

# Welfare, Work Experience, and Economic Self-Sufficiency

*Susanna Loeb  
Mary Corcoran*

## **Abstract**

*The potential of former AFDC recipients to earn a living wage is central to the success of welfare-to-work programs. Previous studies have found that welfare recipients see little increase in their wages over time. Low wage growth could arise from either low returns to work experience or low levels of experience. This distinction is important for designing effective welfare policy. In the following paper, we estimate how wages grew with work experience between 1978 and 1992 for a national sample of women from the National Longitudinal Survey of Youth. We compare women who never received welfare with both short- and long-term recipients in order to see to what extent the rates of wage growth with work experience differ. We find that they differ very little. We use numerous specification checks to test the robustness of our results and find consistent evidence that the wages of AFDC recipients grew at a rate similar to those of nonrecipients once work experience is taken into account. © 2001 by the Association for Public Policy Analysis and Management.*

## **INTRODUCTION**

The potential of former Aid to Families with Dependent Children (AFDC) recipients to earn a living wage is central to the success of welfare-to-work programs. In this paper, we estimate how wages grew with work experience between 1978 and 1992 for a national sample of women from the National Longitudinal Survey of Youth (NLSY). We compare women who never received welfare with both short-term and long-term recipients in order to estimate to what extent the rates of wage growth with work experience differ. We find that they differ very little.

In August 1996, President Clinton abolished AFDC, a program that provided cash assistance to eligible families. It replaced AFDC with Temporary Assistance to Needy Families (TANF), which limits the time recipients can receive cash assistance and conditions the receipt of cash assistance upon participation in work or work-related activities. Two key assumptions of the new welfare legislation are: that time limits and sanctions for noncompliance will increase work among recipients; and that if recipients work regularly, their wages will grow. Holcomb and colleagues (1998, p. 13) sum up the reasoning behind this second assumption: "(T)he best way to succeed in the labor market is to join it. It is believed that job advancement and higher wages

Manuscript received June 9, 1999; revise and resubmit recommended November 25, 1999; first revision completed February 18, 2000; second revision completed April 14, 2000; accepted May 4, 2000.

Journal of Policy Analysis and Management, Vol. 20, No. 1, 1–20 (2001)  
© 2001 by the Association for Public Policy Analysis and Management  
Published by John Wiley & Sons, Inc.

will come from the experience of working....Hence, employment is both a goal and an expectation even if the only jobs that can be obtained pay low wages and lack benefits.”

Some participants in the debate over welfare reform challenge the assumption that welfare recipients' wages will grow as they gain work experience. Burtless (1995) argues that welfare recipients, on average, have few skills and can only obtain poorly paid jobs with few training or promotion opportunities. As a result, recipients' wages will grow slowly, if at all, with work experience. Edin and Lein (1997) claim that recipients have little hope of breaking out of the five-to-six-dollar-an-hour wage ghetto. Limited experimental evidence also suggests, at the most, small benefits of programs that assist former welfare recipients with the transition from welfare to work (Friedlander and Burtless 1994; Gueron and Pauly 1991).

The conflicting views concerning the future earnings prospects of welfare mothers have implications for the design of state and federal welfare programs. If recipients' wages grow as they gain work experience, then policies that promote continuous work experience will eventually lead to higher earnings. Such policies might include policies that increase the attractiveness of work versus nonwork, such as the Earned Income Tax Credit (EITC); policies that enable recipients to sustain employment, such as child care and counseling services; and reemployment policies designed to place job-leavers into new jobs. If, on the other hand, recipients experience little or no wage growth due to low skill levels, then education and training programs to upgrade skills may be the only way to ensure that recipients wages will grow over time.

Past empirical research does not allow us to assess how much welfare recipients' wages grew with work experience. Burtless (1995), Moffitt and Rangarajan (1989), and Pavetti and Acs (1996) show there was little wage growth with age for AFDC mothers, for high school dropouts, and for women with low test scores. Harris (1996) reports very little growth in wages for AFDC recipients in the first few years after leaving welfare. Cancian and colleagues (1999) report that median hourly wages for women leaving AFDC grew from \$6.36 in the first year to \$6.73 in the fifth year. But these researchers looked only at wage growth with age; they did not examine how wages grew with work experience. Since AFDC recipients worked far fewer years than did nonrecipients, the low rates of wage growth could mean either that AFDC recipients had lower returns to work experience, or that recipients had similar returns to work experience but, less of that experience.

This distinction is important because the incentives to work are much higher under the new work-oriented welfare system. If, as recipients spend more time in the labor force, they acquire work experience and job skills, then these changes could lead to better jobs and higher wages. If we are to predict the success of welfare reform we need to know how much recipients' wages will grow as they gain work experience.

Limited evidence suggests that wages may grow with work experience for welfare recipients. A recent paper by Gladden and Taber (1999) examines how wages grew with work experience for a sample of men and women with twelve or fewer years of schooling. They report little difference in returns to work experience by educational attainment. Moreover, in the analysis most similar to that being reported here, Acs (1990) estimates rates of wage growth per year worked for AFDC recipients and for nonrecipients. He reports that AFDC recipients did not have lower returns to increases in work experience than did nonrecipients. Acs cautions readers about generalizing too much from his results since his sample was quite young and he observed them over only an eight-year period. The average AFDC recipient in Acs' sample had worked only about two years and the average nonrecipient had worked about four years. Acs notes: "(S)ince my sample consists of women under the age of 30, the relative volatility of young people's labor attachment may mask the effects of AFDC [on wage growth]

which could be observed in older cohorts of women.” We are able to expand the data set used by Acs, as well as to address some of the potential biases that arise in the estimation of returns to experience for low-wage workers.

The remainder of this paper is in four sections. We begin by describing past research on wage growth and by presenting our model. The following section describes our dataset, sample, and variables. We then present the results and end by discussing their implications for welfare policy.

## BACKGROUND AND METHODOLOGY

In the human capital model, investments in education and in on-the-job training are considered to be critical determinants of wages (Becker, 1964; Mincer, 1974). Wages grow with work experience because workers are acquiring additional skills and seniority as they increase their experience. Mincer and Polachek (1974) and Mincer and Ofek (1982) extend the human capital model to account for the depreciation of human capital during periods of non-work. They argue that dropping out of the labor force for long periods reduces women’s wages because skills acquired in school or on past jobs deteriorate—i.e. become rusty through lack of use. A large body of research on work experience and women’s wages consistently finds that wages grow with work experience, that prolonged periods of nonemployment lower women’s wages, and that economic returns to part-time work experience are lower than returns to full-time work experience (Altonji and Blank, 1999; Blau and Kahn, 1997; Corcoran, 1978; Corcoran and Duncan, 1979; Corcoran, Duncan and Ponza, 1983, 1984; Cox, 1984; England, Christopher and Reid, 1999; England, Farkas, Killbourne, and Dow, 1988; Gronau, 1988; Jung and Magrabi, 1991; Light and Ureta, 1995; Loprest, 1992; Mincer and Ofek, 1982; Mincer and Polachek, 1974; Stratton, 1995; Wellington, 1993).

Past literature also shows that welfare recipients work fewer years, are more likely to work in part-time jobs, and spend more time out of the labor force than do other women (Acs, 1990; Burtless, 1995; Corcoran et al., forthcoming; Danziger, Kalil, and Seefeldt, forthcoming; Pavetti and Acs, 1996). All of these factors could lead to lower wage growth with age for recipients even if recipients’ wages grew at the same rate with work experience as do the wages of nonrecipients.

