Has the Decline in Benefits Shortened Welfare Spells?

Hilary Hoynes; Thomas MaCurdy

Has the Decline in Benefits Shortened Welfare Spells?

By Hilary Hoynes and Thomas MaCurdy*

At no time has there been greater interest in reforming the nation's welfare system. A driving force behind this interest is to create a system that reduces dependency on public assistance. A large body of research has established that a substantial portion of welfare recipients experience long-term dependency on public assistance in the United States; Mary Jo Bane and David Ellwood (1983), for example, in their influential study of participants in the Aid to Families with Dependent Children (AFDC) program, found that while about half of spells of AFDC receipt are completed in two years, almost 10 percent of those spells last ten years or longer. While there is a general consensus that the problem of welfare dependency has worsened over the last 20 years, we know remarkably little about the extent to which this belief is true.

The literature on the dynamics of welfare participation, reviewed by Robert Moffitt (1992), has increased our understanding of welfare dependency through its focus on estimating the distribution of spells of welfare receipt and exploring the determinants of variation in welfare experiences. The main findings reveal that the length of welfare spells varies substantially with demographic characteristics, the generosity of the state's AFDC program, and local labor-market conditions. However, none of the studies has explored how welfare dependency has changed over time.[1] The only evidence on changes in spell durations comes from administrative data sources,

which in each year report the median number of months of welfare receipt since the most recent case opening for a sample drawn from the current AFDC caseload. According to these sources, the median spell length for current participants increased from 23 months in 1968 to 31 months in 1975 and has since decreased such that by 1990 the median length of spells had returned to its 1968 level (U.S. House of Representatives, 1992). Unfortunately, this measure of spell length is well known to suffer from significant shortcomings since it represents a censored period of receipt calculated for a sample of welfare participants which overrepresents long-term recipients.

In this paper we explore how one important dimension of welfare dependency has changed over the last two decades, namely, dependency measured by the lengths of welfare spells. After identifying the trends underlying the shifts in distributions of spells, we explore three sources for explaining the observed shifts: (i) changes in the composition of the recipient population; (ii) changes in public-assistance benefits for female heads of household; and (iii) changes in labor-market opportunities. To accomplish this task, this paper draws heavily on empirical findings developed in Hoynes and MaCurdy (1993). Summarized briefly, these findings show that the length of welfare spells decreased significantly between the mid-1970's and the early 1980's, but increased in the 1980's. While changes in welfare benefits play some role in explaining the trends in welfare dependency, changes in labor-market opportunities appear to play even a smaller role. After controlling for demographic and economic variables, some of the trend in welfare dependency persists.

I. Trends in Welfare Benefits and Labor-Market Opportunities

During the past 20 years there have been substantial changes in welfare benefits and

*Department of Economics, University of California, Berkeley, CA 94720, and Department of Economics, Stanford University, Stanford, CA 94305, respectively.

[1] Ellwood (1986) includes controls for the year the spell started in his specification of the exit probability, but he provides no discussion of why these variables are included and what (if any) time trends they are capturing.

labor-market opportunities, and the available evidence suggests that these economic variables should influence welfare dependency over time. Constructing trends in these economic variables involves three steps: (i) selecting appropriate state-level benefit and wage measures; (ii) assigning these measures to our sample of AFDC recipients; and (iii) averaging over the sample of AFDC recipients in each year.

The sample used for this analysis consists of female heads of households from the 1968–1989 Panel Study of Income Dynamics (PSID) who reported receiving AFDC income (and other public assistance classified as AFDC in the PSID) at some time during the survey period. A woman is assigned to be on welfare in year t if she is a female head of household with a child present and has annual welfare income greater than a threshold defined as the maximum monthly AFDC payment for which the family was eligible given the state of residence, family size, and year. The sample includes data for 1,301 individual women and 1,549 AFDC spell beginnings during 1968–1988. Because AFDC recipients are able to supplement their cash awards with important in-kind benefits, we consider three measures of welfare benefits: maximum benefit payments for AFDC; AFDC and food stamps combined; and AFDC, food stamps, and Medicaid combined.[2]

