AND HOURS WORKED PER YEAR FOR WOMEN ON WELFARE

	Predicted Using Past Welfare Recipients	
	Weeks	Hours
All Women	38.68	1,443.62
Age 19–23, Less than 12 Years of Schooling, Never Married	38.62	1,521.60
Age 24–29, Less than 12 Years of Schooling, Never Married	39.40	1,476.53
Age 30–35, Less than 12 Years of Schooling, Never Married	38.53	1,369.95
Age 24–29, 12 or More Years of Schooling, Separated/Divorced	40.53	1,464.66
Age 30–35, 12 or More Years of Schooling, Separated/Divorced	39.91	1,489.39
Age 19–23, Young Child in Household	38.56	1,466.66
Age 24–29, Young Child in Household	37.38	1,372.21
Age 24–29, No Young Children in Household	40.60	1,530.15
Age 30–35, Young Child in Household	37.46	1,395.07
Age 30–35, No Young Children in Household	39.53	1,441.68
Number of Observations	909	909

The results from the Heckman sample-selection model provide additional evidence related to this issue. In this case, the first-stage regression predicts the probability of not being on welfare and working. The predictions derived from the Heckman model indicate that women on welfare would work 38 weeks per year and 1,175 hours per year if welfare were ended. These estimates yield weekly hours of 30. Thus, the estimates of this model suggest that unmeasured factors may cause greater part-time employment among welfare recipients than would be predicted by a simpler model. Note that in this case, however, the differences between the OLS estimates and the Heckman sample-selection estimates are relatively small. There is basically no difference in predicted weeks worked per year, and a 19 percent difference in predicted hours worked per week. Again, a note of caution is appropriate in regard to how much weight these estimates should be given. The same collinearity problems that plagued the labor force participation model are also present in this analysis. Nonetheless, the sample-selection estimates imply that the estimates in Table 3 may be too optimistic.

The current estimates of the labor supply effects of welfare are somewhat larger than those reported by Moffitt (1992) in his review of the literature. In his review, Moffitt concluded that ending welfare would result in welfare recipients working an average of 10 to 19 hours per week. In contrast, after adjusting for labor force participation, the estimates in Table 3 indicate that welfare recipients would be predicted to work an average of 25 (68 percent of 37) hours per week and 26 (68 percent of 38.7) weeks per year if welfare were ended. Estimates from the Heckman sample-selection model, however, are very similar to those reported by Moffitt. Adjusting for a predicted labor force participation rate of 47 percent, the sample-selection estimates imply that women on welfare would work an average of 14 (47 percent of 30) hours per week and 18 (47 percent of 38) weeks per year if welfare were ended. The 14 hours per week figure is very similar to the midpoint estimate reported by Moffitt. One point to note about these comparisons is how much information is lost when we focus on averages for all women on welfare. For example, estimates in Table 3 indicate that welfare recipients, who are predicted to work, are also predicted to work full-time (37 hours per week) in the absence of welfare. Focusing on the average predicted hours worked per week of all welfare recipients, however, suggests that former welfare recipients will work only 25 hours.

Annual Earnings

The final analysis is of annual earnings. Predicted annual earnings from wages and salaries of women on welfare are derived from earnings

regressions for women in our comparison group who worked in the past year. All earnings have been adjusted for inflation using the consumer price index. Thus, predicted earnings are what women on welfare would earn in 1996 dollars.

Estimates indicate that past labor market experience, education, and cognitive ability (i.e., AFQT) are all positively related to earnings. In addition, Black and Hispanic women earn more than non-Black, non-Hispanic women. In previous analyses of labor supply, cognitive ability was not an especially strong predictor of labor force participation, or weeks and hours worked per year. In regard to earnings, however, cognitive ability does have a strong positive effect. Since annual earnings is a function of both effort (i.e., labor supply) and the return to effort, the estimates imply that cognitive ability has a larger effect on the return to labor market effort than on the quantity of labor market effort. Estimates of the effect of children indicate that additional children decrease annual earnings.

Predicted earnings for women on welfare are listed in Table 4. The mean predicted annual earnings for the sample of women on welfare is $8,754. Dividing predicted annual earnings by the predicted number of weeks and hours worked per year for this sample, yields predicted weekly income of $226 and predicted hourly wages of $6.06. This hourly wage figure is remarkably similar to what Zedlewski et al. (1996) and Waldfogel et al. (1997) used in their simulations of the effect of the new welfare reform law on poverty. The estimates in Table 4 also show that there is significant variation in annual predicted earnings within the samples. For example, those women over 30 without young kids are predicted to earn approximately $10,200, while those under 24 with young children are predicted to earn between $6,100 and $7,721 per year. Finally, predicted annual earnings derived from estimates of the two-stage, sample-selection model were $6,935. While this earnings figure is approximately 20 percent lower than the figure listed in Table 4, the hourly wage associated with it is $5.90, similar to the wages reported for the other earnings measure. Thus, the differences in the predicted earnings from Table 4 and the sample-selection predictions are the result of differences in the quantity of work predicted.