However, some theoretical reasons raise suspicion that returns to work experience may be lower and penalties for time spent out of the labor force may be different for welfare recipients than for other women.<sup>1</sup> First, welfare recipients have few skills and wage growth may be lower for unskilled or semiskilled workers. About half of all recipients lack a high school diploma or GED, and 72 percent of long-term recipients score in the bottom quarter of the Armed Forces Qualification Test (AFQT) (Bane and Ellwood, 1994; Burtless, 1995; Harris, 1993, 1996). Second, Mead (1986, 1992) argues that during periods of nonwork, when women use welfare heavily, the stigma associated with welfare receipt diminishes and women’s work ethics are eroded. This could lead to “bad work attitudes,” poor job performance, and less investment in training when recipients do work. Third, Kane (1987) argues that welfare receipt undermines recipients’ self-confidence and increases learned helplessness. To the extent this happens, it could hamper welfare recipients’ job performance and lead to lower wage growth. Fourth, Acs (1990) argues that employers may stigmatize recipients—i.e., may label recipients “shiftless” and “irresponsible,” and may be disinclined to hire recipients into well-paying jobs, to train recipients, and to promote recipients. Finally, Edin and Lein (1997) claim that AFDC recipients are stuck in minimum wage jobs. To the extent this is true, penalties may be few for time spent out of the labor

<sup>1</sup> See Acs (1990) for a more detailed discussion of these arguments.

#### 4 / Welfare, Work Experience, and Economic Self-Sufficiency

force because wages cannot fall below the minimum wage.

We use panel data from the National Longitudinal Survey of Youth (NLSY) to directly estimate the effects of work experience and nonwork on the wage growth of women who receive AFDC and women who do not receive AFDC. A woman's wage can be written as a function of her human capital and demographic characteristics:

$$\ln(Wage_{it}) = \alpha_0 + \alpha_1 Exp_{it} + \alpha_2 Exp_{it}^2 + \alpha_3 NW + \alpha_4 S_{it} + V_{it} \delta + Z_i \gamma + \mu_{it} \quad (1)$$

where

- $Wage_{it}$  = wage of individual  $i$  at time  $t$
- $Exp_{it}$  = Years of work experience prior to time  $t$
- $NW_{it}$  = Years spent not working and not in school prior to time  $t$
- $S_{it}$  = Educational attainment
- $V_{it}$  = matrix of time varying characteristics that affect wages
- $Z_i$  = matrix of time-invariant characteristics that affect wages

In Equation (1), estimates of the coefficient  $\alpha_1$  are likely to be positive because wages grow with work experience. Estimates of the coefficients of  $\alpha_2$  are likely to be negative because wage growth is highest early on in one's career. Finally estimates of  $\alpha_3$  should be negative because periods of non-work are expected to lower women's human capital.

#### The Pooled Model

We use three approaches in our analysis. The first approach, the pooled cross-section specification, is meant primarily as a benchmark for comparing the results of the alternative specification. In order to answer the question of whether AFDC recipients saw different returns to work experience than nonrecipients, we estimate the following equation:<sup>2</sup>

$$\ln(Wage_{it}) = \alpha_0 + \alpha_1 Exp_{it} + \alpha_2 Exp_{it}^2 + \alpha_3 NW + \beta_1 AFDC_i + \beta_2 AFDC_i \times Exp_{it} + \beta_3 AFDC_i \times Exp_{it}^2 + \beta_4 AFDC_i \times NW_{it} + \epsilon_{it} \quad (2)$$

where AFDC is a dummy variable for whether or not the respondent has ever received AFDC. By examining the coefficients on the AFDC interactions, we can test whether AFDC recipients' wages grow less with work experience and decline more during periods of nonwork than do nonrecipients' wages. It is important to note that we interpret the AFDC measure in this analysis, not as the causal effect of a government program on women's wage growth, but rather as a proxy for characteristics of the individuals' productivity that we cannot measure directly.

<sup>2</sup>We estimate this as a random-effects model, allowing for AR1 correlation in the error terms and weighting by the sample weight multiplied by the inverse of the number of times the individual appears in our data. In this way, each individual is weighted equally. Standard errors are calculated using Huber-White-sandwich estimation.

Because returns to part-time work are lower than returns to full-time work and AFDC recipients are more likely than nonrecipients to work part-time, we re-estimate this equation distinguishing between full-time and part-time work (see, for example, Corcoran, Duncan and Ponza, 1983). Then, in order to estimate how much of the wage growth differential between recipients and nonrecipients can be explained by easily observable differences, we include additional controls for years of schooling, region of residence, ability as measured by the AFQT test, and number of children, as well as differences in returns to experience for each of these measures.

Finally, considerable research on welfare dynamics suggests that short-term and long-term welfare recipients look very different in terms of demographic and human capital characteristics and labor market outcomes (Bane and Ellwood, 1994; Harris, 1993, 1996). The new limits on AFDC will primarily affect women with 24 months or more of AFDC receipt. To address this we add interactions between experience and duration of AFDC receipt (less than 24 months of receipt, 24 to 59 months and over 60 months of receipt) to see if returns to work experience are lower for long-term welfare recipients.<sup>3</sup>

### The Change Model

A potential problem with the Pooled Model is that an individual specific element of the error term may be correlated with the regressors. For example, individuals who spent more time working may have higher wages regardless of experience level. This could bias our estimate of the AFDC differential, because nonrecipients are more likely to be high-experience workers than are recipients. In order to account for this, we difference Equation (2), looking at the change in wage from one observation to the next as a function of the change in experience. This removes an individual-specific fixed effect. The change in a woman's wages between observation  $t$  and observation  $(t+1)$  can be expressed as:

$$\begin{aligned} \ln(Wage_{i(t+1)}) - \ln(Wage_{it}) = & \alpha_1(Exp_{i(t+1)} - Exp_{it}) + \alpha_2(Exp_{i(t+1)}^2 - Exp_{it}^2) + \alpha_3(NW_{i(t+1)} \\ & - NW_{it}) + \beta_2 AFDC_i \times (Exp_{i(t+1)} - Exp_{it}) + \beta_3 AFDC_i \times (Exp_{i(t+1)}^2 - Exp_{it}^2) + \beta_4 AFDC_i \\ & \times (NW_{i(t+1)} - NW_{it}) + (\epsilon_{i(t+1)} - \epsilon_{it}) \end{aligned} \quad (3)$$

We run the same specification checks discussed above in order to assess the importance of full-time and part-time work, as well as the impact of controlling for easily observable differences in the recipient and nonrecipient population and the differential effect of the duration of AFDC receipt.<sup>4</sup>

### The Between Model

The Change Model is likely to be a substantial improvement over the Pooled Model. However, a possible concern with the Change Model arises from the endogeneity of the experience measure. Estimates of Equation (3) are based on variation both between individuals and within individuals over time. We often worry that comparisons between individuals are biased by omitted characteristics of the individuals that are correlated

<sup>3</sup> We weight all of these regressions by the sample weight multiplied by the inverse of the number of times the individual appears in the sample and we use White standard errors.

<sup>4</sup> Again, we weight these regressions by the sample weight multiplied by the inverse of the number of times the individual appears in the sample, and we use White standard errors.

with the regressors. This would be a concern if we were estimating the causal effect of AFDC on wage growth. However, in this case, the focus of interest is simply on the differences in wage growth among individuals and, thus, the potential source of bias is the within-individual variation. In particular, we are concerned with inter-temporal substitution of experience due to expected wage growth. For example, if women work more when they know this work will result in increased wages, estimates of experience effects that come from within-individual variation will be upwardly biased and could affect our estimates of the AFDC differential.

