

The Historical Impact of Welfare Programs on Poverty: Evidence from the American States

Richard C. Fording and William D. Berry

Over the years, there has been a spirited debate over the impact of the welfare expansion associated with the War on Poverty. Many analysts have maintained that public assistance expansion during this period decreased poverty by raising the incomes of the poor (an income enhancement effect), while others have contended that welfare expansion increased poverty by discouraging the poor from working (a work disincentive effect). There has been considerable empirical research about the historical effect of welfare on poverty, nearly all of which relies on the poverty rate (i.e., the percentage of persons with income less than the “poverty threshold”) as an indicator of the extent of poverty. However, this work has not employed designs that allow researchers to sort out distinct income enhancement and work disincentive effects. We develop a model of poverty rates in the American states that permits estimation of these distinct effects—based on state-level time-series data observed annually for the years 1960–90—and we find that welfare had both effects during our period of analysis. We also calculate the net impact of increases in welfare benefits on the poverty rate—taking into account both work disincentive and income enhancement effects. Our results indicate that this net impact is dependent on three variables: the initial level of cash benefits, wage levels for unskilled workers, and the share of the benefit increase provided through cash rather than in-kind assistance. Because of historical trends in these variables, since the 1970s welfare spending has become increasingly less effective in reducing the poverty rate. However, the significance of this result for policymakers must be tempered by evidence that flaws in the poverty rate as an indicator of poverty make it so that any finding about the net effect of an increase in welfare benefits on the poverty rate underestimates welfare’s ability to lessen the true extent of poverty.

KEY WORDS: poverty, welfare, AFDC

Introduction

During the 1960s, the United States embarked on one of the most ambitious social policy initiatives of the twentieth century by waging a “war” on poverty. Although policy efforts associated with this initiative took a variety of forms, one of the most controversial dimensions was the dramatic expansion of public assistance programs for the able-bodied poor and their children. The growth in welfare programs during this period was reflected in the expansion of three important programs that by the late 1960s came to comprise the typical “benefit package” to which most

single-parented poor families were entitled—Aid to Families with Dependent Children (AFDC), Food Stamps, and Medicaid. We estimate that for a typical poor family, between 1965 and 1975 the cash value of this benefit package increased by approximately 75 percent and has remained relatively stable ever since.¹ Combined with unprecedented growth in welfare caseloads, this expansion of public assistance led to expectations of a significant reduction in the U.S. poverty rate. As is well known, while poverty did decrease significantly during the 1960s, the poverty rate stabilized by the 1970s and has remained in double digits ever since.

In 1996, after years of debate, the United States began a new era of public assistance with the passage of the Personal Responsibility and Work Opportunity Reconciliation Act. An important assumption underlying this legislation was that the existing welfare system, partly due to the dramatic expansion of programs and benefits associated with the 1960's War on Poverty, was ineffective in reducing poverty. Much of the criticism was directed at the AFDC program, which until 1996 was the largest cash assistance program for the able-bodied poor. Critics of AFDC claimed that in combination with in-kind benefits provided by the Food Stamp and Medicaid programs, AFDC had come to undermine work incentives (Marmor, Mashaw, & Harvey, 1990; Murray, 1984; Niskanen, 1996). Consequently, it was argued, AFDC not only failed to reduce poverty; it may even have served to increase poverty by encouraging the poor to choose welfare over work.

Others offered an alternative perspective, however, maintaining that welfare expansion significantly improved the lives of the poor, and that work disincentive effects were relatively small, if they existed at all. Acknowledging the fact that poverty did not decline as much as the architects of the War on Poverty had hoped, they argued that this was because of a combination of factors, including the decline of the manufacturing sector in the economy, the failure of wages and public assistance benefits to keep pace with inflation, and demographic changes promoting the growth of economically vulnerable female-headed families (e.g., Ellwood & Summers, 1986; Greenstein, 1991; Marmor et al., 1990; Wilson, 1987). According to this perspective, public assistance reduced poverty, although the magnitude of this reduction has been masked by other forces.

Thus, there are two fundamental suppositions about the historical impact of public assistance expansion on poverty. The *income enhancement* hypothesis asserts that welfare expansion *decreased* poverty by supplementing the incomes of poor persons. The *work disincentive* hypothesis claims that welfare *increased* poverty by discouraging the poor to choose work over welfare. Most scholars entering the debate about the impact of welfare on poverty have accepted *a priori* that welfare likely has both income enhancement and work disincentive effects (e.g., Blank, 1997; Ellwood & Summers, 1986; Scholz & Levine, 2001); for them, the debate concerns which of the two effects is larger, and therefore, whether the *net* effect of public assistance expansion (taking into account both impacts) was to increase or decrease poverty. Therefore, the debate involves three fundamental questions about the historical effects of welfare expansion on poverty: Did welfare expansion have an income enhancement effect (reducing poverty, by increasing income), and if so, how much? Did welfare expansion have a work disincentive effect (increasing poverty, by

decreasing the incentive to work), and if so, how much? And what was the *net* effect of welfare expansion on poverty—taking into account both income enhancement and work disincentive effects? This article seeks to evaluate the impact of welfare on poverty by answering all three questions.

Over the last quarter century, many empirical studies of the effects of welfare on poverty have been conducted. The vast majority of studies have relied on the *poverty rate* to measure the extent of poverty; the poverty rate is defined as the percentage of individuals with income less than the “poverty threshold” (i.e., the income level deemed necessary to maintain a “minimally adequate” standard of living [Fisher, 1992]).² The poverty rate has significant flaws as a measure of the extent of poverty, which limit scholars’ ability to assess the impact of welfare on poverty using the poverty rate as an indicator. First, the poverty rate excludes in-kind assistance (primarily food and health care) when calculating income to determine if an individual is poor. In-kind benefits represent a large and growing component of assistance to the poor in the United States, and clearly provide material benefits that improve the quality of life of the poor. Consequently, in-kind assistance ought to be included in an assessment of the impact of welfare on the extent of poverty. Second, the poverty rate’s reliance on a threshold—below which someone is poor and above which he and she is not—means that any welfare benefits that do not push a poor person above the threshold are not credited with contributing toward any reduction in poverty, despite the fact that such benefits undoubtedly reduce the extent of impoverishment.

Despite these weaknesses, we too rely on the poverty *rate* as our measure of the *extent* of poverty. We do so for several reasons. While alternative measures have been developed, the poverty rate is the only indicator of state-level poverty available annually over a lengthy period of time for all the states; thus, given our research design (to be described below), it is the only realistic alternative. However, even if another measure were feasible for our study, there would be good reason for us to use the poverty rate in our study. Because of the near uniform reliance on the poverty *rate* to measure the *extent* of poverty in both basic and applied research about the causes of poverty over the last two decades, the “poverty rate” has become virtually synonymous with the “extent of poverty” in discussions of the impact of welfare by scholars, policymakers, and politicians. In practice, the vigorous debate about the impact of welfare on the *extent* of poverty has been a dispute about its impact on the poverty *rate*. With different studies pointing to widely varying conclusions, research that offers more definitive conclusions about the impacts of welfare on the poverty rate is sorely needed.

One likely reason for the divergent findings in the literature about the effects of welfare on the poverty rate is that previous studies have failed to employ designs that allow researchers to sort out the potential *income enhancement* (and therefore, poverty reducing) effect of welfare from its possible *work disincentive* (and thus, poverty increasing) effect. In other words, previous research has used a single variable (the welfare benefit level) to model what are potentially two separate causal processes. We utilize a design that allows us to derive separate estimates of the

income enhancement and work disincentive effects of welfare on state poverty rates. Using this approach, we find that welfare programs exhibited both types of effects during the period of our analysis, although their relative magnitude has been dependent upon program characteristics and the economic environment.

After deriving our estimates of the work disincentive and income enhancement effects, we employ them to calculate the net impact of public assistance on the poverty rate (taking into account both effects). Because of several trends over the last 40 years, the magnitude of the income enhancement effect has decreased significantly over the years. Indeed, by the time that welfare reform had reached the national policy agenda in the late 1980s, the net effect of increases in welfare benefits in many states was to increase the official poverty rate.

Our empirical analysis relies on much more extensive data than has prior research. While past studies have employed national-level data, or state-level data observed over a relatively short period of time, we pool annual observations of the states for the period 1961 to 1990. This three-decade period reflects substantially more variation in public assistance benefits than has been observed in previous research. Most importantly, our dataset allows us to examine state poverty rates both before *and* after the policy intervention (i.e., welfare expansion associated with the War on Poverty) we seek to evaluate.

