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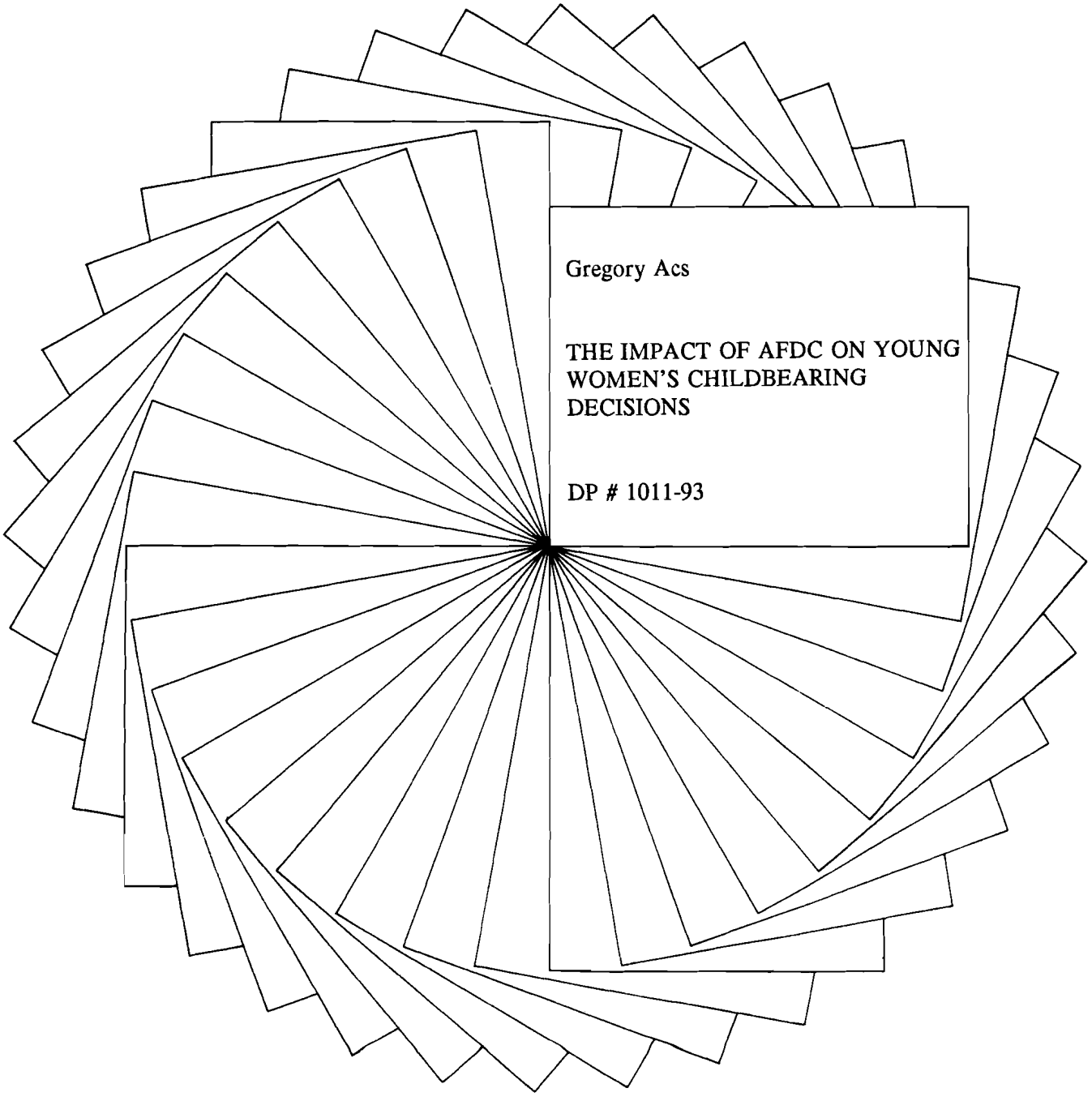

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THE IMPACT OF AFDC ON YOUNG WOMEN'S CHILDBEARING DECISIONS

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Abstract

This research seeks to reevaluate the relationship between AFDC and fertility by focusing on births to women through the age of twenty-three using data from the National Longitudinal Survey of Youth (NLSY). Using discrete time hazard models, I examine the impact of AFDC on births directly associated with AFDC, on out-of-wedlock births, and on all births. I also examine the importance of AFDC on subsequent births--births to women who already have a child. I find that AFDC generosity has very modest pro-natalist effects, at best, on first births and virtually no effect on subsequent births. Furthermore, exposure to AFDC does not encourage future childbearing, although mothers who received AFDC in the past are more likely to receive AFDC upon having a second child.

The Impact of AFDC on Young Women's Childbearing Decisions

INTRODUCTION

The young woman, dependent on public assistance, having child after child has reemerged as the favorite symbol for politicians decrying the U.S. welfare system. The State of New Jersey has even passed legislation preventing women in the Aid to Families with Dependent Children (AFDC) program from receiving supplementary welfare payments if they have another child while on welfare. Indeed, the fear that the AFDC program is pro-natalist has a strong theoretical foundation--AFDC provides support to poor families with children, with larger grants going to households with more children. In effect, AFDC lowers the cost of having a child. Yet, despite its pro-natalist features, there is scant evidence supporting the contention that AFDC promotes out-of-wedlock births.