To address this concern, we run a model based solely on variation between individuals. In the Between Model the average change in wage between observations (averaged across all observations for an individual) is regressed on average change in experience (similarly averaged across all observations for an individual). This reduces our sample size substantially because each individual now provides only one “averaged” observation. The method reduces the potential bias caused by the within variation but, it will not be efficient if the within variation is not biased.<sup>5</sup>

$$\begin{aligned} \overline{\ln(Wage_{i(t+1)}) - \ln(Wage_{it})} = & \alpha_1 \overline{(Exp_{i(t+1)} - Exp_{it})} + \alpha_2 \overline{(Exp_{i(t+1)}^2 - Exp_{it}^2)} + \alpha_3 \overline{(NW_{i(t+1)} - NW_{it})} \\ & + \beta_2 AFDC_i \times \overline{(Exp_{i(t+1)} - Exp_{it})} + \beta_3 AFDC_i \times \overline{(Exp_{i(t+1)}^2 - Exp_{it}^2)} + \beta_4 AFDC_i \\ & \times \overline{(NW_{i(t+1)} - NW_{it})} + \overline{(\epsilon_{i(t+1)} - \epsilon_{it})} \end{aligned} \quad (4)$$

Again we run the same specification checks that we applied to the Pooled Model and the Change Model. In addition, we re-run the Between Model using only observations during the first five and the first ten years of work experience. In this way we check to see whether differences in returns to work experiences for recipients and nonrecipients is driven by differences in average experience (i.e. the misspecification of the functional form of the relationship between wages and experience).

## THE SAMPLE

### Sample Selection

The NLSY has followed a national sample of young women since 1979. At each interview respondents report welfare use over every month in the previous year, the hours they worked for each week in the previous year, annual earned income, and a variety of additional information. We use data from all waves of the survey prior to and including 1993. We end in 1993 both because after 1993 the experience and income measures, which are central to this study, changed and because state waiver programs began to alter the nature of AFDC at this time. The 1993 survey provides information on work experience and earnings for 1992. In 1978, the first year of our study, the women in our sample were between the ages of 14 and 18 years. In 1992, the final year of our study, these women were between the ages of 27 and 34 years.

Our sample consists of the 3960 women who had positive wage data in at least two years since turning age 18 and non-missing weeks worked data for all the years between the two years in which wages were measured.<sup>6</sup> Our measure of AFDC receipt is simply

<sup>5</sup> Note, this approach is similar to the long difference approach in which changes in wages over the entire sample period are regressed on changes in experience over the entire sample period.

<sup>6</sup> We limit the sample to those 18 years old or younger in 1978 so that we have complete wage and experience measures for all jobs after turning 18. Identical analyses without this restriction produce similar results.

a dummy variable with a value of one if a woman received AFDC at any point after turning age 18 and a value of zero if she did not. For each woman in the sample, we assign a start year, defined as the first year after turning age 18 in which the respondent is not attending school, works 250 or more hours, and has valid hourly wage data. See Appendix A for a detailed account of how the sample was drawn and how the variables were constructed. We calculate the dependent variable by dividing annual wage, salary and military earnings by the total number of hours worked in the year. We construct four experience measures. The first, “years worked,” is the sum of weeks worked during the year divided by 52. This measure includes both full-time and part-time work. The second, “non-work years,” is the number of weeks in the year (52) minus the number of weeks worked either full-time or part-time, divided by 52. The measure of “years worked full-time” is the total number of weeks in which the respondent worked 35 or more hours divided by 52. “Years part-time” is the difference between “years worked” and “years worked full-time.”

Our control variables include measures of years of schooling, educational attainment at age 27 (less than high school, high school, some college, or college), region of residence at age 18 (northeast, northcentral, south, or west), AFQT score, and number of children, as well as interactions between experience and the respondent’s education level at age 27, the region in which the respondent resided at age 18, and scores on the AFQT test.

### Sample Characteristics

Table 1 reports the means and standard deviations for work experience, nonwork experience, wages, and demographic characteristics for the women who never received AFDC, for women who received any AFDC, for women who received AFDC for less than 24 months, for women who received AFDC 24 to 59 months, and for women who received AFDC for 60 months or longer. Women who received welfare look very different than women who never received welfare. Not surprisingly, women who received AFDC worked fewer years, were more likely to work part-time when they did work, and spent more time not working than women who never received AFDC.

Women who never received AFDC averaged 7.7 years of work, 6.0 years of full-time work, and 1.8 years of non-work, while those who received AFDC averaged 4.8 years of work, 3.6 years of full-time work, and 3.3 years of nonwork. Women who received AFDC for 60 months or averaged 3.0 years of work, 1.9 years of full-time work longer and 3.7 years of non-work. The start year wages were only slightly higher for women who never received welfare than for recipients, but by age 27, the average wages of recipients and nonrecipients differed substantially. Nonrecipients’ starting wages averaged \$6.80 per hour (1997 dollars); while recipients’ starting wages averaged \$6.32 per hour. The average wages at age 27 were \$11.96 per hour for nonrecipients and \$8.02 per hour for recipients, with long-term recipients averaging only \$6.85 per hour.

The difference in wage may reflect differences in the educational attainment and family situations of recipients and nonrecipients. Like Burtless, we find that recipients have low skills: by age 27, 27 percent of nonrecipients had a college degree compared with less than three percent of recipients. Similarly, ten percent of nonrecipients had not completed high school, compared with 23 percent of recipients. The average AFQT score for nonrecipients was 51.7 while that for recipients was 28.2. More than 50 percent of long-term recipients scored more than one standard deviation below the mean, compared with 18 percent on nonrecipients. Recipients were much more likely to have children than were nonrecipients.

**Table 1.** Summary statistics for analysis variables.

	Full Sample	No AFDC	Any	AFDC (in Months)			
				Less than 24	24 or More	24 to 60	60 or More
Sample Size	3960	2835	891	409	482	231	251
Years Worked	7.230 (3.245)	7.739 (3.066)	4.825 (2.976)	5.841 (3.074)	3.821 (2.498)	4.778 (2.596)	2.995 (2.083)
Years Worked Full Time	5.545 (3.264)	5.958 (3.207)	3.593 (2.788)	4.487 (2.979)	2.710 (2.263)	3.599 (2.497)	1.944 (1.702)
Years Not Worked	2.058 (2.007)	1.801 (1.811)	3.273 (2.405)	3.013 (2.182)	3.530 (2.581)	3.366 (2.339)	3.671 (2.764)
First Wage	6.715 (4.448)	6.799 (4.373)	6.317 (4.770)	6.429 (5.415)	6.207 (4.028)	6.181 (3.866)	6.229 (4.163)
Wage at Age 27	11.256 (8.943)	11.962 (9.004)	8.015 (7.881)	8.278 (7.293)	7.751 (8.420)	8.803 (8.742)	6.846 (8.022)
Experience at Age 27	5.974 (2.328)	6.422 (2.087)	3.981 (2.302)	4.747 (2.292)	3.233 (2.051)	4.217 (1.953)	2.437 (1.762)
Full time at Age 27	4.400 (2.448)	4.755 (2.368)	2.804 (2.148)	3.527 (2.221)	2.109 (1.822)	2.954 (2.010)	1.467 (1.347)
Non-Work time at Age 27	2.206 (1.962)	1.931 (1.794)	3.447 (2.196)	3.043 (2.037)	3.837 (2.273)	3.521 (2.019)	4.081 (2.422)
Months on AFDC	7.612 (24.301)	0.000 (0.000)	41.896 (42.588)	9.520 (6.177)	73.084 (39.265)	39.186 (10.796)	99.149 (32.783)
Education at Age 27							
less than high school	0.128	0.105	0.230	0.248	0.213	0.204	0.220
high school	0.407	0.383	0.512	0.521	0.504	0.444	0.550
some college	0.219	0.230	0.170	0.168	0.171	0.232	0.124
college degree	0.222	0.266	0.026	0.034	0.017	0.025	0.011
Race/Ethnicity							
Black	0.130	0.091	0.303	0.255	0.349	0.320	0.370
Mexican	0.033	0.029	0.051	0.048	0.055	0.073	0.040
Other Hispanic	0.010	0.008	0.016	0.008	0.024	0.023	0.025
AFQT Score	47.404 (27.048)	51.702 (26.392)	28.214 (20.915)	30.570 (21.057)	25.968 (20.530)	28.842 (22.346)	23.777 (18.734)

Taking the percent growth in average wages between the first wage and the wage at age 27 and dividing that by the sum of average experience and average non-work time at age 27, we calculate a percent wage growth with age for each group. Similarly we calculate a percent wage growth with experience by eliminating the time-out term in our measure. We find that nonrecipients' wages grew approximately 9.1 percent per year, while recipients' grew only 3.6 percent per year, and long-term recipients' wages grew only 1.5 percent. The gap in wage growth per year of experience is somewhat smaller: nonrecipients saw an 11.8 percent wage growth, recipients a 6.8 percent wage growth, and long-term recipients, a 4.1 percent wage growth per 52 weeks worked.