Previous Empirical Studies of the Relationship between Welfare and the Poverty Rate

Much research has been done to assess the impact of public assistance on the poverty rate. One approach has been to compare prewelfare and postwelfare poverty rates. Most studies of this type proceed in two stages. First, the researcher calculates the poverty rate using income data that does not include welfare benefits. Then, the poverty rate is recomputed taking into account public assistance transfers, and the prewelfare and postwelfare rates are compared. According to a review by Danziger, Haveman, and Plotnick (1981), early studies of this type found that welfare programs reduced the poverty rate. The estimated poverty reduction varied from as little as 10 percent (Levy, 1976) to as much as 78 percent (Hoagland, 1980), depending on the population of interest, the types of transfers accounted for, and the time period examined. More recent studies employing this technique report similar impacts, although the estimated ameliorative effects of welfare programs seem to have decreased by the 1980s (e.g., Danziger, Haveman, & Plotnick, 1986; Jensen, Eggebeen, & Lichter, 1993; Weinberg, 1991).

Despite the consistency of these findings, this approach to measuring the impact of welfare has rightly been criticized as ignoring the behavioral effects of public assistance. In other words, in the calculation of prewelfare income it is assumed that income levels would be exactly the same if welfare did not exist. Yet a rather large literature suggests that this is not the case, and that in fact, more poor people would choose to work if public assistance were not available.³ Given the likelihood of this behavioral effect, comparisons of pre- and postwelfare

poverty rates probably exaggerate the poverty-reducing impact of welfare programs.

A large body of research attempts to examine the net impact of public assistance on poverty by examining the aggregate-level relationship between welfare benefits and poverty rates. Several studies have assessed this relationship using national-level data. Perhaps the most well known of these is by Murray (1984), who argued that increases in welfare generosity associated with the War on Poverty led to an increase in the poverty rate. This conclusion sparked a series of rebuttals that claimed that the trends in national-level poverty observed by Murray were driven by economic stagnation and demographic changes (Cogan, 1982; Jencks, 1992; Schwarz, 1983; Wilson, 1987). Schram (1991) extended Murray's analysis through the 1980s, concluding that contrary to Murray's thesis, reductions in welfare spending caused an increase in the poverty rate. Other studies of national-level poverty rates, using time-series techniques for different periods of study, have generally found welfare spending to be unrelated to poverty (e.g., Blank & Blinder, 1986; Haveman & Schwabish, 2000).

Recognizing the small number of observations available when analyzing national poverty rates, several scholars have examined the relationship between welfare and poverty at the state level. Unlike the national-level studies, which have typically combined expenditures on all welfare programs into a single variable, these studies have generally focused on the effects of a single program—AFDC. Yet, similar to the national-level studies, the findings are decidedly mixed. Gallaway and Vedder (1986), Peterson and Rom (1989), Niskanen (1996), and Gunderson and Ziliak (2003) find that AFDC benefits are positively and significantly related to state poverty rates, while Schram, Turbett, and Wilken (1988) find a negative relationship. Morgan and Kickham (2001) find the relationship to be negative and significant in one model, but insignificant in two others.

One flaw of the studies examining the relationship between public assistance benefit levels and poverty rates is that they employ a single welfare benefit variable to model two distinct effects—income enhancement and work disincentive—and therefore offer no vehicle for separating out a possible income enhancement (and therefore, poverty reducing) effect of welfare from a potential work disincentive (and thus, poverty increasing) effect. If one finds little relationship between the benefit level and the poverty rate, this may indicate that there is neither a strong income enhancement effect nor a strong work disincentive effect. But it may also mean that both these effects are powerful, yet in aggregate, they cancel each other out to yield a weak relationship between welfare and the poverty rate. Thus, even if the relationship between welfare benefit levels and poverty rates accurately reflected the *net* impact of welfare on poverty, estimating this relationship would not clarify the causal forces resulting in this net impact. However, we will demonstrate that the problem is more serious. As we will show, past studies estimating the effect of a single welfare benefit variable on the poverty rate have not only failed to provide separate estimates of income enhancement and work disincentive effects; they have produced biased estimates of the *net* effect of welfare. The logic underlying this conclusion is further developed below.

An Alternative Strategy for Assessing the Impact of Welfare on the Poverty Rate

If (for the purpose of research) we had the ability to manipulate the states' policies, economic conditions, and other variables, we could conduct a quasi-experiment to sort out the income enhancement and work disincentive effects of welfare. In each American state, the poor that are eligible for public assistance receive both *cash* and *in-kind* (primarily for food and health care) benefits. Assume that we observe the *poverty rate* in a state. Imagine that we could intervene to increase the real (i.e., adjusted for inflation) level of cash welfare assistance to the poor in the state. At the same time, we would fix the real poverty threshold (so the rules for determining who is poor are stable),⁴ and we would hold real wage levels for unskilled workers constant, so we do not let the income of the working poor change, perhaps moving some from one side of the poverty threshold to the other. We would also make sure that the total real welfare benefit to the poor remained constant (by reducing in-kind benefits the same amount that we increased cash assistance). This means that the ratio of the total welfare benefit to the wage level for unskilled workers is fixed. Finally, we would also fix all other variables. If, after the intervention, the observed poverty rate were lower, the decrease could not be because of changes in the incentive to work because the ratio of the total welfare benefit to the wage level for unskilled workers was unchanged. Because all other variables were also fixed, the decrease in the poverty rate would have to be because of the increased income of welfare recipients resulting from the larger cash benefit.

Of course, such experimental control is unfeasible in the real world. But this idealized design suggests a "parallel" econometric model that capitalizes on statistical control toward the same end: Collect annual data for the American states for a multi-year period, and regress a state's poverty rate on (i) its real cash welfare benefit (*Cash Benefit*); (ii) the wage level for unskilled workers (*Unskilled Wage*); (iii) the ratio of the state's total welfare benefit (cash and in-kind together) to the wage level for unskilled workers (*Total Welf Benefit / Unskilled Wage*); and (iv) a variety of other likely determinants of the poverty rate.⁵ As *Unskilled Wage* and *Total Welf Benefit / Unskilled Wage* are included as independent variables, *the slope coefficient estimate for Cash Benefit would reflect the change in the poverty rate resulting from an increase in the cash welfare benefit, when the real wage level for unskilled workers is fixed* (so incomes of the working poor do not change, moving some working poor from one side of the poverty threshold to the other), *the ratio of the total welfare benefit to the wage level for unskilled workers is constant* (so there is no change in the incentive to work), *and all other independent variables are fixed*. Therefore, a *negative* coefficient for *Cash Benefit* would imply that an increase in the real value of cash assistance prompts a decrease in the poverty rate, and would indicate an *income enhancement effect* of welfare.

In another idealized design, we would intervene to increase the total real welfare benefit level, by increasing in-kind assistance and keeping cash assistance constant. Again, we would fix both the real poverty threshold (keeping the rules for calculating the poverty rate stable) and real wage levels for unskilled workers (holding

constant the income of the working poor). This means that the ratio of the total welfare benefit to the wage level for unskilled workers would rise. We would fix all other variables. Now, any observed increase in the poverty rate could not be because of an income enhancement effect of welfare, because the cash assistance benefit was unchanged.⁶ Indeed, given that all other variables were fixed, an increase in the poverty rate would have to be traceable to the increased attractiveness of welfare relative to the wage level for unskilled workers, and therefore, a work disincentive effect.

Although this quasi-experiment, too, is unfeasible, the same regression model introduced above offers a statistical analog. As *Cash Benefit* and *Unskilled Wage* are in the model, the slope coefficient for *Total Welf Benefit / Unskilled Wage* measures the response of the poverty rate to an increase in the total welfare benefit relative to the wage level for unskilled workers, when the real wage level for unskilled workers is fixed (so there is no movement of the working poor from one side of the poverty threshold to the other due to increases in income), the real cash welfare benefit is constant (so there is no income enhancement effect), and all other independent variables are fixed. Consequently, a positive coefficient for *Total Welf Benefit / Unskilled Wage* would imply that an increase in the ratio of the total welfare benefit to the wage level for unskilled workers (and thus a decline in the incentive to work) leads to a rise in the poverty rate, and would indicate a *work disincentive effect* of welfare.