It is interesting to compare predicted earnings to the federal poverty level. In 1996, the federal poverty income threshold was approximately $13,000 for a family of three that includes two children. Since the average woman on welfare has about two children, the $8,754 predicted earnings imply that 18 percent of all women on welfare would be at or above the federal poverty level if they worked. If we also assume that 68 percent of welfare recipients will work, the earnings

TABLE 4

PREDICTED ANNUAL EARNINGS FROM WAGES AND SALARIES FOR WOMEN ON WELFARE

	Predicted Using Past Welfare Recipients
All Women	$ 8,753.51
Age 19–23, Less than 12 Years of Schooling, Never Married	6,988.24
Age 24–29, Less than 12 Years of Schooling, Never Married	8,030.55
Age 30–35, Less than 12 Years of Schooling, Never Married	8,256.33
Age 24–29, 12 or More Years of Schooling, Separated/Divorced	10,001.40
Age 30–35, 12 or More Years of Schooling, Separated/Divorced	11,130.10
Age 19–23, Young Child in Household	7,721.23
Age 24–29, Young Child in Household	7,894.14
Age 24–29, No Young Children in Household	10,375.00
Age 30–35, Young Child in Household	9,367.90
Age 30–35, No Young Children in Household	10,209.10

associated with work suggest that approximately 12 percent of all women on welfare would be at or above the federal poverty level if they were denied benefits and forced into the labor market. In addition, the earnings estimates indicate that many women on welfare would not be eligible for welfare if they were working. State AFDC eligibility thresholds are in most cases well below the federal poverty level: the median is approximately 40 percent of poverty ($5,000) (National Governors' Association 1996). Thus, more than half the women on welfare would not be eligible to participate if they supplied their non-welfare level of work.

Predicted earnings can also be used to evaluate the effect of time limits on poverty. Although the predicted earnings are relatively low, the mean level of earnings of $8,574 is 67 percent of the 1996 federal

poverty threshold. At this low level of earnings, women would be eligible for the earned income tax credit that adds approximately $3,500 to their income. Furthermore, the children from these families would remain eligible for Medicaid. Federal law requires that states provide Medicaid for all children below age six who come from families with incomes less than 133 percent of the federal poverty level. In fact, many states have extended these benefits to older children and families with higher incomes. Therefore, for the 68 percent of women on welfare who are predicted to work, their annual earned income plus the earned income tax credit would yield earnings of $12,254 ($8,754 + $3,500) on average, and most would have free health insurance coverage for their children through the Medicaid program. These figures do not count the food stamp allowance that many families would still be eligible to receive, although at a reduced level from that they received while on welfare. Even with this omission, however, 29 percent of all families on welfare could be raised out of poverty through employment.[13] Compare these income figures to the cash benefits of women who are on welfare. If we assume that the average woman on welfare receives approximately $400 per month in AFDC income (the median benefit is $377), this yields an annual income of $4,800, which is 54 percent of the mean predicted income from working. In fact, approximately 90 percent of women on welfare, who are predicted to work, are also predicted to have incomes (earnings plus earned income tax credit) that exceed the $4,800 welfare income. Therefore, most women would be worse off financially if they remained on welfare than if they worked.

These are optimistic estimates since they are based on the more optimistic assumptions about labor supply and do not consider the costs of childcare associated with work. Nevertheless, what these estimates demonstrate is that even at relatively low wage rates, women on welfare are financially better off working than they are on welfare. The critical determinant is the quantity of work. If women are denied benefits, they will be forced into the labor market where their earnings prospects are not as bleak as some critics of the new welfare law have contended. Of course, for the 32 (potentially 53) percent of the women on welfare who are not predicted to work, being denied benefits will make them worse off. The new welfare law, however, allows states to exempt 20 percent of the caseload from time limits. Thus, according to the more optimistic estimates, the majority of the women who will

[13]The 29 percent figure is arrived at by multiplying the 0.68 labor force participation rate times the 0.42 percent of women who work and earn at least $9,500 ($9,500 + $3,500 = $13,000).

be adversely affected financially may continue to receive benefits.[14] Furthermore, the incentives of the new welfare law may increase human capital investments and discourage personal behaviors that adversely affect earnings.