Much of the research in this area has focused on first births to unwed teenagers, and only a few studies have attempted to explicitly tie births to the receipt of AFDC (see Duncan and Hoffman [1990], for example). In the current debate, however, politicians, the press, and the public express concern not just about teenage, out-of-wedlock births but also about welfare becoming a "lifestyle" in which women have multiple births both to increase their incomes and to prolong their stays on the welfare rolls.

This research seeks to reevaluate the relationship between AFDC and childbearing by focusing not just on births to teenagers but also on births to women in their mid-twenties using data from the National Longitudinal Survey of Youth (NLSY). Using discrete time hazard models, I examine the impact of AFDC on births directly associated with welfare receipt, on out-of-wedlock births, and on all births. I also examine the importance of AFDC on subsequent births--births to women who already have a child. I find that AFDC generosity has very modest pro-natalist effects at best on first births and virtually no effect on subsequent births. Furthermore, exposure to AFDC does not

encourage future childbearing, although mothers who received AFDC in the past are more likely to receive AFDC upon having a second child.

In the following sections, I first review previous research on the relationship between AFDC and childbearing. Then, I describe the data used in this study. The next section presents estimates of AFDC's impact on young women's childbearing decisions. The paper concludes with a summary of major findings and implications for policymakers.

BACKGROUND

A young woman's childbearing decision is complex and involves her attitudes toward sex and birth control as well as her perceptions of the costs and rewards of children. Indeed, both the direct and indirect costs of supporting a child are quite substantial. Children need food and shelter, and if a young mother wants to work or attend school, she must arrange for childcare. On the other hand, a woman may not perceive the costs of having a child to be particularly high if she believes that her economic prospects are weak. Furthermore, a child may afford a modicum of attention and respect to women with poor labor market prospects (Anderson 1989). A woman's perception of the opportunity cost of having a child is shaped by her family background, education, and strength of the local economy. The financial support available through AFDC and other welfare programs partially offsets these costs.

In their book, Single Mothers and Their Children, Garfinkel and McLanahan (1986) document the increase in the incidence of female headship from 1960 to 1985 and note that this coincided with a rise in the generosity of welfare transfers to single mothers (at least up through 1975 when the real value of benefits began to erode). Yet, the authors argue that the rise in female headship reflected a rise in divorce rates and the increasing incidence of single mothers establishing households independent from other relatives, rather than a rise in out-of-wedlock births. Ellwood and Bane's

(1985) study of AFDC's impact on female headship reaches similar conclusions. And Moore (1980) tests fourteen models of the relationship between AFDC and teen out-of-wedlock births and only obtains a significant, positive correlation in one model. Similarly, Winegarden (1974), using aggregate data on birth rates in all fifty states and the District of Columbia, finds that birth rates among single women are not positively correlated with the generosity of a state's welfare benefits.

More-recent studies investigate the relationship between AFDC and childbirth using panel data. Such data allow investigators to observe how women's childbearing decisions change as their own characteristics as well as the generosity of public assistance change. Plotnick (1990) uses data from the NLSY through 1984 to examine the impact of welfare on the probability of having an out-of-wedlock teen birth. By focusing on women between the ages of fourteen and fifteen in 1979, he can observe all birth events (save for four) in his sample and can link the births to the welfare benefit levels prevailing at the time of the birth instead of at an arbitrary point in time. While he does not find compelling evidence of pro-natalist effects, he finds that some of his welfare measures are significant and consistent with a pro-natalist impact. His results are relatively sensitive to the variables included in his regression analysis and are not robust across racial groups.

Duncan and Hoffman (1990) use longitudinal data from the Panel Study of Income Dynamics (PSID) and focus explicitly on teen births associated with the receipt of AFDC. They argue that if a birth does not coincide with a spell of AFDC receipt, then AFDC could not have motivated it. The authors also argue that it is not merely the generosity of AFDC but also a woman's earnings potential that affects her fertility decisions. Consequently, they estimate the impact of AFDC generosity on the probability that a woman has an AFDC birth as a teenager while controlling for what her earnings would have been at age twenty-six had she not had a birth. They find that poor earnings prospects raise the probability of an out-of-wedlock teen birth associated with AFDC while generous AFDC benefits have small, insignificant pro-natalist effects.

The Duncan and Hoffman approach--counting only births directly linked to AFDC--is a very restrictive test of the hypothesized effects of AFDC on fertility. Indeed, single women and even women in tenuous marriages may view AFDC as insurance. AFDC allows them to be more lax about contraception, carry pregnancies to term, and raise children because it will provide them support if their financial conditions change. Plotnick's approach of counting all out-of-wedlock teen births does allow AFDC's insurance value to affect the fertility decisions of single women. However, in his hazard model approach, he censors all cases in which the woman marries, thereby missing the impact of potential AFDC transfers on marital births.[1] Furthermore, Duncan and Hoffman as well as Plotnick study only first births and teen births. Women in their twenties, who are less likely to be able to rely on parental support, and women who already receive public transfers may be more sensitive to variation in potential AFDC benefits than are teens and first-time mothers. Consequently, this research explores the impact of AFDC on women's childbearing decisions through their mid-twenties, focusing on both initial and subsequent births.

DATA

The NLSY provides a large sample of young women in their early and middle childbearing years. The women in the survey ranged in age from fourteen to twenty-one in 1979, the first year of the panel, and are reinterviewed annually. The NLSY contains information on women's work, wages, welfare use, fertility, and family backgrounds, as well as information on the communities in which they live. As such, it is an excellent data source for investigating the impact of AFDC on women's childbearing decisions. Given the importance of observing women's initial welfare and fertility events, I will restrict the analysis to women who were between the ages of fourteen and sixteen in 1979. In the final year for which I have data (1988), these women are aged twenty-three to twenty-five.