A Model of State Poverty Rates

The regression model proposed above as a statistical analog to an idealized quasi-experimental design includes *Cash Benefit* as an independent variable. Consistent with previous state-level analyses of the effects of welfare expansion on the poverty rate, we focus on AFDC—a program serving primarily unmarried mothers and their children—to measure the cash welfare benefit. Given that the debate about the effects of welfare on poverty has been framed primarily in terms of the impacts of AFDC, our historical focus on AFDC is actually quite fitting. We estimate our model using pooled annual data from the 48 continental states for the 1961–90 period. Although AFDC was not eliminated until 1997, various changes in the AFDC after the implementation of the Family Support Act in 1990 made the program significantly less comparable to the program of prior years. Also, data for the variables in our model are not systematically available across all states before 1960. Our basic model is specified in equation (1), where the subscripts “i” and “t” denote the state and year of observation, respectively.

$$\begin{aligned}
 \text{Poverty Rate}_{i,t} = & \beta_0 + \beta_1 \text{Cash Benefit}_{i,t} + \beta_2 \text{Cash Benefit}_{i,t}^2 \\
 & + \beta_3 \text{Unskilled Wage}_{i,t} + \beta_4 \text{Total Welf Benefit / Unskilled Wage}_{i,t} \\
 & + \sum (\beta_j Z_j) + \varepsilon_{i,t}
 \end{aligned} \tag{1}$$

Our dependent variable, *Poverty Rate*, is based on the Census Bureau’s measure of the poverty rate. The key independent variables are operationalized as follows:

Cash Benefit = the maximum monthly AFDC payment for a family of four (one adult and three children) with no income in real (2000) dollars.⁷

Unskilled Wage = the typical wage that an unskilled AFDC recipient could earn in a private sector job (measured by the average monthly wage in the retail trade sector [in real dollars]).

Total Welf Benefit / Unskilled Wage = ([the maximum monthly AFDC payment for a family of four with no income] plus [the monetary value of the in-kind benefits to which such a family is entitled]) divided by (the typical wage that an unskilled AFDC recipient could earn in a private sector job).

Note that equation (1) includes both *Cash Benefit* and *Cash Benefit*², thereby specifying a nonlinear relationship between *Cash Benefit* and *Poverty Rate*. Given that the poverty rate is measured as the number of persons with income below an established poverty threshold, if cash assistance reduces poverty by enhancing incomes, a change in the real AFDC benefit should have the greatest marginal impact on the poverty rate when the benefit is at the level that provides an income *equal* to the poverty threshold (i.e., when the ratio of the nominal AFDC benefit to the nominal poverty threshold—*Cash Benefit / Poverty Threshold*—equals one). It is at this benefit level that a change in benefits is most likely to move AFDC recipients from one side of the threshold to the other. As the distance of the AFDC benefit from this point of maximal impact widens (i.e., as *Cash Benefit / Poverty Threshold* moves away from one in either direction), the benefit level should have less effect on the poverty rate because the income changes generated by adjustments in welfare benefits are less likely to move recipients from one side of the poverty threshold to the other. Indeed, as the AFDC benefit approaches zero, the marginal impact of the benefit level on the poverty rate should also approach zero, as a slight increase in the benefit level should prompt no reduction in the poverty rate when the benefit level starts at zero. Thus, whereas previous studies of the effect of AFDC benefits on the poverty rate have implicitly assumed that the effect is linear, we recognize that the income enhancement hypothesis anticipates that this effect should be nonlinear.

Unfortunately, there are insufficient observations in our dataset to test this hypothesis over the range of AFDC benefit levels for which *Cash Benefit / Poverty Threshold* is greater than one: only nine (of the 1,440) cases in our sample have *Cash Benefit / Poverty Threshold* values exceeding one.⁸ Thus, we restrict our empirical analysis to the range of *Cash Benefit / Poverty Threshold* values less than one (which turns out to be the range in which *Cash Benefit* is less than \$1,430 [per month]). In this range, the income enhancement hypothesis predicts that the negative effect of *Cash Benefit* on the poverty rate should gradually decline in magnitude as the value of *Cash Benefit* decreases toward zero, and when *Cash Benefit* equals zero, the effect should reach zero. If this prediction holds true, the coefficient for *Cash Benefit* (β_1) would be zero (indicating that *Cash Benefit* has no effect on the poverty rate when *Cash Benefit* equals zero) and the coefficient for *Cash Benefit*² (β_2) would be negative.

As AFDC provides benefits primarily to unmarried mothers, *Unskilled Wage* ideally would be based on wages earned by unskilled women of child-rearing age. Unfortunately, reliable annual state-level data are not available for wages earned by this subpopulation. However, we can measure the average wage in a state's retail trade sector annually, and this is a reasonable indicator of the wage that an AFDC recipient is likely to earn in the private sector. Based on the Census Bureau's classification system, the retail sector includes several traditionally low-paying occupational categories, such as "eating and drinking places," "food stores," "retail general merchandise stores," and "apparel and accessory stores," among others. These jobs generally require little education and few skills and, on average, pay significantly less than jobs in the other nonagricultural sectors.

To measure the numerator of *Total Welf Benefit / Unskilled Wage*, we add to the maximum monthly AFDC benefit for a family of four with no income the monetary value of the in-kind assistance to which such a family is entitled. There are two primary in-kind benefits for which AFDC families are eligible: Food Stamps and Medicaid. The Food Stamp benefit is determined by the national government, using a formula that is the same for all states in any year. We include in our measure of the total welfare benefit the monetary value of the monthly allotment of food coupons for which the AFDC family is eligible. The value of Medicaid benefits, on the other hand, is not as easy to determine, as the subjective demand for medical services among the poor is difficult to anticipate and likely varies a great deal across individuals. Indeed, some might question whether poor persons attach a *monetary* value to medical services in the same way they do the more easily valued cash and food assistance they receive. We believe that access to health care is of great concern to poor Americans, and that as a consequence, the poor do count Medicaid benefits among the tangible benefits they receive. Thus, our measure of the total welfare benefit includes an estimate of a state's Medicaid expenditure for an AFDC family of four. Yet, to test the sensitivity of our results to the inclusion of Medicaid benefits, we estimate our model with measures of the total welfare benefit package including and excluding Medicaid—which we label *Total Welf Benefit (with Medicaid) / Unskilled Wage* and *Total Welf Benefit (w/out Medicaid) / Unskilled Wage*. If results are consistent across the two indicators, it will be clear that our findings do not hinge on any debate about whether health care benefits are valued in the same way as cash and food benefits.

The term $\Sigma(\beta_j Z_j)$ in equation (1) represents a set of statistical control variables. The large literature on the determinants of poverty suggests that our model should reflect hypothesized impacts on the poverty rate of (i) economic conditions; (ii) interstate migration; (iii) social insurance programs; and (iv) state demographic factors. To simplify model specification, we began with a model containing all independent variables in Berry, Fording, and Hanson's (2003) recently published model of state poverty rates, and including all the interactions among these variables originally specified. Berry et al.'s model emphasizes economic conditions and interstate migration, and we were satisfied with their model's coverage of these forces. But the only demographic variable included by these authors tapped the presence of female-headed families with children. We added a second variable reflecting the

special susceptibility of children to poverty: the number of out-of-wedlock births (as a percentage of population). Because African Americans have been especially vulnerable to poverty (Rodgers, 2000), we also include a measure of the size of a state's black population. Finally, to capture the role of social insurance programs in reducing poverty, we include both the number of social security recipients in a state and the average monthly Social Security benefit for retired workers.⁹

This model proved to be characterized by extreme multicollinearity.¹⁰ To create the ultimate model for which we report empirical results, we deleted several variables to reduce collinearity, and we also removed variables that were consistently estimated to have little effect on the dependent variable—or an effect contrary to that hypothesized—across a variety of specifications involving different combinations of variables. This yielded equation (2):

$$\begin{aligned}
 \text{Poverty Rate}_{i,t} = & \beta_0 + \beta_1 \text{Cash Benefit}_{i,t} + \beta_2 \text{Cash Benefit}^2_{i,t} \\
 & + \beta_3 \text{Unskilled Wage}_{i,t} + \beta_4 \text{Total Welf Benefit / Unskilled Wage}_{i,t} \\
 & + \beta_5 \text{Relative Wage}_{i,t} + \beta_6 \text{Soc Sec Recipients}_{i,t} + \beta_7 \text{Income}_{i,t} \\
 & + \beta_8 \text{Unemployment}_{i,t} + \beta_9 \text{Relative Unemployment}_{i,t} \\
 & + \beta_{10} \text{Manuf Jobs}_{i,t} + \beta_{11} \text{Out of Wedlock Births}_{i,t} + \varepsilon_{i,t}
 \end{aligned} \tag{2}$$

The control variables in this final version of the model are as follows:

Relative Wage = ratio of the average wage in a state's retail sector to the average retail wage in neighboring states.

Soc Secur Recipients = number of recipients (retired, survivors, and disabled) of Social Security (OASDI) (per 100 population).