To explore the role of labor-market opportunities on welfare spells, we consider four weekly wage measures available at the state level. The first is the Bureau of Labor Statistics (BLS) wage for all manufacturing workers in production and nonsupervisory positions. The second is the average wage
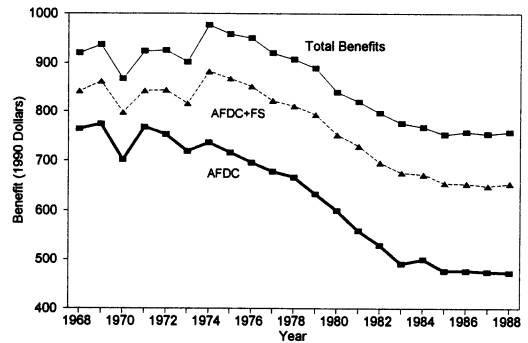

FIGURE 1. AVERAGE REAL MONTHLY BENEFITS BY YEAR

for all workers covered by the Unemployment Insurance (UI) system. Neither the BLS nor the UI wage may be appropriate for this study, since women on welfare tend to have less work experience and lower education levels than the population at large. To mitigate this shortcoming, we use the Current Population Survey (CPS) to construct the two remaining wage series for the years 1976–1988:[3] median wages, by state, for all employed women, and analogous median wages for all employed women with a high-school education or less.

To compute averages of welfare benefits and wages over time, we assign each woman in our PSID sample the benefit and wage variables applicable to her in each year based on her state of residence at the time of the relevant interview. Using the PSID weights and averaging over the sample of AFDC participants in a given calendar year, we construct the average benefit and wage series shown in Figures 1 and 2. The average benefit and wage variables graphed in these figures do *not* represent those published in familiar government documents, but instead they constitute the averages associated with a nationally representative

---

[2] The AFDC benefit is the maximum state benefit for a family of four. The maximum benefit for AFDC and food stamps is equal to 70 percent of the maximum AFDC benefit (AFDC income counts as income against food-stamp benefits) plus the food-stamp maximum benefit. The total-benefit variable adds the cash equivalent value of Medicaid, estimated to be 36.8 percent of average state Medicaid expenditures for female heads on AFDC (Moffitt and Barbara Wolfe, 1992).

[3] CPS wages are constructed for 1976–1988 because prior to 1976 both hours worked per week and weeks worked per year were only available as categorical or bracketed variables.
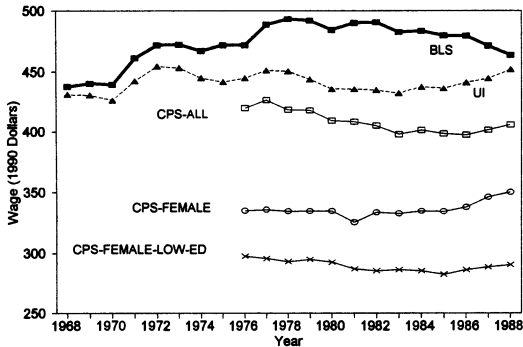
FIGURE 2. AVERAGE REAL WEEKLY WAGE

FIGURE 3. MONTHLY TOTAL BENEFITS/WEEKLY WAGE

population making up the AFDC caseload in each year.

Average AFDC benefits, as shown in Figure 1, have declined steadily in real terms since the late 1960's, with little change taking place after 1983. This real decline in benefits has been moderated by growth in food stamps and Medicaid, especially in the early part of this period when both in-kind benefit programs were expanding. The period can be characterized by three phases in the growth of total welfare benefits: moderate increases between 1968 to 1974, fairly large declines between 1974 and 1982, and flattening after 1982.