## RESULTS

### Returns to Work Experience

Table 2 reports results of estimating wage growth models using our three specifications. Panel I gives the pooled cross-sectional estimates; panel II, the change estimates; and panel III, the between estimates. The results are similar across the three specifications. Wages grow, on average, 6.1 to 7.3 percent per year worked and decline 1.0 to 2.6

**Table 2.** Estimates of wage returns to experience.

	P I	P II	P III	P IV	C I	C II	C III	C IV	B I	B II	B III	B IV
Years Worked	0.073 (0.004)	0.141 (0.005)			0.068 (0.015)	0.111 (0.019)			0.061 (0.023)	0.113 (0.031)		
Years Worked - Squared		-0.007 (0.000)				-0.005 (0.001)				-0.006 (0.002)		
Years Worked Full Time			0.077 (0.004)	0.145 (0.006)			0.079 (0.016)	0.132 (0.019)			0.079 (0.011)	0.094 (0.018)
Years Worked Part Time			0.050 (0.007)	0.078 (0.011)			0.024 (0.020)	0.032 (0.028)			0.049 (0.018)	0.042 (0.030)
Years Worked Full Time - Squared				-0.007 (0.000)				-0.007 (0.001)				-0.002 (0.002)
Years Worked Part Time - Squared				-0.007 (0.002)				-0.003 (0.004)				0.001 (0.006)
Years of Non-Work	-0.026 (0.006)	-0.035 (0.006)	-0.024 (0.006)	-0.033 (0.006)	-0.010 (0.011)	-0.014 (0.011)	-0.009 (0.011)	-0.012 (0.011)	-0.015 (0.014)	-0.026 (0.015)	-0.012 (0.005)	-0.013 (0.005)
Constant	1.606 (0.304)	1.897 (0.300)	1.559 (0.302)	1.813 (0.301)	-0.003 (0.016)	-0.007 (0.016)	0.000 (0.016)	-0.003 (0.016)	0.024 (0.024)	0.024 (0.024)	-0.009 (0.010)	-0.010 (0.010)

Note: White standard errors are in parentheses. The first panel gives the results of the pooled cross-sectional model. The second panel gives the first-differenced results and the final panel gives results for the between estimation.

percent per year of non-work.<sup>7</sup> The second column in each panel reports the results when a squared experience term is added to the wage growth model to capture nonlinear returns to experience. Returns to work experience are clearly nonlinear. Wages grow by more than 11 percent initially, but the rate of wage growth for each additional year drops sharply. In year five, the change in wage drops to about 6.6 percent; and by year ten, wage growth drops to approximately 1.5 percent.

These estimates of the returns to experience are somewhat higher than previous estimates. Lin (1999), for example, found that wages, on average, grew at about 3 percent per year over the years 1973 to 1991 for a sample of 1,455 women who had been female heads of households with young children for at least one year. Because wage growth diminishes with experience and our sample period is shorter than Lin's, because we start with respondents' first job, and because we include all women and not just single mothers, it is not surprising that our linear wage growth estimates are larger.

### Full-Time and Part-Time Work

The final two columns in each panel of Table 2 report results from estimates that allow returns to experience to differ for part-time and full-time work. The third column reports the linear model in both full- and part-time work; the fourth column reports results when quadratic terms are included. The coefficients on the part-time work measures are smaller than those on full-time work. In the Change Model the estimates of returns to part-time work are particularly small and statistically indistinguishable from zero. These results are consistent with past research that has found that wages grow slowly, if at all, when women work part-time (Corcoran, Duncan, Ponza, 1983; Stratton, 1995). A recent paper by Waldfogel and Ferber (1997) suggests that there is only a penalty to part-time work for women who would prefer full-time work but are unable to find full-time jobs. Unfortunately we cannot distinguish voluntary from involuntary part-time work with our data.

### Do AFDC Recipients See Lower Returns?

We examine whether welfare recipients' have lower rates of wage growth and higher penalties for time out of the labor force than do nonrecipients by allowing for interactions between the work and nonwork experience measures and the welfare receipt dummy variable. Table 3 gives these results. The results of the linear model appear in the first column of each panel. If wage growth were lower for recipients in this sample, then the interactions between years worked and welfare receipt would be negative. Neither the Pooled Model nor the Between Model (which is likely to be the least biased for this estimation) show a significant difference in wage growth between the two groups and the point estimates are tiny. The coefficient on the Change Model is marginally statistically significant and indicates a 3 percentage point lower wage growth for recipients than nonrecipients. Given that the estimate for nonrecipient wage growth is 7.2 percent on average, even this later estimate corresponds to a 4.2 percent growth for recipients. While recipients' wage growth may be slightly lower than that of nonrecipients, on average, recipients see substantial returns to work experience.

<sup>7</sup> While between estimates will be most useful for assessing differences in wage growth between recipients and nonrecipients, it is unlikely to be the best for estimating the causal effects of experience on wages. For this, we may be better off with a specification that uses more within-individual variation so that high wage growth/high experience individuals and low wage growth/low experience individuals do not bias the results. We do not include a change model with individual fixed effects in this analysis because it is not useful for estimating the AFDC differential.

**Table 3.** AFDC wage growth differential.

	PI	P II	P III	P IV	CI	C II	C III	C IV	BI	B II	B III	B IV
Years Worked	0.064 (0.004)	0.134 (0.006)			0.072 (0.015)	0.124 (0.019)			0.061 (0.022)	0.124 (0.032)		
Years - Squared		-0.007 (0.000)				-0.006 (0.001)				-0.008 (0.003)		
AFDC	-0.212 (0.021)	-0.157 (0.022)	-0.212 (0.021)	-0.169 (0.021)								
Years x AFDC	-0.003 (0.005)	-0.040 (0.014)			-0.031 (0.018)	-0.081 (0.032)			0.003 (0.016)	-0.045 (0.055)		
Years <sup>2</sup> x AFDC		0.003 (0.002)				0.006 (0.003)				0.005 (0.006)		
Full Time			0.068 (0.004)	0.135 (0.006)			0.079 (0.015)	0.137 (0.019)			0.078 (0.011)	0.114 (0.020)
Part Time			0.041 (0.007)	0.074 (0.012)			0.038 (0.020)	0.070 (0.029)			0.079 (0.020)	0.130 (0.035)
Full Time x AFDC			0.003 (0.006)	-0.007 (0.015)			-0.004 (0.020)	-0.031 (0.036)			-0.021 (0.015)	-0.120 (0.035)
Part Time x AFDC			-0.026 (0.019)	-0.106 (0.033)			-0.105 (0.042)	-0.223 (0.062)			-0.126 (0.032)	-0.297 (0.060)
Full Time - Squared				-0.007 (0.001)				-0.007 (0.001)				-0.005 (0.002)
Part Time - Squared				-0.008 (0.002)				-0.008 (0.004)				-0.015 (0.007)
Full Time 2 x AFDC				0.000 (0.002)				0.002 (0.004)				0.017 (0.005)
Part Time 2 x AFDC				0.019 (0.008)				0.038 (0.012)				0.055 (0.015)
Years of Non-Work	-0.017 (0.007)	-0.027 (0.007)	-0.015 (0.007)	-0.024 (0.007)	-0.012 (0.015)	-0.017 (0.015)	-0.010 (0.015)	-0.015 (0.015)	-0.028 (0.017)	-0.045 (0.019)	-0.029 (0.007)	-0.039 (0.008)
Non-Work x AFDC	-0.014 (0.009)	-0.005 (0.010)	-0.015 (0.009)	-0.006 (0.010)	0.007 (0.020)	0.013 (0.021)	0.007 (0.020)	0.014 (0.021)	0.021 (0.022)	0.035 (0.025)	0.034 (0.009)	0.054 (0.010)
Constant	1.186 (0.301)	1.495 (0.298)	1.128 (0.299)	1.394 (0.298)	-0.002 (0.016)	-0.006 (0.016)	0.001 (0.015)	-0.003 (0.016)	0.025 (0.023)	0.028 (0.023)	-0.005 (0.011)	-0.002 (0.011)

Note: White standard errors are in parentheses. The first panel gives the results of the pooled cross-sectional model. The second panel gives the first-differenced results and the final panel gives results of the between estimation.