Table 1 provides a description of the 1,814 women observed at age twenty-three in my sample.[2] Half of the women in the sample had had a child by age twenty-three; 30.8 percent had had an out-of-wedlock birth; and 14.3 percent had received AFDC within three months of a birth. A greater proportion of black women had given birth by age twenty-three than white and Hispanic women. Nearly a quarter of the sample had had two children. Women in all three racial/ethnic groups average slightly over twelve years of schooling, but they differ significantly in their family backgrounds. While 69.3 percent of white women and 67.1 percent of Hispanic women were raised in two-parent families, only 43.1 percent of black women had been so. Furthermore, 56 percent of black women grew up in households with annual incomes below $10,000 a year.[3] The comparable figures for Hispanic and white women were 43.3 percent and 27.6 percent, respectively.

Table 2 shows the characteristics of women with different numbers of children. Interestingly, women with more children tend to live in states with slightly lower average AFDC benefits. They also live in states with lower average annual wages. The ratio of the annual AFDC guarantee for a family of two to the state median wage illustrates how attractive welfare is relative to earnings. Using this measure, AFDC appears slightly more attractive in states where childless women reside. Women with children by age twenty-three average less than 12 years of schooling, while women without children average 13.5 years. And, at age twenty-three, women with children are more likely to come from low-income and single-parent households than are women with no children.

IMPACT OF AFDC ON CHILDBEARING

I explore the impact of AFDC on three "types" of births: (1) any birth by the age of twenty-three, (2) out-of-wedlock births by the age of twenty-three, and (3) births to women by the age of twenty-three that precipitate a spell of AFDC receipt. The first model allows AFDC to affect all women's fertility decisions. The second model is fairly similar to Plotnick's (1990), although it

TABLE 1

Characteristics of Women in the Sample at Age 23, by Race

	All (n=1,814)	White (n=1,003)	Black (n=478)	Hispanic (n=333)
% with a child	50.0	42.6	61.7	55.6
% with a child born out of wedlock	30.8	19.7	53.1	32.1
% who began an AFDC spell within 3 months of having a child	14.3	8.8	27.0	12.9
% with 2 or more children	23.8	19.9	28.9	27.9
Years of school	12.5	12.7	12.7	12.0
% raised in 2-parent families	62.0	69.3	43.1	67.1
% raised in a family whose income was < $10,000/year	38.4	27.6	56.0	43.3

Source: Author's tabulations from the National Longitudinal Survey of Youth.

Note: All monetary values are 1988 CPIX dollars.

TABLE 2

Characteristics of Women in the Sample at Age 23, by Number of Children

	0 Children (n=907)	1 Child (n=476)	2 Children (n=431)
AFDC guarantee, family of 2	$313	$302	$296
AFDC & Food Stamp benefits, family of 2	$409	$401	$397
AFDC guarantee, family of 3	$387	$372	$364
AFDC & Food Stamp benefits, family of 3	$530	$520	$514
Gap between AFDC guarantee for family of 2 and guarantee for family of 3	$74	$70	$68
Gap between AFDC & Food Stamp benefits for family of 2 and AFDC & Food Stamp benefits for family of 3	$121	$119	$117
State median wage (per year)	$21,248	$20,975	$20,760
Ratio of annual AFDC guarantee, family of 2, to state median wage	17.4%	17.0%	17.0%
% with a child born out of wedlock	---	56.1	67.7
% who began an AFDC spell within 3 months of having a child	---	20.4	37.8
% raised in a family whose income was < $10,000/year	27.0	46.8	52.2
% raised in 2-parent families	72.4	56.6	46.0
Years of school	13.5	12.0	11.2

Source: Author's tabulations from the National Longitudinal Survey of Youth.

Note: All monetary values are 1988 CPIX dollars. The AFDC and Food Stamp guarantee reflects the AFDC guarantee plus the value of Food Stamps received if AFDC is the sole source of income, the standard deduction is taken, and the shelter deduction is ignored.

allows for out-of-wedlock births through the age of twenty-three. The third model linking births to the start of a spell of AFDC receipt (receipt must begin within three months of a birth) is similar to the Duncan and Hoffman (1990) definition of an AFDC birth.[4]

All three models are estimated using discrete time hazard models. Such models estimate the probability that an event (in this case, a birth) occurs at a specific time, given that it has not already occurred. Using a standard logistic parameterization of the hazard rate, I can express the probability that a woman has a birth in a given year conditional on her not having yet given birth and on her characteristics as:

$$P(t)=Pr[birth_{it} \mid birth_{i,t-1}=0;\ X_{it}]=\frac{e^{\beta' X_{it}}}{1+e^{\beta' X_{it}}}$$

where P(t) is the probability of the specified birth event in year t, ß' is a vector of coefficients to be estimated, and X_{it} is a set of explanatory variables. This specification allows for both time-varying and time-invariant factors to influence a young woman's childbearing decisions. The unit of observation is a person-year: each woman enters the sample in 1979 and remains in the sample, at risk of having a birth, until she has a birth, turns twenty-three, or is censored. Censoring occurs for several reasons. First, there is some attrition in the NLSY; I censor cases in the first year in which a woman becomes a nonrespondent. For the model considering out-of-wedlock births, I censor cases in which a woman marries, because once married, she is no longer at risk of having an out-of-wedlock birth. As such, this model is fairly similar to the one estimated by Plotnick (1990). Finally, for the model on AFDC births, I do not censor cases in which a woman has a non-AFDC birth; instead, I add a variable indicating that the woman now has a child and allow the woman to remain at risk of having an AFDC birth. These discrete time hazard models are estimated by compiling all "at risk" person-years and running a standard logit regression.