Income = state per capita income in thousands (in real dollars).

Unemployment = average monthly unemployment rate.

Relative Unemployment = ratio of the unemployment rate in a state to the average rate in neighboring states.

Manuf Jobs = number of people employed in the manufacturing sector (per 100 population).

Out of Wedlock Births = number of out of wedlock births (per 100 population).

Although equation (2) is substantially revised from our initial model including a full set of control variables, and coefficient estimates for some variables are sensitive to the precise specification of the model, it is important to note that the coefficient estimates for the variables of theoretical interest in this article—*Cash Benefit*, *Cash Benefit*², and *Total Welf Benefit / Unskilled Wage*—are robust across the two specifications.

Empirical Analysis

Equation (2) is estimated as a fixed-effects model (i.e., with a set of dummy variables for the states) using OLS regression. Consistent with Beck and Katz's (1995) advice, a lagged dependent variable is added to model dynamics within states. The

presence of the lagged dependent variable casts the equation as a partial adjustment model. In such a model, the slope coefficients reflect the *immediate* impacts of independent variables (i.e., that experienced in the first year). But the *total* effects of independent variables are dynamically distributed over time through the lagged dependent variable, so that the dependent variable is assumed to respond gradually to changes in the independent variables (Gujarati, 1995, pp. 599–600). Also following Beck and Katz, panel corrected standard errors (PCSEs) are reported.¹¹

The proposition that welfare has an income enhancement impact requires that *Cash Benefit* should have a negative effect on state poverty rates, but that the effect should gradually diminish to zero as *Cash Benefit* approaches zero. This nonlinear hypothesis is modeled in equation (2) by the inclusion of a quadratic term for *Cash Benefit*, where the expectation is that the coefficient for *Cash Benefit* (β_1) should equal zero, and the coefficient for *Cash Benefit*² (β_2) should be negative. The empirical results for equation (2) (not shown) were consistent with these predictions. In both versions of our model (i.e., *Total Welf Benefit / Unskilled Wage* measured with and without Medicaid), the coefficient estimate for *Cash Benefit* was weak (failing a test of statistical significance with a *t*-value less than 1.35), and the parameter estimate for *Cash Benefit*² was strongly negative (with a *t*-ratio with absolute value greater than 2.17). Given this empirical evidence that the coefficient estimate for *Cash Benefit* is near zero, we deleted this term from the equation, thereby allowing for a more efficient estimate of the coefficient for *Cash Benefit*². It is these results that are reported in Table 1.

Column 1 presents results when *Total Welf Benefit / Unskilled Wage* is measured “with Medicaid”; column 2 shows findings when Medicaid benefits are excluded. The results across the two versions of the model are very similar, and thus appear robust to the choice about whether to include Medicaid assistance when calculating total welfare benefits. In the text interpretations to follow, we rely on the results for the model including Medicaid in the calculation.

Our unpublished appendix summarizes our findings regarding the control variables. Here, we turn to the results of greatest theoretical interest: those pertaining to the effects of welfare benefits. As can be seen, the coefficient estimate for *Cash Benefit*² is negative and highly significant across both versions of our model. As the value of the coefficient is not readily interpretable, Figure 1 displays the estimated relationship between *Cash Benefit* (i.e., the real AFDC benefit) and the poverty rate (based on the coefficient estimates for the model “with Medicaid” in column 1). The effect of the AFDC benefit on the poverty rate (i.e., the slope of the curve) is constrained to be zero when the benefit level is zero. But the estimated effect gradually increases as *Cash Benefit / Poverty Threshold* rises (the values for this ratio are reported at the top of the graph); when the ratio reaches one, the slope of the curve is strongly negative at -0.0021 . This slope implies that if the real AFDC benefit in a state increases by \$100, while (i) the real wage level for unskilled workers; (ii) the ratio of the total welfare benefit to the wage level for these workers; and (iii) all other variables are held constant, the poverty rate decreases, on average, by 0.21 points in the first year, and over time by a total of 0.76 points. This provides substantial support for the supposition that increases in welfare reduce the poverty rate by enhancing incomes.

Table 1. Regression Results for Poverty Rate Model (Modified Version of Equation 2)

Independent Variable	(1)	(2)
Poverty rate _{t-1}	0.723** (0.029)	0.722** (0.029)
Cash benefit _{t-2}	-7.29e-07** (1.92e-07)	-9.27e-07** (2.60e-07)
Unskilled wage	-0.0033** (0.0010)	-0.0031** (0.0010)
Total welf benefit (<i>with</i> Medicaid)/unskilled wage	1.411** (0.473)	—
Total welf benefit (<i>w/out</i> Medicaid)/unskilled wage	—	2.141** (0.752)
Relative wage	5.040** (0.716)	4.777** (0.724)
Soc sec recipients	-0.276** (0.056)	-0.275** (0.056)
Income	-0.00020** (0.00004)	-0.00020** (0.00004)
Unemployment	0.166** (0.050)	0.169** (0.049)
Relative unemployment	-0.803** (0.266)	-0.779** (0.260)
Manuf jobs	-0.109* (0.056)	-0.104* (0.056)
Out-of-wedlock births	0.332** (0.141)	0.351** (0.139)
R ²	0.983	0.983
N	1,431	1,431

Notes: * $p < 0.05$, one-tailed, ** $p < 0.01$, one-tailed. Column entries are unstandardized slope estimates, with panel corrected standard errors in parentheses. All estimates were generated by STATA 8.0, using the XTPCSE procedure.

The parameter estimate for *Total Welf Benefit / Unskilled Wage* (1.41) is also statistically significant at the 0.01 level and suggests an appreciable work disincentive effect. Assume that the ratio of the total welfare benefit to the wage level for unskilled workers grows by 0.10, while (i) the real wage level for unskilled workers; (ii) the real welfare cash benefit; and (iii) all other variables, are fixed. This increase in welfare benefits relative to the unskilled wage would lead to an expected increase in the poverty rate of 0.14 points in one year, and ultimately a cumulative increase of 0.51 points. During our period of analysis, the variation in the ratio of welfare benefits to wages—even within states—is considerable: the average within-state difference between the minimum and maximum ratios during the period of analysis is 0.65. An increase of 0.65 in *Total Welf Benefit / Unskilled Wage* would prompt, on average, a first-year increase of 0.92 points in a state's poverty rate, and over time, a total change of 3.32 points. Note that this response of the poverty rate occurs despite the fact that the cash benefit is fixed. Therefore, the response cannot be because of any income-enhancement effect of welfare, and can be interpreted as a *work disincentive effect*.

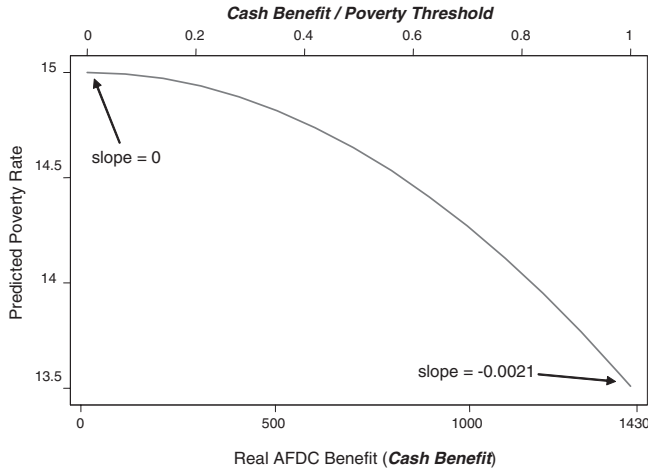


Figure 1. Predicted Effect of *Cash Benefit* on the Poverty Rate by Value of *Cash Benefit* and *Cash Benefit/Poverty Threshold*.

Notes: (i) The graph is based on the coefficient estimates in Table 1, column 1. (ii) The scale for the vertical axis is determined by fixing all other independent variables besides *Cash Benefit* at their mean. Yet the values at which these other variables are fixed influence only the height of the curve; the slope of the curve at any point is independent of these values.