The quadratic model tells a similar story. Interestingly, in the quadratic specification, the linear experience coefficient is lower for recipients than nonrecipients and the quadratic is greater. These estimates suggest that recipients experience slower initial wage growth but that their wage growth decreases at a slower rate over time.

The second two columns in each panel show the differential in returns to full-time and part-time work. All three models show minor differences, if any, in the returns to full-time work by AFDC status. However, while nonrecipients see substantial returns to part-time work, recipients do not.

Finally, consider the differential in penalties for time spent not working. If penalties for time-out were greater for recipients, then the coefficients on the interactions between non-work and welfare receipt should be negative. This is, generally, not

the case. The between estimates show substantial penalties for time-out for nonrecipients of approximately four percent per year, but no penalties for welfare recipients. The other two specifications show little difference in penalties for time out between the two groups.

Our Between Model results are consistent with Lin's (1999) findings that wages decline less for recipients than for nonrecipients during periods of non-work. A possible explanation for this result is that recipients may be in low-skill jobs, the skills for which do not depreciate as much during time not working. The minimum wage may also limit wage decreases in these jobs. An alternative explanation is that recipients may underreport how much they work while on welfare; and thus their

**Table 4.** AFDC wage growth differential with additional controls.

	P I	P II	P III	P IV	C I	C II	C III	C IV	B I	B II	B III	B IV
Years Worked	0.083 (0.006)	0.153 (0.013)			0.147 (0.025)	0.194 (0.023)			0.070 (0.021)	0.148 (0.056)		
Years - Squared		-0.007 (0.001)				-0.010 (0.001)				-0.008 (0.005)		
AFDC	-0.132 (0.022)	-0.102 (0.023)	-0.192 (0.030)	-0.112 (0.023)								
Years x AFDC	0.004 (0.005)	-0.015 (0.014)			-0.014 (0.018)	-0.011 (0.019)			0.001 (0.015)	-0.047 (0.050)		
Years2 x AFDC		0.001 (0.001)				0.001 (0.002)				0.005 (0.006)		
Full Time			0.097 (0.006)	0.173 (0.014)			0.150 (0.025)	0.242 (0.038)			0.088 (0.023)	0.117 (0.052)
Part Time			0.021 (0.012)	0.026 (0.026)			0.141 (0.044)	0.165 (0.068)			0.000 (0.043)	0.060 (0.093)
Full Time x AFDC			0.013 (0.006)	0.010 (0.015)			-0.003 (0.020)	-0.019 (0.036)			-0.004 (0.018)	-0.059 (0.056)
Part Time x AFDC			0.011 (0.019)	-0.037 (0.033)			-0.036 (0.043)	-0.159 (0.065)			0.019 (0.041)	0.002 (0.099)
Full Time - Squared				-0.009 (0.001)				-0.013 (0.003)				-0.005 (0.005)
Part Time - Squared				-0.005 (0.005)				-0.007 (0.011)				-0.013 (0.012)
Full Time 2 x AFDC			0.011 (0.005)	-0.001 (0.002)				0.001 (0.004)				0.007 (0.007)
Part Time 2 x AFDC			-0.002 (0.013)	0.009 (0.008)				0.038 (0.013)				0.009 (0.019)
Years of Non-Work	0.019 (0.015)	0.006 (0.015)	0.009 (0.016)	0.004 (0.015)	-0.022 (0.041)	-0.016 (0.029)	-0.027 (0.041)	-0.033 (0.042)	-0.014 (0.041)	-0.035 (0.045)	-0.012 (0.041)	-0.023 (0.043)
Non-Work x AFDC	0.010 (0.009)	0.013 (0.010)	0.014 (0.010)	0.007 (0.010)	-0.010 (0.022)	-0.014 (0.015)	-0.009 (0.022)	-0.003 (0.023)	0.024 (0.020)	0.038 (0.022)	0.021 (0.020)	0.030 (0.022)

*Note:* White standard errors are in parentheses. All models have controls for the interaction between educational attainment at age 27 (less than high school, high school, some college) and all experience measures, between region of residence at age 18 (north-central, west, south) and all experience measures, and between low-AFQT score and all experience measures. The first panel gives the results of the pooled cross-sectional model, and also includes constant terms for education at age 27, for region, for years of education in the current year, and for number of children in the current year. The second panel gives the first-differential results and the final panel gives the between estimation. These last two panels include controls for change in years of education and change in number of children during the time period.

human capital depreciation during periods in which they say they do not work may not be as great as it would have been if they actually did not work. This explanation is consistent with Edin and Lein's (1997) ethnographic studies of welfare mothers, which found that working while on welfare is much more pervasive than survey-based research suggests.

### **Adjusting for Measurable Differences**

Table 4 presents the welfare differential in wage growth when education at age 27, AFQT score, region, and the interactions between these three measures and all the experience variables are included in the analysis, along with the change in the number of children and the change in the number of years of education between observations. The results are quite similar to those in Table 3. The Change Model shows less of a differential than before the controls were included (1.4 percentage points instead of 3.1). In addition, the disparity in returns to part-time work is accounted for by these additional controls. AFDC recipients no longer appear to have lower returns for part-time work than nonrecipients with similar observable characteristics.

### **Wage Growth Differentials by Skill**

Burtless (1995) showed that women with low levels of schooling and low AFQT scores had lower rates of wage growth with age than did other women. He speculated that welfare recipients' low rates of wage growth with age reflect their low skill levels. The findings presented above indicate that it is primarily experience and not education differences that explain wage growth differentials over time. However, to test whether returns to experience do, in fact, vary with educational attainment.

We use interactions between measures of education level and the work and non-work variables to investigate whether rates of wage growth differ by educational attainment. We define attainment as whether, by the age of 27, the recipient had less than a high school degree, had a high school degree but no more formal education, had attended some college, or had a college degree. The columns in Table 5 correspond to those in Tables 3 and 4, and the omitted group is college graduates. We see that wage growth is greater for a year of work for college graduates than for all other respondents. However, there is little difference in wage growth among the three other groups. On average the wages of college graduates grew approximately ten percent per year while the wages of non-college graduates grew approximately six percent per year. There is some evidence that respondents who have attended some college have higher wage growth (seven percent compared with six percent per year), but there is no evidence of a wage growth differential between high school dropouts and high school graduates. We see indications of the same non-linear trends we saw for AFDC receipt; the starting wage growth is substantially slower for women who did not complete college but this wage growth diminishes less rapidly than it does for college-educated women.