The explanatory variables are virtually identical in all three models and include measures of potential AFDC benefits, women's own characteristics and family backgrounds, and their labor market opportunities.[5] All time-varying variables take on their appropriate year t values.[6] The most important explanatory variable in the analyses is the potential transfer a woman could receive from the AFDC program. AFDC guarantees vary from state to state. I will use the maximum AFDC benefit a single-parent family of two could receive in a woman's state of residence to measure AFDC's generosity.[7] If AFDC does, in fact, have pro-natalist effects, the estimated coefficient on the AFDC guarantee should be positive in all three models.

Since marital births can also be influenced by AFDC, I include a variable indicating if a woman is married in a given year. Unmarried women may be less likely to have children than married women, but they may be more likely to have an AFDC birth, because married women may not be eligible for AFDC benefits. These models will not be able to disentangle the offsetting effects of marital status. On net, however, one would expect that unmarried women are more likely to have AFDC births than married women but less likely to have any birth (model 1). Again, since married women are not at risk of an out-of-wedlock birth, model 2 contains no married women.

I also include the number of years of schooling a woman has completed. More-educated women are probably less likely to have any of the three types of births.[8] A woman's labor market opportunities affect the relative value of AFDC benefits and thus also affect her fertility decisions. To measure these opportunities, I include the prevailing annual wage rate in a woman's state of residence in a given year. I also add measures of the local unemployment rate. Stronger economic opportunities should reduce the probability of AFDC and out-of-wedlock births and possibly reduce the probability of all births.[9]

I also control for differences in women's family backgrounds that may affect both their childbearing and welfare participation decisions. These background measures include a woman's

family income in 1978, her mother's education, and whether she lived in a two-parent family at age fourteen. Women from lower-income and single-parent households as well as those with less-educated mothers are probably more likely to have any of the three types of births. Finally, I also control for a woman's racial/ethnic affiliation.

DISCRETE TIME HAZARD MODELS FOR FIRST BIRTHS

Table 3 presents the results from hazard models for first births, out-of-wedlock births, and births associated with the receipt of AFDC (AFDC births). By considering the impact of AFDC generosity on both marital and out-of-wedlock births, I allow AFDC to have "insurance" value: even though a married woman may not be eligible for AFDC (or eligible for only a small amount of support under a state's AFDC-UP program), her childbearing decisions may be affected by the generosity of the potential benefit. I observe 872 births in 12,822 person-years; 498 out-of-wedlock births in 11,313 person-years; and 252 AFDC births in 15,280 person-years.[10]

The generosity of AFDC benefits available to a single mother does not have a significant impact on either first births or out-of-wedlock births. Not only are the impacts statistically insignificant, they are also trivially small. If monthly AFDC benefits were $100 higher, the chance of a woman having a birth in any given year would rise by 0.13 percentage points--a 2 percent increase over the average probability.[11] Similarly, a $100 rise in the maximum monthly AFDC benefit would increase the chance of an out-of-wedlock birth in any given year by 0.13 percentage points--a 3 percent increase over the average probability.[12]

Generosity does, however, have a statistically significant impact on AFDC births: a $100 increase in the maximum monthly AFDC benefit would increase the chance of an AFDC birth by 0.36 percentage points on average in any given year. While this finding is consistent with the hypothesis that more-generous benefits have pro-natalist effects, it can also be interpreted as a

TABLE 3
Effect of AFDC on the Probability of Having a Child in a Given Year: Discrete Time Hazard Model Results

	Any 1st Birth	Out-of-Wedlock Birth	AFDC Birth
Intercept	-2.711* (0.672)	-2.644* (0.818)	-4.734* (1.167)
AFDC Benefit, Family of 2 ($100s)	0.0211 (0.0344)	0.0314 (0.0424)	0.223* (0.0592)
Average Wages ($1000s)	0.00935 (0.0228)	0.0146 (0.0274)	-0.0268 (0.0383)
Unemployed < 6%	-0.166 (0.132)	-0.217 (0.166)	-0.710* (0.228)
Unemployed 6–12%	-0.0138 (0.107)	-0.0778 (0.136)	-0.390* (0.162)
Central City	0.115 (0.100)	0.128 (0.116)	-0.228 (0.174)
Education < 12	0.136 (0.111)	0.0538 (0.0140)	0.234 (0.164)
Education 13–15	-0.669* (0.132)	-0.811* (0.177)	---
Education 16	-0.980* (0.334)	-2.512* (1.015)	---
Education > 12	---	---	-1.095* (0.280)
Spouse Present	2.188* (0.0925)	---	-1.289* (0.253)
Child	---	---	0.535* (0.168)
Black	0.771* (0.0970)	0.961* (0.116)	1.041* (0.161)
Hispanic	0.419* (0.105)	0.294* (0.141)	0.184 (0.201)

(table continues)

TABLE 3 (continued)