Figure 2 shows average real wages for the four weekly wage measures among female heads of households on AFDC. The BLS wage shows real wage growth until the late 1970's, after which real wage growth slows, and turns negative. The UI wage shows growth until the early 1970's, followed by negative growth until the early 1980's, when real wages started to increase slowly. The CPS wage for low-education women, at about 65 percent of the level of the UI wage, decreased modestly between 1976 and 1985, and it has increased slightly since then. The CPS wage for all women remained unchanged until the mid-1980's, with modest increases in the end of the period.

The ratio of maximum monthly welfare benefits to average weekly wages gives a measure of the generosity of public assistance relative to labor-market opportuni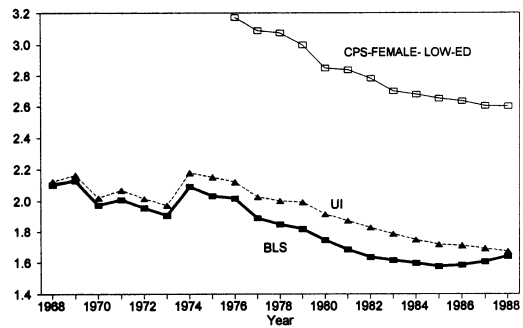ties. Figure 3 shows the trend in the ratio of total benefits to wages over the sample period for the wage measures. All series show that benefits relative to wages have decreased significantly since the mid-1970's. This measure highlights how much real benefits have declined: in 1988 combined welfare benefits represented only about 65 percent of median earnings of low-education women. No matter how one measures pay for work, the relative attractiveness of welfare benefits has declined steadily since the late 1960's.

II. Trends in Welfare Dependency

Following the tradition of the welfare literature, the basic building block used in our empirical analysis of welfare durations is to formulate and estimate hazard rates associated with exiting from welfare in successive years. The hazard rate, denoted by $H(\ell, X(k))$, designates the probability that an individual with characteristics $X(k)$ leaves the welfare rolls in year k after ℓ years of uninterrupted receipt of welfare benefits. The presence of $X(k)$ in this function permits the hazard rate to vary as a function of time-varying covariates, which can include variables designed to capture the trends followed by welfare exit rates over time.

Knowledge of how hazard rates vary at different durations over time and across characteristics provides sufficient information to construct two distinct distributions describing the length of welfare spells. The

specification for the duration distribution is

$$(1) \quad f(\ell,t) = \prod_{j=0}^{\ell-1} [1 - H(j, X(t+j-1))]$$

$$\times H(\ell, X(t+\ell-1))$$

$$\equiv S(\ell-1,t)H(\ell, X(t+\ell-1))$$

where t is the year in which the spells start, and the quantity $H(0, X(k)) = 0$ by definition. Of all the women who start a spell on welfare in year t, $f(\ell,t)$ shows the fraction who end a spell in exactly ℓ years (i.e., leave the welfare rolls in year $t + \ell$); and $S(\ell,t)$ is the survivor function.

The second distribution sometimes used in the welfare literature to summarize welfare dependency is the point-in-time spell distribution. If one assumes that the probability of welfare spells starting in a given year is constant over time (known as a stationarity assumption for the welfare intake rate), then the specification for the point-in-time distribution is

$$(2) \quad g(\ell,t) = \frac{\sum_{j=1}^{\ell} f(\ell, t-j+1)}{\sum_{j=0}^{\ell_{max}} S(j+1, t-j)}.$$

Of the women who comprise the welfare population in a particular year t, $g(\ell,t)$ shows the fraction who will eventually experience a spell length of exactly ℓ years.

A. Empirical Framework

In our empirical work we adopt a flexible specification for the hazard rate given by

$$(3) \quad H(\ell, X(t)) = 1/[1 + e^{Z_1\beta + \varphi(\ell, Z_2, \alpha)}]$$

where Z_1 and Z_2 are vectors of variables made up of the covariates $X(t)$, β is a parameter vector, and the function $\phi(\ell, Z_2, \alpha)$ is a sum of smooth splines that determine

the basic duration properties of survival rates. Our formulation of ϕ admits nonmonotonic duration dependence and allows the form of this dependence to vary according to the attributes $X(t)$ (through Z_2). The inclusion of Z_2 in the function ϕ allows us to explore whether components of $X(t)$ (e.g., time effects and economic variables) have differential effects at short verses long durations.