### **Wage Growth Differentials by Duration of AFDC Receipt**

While, on average, the wage growth of welfare recipients may be similar to that of nonrecipients, recipients are a heterogeneous group. The wage growth of long-time recipients may be less than the wage growth of those who only spent a few months on AFDC. This difference is especially important to assess given that long-term recipients will be the ones most affected by time limits. In Table 6 we allow returns to experience to vary by length of AFDC receipt. AFDC Group 1 are those respondents who received welfare from 1 to 24 months; AFDC Group 2 are those who received welfare from 24

**Table 5.** Education wage growth differential.

	P I	P II	P III	P IV	C I	C II	C III	C IV	B I	B II	B III	B IV
Years Worked	0.099 (0.005)	0.195 (0.010)			0.113 (0.019)	0.193 (0.028)			0.102 (0.026)	0.187 (0.047)		
Years - Squared		-0.010 (0.001)				-0.009 (0.002)				-0.010 (0.004)		
Ed < high School	-0.063 (0.029)	-0.010 (0.031)	-0.083 (0.030)	-0.059 (0.032)								
Ed = High School	0.002 (0.023)	0.030 (0.024)	-0.013 (0.024)	-0.003 (0.024)								
Ed = Some College	0.040 (0.025)	0.072 (0.026)	0.029 (0.026)	0.033 (0.027)								
Years x ED1	-0.026 (0.007)	-0.074 (0.018)			-0.061 (0.018)	-0.121 (0.036)			-0.040 (0.019)	-0.110 (0.060)		
Years2 x ED1		0.005 (0.002)				0.006 (0.003)				0.008 (0.007)		
Years x ED2	-0.038 (0.004)	-0.080 (0.011)			-0.047 (0.012)	-0.085 (0.026)			-0.042 (0.009)	-0.057 (0.050)		
Years2 x ED2		0.005 (0.001)				0.004 (0.002)				0.001 (0.005)		
Years x ED3	-0.026 (0.005)	-0.072 (0.013)			-0.036 (0.014)	-0.078 (0.029)			-0.029 (0.009)	-0.032 (0.054)		
Years2 x ED3		0.005 (0.001)				0.005 (0.002)				0.000 (0.005)		
Full Time			0.112 (0.006)	0.205 (0.012)			0.118 (0.020)	0.216 (0.027)			0.116 (0.027)	0.173 (0.060)
Part Time			0.064 (0.011)	0.100 (0.021)			0.095 (0.029)	0.106 (0.044)			0.058 (0.034)	0.114 (0.100)
Full Time x ED1			-0.040 (0.009)	-0.092 (0.022)			-0.065 (0.021)	-0.137 (0.041)			-0.051 (0.023)	-0.064 (0.085)
Part Time x ED1			0.012 (0.030)	0.002 (0.048)			-0.051 (0.042)	-0.058 (0.081)			-0.020 (0.052)	-0.172 (0.139)
Full Time x ED2			-0.042 (0.005)	-0.080 (0.014)			-0.034 (0.013)	-0.086 (0.026)			-0.059 (0.014)	-0.069 (0.064)
Part Time x ED2			-0.056 (0.013)	-0.122 (0.026)			-0.102 (0.034)	-0.115 (0.053)			-0.002 (0.032)	-0.018 (0.110)
Full Time x ED3			-0.033 (0.006)	-0.061 (0.015)			-0.024 (0.015)	-0.065 (0.029)			-0.037 (0.014)	0.010 (0.070)
Part Time x ED3			-0.028 (0.014)	-0.070 (0.028)			-0.088 (0.040)	-0.062 (0.059)			-0.019 (0.037)	-0.092 (0.132)
Full Time - Squared				-0.012 (0.001)				-0.014 (0.002)				-0.008 (0.006)
Part Time - Squared				-0.011 (0.004)				-0.005 (0.008)				-0.017 (0.016)
Full Time2 x ED1				0.007 (0.003)				0.010 (0.004)				0.002 (0.011)
Part Time2 x ED1				0.005 (0.013)				0.004 (0.012)				0.038 (0.021)
Full Time2 x ED2				0.006 (0.002)				0.008 (0.002)				0.002 (0.007)
Part Time2 x ED2				0.016 (0.005)				0.005 (0.010)				0.005 (0.018)
Full Time2 x ED3				0.005 (0.002)				0.006 (0.003)				-0.005 (0.007)
Part Time2 x ED3				0.011 (0.005)				-0.005 (0.011)				0.015 (0.021)
Years of Non-Work	0.046 (0.012)	0.025 (0.012)	0.043 (0.012)	0.025 (0.012)	0.008 (0.028)	-0.003 (0.029)	0.009 (0.028)	0.000 (0.029)	0.011 (0.021)	-0.010 (0.026)	0.012 (0.020)	-0.001 (0.023)
Non-Work x ED1	-0.072 (0.016)	-0.056 (0.016)	-0.071 (0.016)	-0.056 (0.017)	0.012 (0.035)	0.022 (0.036)	0.011 (0.035)	0.019 (0.036)	-0.031 (0.038)	-0.013 (0.042)	-0.032 (0.039)	-0.019 (0.040)
Non-Work x ED2	-0.098 (0.013)	-0.083 (0.013)	-0.088 (0.013)	-0.071 (0.013)	-0.030 (0.031)	-0.022 (0.032)	-0.028 (0.031)	-0.021 (0.032)	-0.021 (0.024)	-0.014 (0.030)	-0.023 (0.024)	-0.019 (0.027)
Non-Work x ED3	-0.077 (0.017)	-0.064 (0.017)	-0.069 (0.017)	-0.059 (0.017)	-0.018 (0.040)	-0.010 (0.041)	-0.015 (0.040)	-0.011 (0.041)	-0.034 (0.026)	-0.035 (0.033)	-0.033 (0.026)	-0.036 (0.030)
Constant	1.889 (0.298)	2.131 (0.295)	1.852 (0.294)	2.034 (0.291)	-0.013 (0.017)	-0.018 (0.018)	-0.012 (0.017)	-0.015 (0.018)	0.012 (0.024)	0.011 (0.026)	0.014 (0.022)	0.015 (0.022)

Note: White standard errors are in parentheses.

to 60 months; and AFDC Group 3 are those who received welfare for 60 or more months. The comparison group is nonrecipients. While the means reported in Table 1 show large wage growth difference by length of receipt, these differences are much less clear in a multivariate framework. Wage growth with experience does not appear to be substantially lower for recipients who have been on AFDC longer.

Specification Checks

In order to test the robustness of these results we run a number of specification checks.

**Table 6.** Wage growth differential by length of AFDC receipt.

CROSS-SECTIONAL	P I	P II	C I	C II	B I	B II
Years x AFDC1	-0.014 (0.006)	-0.053 (0.018)	-0.036 (0.022)	-0.048 (0.041)	-0.009 (0.023)	-0.004 (0.085)
Years x AFDC2	0.016 (0.015)	0.011 (0.034)	0.028 (0.037)	0.040 (0.070)	0.077 (0.026)	0.145 (0.086)
Years x AFDC3	0.000 (0.008)	-0.037 (0.020)	-0.024 (0.019)	-0.101 (0.034)	-0.016 (0.017)	-0.087 (0.042)
Years2 x AFDC1		0.004 (0.002)		0.001 (0.004)		-0.002 (0.009)
Years2 x AFDC2		-0.001 (0.004)		-0.006 (0.009)		-0.015 (0.012)
Years2 x AFDC3		0.004 (0.003)		0.014 (0.006)		0.012 (0.007)
Non-Work x AFDC1	-0.003 (0.013)	0.006 (0.013)	0.026 (0.026)	0.028 (0.025)	0.048 (0.036)	0.054 (0.039)
Non-Work x AFDC2	-0.011 (0.018)	-0.008 (0.019)	-0.063 (0.037)	-0.062 (0.038)	-0.049 (0.024)	-0.053 (0.026)
Non-Work x AFDC3	-0.010 (0.006)	-0.003 (0.007)	0.008 (0.012)	0.015 (0.012)	0.011 (0.012)	0.024 (0.013)
CHANGE	P I	P II	C I	C II	B I	B II
Years x AFDC1	-0.003 (0.006)	-0.023 (0.018)	-0.014 (0.022)	-0.019 (0.041)	-0.015 0.020	-0.031 (0.073)
Years x AFDC2	0.021 (0.015)	0.033 (0.035)	0.037 (0.040)	0.049 (0.075)	0.069 0.026	0.145 (0.076)
Years x AFDC3	0.001 (0.007)	-0.028 (0.019)	-0.020 (0.018)	-0.093 (0.037)	-0.013 0.019	-0.074 (0.045)
Years2 x AFDC1		0.002 (0.002)		0.000 (0.004)		0.001 (0.008)
Years2 x AFDC2		-0.002 (0.004)		-0.006 (0.009)		-0.017 (0.011)
Years2 x AFDC3		0.003 (0.003)		0.014 (0.006)		0.012 (0.007)
Non-Work x AFDC1	0.022 (0.013)	0.026 (0.013)	0.003 (0.028)	0.003 (0.028)	0.056 (0.032)	0.057 (0.037)
Non-Work x AFDC2	-0.003 (0.017)	-0.004 (0.017)	-0.072 (0.035)	-0.071 (0.036)	-0.037 (0.024)	-0.040 (0.026)
Non-Work x AFDC3	0.001 (0.006)	0.006 (0.007)	0.007 (0.013)	0.012 (0.013)	0.015 (0.013)	0.021 (0.014)

Note: White standard errors are in parentheses. AFDC1 is less than 24 months. AFDC2 is 24–59 months. AFDC3 is 60 or more months.