Conclusion

In this paper, an analysis of potential employment and earnings of women on welfare has been presented. The starting point of the analysis was the assumption that the employment and earnings experiences of former welfare recipients could be used to predict the potential employment and earnings of women who are on welfare. Since women on welfare may differ from those not on welfare, multiple regression analysis was used to adjust for observed differences between women who are, and are not, on welfare. In an attempt to control for unmeasured differences, I restricted the sample to former welfare recipients. I also used an econometric approach to adjust for unmeasured differences between former and current welfare recipients. Results suggest that the employment potential of women on welfare may be better than is commonly assumed. The majority of women (68 percent) currently on welfare are predicted to work if welfare were ended. In addition to the high levels of annual labor force participation, estimates suggest that women on welfare would have relatively continuous participation, working approximately 39 weeks per year and 38 hours per week.

These figures may be too optimistic because they fail to fully consider the impact of unmeasured factors that influence the behavior of women on welfare. In light of this consideration, I also predicted labor supply using Heckman's sample-selection procedure. The predictions from that model were not as encouraging as those just mentioned. Using Heckman's procedure, only 47 percent of current welfare recipients were predicted to work. His model also predicted that former welfare recipients would work only 30 hours per week.

Which estimates are correct? I prefer to emphasize the more optimistic set of estimates. The reason for this is threefold. First, there is substantial empirical evidence that the Heckman sample-selection model performs poorly in cases where the identification of the model is weak (Leung and Yu 1997). The current case is an example of this

[14] Allowing states to exempt part of the caseload, or extending state benefits to recipients denied federal funds, creates labor supply disincentives and welfare participation incentives similar to the old welfare program. Since states cannot identify which women are truly disadvantaged in the labor market, but are willing to extend benefits to those who are, there may be a gain for nondisadvantaged women to appear to be disadvantaged.

since the variables that identify the first stage model are relatively weak predictors of welfare participation. Second, I find the effect of unmeasured factors to be implausibly large, which further erodes my confidence in these estimates. For example, a 21 percentage point decline in annual labor force participation due to unmeasured factors appears to be simply too large given the effect of measured factors on labor force participation. Finally, the U.S. economy has consistently provided employment opportunities even for very low-skilled workers, as evidenced by the high levels of work effort of former welfare recipients and of all less-educated unmarried women with children. The problem with the U.S. economy has not been a shortage of jobs but a shortage of high-paying jobs.

The range of employment estimates is important for policy purposes. The more optimistic estimates strongly suggest that states and municipalities should be able to meet a 50 percent work requirement for welfare recipients and that the majority of women affected by the five-year time limit will not be financially disadvantaged by the move off of welfare. On the other hand, the less optimistic employment estimates suggest that states and municipalities will have to implement significant public work programs to meet the federal requirements. This will create an administrative nightmare and necessitate considerable expenditures for childcare. Moreover, the five-year time limits will cause significant financial hardships for women who are forced to leave welfare.

Some critics of the new welfare law may be concerned that forcing women off of welfare and into work may help meet the work requirements, but will also worsen the financial position of families on welfare. Estimates of predicted earnings suggest otherwise. For a significant portion of welfare recipients, work will make them better off financially but worse off in terms of utility, given the value of nonmarket work. The reason for this financial improvement is not because these women will find good jobs that have high hourly wages. Rather, this result is primarily a function of the expected quantity of work and the low-income guarantee thresholds of most states' welfare programs. The predicted hourly wage rate for welfare recipients was approximately $6.00 in 1996, but if combined with significant work effort and the earned income tax credit, the resulting earnings are significantly above the income guarantee of most states. Moreover, the availability of Medicaid coverage for children under age six from families with incomes up to 133 percent of the poverty level makes working a financially superior alternative to welfare for almost all families in which the mother is predicted to work. Of course, these calculations ignore the significant costs of childcare and other work-related expenses

that could effectively erode any financial gain from work. Therefore, what states do to offset these work-related costs may be critical in helping former welfare recipients gain financial independence.

This analysis is preliminary. It was nonexperimental and as such unable to address in a definitive way potentially important issues related to unmeasured factors that may affect labor market success. Women on welfare may be quite different from women not on welfare, even those who had been on welfare in the past, and these differences may lead to biased predictions and misleading conclusions. Preliminary analysis of the issue indicated relatively large changes in predicted outcomes when unmeasured factors were considered. Although this particular statistical procedure has some limitations, the results obtained from it are at the least a source of doubt. Accordingly, it is recommended that the conclusions of this study be interpreted with caution. On the other hand, the new welfare law should increase women's investments in human capital and decrease behaviors that adversely affect earnings and employment. These factors suggest that the predicted employment and earnings estimates of this analysis may be too low.

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