In estimation, we include three sets of covariates in Z: demographic characteristics (age, education, race, marital status, and number and ages of children); economic variables (level of public-assistance benefits, wage rates, and the unemployment rate); and year splines capturing the time trends in the hazard rates. We then analyze the time trends before and after controlling for the demographic and economic variables. Short-duration effects are largest at year 1 and decline rapidly to near zero by year 5, while the long-duration effects influence hazard rates at four years and beyond. In our empirical analysis all demographic variables and the unemployment rate are included in Z_1, shifting the hazard rate uniformly across spell lengths. Time effects and the economic variables measuring benefits and wages are included in Z_2 to allow for differential effects in short versus long durations. We estimate the parameters of the hazard rates by implementing conventional maximum-likelihood methods for duration models, accounting for right-censoring and weighting to adjust for the nonrandom sample design of the PSID.

A major finding of our empirical analysis concerns the absence of factors influencing exits from long welfare spells (those greater than four years in length). Using several specifications for the time trends, our results show that the likelihood of leaving welfare at the longer durations has remained unchanged throughout our sample period of 1968–1988. Further, welfare benefit levels and wage rates have no influence at the longer lengths even though they shift hazard rates in the way predicted by economic theory for short durations. In light of these findings, the specification used below to summarize results includes time effects,

TABLE 1—TRENDS IN WELFARE SPELL DISTRIBUTIONS, BY SPELL LENGTH AND YEAR

Controls	Period	Percentage of spells lasting:		
		1–2 years	3–6 years	7+ years
A. *Duration Distribution:*				
None	1970	49	29	22
	1975	45	33	22
	1980	59	26	15
	1985	51	28	21
Demographic	1970	49	31	20
	1975	44	35	21
	1980	58	28	14
	1985	50	30	20
Demographic	1970	49	31	20
+ economic	1975	44	35	21
	1980	53	30	17
	1985	43	33	24
B. *Point-in-Time Distribution:*				
Demographic	1970	17	32	51
	1975	14	34	52
	1980	19	31	50
	1985	18	31	51
Demographic	1970	17	33	50
+ economic	1975	15	34	51
	1980	17	32	51
	1985	15	32	53

Notes: The column designated 1–2 years reports the sum $f(1,t)+f(2,t)$ for the duration distribution, and the sum $g(1,t)+g(2,t)$ for the point-in-time distribution. Column "3–6 years" lists the sums $\Sigma_i f(i,t)$ and $\Sigma_i g(i,t)$ for $i = 3,4,5,6$; and the last column reports $\Sigma_i f(i,t)$ and $\Sigma_i g(i,t)$ for $i = 7,\ldots,20$; terms beyond year 10 contributed trivially to the result.

benefits, and wages in Z_2, but for short durations only.

B. *Implications of Empirical Findings*

Using the fitted values for our estimated hazard rates, Table 1 summarizes how welfare durations have changed from the late 1960's to the late 1980's. The top portion of the table lists predicted values for the duration distribution $f(\ell,t)$, and the bottom portion presents findings for the point-in-time distribution $g(\ell,t)$. The first two columns identify the specification considered: the first describes the controls included among the covariates to eliminate their influence when estimating the time trends; and the next specifies the reference year for the prediction. The last group of three columns making up Table 1 reports the

fraction of spells that end in two years or less, between two and seven years, and seven years or longer. To calibrate the predictions, we evaluate covariates other than time at values representing three-year averages with 1970 taken as the midpoint, and we adjust the intercepts (included in Z_1) in the estimated hazards to match predictions for the 1–2-year bracket in 1970 for comparable distributions.