A Further Test of the Work Disincentive Hypothesis

We can subject the work disincentive hypothesis to a further empirical test by constructing a model of the AFDC recipient rate in a state (i.e., the number of AFDC recipients per 100 population). The work disincentive hypothesis predicts that as the total welfare benefit rises relative to the wage level for unskilled workers, welfare’s attractiveness relative to that of employment increases, and the poverty rate grows as more poor people choose welfare over work. Thus, according to the hypothesis, an increase in the total welfare benefit relative to the wage level for unskilled workers should prompt an increase not only in poverty, but in AFDC caseloads as well. To test this prediction, we include *Total Welf Benefit / Unskilled Wage* in a model of the AFDC recipient rate:

$$\begin{aligned}
 AFDC\ Recipients_{i,t} = & \beta_0 + \beta_1 AFDC\ Recipients_{i,t-1} + \beta_2 AFDC\ Recipients_{i,t-2} \\
 & + \beta_3 Total\ Welf\ Benefit / Unskilled\ Wage_{i,t} + \beta_4 Citizen\ Ideology_{i,t} \\
 & + \beta_5 Government\ Ideology_{i,t} + \beta_6 Party\ Competition_{i,t} + \beta_7 Tax\ Capacity_{i,t} \quad (3) \\
 & + \beta_8 Tax\ Effort_{i,t} + \beta_9 Unemployment_{i,t} + \beta_{10} Female\ Headed\ Families_{i,t} \\
 & + \beta_{11} Out\ of\ Wedlock\ Births_{i,t} + \beta_{12} Urbanization_{i,t} + \beta_{13} Mass\ Insurgency_{i,t} \\
 & + \epsilon_{i,t}
 \end{aligned}$$

where *AFDC Recipients* denotes the number of AFDC recipients per 100 population, and the rest of the new variables are defined in our unpublished appendix. The model incorporates controls for a number of variables suggested by past research, including various economic (*Unemployment, Tax Capacity*), political (*Citizen Ide-*

ology, Government Ideology, Party Competition, Tax Effort, Mass Insurgency), and social (*Urbanization, Out of Wedlock Births, Female Headed Families*) influences on state welfare caseloads.¹² This model includes two lagged dependent variables (both “t-1” and “t-2”) because a model with just one lag showed evidence of substantial remaining autocorrelation.¹³ Yet models with two lags are interpreted very similarly to those with just one; the slope coefficients reflect immediate impacts in the first year, but the total effects of variables are distributed over time.

The results are presented in columns 1 and 2 of Table 2. Many of the independent variables have very weak estimated effects—which is not surprising, as even one lagged dependent variable can be expected to suppress the effects of other independent variables (Achen, 2000), and our model contains two lags. But the coefficient estimate for *Total Welf Benefit / Unskilled Wage* is positive and statistically significant for both the version that includes Medicaid benefits (column 1) and the version that does not (column 2). The parameter estimate of 0.346 in column 1 implies that

Table 2. Regression Results for Equation 3

Independent Variable	(1)	(2)
AFDC recipients _{t-1}	1.412** (0.065)	1.413** (0.066)
AFDC recipients _{t-2}	-0.503** (0.063)	-0.502* (0.064)
Total welf benefit (<i>with</i> Medicaid)/retail wage	0.346** (0.113)	—
Total welf benefit (<i>w/out</i> Medicaid)/retail wage	—	0.308* (0.142)
Citizen ideology	-0.0020 (0.0020)	-0.0018 (0.0020)
Government ideology	-0.00011 (0.00057)	-0.00018 (0.00058)
Party competition	0.050 (0.156)	0.047 (0.158)
Tax capacity	-0.00082 (0.0011)	-0.0010 (0.0011)
Tax effort	0.0013 (0.001)	0.0015 (0.0013)
Unemployment	0.0172 (0.0132)	0.015 (0.013)
Female-headed families	-0.184* (0.094)	-0.119 (0.087)
Out-of-wedlock births	0.050 (0.042)	0.053 (0.042)
Urbanization	0.0049 (0.0050)	0.0057 (0.0051)
Mass insurgency	0.017** (0.005)	0.018** (0.005)
R ²	0.975	0.974
N	1,392	1,392

Notes: * $p < 0.05$, one-tailed, ** $p < 0.01$, one-tailed. Entries are unstandardized slope estimates, with panel corrected standard errors in parentheses. All estimates were generated by STATA 8.0, using the XTPCSE procedure.

when the total welfare benefit rises by 10 percent, but the wage level for unskilled workers and all other independent variables remain constant, the AFDC recipient rate will increase in the first year, on average, 0.035 points (i.e., the number of AFDC recipients per 100 population should increase by approximately 0.035); over time, the recipient rate will increase a total of 0.38 points.

The Net Effect of Welfare on the Poverty Rate

Thus far, we have found evidence that supports both sides of an important welfare debate. Consistent with critics of welfare programs, we have found that an increase in welfare benefits contributes to work disincentives that lead to an increase in the poverty rate. At the same time, we have found that a rise in cash assistance has an income enhancement effect, which results in a decrease in the poverty rate. Thus, increases in welfare benefits clearly have two distinct effects on the poverty rate acting in opposite directions—one increasing the poverty rate, the other decreasing it. The remaining issue concerns the *net effect* of welfare: Taking into account *both* income enhancement and work disincentive effects, what is the *net* impact of a marginal increase in welfare benefits on the poverty rate?

The net impact of welfare on the poverty rate cannot be discerned from a *direct* inspection of the coefficient estimates in Table 1 for two reasons. First, the variables reflecting the work disincentive effect (i.e., *Total Welf Benefit / Unskilled Wage*) and the income enhancement effect (i.e., *Cash Benefit* and *Cash Benefit*²) are measured in metrics that are not immediately comparable. Second, because the poverty rate is defined as the percentage of the population with income less than an established threshold, the effect of *Cash Benefit* on the poverty rate is nonlinear—varying with the size of *Cash Benefit* (see Figure 1).

Note that the solution to this problem is not to ignore the coefficient estimates in Table 1 and determine the net effect of welfare spending on the poverty rate by estimating a revised version of equation (2) replacing *Cash Benefit*, *Cash Benefit*² and *Total Welf Benefit / Unskilled Wage* with a single variable measuring total welfare benefits. At first glance, estimating such an equation might seem capable of producing the measure of net effect we seek. But the appeal of this model is illusory because welfare assistance consists of both cash and in-kind benefits, and these two forms of assistance have fundamentally different kinds of effects on the poverty rate. Therefore, below we present analyses of the net effect of welfare on the poverty rate that are grounded in our more sophisticated model of poverty rates specified as equation (2).

We first consider the net impact of *cash* assistance on the poverty rate by examining the net effect of a \$100 increase in the monthly AFDC benefit (measured in real 2000 dollars), assuming in-kind benefits remain unchanged. To do so, we start by (i) setting *Cash Benefit* at some value, *CB**; (ii) setting *Unskilled Wage* at some value, *UW**; (iii) fixing the remaining independent variables at specified values; and (iv) using the coefficient estimates (from column 1 of Table 1) to calculate a predicted value for *Poverty Rate*. We then increase *Cash Benefit* by \$100, which (as in-kind benefits are assumed to be constant) also increases the numerator of *Total Welf*

Benefit / Unskilled Wage by \$100, but hold all other variables constant, and calculate a new predicted value for *Poverty Rate*. The difference between the two predicted values can be interpreted as the net effect of the \$100 increase in cash assistance. Because the two predicted values fix most independent variables at the same values, the calculation of this net effect simplifies to a function of just the initial value of *Cash Benefit*, CB^* , and the value, UW^* , of *Unskilled Wage*:

$$\begin{aligned} \text{Estimated Net Effect } (CB^*, UW^*) = & \{ \underline{1.411 (100 / UW^*)} \\ & - \{0.000000729 [(CB^* + 100)^2 - (CB^*)^2] \} \} \end{aligned} \quad (4)$$

The underlined term on the right side of the equation constitutes the work disincentive effect of the \$100 boost in *Cash Benefit*; the remaining term is the income enhancement effect of the increase; added together, they yield the net effect.