	Any 1st Birth	Out-of-Wedlock Birth	AFDC Birth
Mom Education < 12	0.682*	0.996*	0.894*
	(0.148)	(0.203)	(0.230)
Mom Education = 12	0.499*	0.713*	0.544
	(0.148)	(0.206)	(0.305)
Two Parents	-0.435*	-0.512*	-0.673*
	(0.0812)	(0.102)	(0.144)
Ln Family Income	-0.165*	-0.220*	-0.101
	(0.0530)	(0.0646)	(0.0930)
Age 17	0.434*	0.519*	0.985*
	(0.137)	(0.156)	(0.272)
Age 18	0.781*	0.912*	1.653*
	(0.142)	(0.166)	(0.263)
Age 19	0.772	1.045*	1.628*
	(0.164)	(0.194)	(0.292)
Age 20	0.556*	0.712*	1.390*
	(0.178)	(0.225)	(0.319)
Age 21	0.811*	1.005*	1.663*
	(0.177)	(0.222)	(0.314)
Age 22	0.528*	0.968*	1.450*
	(0.190)	(0.242)	(0.338)
Age 23	0.413*	0.678*	0.954*
	(0.201)	(0.290)	(0.397)
Log likelihood	-2,710.4	-1,870.7	-1,131.8
Probability of a birth	0.068	0.044	0.0165
Person-years	12,822	11,313	15,280

Source: Author's tabulations from the National Longitudinal Survey of Youth.

Notes: Standard errors in parentheses. All dummy variables equal one in the affirmative. The constant refers to women sixteen or younger, living in SMSAs with unemployment rates in excess of 12 percent. Their mothers completed more than twelve years of schooling, while the women themselves have completed exactly twelve years.

* Indicates significance at the 5 percent level.

participation effect: since women are not more likely to have an out-of-wedlock birth as benefits rise, the positive correlation between AFDC generosity and AFDC births reflects the fact that women in states with higher benefits are more likely to participate in the AFDC program once they have a qualifying birth than are new mothers in low-benefit states. While it is difficult to disentangle AFDC's pro-natalist and participation effects, my estimate likely overstates AFDC's pro-natalist impact. I also find that relative to other factors affecting women's childbearing decisions, the impact of generosity is quite modest.[13]

For example, the chances of any type of birth decline as educational attainment rises. Relative to women with exactly twelve years of schooling, women with at least some college are 4.2 percentage points less likely to have a birth in any given year. The chances of an out-of-wedlock birth fall by 3.4 percentage points, and those of an AFDC birth decline by 1.8 percentage points.

A woman's family background as well as her demographic characteristics also affects her childbearing decisions. Black women are more likely to have all three types of births than both white and Hispanic women. Similarly, Hispanic women are more likely to have any birth and out-of-wedlock births than white women, although they are equally likely to have AFDC births. As anticipated, births are considerably more likely and AFDC births are considerably less likely in years in which a woman is married. Women raised in two-parent families and women with more-educated mothers are less likely to have any type of birth by the age of twenty-three. Furthermore, women from higher-income families are less likely to have a child or an out-of-wedlock birth through the age of twenty-three. Surprisingly, family income has no statistically significant effect on the chances of an AFDC birth. One would have expected that women from wealthier backgrounds would be less likely to require AFDC to support any children they may have.

The economic climate in which a woman lives also has surprisingly weak effects on her childbearing decisions. Indeed, the prevailing wage rate has no significant impact on any type of

birth. Neither does living in an inner-city area. The local unemployment rate only affects AFDC births--women in SMSAs (or nonmetropolitan areas of states) with high unemployment rates are more likely to have AFDC births than women living elsewhere.

In table 4, I use the estimated coefficients from the hazard models to generate predicted birth rates for women with given characteristics to evaluate the impact of welfare, environment, family background, and a woman's own characteristics on childbearing decisions in a given year. At the sample means, the probability of a birth is 4.46 percent; the probability of an out-of-wedlock birth is 3.02 percent; and the probability of an AFDC birth is 0.88 percent. The probability that a "typical" woman has a child by her sixteenth birthday is 2.18 percent. The chances that she will have an out-of-wedlock birth are 1.57 percent, and her chances of an AFDC birth are 0.22 percent. The "typical" sixteen-year-old is white and lives in a central city with an SMSA-wide unemployment rate between 6 and 12 percent; she was raised in a two-parent household of average means, and her mother graduated from high school. She, however, has not yet finished high school. AFDC benefits and average annual wages are set to the mean values for each sample: approximately $320/month in AFDC benefits and $20,300/year in wages.

The odds of any type of birth occurring during the year in which a woman turns nineteen are higher than the odds of a birth at age sixteen. Indeed the probabilities of a birth at age nineteen for the typical woman are 4.61 percent for any birth, 4.33 percent for an out-of-wedlock birth, and 1.14 percent for an AFDC birth. If this woman had completed high school, her chances of birth would have fallen by 0.57 percentage points for any birth, 0.22 percentage points for out-of-wedlock births, and by 0.24 percentage points for AFDC births. If monthly AFDC benefits rose by $100, the chances of this nineteen-year-old high school graduate having a birth would climb by only 0.09 percentage points, while the chances of an out-of-wedlock and an AFDC birth would rise by 0.13 and 0.22 percentage points, respectively. This impact is quite modest relative to the impact of being

TABLE 4

Predicted Probability of Having a Child in a Given Year

	Any 1st Birth	Out-of-Wedlock Birth	AFDC Birth
Woman with mean characteristics	0.0446	0.0302	0.0088
Typical 16-year-old[a]	0.0218	0.0157	0.0022
Typical 19-year-old[a]	0.0461	0.0433	0.0114
19-year-old high school grad[b]	0.0404	0.0411	0.0090
$100 increase in AFDC maximum[c]	0.0413	0.0424	0.0112
Raised in single-parent family[d]	0.0624	0.0684	0.0218

Source: Author's tabulations from the National Longitudinal Survey of Youth.