### *Differences in Years of Experience*

As noted above, nonrecipients gained substantially more work experience over the sample period than did recipients. If the quadratic specification does not accurately model returns to these experience gains, the high experience observations, primarily for nonrecipients, may bias our assessment of the AFDC differential. We re-ran the analysis using only observations in which experience is less than five years. This change makes very little difference.<sup>8</sup>

### *Minimum Wage Concerns*

Another concern was that the wage growth regressions may be biased by a minimum-wage-effect. That is, workers at the minimum wage are unlikely to see their wage rate drop while those higher up the wage distribution may experience negative wage growth. This may lead to a higher wage growth estimate for low-wage workers. Using the Change specification, we set all wage decreases to zero and then used a Tobit procedure to estimate the model. The returns to experience, especially full-time experience, appear substantially higher for recipients in this analysis. This result may be due to the fact that AFDC recipients are more likely to experience negative wage growth and thus removing these negative incidents from the sample increases estimates of returns to experience for these workers. The results suggest that wage floors are unlikely to be biasing the AFDC differential in wage growth toward finding no difference. As an additional check into the effect of the minimum wage, we re-ran analyses using only wages greater than five dollars per hour. The results are, again, substantively similar to the unrestricted results.

### *Selection Bias*

The most serious source of bias in this analysis is selection. We do not observe wage changes for all the women in the nationally representative NLSY sample. It is not hard to imagine that the unobserved AFDC recipients would have the lowest wages and lowest wage growth had they been working. We re-estimate the Between Model using the Heckman (1979) procedure for dealing with selection bias. State AFDC benefits, the local unemployment rate, and whether the respondent gave birth to a child before age 18 identify the estimation. Results are similar to those discussed above and provide some evidence that selection is not biasing our estimation of the wage growth differential. However, we are not confident of these instruments. It is likely that selection for the sample is non-random. Yet, 70 percent of welfare recipients surveyed do have the wage and experience measures necessary to be included in this analysis, almost as high a percent age as for nonrecipients. While our results may not characterize the wage growth potential of all former AFDC recipients, they are likely to apply to a large majority.

## CONCLUSION

These results suggest that recipients' wages will grow with full-time work experience. In fact, in the sample used here, there was little evidence that returns to full-time work experience were lower for women who had received AFDC than for women who had not received AFDC. Wages grew by approximately seven percent per year of full-time experience for both groups. There was also little evidence that returns

<sup>8</sup> These results, as well as the results from the specification checks discussed below, are available from the authors upon request.

to full-time experience varied significantly by length of time on AFDC. Long-term recipients experienced substantial wage gains for work experience as well.

Like others, we find that returns to full-time experience are higher than returns to part-time experience. Moreover, while returns to full-time experience were similar for recipients and nonrecipients, this did not hold true for part-time experience. Returns to a year of part-time experience averaged more than 4 percent per year for nonrecipients, but were tiny and not always positive for recipients. These differences between recipients and nonrecipients disappeared when we adjusted for observable differences in education and region of residence.

These analyses began by asking whether previous studies' findings that AFDC recipients' wages grew slowly with age were due to meager work experience recipients' or to low rates of return to that experience. Our results show that the first explanation is correct: *AFDC recipients' wages grew slowly with age because recipients accumulated less work experience than did other women and often worked part-time.*

We also investigated whether returns to work experience varied by level of schooling. Burtless (1995) speculated that AFDC recipients' low rates of wage growth with age reflect their low skill levels. The study shows that women at all skill levels experienced substantial returns to work experience. Wage growth averaged about six percent per year for high school dropouts and for high school graduates. This result is consistent with Gladden and Taber (1999), who found no differences in returns to work experience by level of schooling for a sample of NLSY men and women workers with 12 or fewer years of schooling. In our sample, college graduates and women who started but did not complete college did experience higher returns to experience than workers with less schooling. Wage growth averaged about 10 percent per year worked for college graduates and about seven percent per year worked for women with one to three years of post-secondary schooling.

These results suggest that continuous, full-time work experience will pay off for former welfare recipients. This is both bad news and good news. The bad news is that, in the past, many AFDC recipients had intermittent work histories, worked part-time when they did work, and were unable to sustain continuous employment. If the past predicts the future, then there is reason to worry.

The good news is that work incentives for welfare recipients are much stronger now than in the past. Federal policy changes, most notably the expansion of the Earned Income Tax Credit (EITC), have increased the relative attractiveness of work versus non-work for low-wage single mothers (Corcoran, et al., forthcoming; Ellwood, 1999). Changes in health care such as the Child Health Insurance Program (CHIP) have made health coverage more affordable for some families, thus increasing incentives to remain in jobs that do not provide health coverage. With the EITC and CHIP, an ex-recipient with two children who works 35 hours per week at the minimum wage has an income above the poverty line and has health insurance for her children.<sup>9</sup> Further expanding the EITC so that single mothers with three or more children can escape poverty with a full-time minimum wage job could increase incentives for continuous employment. Making the child care tax credit refundable could also increase recipients' incentives to sustain continuous employment.

A second piece of good news is that states have both considerable flexibility and the funds to increase incentives for work. The federal block grant for TANF is tied to 1994 funding levels, and welfare caseloads have dropped dramatically in most states. As a result, states have ample funds to encourage and support recipients as they move from welfare to work (Corcoran et. al., forthcoming). State policies that promote continuous employment and that try to move recipients from part-time to full-time work could have big payoffs. Such policies might include a state EITC or transitional support and counseling services to increase movement into

<sup>9</sup> We thank an anonymous reviewer for pointing this out.

the work force, to increase job retention, and to quickly move job-leavers back into the workforce.

Finally, these results show that programs designed to increase recipients' schooling beyond high school may improve recipients' future wages. Each year of additional schooling led to approximately a seven percent wage increase. In addition, respondents who completed college by age 27 saw two to three percentage points greater wage growth per year than those with some college and four percentage points greater wage growth than high school dropouts or college graduates.

We gratefully acknowledge the Joyce Foundation for support. We also thank Charlie Brown, Julie Cullen, Marianne Page, and two anonymous referees for their helpful comments.

## APPENDIX A: Sample and Variables

### Sample

We began with a sample of 6283 women in the NLSY in 1979. We restricted this sample to the 4556 respondents who were 18 years of age or younger in 1978, the first year for which we have income and work experience measures. Of these women, 1262 or 27.7 percent received AFDC at some point during the sample period. We further restricted our sample to the 4160 women had worked 250 or more hours and had reported valid annual earnings data and valid annual work hours data in at least one of the years they were not in school full-time and were over age 18. Of these women 1070 or 25.7 percent had received AFDC. Next, we restricted our sample to include only cases where we had valid measures of wages for two years and had valid measures of weeks worked for the years between those two years in which wages were measured. This dropped the sample to 3960 women, 891 or 22.5 percent of whom had received AFDC. The pooled cross-section has 33836 observations and the cross-section of change scores has 29876 observations

### Variables

Table A describes our work experience and wage measures. One advantage of the NLSY is that women reported annually on how many hours they worked per week during the previous year. We began by assigning start years. The start year is defined as the first year after turning age 18 in which the respondent is not attending school full-time, works 250 or more hours, and has valid hourly wage data available. We then obtained additional experience and wage measures for each year following the start year.