Figure 2 shows the estimated net effect on the poverty rate of a \$100 increase in *Cash Benefit* across the range of *Cash Benefit* values in our sample for which *Cash Benefit / Poverty Threshold* is less than one,¹⁴ when *Unskilled Wage* is fixed at its median (\$1,372) across the state-years in our sample. The figure also shows 95 percent confidence intervals for the estimated net effect at various values of *Cash Benefit* spread across its range. It is at a real *Cash Benefit* level of \$655—the thirty-eighth percentile of the benefit distribution—that the estimated income enhancement effect of a \$100 increase in monthly cash benefits becomes larger than the work disincentive effect, so that the point estimate of the net effect on the poverty rate switches from positive to negative. At *Cash Benefit* levels lower than \$655, the \$100 increase in *Cash Benefit* is estimated to increase poverty; at values in excess of \$655, the benefit increase is predicted to decrease poverty. However, for all *Cash Benefit* levels between \$280 (the third percentile) and \$1,112 (the eighty-fifth percentile), the

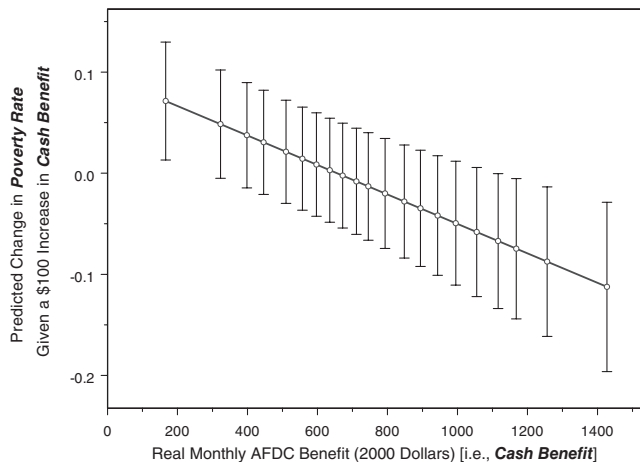


Figure 2. Estimated Net Effect on the Poverty Rate of a \$100 Increase in *Cash Benefit* When *Unskilled Wage* is at its Median, by Benefit Level.

Notes: (i) Vertical bars indicate 95 percent confidence interval. (ii) This graph is based on the coefficient estimates in Table 1, column 1.

confidence interval for the estimated net effect includes zero, indicating that the net effect is not statistically significant. It is only for extremely low benefit levels that we can conclude with confidence that the net effect of the \$100 increment in *Cash Benefit* is to increase the poverty rate, and only at the highest benefit levels that we can be confident that the *Cash Benefit* rise serves to decrease the poverty rate.

The net effects examined thus far (in Figure 2) assume that *Unskilled Wage* is fixed at its median across all states. We relax this assumption in Figure 3 to assess the impact wage levels have on the estimated net effect on the poverty rate of a \$100 increase in cash benefits. The *direction* of the impact is clear even before we inspect the graph: Because a decrease in the wages available to unskilled workers in the private sector does not influence the magnitude of the income enhancement component of the net effect, but it increases the size of the work disincentive component (by decreasing the denominator of *Total Welf Benefit / Unskilled Wage*), a decrease in *Unskilled Wage* shifts the net effect of welfare toward a smaller reduction (or a larger increase) in the poverty rate. Figure 3, however, shows the estimated *magnitude* of the impact of a wage decrease on the net effect. Consider the three negatively sloped solid lines in the graph. The lower, middle, and upper lines show the predicted net change in the poverty rate given a \$100 increase in cash benefits, at various values of *Cash Benefit*, when *Unskilled Wage* is fixed at its ninetieth, fiftieth, and tenth

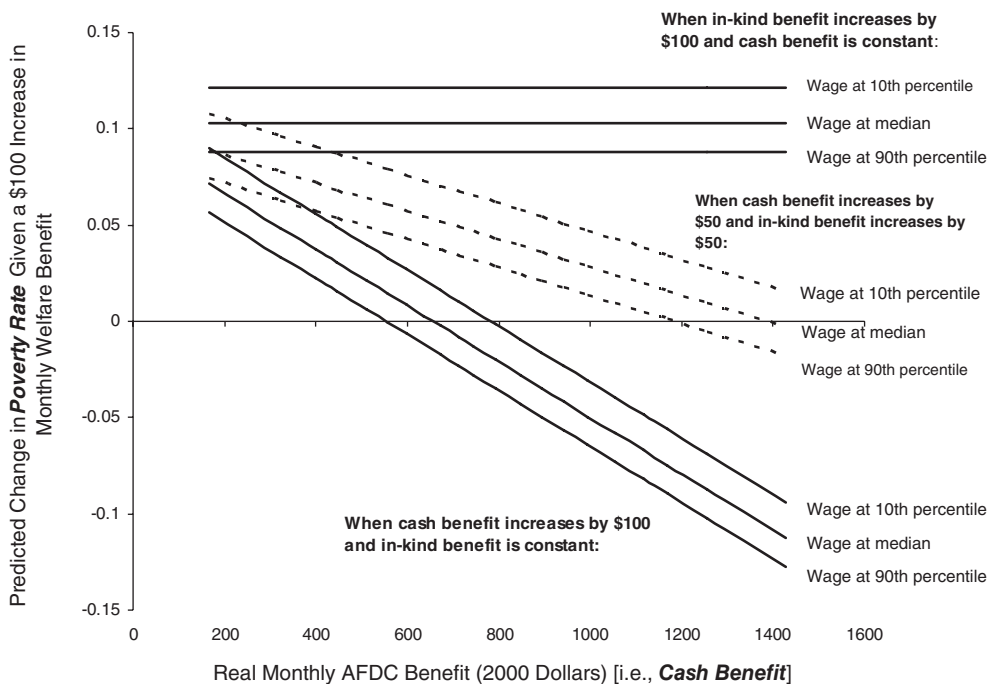


Figure 3. Net Effect on the Poverty Rate of a \$100 Increase in Real Welfare Benefit Level, by *Cash Benefit* and *Unskilled Wage* Levels.

Notes: (i) Confidence intervals for predicted changes in *Poverty Rate* are not shown to enhance readability of the graph. (ii) This graph is based on the coefficient estimates in Table 1, column 1.

percentile values, respectively. (Thus, the middle line in the figure is identical to the line in Figure 2.) Movement from the high-wage context to the low-wage context increases the estimated poverty rate change accompanying a \$100 boost in *Cash Benefit* by 0.033 points—the vertical distance between the low and high lines—a value significantly different from zero at the 0.01 level. For example, when *Cash Benefit* is fixed at its median and *Unskilled Wage* is at the ninetieth percentile, an increase of \$100 in *Cash Benefit* is expected to *decrease* the poverty rate by 0.028 points, but when *Unskilled Wage* is at the tenth percentile, at the same benefit level, an increase of \$100 in *Cash Benefit* *increases* the poverty rate, on average, by 0.005 points.

We now shift our attention to the horizontal lines at the top of Figure 3. These also represent the estimated net effect of a \$100 increase in welfare benefits, but this time assuming that the entire increase comes in in-kind benefits, and the cash benefit remains constant. Because the poverty rate relies on the Census Bureau definition of income, which takes into account cash assistance but not in-kind benefits, an increase of \$100 in in-kind benefits cannot—by definition—prompt any reduction in the poverty rate at *any Cash Benefit* level. Thus, the estimated net effect on the poverty rate of a \$100 increase in in-kind benefits consists of only a work disincentive component. When *Unskilled Wage* is at its median, an increase of \$100 in in-kind benefits is expected to increase the poverty rate by 0.103 points, regardless of the *Cash Benefit* level. Furthermore, the same wage effect described above in the case of a \$100 increase in cash benefits applies in the case of a \$100 increase in in-kind assistance: at the ninetieth percentile value of *Unskilled Wage*, an increase of \$100 in in-kind benefits results in an average increase in the poverty rate of 0.088 points. At the tenth percentile value, the expected increase in the poverty rate is 0.033 higher, at 0.121.

We have seen that the net effect on the poverty *rate* of an increase in *cash* assistance is a function of two variables: the size of the initial cash benefit, and the wage level earned by unskilled workers. The ability of an increase in cash benefits to reduce the poverty rate decreases as either of these variables declines in value. In contrast, the net effect of an increase in *in-kind* assistance is unaffected by the initial cash benefit level and is a function of just the unskilled wage. As with the case of cash benefits, the effectiveness of an increase in in-kind benefits in lowering the poverty rate diminishes as wages decline. By comparing the net effects of increases in cash and in-kind assistance, we derive another important conclusion: the net impact of an increase in welfare benefits on the poverty rate is a function of the relative shares of the increase distributed as cash and in-kind assistance. The smaller the share of an increase in welfare benefits allocated as cash assistance, the smaller the capacity of the benefit increase to lower the poverty rate. To illustrate, the three dashed lines in Figure 3 show the estimated net effect on the poverty rate of a \$100 increase in benefits split evenly between cash and in-kind assistance. At any fixed levels for the unskilled wage and the initial cash benefit, the predicted change in the poverty rate accompanying a \$100 benefit increase is greater (i.e., more positive or less negative) when the benefit increase is split evenly between cash and in-kind assistance than when the benefit increase is exclusively cash.

Thus, we conclude that the net impact of an increase in welfare benefits on the poverty rate is contingent on three factors. Specifically, the ability of an increase in welfare benefits to reduce the poverty rate declines as three variables decrease: (i) the size of the initial cash benefit in relation to the poverty threshold; (ii) the relative share of the benefit increment that is provided via cash, as opposed to in-kind, assistance; and (iii) the wage level earned by unskilled workers.