[a]The typical woman lives in a state where the AFDC guarantee for a family of two and the average annual wage are at the average value for the samples. She is white and lives in a central city of an SMSA whose unemployment rate is between 6 and 12 percent. She was raised in a two-parent household of average means, and her mother graduated from high school. She, however, has not completed high school.

[b]Same as woman directly above except she completed high school.

[c]Same as woman directly above except she lives in a state with more-generous AFDC benefits.

[d]Same as woman directly above except she was raised in a single-parent household.

raised in a single-parent family. If this woman had been raised in a single-parent family, the chances of her giving birth would have risen to 6.24 percent. The chances of an out-of-wedlock birth would have climbed to 6.84 percent, and the chances of an AFDC birth would have reached 2.18 percent.

These discrete time hazard models for first births suggest that AFDC's generosity explains little to none of the variation in young women's childbearing decisions. One concern with this finding is that it is unlikely that women who never anticipate needing AFDC are influenced by its generosity. Thus any pro-natalist effects AFDC may have are diluted by the composition of the sample. To check this, I reestimated the hazard models using women from low-income (less than $10,000/year), single-parent households. The impact of AFDC generosity on births for this sample are reported in table 5.

All types of births are more common for this sample than for the full sample. Nevertheless, AFDC generosity does not significantly increase the likelihood of any birth or out-of-wedlock births. Indeed, a $100 increase in monthly benefits increases the chance of a birth in any given year by 1.0 percentage points on average, while the chance of an out-of-wedlock birth increases by 0.6 percentage points. A similar increase in benefits drives up the odds of an AFDC birth by 0.7 percentage points--a statistically significant increase at the 10 percent level. Given that the chances of each type of birth are higher for this sample, the impact of AFDC on childbearing is about the same on women from poor, single-parent families as it is on women in general in my sample.

The impact may also be different for different racial/ethnic groups. Table 6 presents the estimated effect of AFDC on childbearing decisions separately for white, black, and Hispanic women. AFDC's generosity does not appear to affect black and Hispanic women's childbearing decisions--the estimated coefficients are not only statistically insignificant but surprisingly signed as well. AFDC benefit levels are positively correlated with white women's decisions to have children; the impact is

TABLE 5

Effect of AFDC on the Probability of Having a Child in a Given Year: Women from Low-Income, Single Parent Families

	Any 1st Birth	Out-of-Wedlock Birth	AFDC Birth
AFDC Benefit, Family of 2 ($100s)	0.100 (0.0884)	0.0718 (0.0994)	0.229 (0.135)
Log likelihood	-390.4	-325.6	-207.0
Probability of birth	0.109	0.094	0.033
Person-years	1,201	1,086	1,576

Source: Author's tabulations from the National Longitudinal Survey of Youth.

Notes: Standard errors in parentheses. Specifications are identical to those in the basic model; only the coefficient measuring AFDC's impact is shown. The complete regression results are available from the author.

TABLE 6
Effect of AFDC on the Probability of Having a Child in a Given Year: Discrete Time Hazard Model Results, by Racial/Ethnic Group

	All	White	Black	Hispanic
Any 1st Birth				
AFDC benefit, family of 2 ($100s)	0.0211 (0.0344)	0.091 (0.0497)	-0.0160 (0.0692)	-0.0251 (0.0747)
Effect of $100 rise in benefit	0.0013	0.0047	-0.0013	-0.0018
Mean benefits	0.068	0.0545	0.0926	0.079
Person-years	12,822	7,841	3,047	2,294
Log likelihood	-2,710.4	-1,279.5	-885.5	-503.7
Out-of-Wedlock Birth				
AFDC benefit, family of 2 ($100s)	0.0314 (0.0424)	0.0453 (0.0702)	-0.0232 (0.0716)	0.101 (0.968)
Effect of $100 rise in benefit	0.0013	0.0010	0.0018	.0043
Mean births	0.044	0.0257	0.0858	0.045
Person-years	11,313	6,387	2,878	2,048
Log likelihood	-1,807.7	-692.6	-801.2	-346.3
AFDC Birth				
AFDC benefit, family of 2 ($100s)	0.223* (0.0592)	0.180 (0.0989)	0.179 (0.0955)	0.566* (0.185)
Effect of $100 rise in benefit	0.0036	0.0018	0.0058	.0082
Mean benefits	0.0165	.0097	0.0335	0.0147
Person-years	15,280	8,671	3,761	2,848
Log likelihood	-1,131.8	-409.7	-496.6	-193.8

Source: Author's tabulations from the National Longitudinal Survey of Youth.
Notes: Standard errors in parentheses. Specifications are identical to those in the basic model; only the coefficients measuring AFDC's impact are shown. The complete regression results are available from the author.
* Indicates significance at the 5 percent level.

significant at the 10 percent level although it is rather small in magnitude. Generosity has no statistically significant impact on out-of-wedlock births.

Women in all three racial/ethnic groups living in high-benefit states are more likely to have births linked directly to a spell of AFDC receipt. For whites and blacks, the impact is significant at the 10 percent level, while for Hispanics it is significant at the 5 percent level. As in the model for AFDC births for all women, the positive correlation between generosity and childbearing probably reflects a participation effect more than a pro-natalist effect.

To review, the discrete time hazard models indicate that the generosity of welfare benefits has, at most, a very modest impact on young women's decisions to have children in general and to bear children out-of-wedlock. AFDC generosity is positively correlated with the incidence of births linked to the start of a spell of AFDC receipt. This, however, probably reflects an increased likelihood of participation given a qualifying birth rather than a pro-natalist impact. Next, I examine AFDC's impact on subsequent births.