Regarding the basic trends, inspection of the top set of rows in Table 1 (presenting results without controls) suggests that spell durations starting in the late 1960's and early 1970's were slightly shorter than those starting in the mid-1970's. Spells significantly shortened in length from the mid-1970's until the early 1980's. For example, the percentage of spells lasting two years or less increased from 45 to 59 over the period 1975–1980, an increase of one-third. Spells starting in the mid-1980's roughly returned to the lengths applicable in 1970.

In contrast, the bottom portion of Table 1 shows that the distribution of spells experienced by the point-in-time welfare caseload remained fairly constant over the entire period. No doubt this reflects the fact that long-term welfare recipients make up the bulk of the welfare caseload in any year, and our empirical findings indicate that time effects and economic variables play virtually no role in determining the likelihood that individuals exit from spells lasting longer than four years.

III. Conclusion

Despite changes in the composition of the AFDC population during 1968–1988, controlling for demographic variables does very little to explain the trends in welfare dependency. This can be seen by comparing the results in the first panel in Table 1, with no controls, to the results in the second panel where we control for demographic characteristics. The third panel of Table 1 shows that economic variables can explain about 50 percent of the reduction in spell lengths between the late 1960's and the early 1980's. Controlling for benefits and wages reduces the percentage of spells start-

ing in 1980 and lasting two years or less from 59 to 53. Our empirical findings indicate that it is the reduction in real benefit levels and not wages that accounts for most of this change. However, neither benefit levels nor wage rates can explain the lengthening of spells that has occurred in the 1980's.

There have been other changes in program and economic variables that may have contributed to the unexplained increase in spells over the 1980's. The Omnibus Reconciliation Act of 1982 raised the implicit tax rate in the AFDC program from 66 percent to 100 percent, and this could affect the composition of short- versus long-term recipients, which could readily lead to a relative increase in longer spell lengths. In addition, due to the rising cost of health care, the cash-equivalent value of Medicaid, which we assumed to be a fixed percentage of average state Medicaid expenditures, could have increased over this period, leading to an increase in total welfare benefits. Still further, other costs associated with leaving welfare, such as child-care costs may have increased over the period.

By analyzing how individual spells of welfare utilization have changed over the 20-year period, this study provides a crucial first step toward examining trends in welfare dependency. Knowledge of the properties of spell durations combined with information on welfare entry and recidivism provide the elements needed to infer comprehensive notions of welfare dependency, including the total time spent on welfare over extended periods. The use of duration models to characterize welfare dependency avoids the problems encountered when using the "fixed-accounting" method, which summarizes welfare experiences by counting the fraction of a fixed horizon spent on welfare; right- and left-censoring of spells potentially leads to serious biases in measuring dependency using this method. We hope to combine the results summarized in this study with our future research on the behavior of welfare entry and recidivism to develop an understanding of how total welfare participation has changed over the last three decades.

REFERENCES

Bane, Mary Jo and Ellwood, David T. "The Dynamics of Dependence: The Routes to Self Sufficiency." Report prepared for the U.S. Department of Health and Human Services (Office of the Assistant Secretary for Planning and Evaluation), Urban Systems Research and Engineering, Inc., Cambridge, MA, 1983.

Ellwood, David T. "Targeting 'Would-Be' Long-Term Recipients of AFDC." Report prepared for the U.S. Department of Health and Human Services (Office of the Assistant Secretary for Planning and Evaluation), Mathematica Policy Research, Inc., Princeton, NJ, 1986.

Hoynes, Hilary and MaCurdy, Thomas. "Welfare Spells Over the Last Two Decades: Do Changes in Benefits Explain the Trends?" Mimeo, University of California-Berkeley, 1993.

Moffitt, Robert. "Incentive Effects of the U.S. Welfare System: A Review." Journal of Economic Literature, March 1992, 30(1), pp. 1–61.

Moffitt, Robert and Wolfe, Barbara. "The Effect of the Medicaid Program on Welfare Participation and Labor Supply." Review of Economics and Statistics, November 1992, 74(4), pp. 615–26.

U.S. House of Representatives. Background materials and data on programs within the jurisdiction of the Committee on Ways and Means. Washington, DC: U.S. Government Printing Office, various issues.