It is important to recognize that all three determinants of the net impact of an increase in welfare benefits have moved in tandem after 1970 in a direction that diminishes the capacity of welfare benefit increases to reduce the poverty rate: cash benefits have declined relative to the poverty threshold, the share of welfare benefits provided through cash rather than in-kind assistance has dipped, and real wages for unskilled workers have dropped. The inevitable conclusion is that since the 1970s, welfare spending by the American states has become increasingly less effective in reducing the poverty rate. This fact is confirmed by the data presented in Figure 4, which presents historical trends in the effectiveness of cash assistance in reducing the poverty rate during our period of analysis.

To generate Figure 4, we first calculated the predicted net effect of a marginal increase of \$100 in the cash portion of the welfare benefit for each state-year observation in our sample, based on observed values of *Cash Benefit* and *Unskilled Wage* in the state-year. For each year from 1961 to 1990, we then calculated both the average net effect across all 48 states and the percentage of states for which the predicted net effect was less than zero. The results are displayed in the figure. As can be seen, our results suggest that prior to the mid-1970s, the average net effect of welfare on the poverty rate hovered between -0.03 and -0.05 , while the vast majority of states (approximately 70 percent) generated predicted net effects that were below zero. Thus, for the first half of our period of analysis, welfare spending had the effect

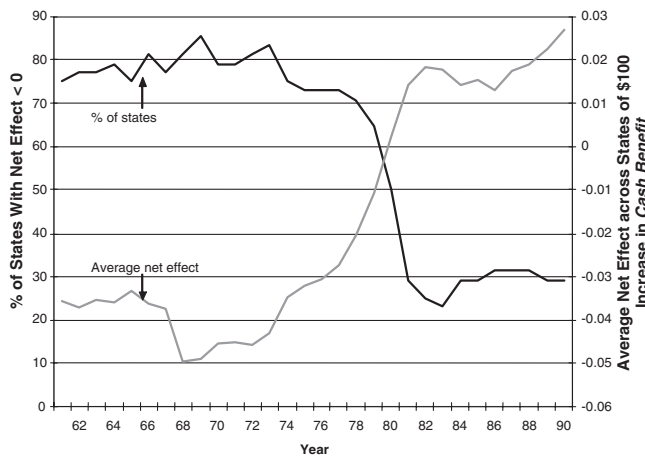


Figure 4. Historical Trends in the Effectiveness of Welfare Spending in Reducing the Poverty Rate.
 Notes: (i) Excludes Alaska and Hawaii. (ii) This graph is based on the coefficient estimates in Table 1, column 1, and net effects are calculated given observed state values for *Cash Benefit* and *Unskilled Wage*.

of reducing the poverty rate in many states. Beginning in the mid-1970s, however, the ability of state welfare spending to reduce the poverty rate began to decrease. By the early 1980s, only 30 percent of the states generated a predicted net effect that was below zero, while the average net effect of welfare across all states was considerably greater than zero. These trends continued through the last year of our analysis (1990), and suggest that declining cash benefit levels and declining wages have had a profound effect on the impact of welfare spending on the poverty rate.

Conclusion

Generally speaking, there are two views about the historical effect of the War on Poverty: the *income enhancement* hypothesis—which contends that public assistance expansion reduced poverty by supplementing the incomes of poor persons—and the *work disincentive* hypothesis—which proposes that welfare expansion increased poverty by encouraging the poor to choose welfare over work. Using the poverty rate to measure the extent of poverty, and a unique design that allows us to simultaneously test for both types of effects, we find that both propositions are correct.

We also calculate the net impact of increases in welfare benefits on the poverty rate—taking into account both work disincentive and income enhancement effects. Our results suggest that this net impact is complex, and highly contingent on three factors: the initial level of cash benefits relative to the poverty threshold, real wage levels for unskilled workers, and the share of the benefit increase provided through cash rather than in-kind assistance. These conclusions are not entirely new and can be found, to varying degrees, in reviews of the welfare impact literature, or drawn from tabular analyses of welfare and poverty data (e.g., Blank, 1997; Ellwood & Summers, 1986). There is a glaring inconsistency, however, between these recognitions and the model specifications of past multivariate analyses of the impact of welfare on poverty rates. Our analysis reconciles this inconsistency by incorporating the highly conditional effect of welfare in the model specification. Consequently, our analysis is the first to empirically demonstrate the varying effects of welfare programs on poverty rates.

Because of historical trends in cash benefit levels, the share of public assistance provided thru cash (as opposed to in-kind) assistance, and wage levels for unskilled workers, welfare spending has become increasingly less effective in reducing the poverty rate. This historical observation reveals an interesting irony in welfare policymaking over the last three decades. At least partly motivated by criticism that welfare spending was ineffective in reducing poverty, since the early 1970s policymakers have (i) systematically reduced real cash benefit levels; and (ii) gradually shifted the majority of the total welfare benefit package to more politically acceptable in-kind programs. It is these very two features of today's welfare system, however, that virtually assure that *additional* welfare spending will fail to reduce the poverty rate in most states.

Although these results offer insight into questions about the impact of public assistance on poverty that have preoccupied scholars, policy analysts, and politicians

for decades, it is important to recognize that our results pertain to the poverty rate, and not to the concept the poverty rate is intended to measure: the extent of poverty. In fact, the influence of two of the three contextual variables—the initial level of cash benefits relative to the poverty threshold and the share of the benefit increase given as cash rather than in-kind assistance—on the net effect of an increase in welfare benefits is an artifact of measurement flaws in the poverty rate. There is no reason to expect the net effect of an increase in welfare benefits on the *extent* of poverty to vary with these contextual variables.

The fact that the ability of an increase in welfare benefits to reduce the poverty rate declines as the initial level of cash benefits relative to the poverty threshold decreases is an artifact of the poverty rate defining a poor person as someone with income less than an established threshold. That is, the poverty rate's construction completely ignores the value of increasing a poor person's income unless the increase is sufficient to lift the person above the poverty threshold. Thus, in an environment in which cash benefits are substantially less than the poverty threshold—as they currently are in most states—any finding about the net effect of an increase in welfare benefits on the poverty *rate* underestimates welfare's ability to reduce the true *extent* of poverty.

We have also seen that the ability of an increase in welfare benefits to reduce the poverty rate decreases as the share of the benefit increase distributed as cash, as opposed to in-kind, assistance drops. This result, too, is an artifact of the definition of the poverty rate: the fact that it ignores in-kind assistance when calculating income. While there is debate about whether it is more appropriate for society to assist the poor with in-kind or cash support, there is no doubt that in-kind assistance in the form of food stamps and Medicaid provides important material benefits to the poor that improve the quality of their lives (Fraker, 1990; Freeman, Aiken, Blendon, & Cory, 1990). Presumably, any welfare benefits that enhance the ability of recipients to provide for their material needs and improve the quality of their lives ought to be reflected in an assessment of the net effect of a marginal increase in welfare benefits on the *extent* of poverty. The failure of the poverty rate to take into account the value of in-kind assistance to the poor undoubtedly makes it so that any conclusion about the net effect of welfare benefits on the poverty *rate* underestimates welfare's ability to diminish the true *extent* of poverty when, as has been the case for many years, a substantial portion of welfare benefits are in-kind.

Richard C. Fording is associate professor in the Department of Political Science at the University of Kentucky.

William D. Berry is Marian D. Irish Professor and Syde P. Deeb Eminent Scholar in Political Science in the Department of Political Science at Florida State University.

Notes

We are grateful to the National Science Foundation (SBR-9320849/Berry) for supporting the project. We would like to thank Robert Albritton, Joe Soss, Sanford Schram, and the anonymous reviewers for helpful comments on earlier versions of this manuscript. The ordering of authors' names is random.