DISCRETE TIME HAZARD MODELS FOR SECOND BIRTHS

Recent debates have focused on whether AFDC encourages welfare recipients to have even more children. There are several reasons to believe that it might. First, the amount of money a woman can receive in aid rises as she has more children. Second, the basic generosity of AFDC may provide adequate support to raise children without a father. And third, simple exposure to AFDC, regardless of generosity, may induce welfare recipients to continue to have children that they can only support with the aid of public assistance. To explore these hypotheses, I examine the factors affecting women's decisions to have a second child and to receive AFDC to support that child.

The explanatory variables are basically the same as in the first-birth models; however, generosity is measured by the maximum AFDC benefit for a family of three as well as by the extra

support a woman receives for having an additional child (the difference between the AFDC guarantee for a family three and the AFDC guarantee for family of two in a woman's state of residence). I also include a variable indicating if a woman ever received AFDC to support her first child at any time prior to the year at risk in order to detect the impact of exposure to welfare on future childbearing decisions. In addition to including a series of time dummies measuring how long a woman is at risk of having a second child, I also add a variable for the respondent's age. A woman enters the sample in the year following her first birth and remains in the sample until she has a second birth or turns twenty-three.[14] As before, I censor cases when women become nonrespondents. I observe 417 second births, 126 of which are AFDC births, in 2,526 person-years.[15]

Table 7 shows the results from the hazard models. Neither the generosity of AFDC nor the supplementary benefit for an additional child can explain any of the variation in mothers' subsequent childbearing decisions.[16] The estimated coefficients are trivially small, statistically insignificant, and in some cases, surprisingly signed. Indeed, even if one were to evaluate the impact of generosity at two standard deviations above the estimated coefficient, a $100 rise in AFDC benefits would induce only a 2.6 percentage point rise in the chance of a second birth.

Exposure to AFDC has a modest but statistically insignificant impact on subsequent births. The chance that a woman who had an AFDC first birth has a second birth in any given year is 2.1 percentage points higher than the chances of a second birth to a mother who did not receive welfare. Mothers exposed to AFDC after having their first child are 6.3 percentage points more likely to have an AFDC second birth than other mothers. Although this is a significant and substantial effect, when the findings from the two models are taken together, they suggest that exposure to AFDC does not so much encourage women to have more children but rather that poor women who do have an additional child will require continued public assistance. The increased likelihood of an AFDC second birth for AFDC mothers thus reflects continued need rather than a response to welfare.[17]

TABLE 7

Effect of AFDC on the Probability of Second Births: Discrete Time Hazard Model Results

	Any 2nd Birth	AFDC 2nd Birth
Intercept	-2.750*	-4.280
	(1.174)	(2.10)
AFDC Benefit, Family of 3 ($100s)	-0.0078	-0.00096
	(0.0986)	(0.164)
AFDC Gap	0.0011	0.00039
	(0.0051)	(0.00829)
AFDC Exposure	0.151	1.332*
	(0.137)	(0.231)
Age	-0.0301	-0.0281
	(0.0376)	(0.0651)
Average Wages ($1000s)	0.0195	0.118*
	(0.0333)	(0.055)
Unemployed < 6%	-0.0493	-0.088*
	(0.190)	(0.367)
Unemployed 6–12%	0.145	-0.100
	(0.149)	(0.240)
Central City	-0.168	-0.0887
	(0.154)	(0.245)
Education < 12	0.365*	0.587*
	(0.131)	(0.228)
Education > 12	-0.115	-0.105
	(0.205)	(0.369)
Spouse	0.726*	-0.633*
	(0.136)	(0.281)
Black	0.288*	0.740*
	(0.150)	(0.259)
Hispanic	0.110	0.115
	(0.153)	(0.299)
Mom Education < 12	0.299	0.405
	(0.261)	(0.519)

(table continues)

TABLE 7 (continued)

	Any 2nd Birth	AFDC 2nd Birth
Mom Education = 12	0.317 (0.270)	0.228 (0.534)
Two Parents	-0.224 (0.117)	-0.0312 (0.208)
Ln Family Income	-0.0051 (0.0823)	-0.185 (0.139)
Year 2	0.868* (0.146)	0.458* (0.242)
Year 3	0.749* (0.171)	0.0206 (0.300)
Year 4	0.314 (0.218)	-0.586 (0.407)
Year 5	0.154 (0.276)	-0.822 (0.521)
Year 6	0.0475 (0.387)	-0.0760 (0.538)
Year 7	0.706 (0.398)	-0.437 (0.789)
Log likelihood	-1,080.9	-433.6
Probability of a birth	0.165	0.050
Person-years	2,526	2,526

Source: Author's tabulations from the National Longitudinal Survey of Youth.

Notes: Standard errors in parentheses. All dummy variables equal one in the affirmative. The constant refers to women in the first year after their first birth, living in SMSAs with unemployment rates in excess of 12 percent. Their mothers completed more than twelve years of schooling, while the women themselves have completed exactly twelve years.

*Indicates significance at the 5 percent level.

Other factors also affect young mothers' subsequent childbearing decisions. For example, relative to high school graduates, high school dropouts are 5 percentage points more likely to have a second child and 2.8 percentage points more likely to have an AFDC second birth in any given year.