**Table A.** Wage and Work Experience Measures.

---

hours <sup>a</sup> <sub>t</sub>	= sum of hours worked per week summed across all weeks in year <sub>t</sub>
weeks <sup>a</sup> <sub>t</sub>	= number of weeks in which respondent worked positive hours in year <sub>t</sub>
FT weeks <sub>t</sub>	= number of weeks in which respondent worked 35 or more hours in year <sub>t</sub>
wage <sup>b</sup> <sub>t</sub>	= (annual wage, salary and military income in year <sub>t</sub> ) / annual hours worked in year <sub>t</sub> = 0 if respondent worked no hours in year <sub>t</sub>
start year	= the first year in which respondent is out-of-school, over 18 years old, works 250 hours or more and has valid wage data.
Years worked	= weeks worked in year t divided by 52
Non-work years	= 1 - years worked
Years worked full time	= total number of weeks respondent worked 35 or more hours divided by 52
Years worked part time	= years worked - years worked full time

---

**Table A.** continued.

Notes

a) Respondents were asked to report hours worked for every week in a given year. If there is missing data for more than 20 weeks in year  $t$ , then  $weeks_t$  and  $hours_t$  are assigned missing data values. If respondent has 1 to 20 weeks of missing data for year  $t$ , then the  $hours_t$  and  $weeks_t$  variables are adjusted to take account of the missing data.

b) If a respondent has missing data on annual wage and salary income, has missing data on annual hours worked, reports more than 3000 annual hours worked, or has a computed wage that is less than \$1 or greater than \$200, this variable is assigned a missing value.

*SUSANNA LOEB is an Assistant Professor in the School of Education at Stanford University, Stanford, California.*

*MARY CORCORAN is a Professor in the School of Public Policy at the University of Michigan, Ann Arbor, Michigan.*

**REFERENCES**

- Acs, G. (1990). Welfare, work and dependence: Analyzing the potential effects of work-related welfare reform. Ph.D. thesis, Economics Department, University of Michigan.
- Altonji, J.G., & Blank, R.M. (1999). Race and gender in the labor market. In O. Ashenfelter & D. Card (Eds.), *Handbook of Labor Economics*. Amsterdam: North-Holland.
- Bane, M., & Ellwood, D.T. (1994). *Welfare realities: From rhetoric to reform*. Cambridge: Harvard University Press.
- Becker, G.S. (1964). *Human capital: A theoretical and empirical analysis with special reference to education*. New York: National Bureau of Economic Research.
- Blau, F., & Kahn, L. (1997). Swimming upstream: Trends in the gender wage differential in the 1980s. *Journal of Labor Economics*, 15 (1), 1–42.
- Burtless, G. (1995). Employment prospects of welfare recipients. In D. Nightingale & R. Haveman (Eds.), *The Work Alternative*. Washington, D.C.: Urban Institute.
- Cancian, M., Haveman, R., Kaplan, T., Meyer, D., & Wolfe, B. (1999). Work, earnings, and well-being, after welfare: What do we know? Pp 161–186. In S. Danziger (Ed.), *Economic Conditions and Welfare Reform*. Kalamazoo, MI: Upjohn Institute.
- Corcoran, M. (1978). The structure of female wages. *American Economic Review*, 68(2), 165–170.
- Corcoran, M., & Duncan G.J. (1979). Work experience, labor force attachment and earnings differences between the races and sexes. *Journal of Human Resources*, 14(1), 3–20.
- Corcoran, M., Duncan, G.J., & Ponza, M. (1983). A longitudinal analysis of white women's wages. *Journal of Human Resources*, 18(4), 497–520.
- Corcoran, M., Danziger, S., Kalil, A., & Seefeldt, K. (forthcoming). How welfare reform is affecting women's work. *Annual Review of Sociology*.
- Cox, D. (1984). Panel estimates of the effects of career interruptions on the earnings of women. *Economic Inquiry*, 22(3), 386–403.
- Edin, K., & Lein, L. (1997). *Making ends meet*. New York: Russell Sage.
- Ellwood, D.T. (1999). *Anti-poverty policy for families in the next century: From welfare to work—and worries*. Harvard University, Boston, unpublished manuscript.
- England, P., Christopher, K., & Reid, L. (1999). Gender, race, ethnicity, and wages. In I. Browne (Ed.), *Latinas and African American women at work*. New York: Russell Sage.
- England, P., Farkas, G., Killbourne, B.S., & Dow, T. (1988). Explaining occupational segregation and wages: Findings from a model with fixed effects. *American Sociological Review*, 53, 544–558.

- Friedland D., & Burtless G. (1994). Five years after: The long-term effects of welfare-to-work programs. New York: Russell Sage Foundation.
- Gladden, T., & Taber, C. (1999). Wage progression among less skilled workers. Mimeo. Northwestern University.
- Gronau, R. (1988, July). Sex-related wage differentials and women's interrupted labor careers—The chicken or the egg. *Journal of Labor Economics*, 277–301.
- Gueron, J.M., & Pauly, E. (1991). From welfare to work. New York: Russell Sage Foundation.
- Harris, K.M. (1993). Work and welfare among single mothers in poverty. *American Journal of Sociology*, 99, 317–352.
- Harris, K.M. (1996). Life after welfare: Women, work and repeat dependency. Mimeo, University of North Carolina, Sociology.
- Heckman, J. (1979). Sample selection bias as a specification error. *Econometrica*, 47, 1251–1271.
- Holcomb, P., Pavetti, L., Ratcliffe, C., & Reidinger, S. (1998). Building an employment focused welfare system: Work first and other work-oriented strategies in five states. Washington, D.C.: The Urban Institute.
- Jung, J.H., & Magrabi, F.M. (1991). Work experience, specific human capital, and earnings. *Quarterly Review of Economics and Business*, 31(1), 15–27.
- Kane, T.J. (1987). Giving back control: Long-term poverty and motivation. *Social Service Review*, 61, 405–419.
- Light, A., & Uréla, M. (1995). Early career interruptions and gender wage differentials. *Journal of Labor Economics*, 80, 293–298.
- Lin, Y.F. (1999). Three essays on the welfare system. Unpublished dissertation, Ann Arbor: University of Michigan, Department of Economics.
- Loprest, P. (1992). Gender differences in wage growth and job mobility. *American Economic Review*, 82, 526–32.
- Mead, L. (1986). Beyond entitlement: The social obligations of citizenship. New York: Free Press.
- Mead, L. (1992). The new politics of poverty: The nonworking poor in America. New York: Basic Books.
- Mincer, J. (1974). Schooling, experience and earnings. New York: Columbia University Press.
- Mincer, J., & Ofek, H. (1982). Interrupted work careers: Depreciation and restoration of human capital. *Journal of Human Resources*, 17, 3–24.
- Mincer, J., & Polachek, S. (1974). Family investments in human capital: Earnings of women. *Journal of Human Resources*, 13(1), 118–1343.
- Moffitt, R., & Rangarajan, A. (1989). The effect of transfer programs in work effort and human capital formation: Evidence from the US. Pp.116–136. In A. Dilmot & I. Walker (Eds.), *The Economics of Social Security*. Oxford: Oxford University Press.
- Pavetti, L., & Acs, G. (1996). Moving up, moving out, or going nowhere? A study of the employment patterns of young women and the implications for welfare mothers. Washington, D.C.: The Urban Institute.
- Stratton, L. (1995). The effect interruptions in work experience have on wages, *Southern Economic Journal*, 61(4), 955–970.
- Waldfogel, J., & Ferber, M. (1997). The long-term consequences of non-standard work. New York: Columbia University School of Social Work.
- Wellington, A. (1993). Changes in the male/female wage gap, 1976–1985. *Journal of Human Resources*, 28, 383–411.