1. The figures used to arrive at this estimate are based on program characteristics (in real dollars) in the average state for a family of four with no earned income. The data used to generate these estimates are described later in the text and in our unpublished appendix to this manuscript.
2. In the following discussion we will often italicize the word *extent* in the concept “extent of poverty” and the word *rate* in the empirical measure, the “poverty rate,” to allow readers to distinguish easily whether we are referring to the concept or the measure.
3. According to reviews of this research by Danziger et al. (1981), Moffitt (1992), and Hoynes (1997), the findings are relatively consistent. As Moffitt concludes, AFDC benefit levels have generally been found to “generate nontrivial work disincentives” (61) and to be significantly related to welfare participation and turnover. The magnitude of this effect, however, is a matter of dispute.
4. In fact, the real poverty threshold is fixed in the United States, as the nominal threshold automatically increases each year by the rise in the consumer price index (CPI).
5. Note that the real poverty threshold is constant, as the nominal threshold is indexed to the CPI, and thus the poverty threshold is not included in the model.
6. Recall that when measuring the poverty rate in a state, the poverty status of individuals is based solely on cash income, and ignores any in-kind assistance received.
7. The CPI is used to deflate all variables measured in real terms to 2000 dollars.
8. In our sample, *Cash Benefit / Poverty Threshold* ranges from 0.12 to 1.12.
9. Details concerning the construction of all variables used in our analysis, including data sources, are provided in an unpublished appendix available from the authors upon request.
10. Regressing an independent variable on the remaining independent variables yielded an R^2 greater than 0.99 in the case of four variables, and greater than 0.98 in three other cases.
11. Both equations showed nearly no autocorrelation; a Lagrange multiplier test (regressing residual, on residual_{t-1}) yielded an estimated slope coefficient of 0.16 for residual_{t-1} “with Medicaid” and 0.15 “without.”
12. For research supporting the inclusion of these variables, see (among others), Peterson and Rom (1989), Fording (2001), and Hill, Leighley, and Hinton-Andersson (1995).
13. When the second lag is added, a Lagrange multiplier test for autocorrelation (regressing residual, on residual_{t-1}) yields a slope coefficient of less than 0.01 both “with” and “without Medicaid.”
14. As the regression model on which Figure 2 is based is estimated using only cases for which *Cash Benefit / Poverty Threshold* is less than one, it would not be appropriate to apply equation (4) to calculate a net effect when *Cash Benefit / Poverty Threshold* is greater than one.

References

- Achen, Christopher H. 2000. “Why Lagged Dependent Variables Can Suppress the Explanatory Power of Other Independent Variables.” Paper presented at the Annual Meeting of the Political Methodology Society, UCLA, July 2001.
- Beck, Nathaniel, and Jonathan Katz. 1995. “What to Do (and Not to Do) With Time-Series Cross-Section Data.” *American Political Science Review* 89: 634–47.
- Berry, William D., Richard C. Fording, and Russell H. Hanson. 2003. “Reassessing the ‘Race to the Bottom’ in State Welfare Policy: Resolving the Conflict between Individual-Level and Aggregate Research.” *Journal of Politics* 65 (May): 327–49.
- Blank, Rebecca. 1997. *It Takes a Nation: A New Agenda for Fighting Poverty*. Princeton, NJ: Princeton University Press.
- Blank, Rebecca, and Alan S. Blinder. 1986. “Macroeconomics, Income Distribution, and Poverty.” In *Fighting Poverty: What Works and What Doesn’t*, ed. S. Danziger, and D. Weinberg. Cambridge, MA: Harvard University Press, 180–208.
- Cogan, John. 1982. “The Decline in Black Teenage Employment: 1950–70.” *American Economic Review* 72: 621–38.

- Danziger, Sheldon, Robert Haveman, and Robert Plotnick. 1981. "How Income Transfer Programs Affect Work, Savings, and the Income Distribution: A Critical Review." *Journal of Econometric Literature* 19 (September): 975–1028.
- . 1986. "Poverty and Policy: Lessons of the Last Two Decades." *Social Service Review* 60: 34–51.
- Ellwood, David T., and Lawrence H. Summers. 1986. "Poverty in America: Is Welfare the Answer or the Problem?" In *Fighting Poverty: What Works and What Doesn't*, ed. S. Danziger, and D. Weinberg. Cambridge, MA: Harvard University Press, 78–105.
- Fording, Richard C. 2001. "The Political Response to Black Insurgency: A Critical Test of Competing Theories of the State." *American Political Science Review* 95 (1): 115–30.
- Fraker, Thomas M. 1990. *The Effects of Food Stamps on Food Consumption: A Review of the Literature*. A Report for the Food and Nutrition Service, United States Department of Agriculture. Washington, DC: Mathematica Policy Research.
- Freeman, Howard E., Linda H. Aiken, Robert J. Blendon, and Christopher R. Cory. 1990. "Uninsured Working-Aged Adults: Characteristics and Consequences." *Health Services Research* 24 (6): 811–23.
- Gallaway, Lowell, and Richard Vedder. 1986. "Suffer the Little Children: The True Casualties of the War on Poverty." In *War on Poverty—Victory or Defeat?* Hearing before the Subcommittee on Monetary and Fiscal Policy, Joint Economic Committee, Congress of the United States. Washington, DC: U.S. Government Printing Office.
- Greenstein, Robert. 1991. "Universal and Targeted Approaches to Relieving Poverty: An Alternative View." In *The Urban Underclass*, ed. Christopher Jencks, and Paul E. Peterson. Washington, DC: Brookings Institution, 437–459.
- Gujarati, Damodar N. 1995. *Basic Econometrics*, 3rd ed., New York: McGraw-Hill.
- Gunderson, Craig, and James P. Ziliak. 2003. "Poverty and Macroeconomic Performance Across Space, Race, and Family Structure." Discussion Paper 2003-01. Center for Poverty Research, University of Kentucky.
- Haveman, Robert, and Jonathan Schwabish. 2000. "Has Macroeconomic Performance Regained Its Anti-poverty Bite?" *Contemporary Economic Policy* 18 (4): 415–27.
- Hill, Kim Quaile, Jan Leighley, and Angela Hinton-Andersson. 1995. "Lower Class Mobilization and Policy Linkage in the United States." *American Journal of Political Science* 39: 75–86.
- Hoagland, G. William. 1980. "The Effectiveness of Current Transfer Programs in Reducing Poverty." Paper presented at the Middlebury College Conference on Welfare Reform.
- Hoynes, Hilary. 1997. "Work, Welfare, and Family Structure: What Have We Learned?" In *Fiscal Policy: Lessons from Economic Research*, ed. A. Auerbach. Cambridge, MA: MIT Press, 101–146.
- Jencks, Christopher. 1992. *Rethinking Social Policy: Race, Poverty, and the Underclass*. Cambridge, MA: Harvard University Press.
- Jensen, Leif, David J. Eggebeen, and Daniel T. Lichter. 1993. "Child Poverty and the Ameliorative Effects of Public Assistance." *Social Science Quarterly* 74 (September): 542–59.
- Levy, Frank. 1976. "The Labor Supply of Female Households Heads, or AFDC Work Incentives Don't Work Too Well." *Journal of Human Resources* 14 (1): 76–97.
- Marmor, Theodore R., Jerry L. Mashaw, and Philip L. Harvey. 1990. *America's Misunderstood Welfare State: Persistent Myths, Enduring Realities*. New York: Basic Books.
- Moffitt, Robert. 1992. "Incentive Effects of the U.S. Welfare System: A Review." *Journal of Economic Literature* 30: 1–61.
- Morgan, David R., and Kenneth Kickham. 2001. "Children in Poverty: Do State Policies Matter?" *Social Science Quarterly* 82 (3): 478–94.
- Murray, Charles. 1984. *Losing Ground: American Social Policy, 1950–1980*. New York: Basic Books.
- Niskanen, William A. 1996. "Welfare and the Culture of Poverty." *Cato Journal* 16 (1): 1–15.
- Peterson, Paul E., and Mark C. Rom. 1989. "American Federalism, Welfare Policy and Residential Choices." *American Political Science Review* 83: 711–28.
- Rodgers, Harrell R. 2000. *American Poverty in a New Era of Reform*. New York: M.E. Sharpe.

- Scholz, John Karl, and Kara Levine. 2001. "The Evolution of Income Support Policy in Recent Decades." In *Understanding Poverty*, ed. S. Danziger, and R. Haveman. Cambridge, MA: Harvard University Press, 193–228.
- Schram, Sanford F. 1991. "Welfare Spending and Poverty: Cutting Back Produces More Poverty, Not Less." *American Journal of Economics and Sociology* 50 (April): 129–41.
- Schram, Sanford F., Patrick J. Turbett, and Paul H. Wilken. 1988. "Child Poverty and Welfare Benefits: A Reassessment with State Data of the Claim that American Welfare Breeds Dependence." *American Journal of Economics and Sociology* 47 (October): 409–22.
- Schwarz, John E. 1983. *America's Hidden Success: A Reassessment of Twenty Years of Public Policy*. New York: Norton.
- Weinberg, Daniel H. 1991. "Poverty Dynamics and the Poverty Gap: 1984–86." *Journal of Human Resources* 26 (Summer): 535–44.
- Wilson, William Julius. 1987. *The Truly Disadvantaged*. Chicago: University of Chicago Press.