Interestingly, women's family backgrounds and demographic characteristics have very small effects on subsequent childbearing. Indeed, while women raised in two-parent families are less likely to have a second child in any year up through the age of twenty-three, they are no less likely to have an AFDC second birth. And family income and mother's education have no statistically significant impact on the decision to have a second child. The chances of any second birth and an AFDC second birth are higher for black mothers than for white and Hispanic mothers; the differences between whites and Hispanics, however, are not statistically significant.

The environment in which a young mother lives also affects her future childbearing decisions. For example, if the prevailing annual wage rate in a woman's state of residence were $1,000 higher, the chance of an AFDC second birth in a given year would rise by 0.6 percentage points, on average. And women living in low-unemployment areas are 4.2 percentage points less likely to have an AFDC second birth than women living in high-unemployment areas.

Table 8 shows the predicted probability that a "typical" woman has a second birth in a given year. The "typical" woman is similar to the woman described earlier except that her AFDC guarantee for a family of three is set at $364/month, which represents a $68.40/month increase over the benefit level for a family of two. Also, she did not begin receiving AFDC upon her first birth. Finally, the average annual wage rate is set at $20,319.

If this "typical" woman had her first child at age twenty, the probability that she would have a second child between the ages of twenty and twenty-one is 7.24 percent. Her chances of having an AFDC second birth in that year would be 2.74 percent. Had she had her first child at nineteen, the

TABLE 8

Predicted Probability of Having a Second Child for Women with Different Characteristics

	Any 2nd Birth	AFDC 2nd Birth
Woman with mean characteristics	0.152	0.0290
Typical 21-year-old, first child born @ age 20[a]	0.0724	0.0274
Typical 21-year-old, first child born @ age 19	0.157	0.0426
Received AFDC[b]	0.178	0.144
Raised in a single-parent family[c]	0.213	0.148

Source: Author's tabulations from the National Longitudinal Survey of Youth.

[a]The typical woman lives in a state where the AFDC guarantee for a family of three is $364/month, the increment for a second child is $68.40/month, and the average annual wage is $20,319. She is white and lives in the central city of an SMSA where unemployment is in the 6–12 percent range. She was raised in a two-parent family of average means. Both she and her mother are high school graduates. She is unmarried, and she did not receive AFDC within three months of having her first child.

[b]Same as woman directly above except she received AFDC.

[c]Same as woman directly above except she was raised in a single-parent household.

chances of both types of births would have increased dramatically to 15.7 percent for any second birth and to 4.26 percent for an AFDC second birth.

The chances of this twenty-one-year-old who had her first child at age nineteen having a second birth would have risen by 2.1 percentage points if she had received AFDC to support her first child. The chances of an AFDC second birth, however, would have risen by over 10 percentage points to 14.4 percent. Being raised in a single-parent family would have further increased the chances of a birth; the probability of such a woman having a second child in the year in which she turned twenty-one would have reached 21.3 percent, while the chances of an AFDC birth would have climbed to 14.8 percent.

Several questions are left unresolved by these comparisons: are welfare recipients more sensitive to variation in welfare benefits than women who manage to raise children without public assistance? are the childbearing decisions of women from low-income, single-parent families more sensitive to welfare's effects? To address these questions, I estimate two additional discrete time hazard models for second births. The results appear in table 9.

First, I interact the exposure indicator with the monthly AFDC maximum. Surprisingly, the estimates suggest that women who received AFDC to support their first children are less sensitive to the program's generosity than other young mothers. The impact, however, is not statistically significant. Next, I restrict my sample to mothers raised in low-income, single-parent households. Again, the impact of generosity is insignificant and surprisingly signed. And women in this sample who received AFDC in the past are not more likely to have a second birth than other mothers. In fact, the coefficient on the exposure indicator is negatively signed, although the impact is not significant. The chances of an AFDC second birth, however, are higher for this group. The measured impact is statistically significant at the 10 percent level.

TABLE 9

Effect of AFDC on the Probability of Second Births: Alternative Specifications

	Any 2nd Birth	AFDC 2nd Birth
I. Interaction		
AFDC Benefit, Family of 3 ($100s)	0.0440	0.0418
	(0.103)	(0.183)
AFDC Gap	0.00054	-0.00038
	(0.0051)	(0.0083)
AFDC Exposure* AFDC Benefit	-0.0119	-0.0611
	(0.068)	(0.119)
Log likelihood	-1,081.2	-433.5
II. Women from Low-Income, Single-Parent Households		
AFDC Benefit, Family of 3 ($100s)	-0.138	-0.247
	(0.306)	(0.496)
AFDC Gap	0.0095	-0.0029
	(0.0149)	(0.0228)
AFDC Exposure	-0.212	0.911
	(0.350)	(0.524)
Log likelihood	-160.2	-74.9
Probability of a birth	0.155	0.064
Person-years	407	407

Source: Author's tabulations from the National Longitudinal Survey of Youth.

Notes: Standard errors in parentheses. Specifications are identical for those in the basic models; only the coefficients measuring AFDC's impact are shown. The complete regression results are available from the author.

These results suggest that the subsequent childbearing decisions of women from poor, single-parent families, and of women who received AFDC in the past, are not more sensitive to the generosity of the AFDC program. Furthermore, young mothers who received AFDC are no more likely to have a second child in any given year through their twenty-third birthday than other mothers. Thus, the positive correlation between exposure and AFDC second births probably reflects continued need rather than an unintended pro-natalist impact of AFDC.

SUMMARY AND CONCLUSIONS

Politicians, the press, and the public have latched onto the argument that the welfare system encourages childbearing, and this argument is theoretically sound. However, there are real costs to raising children, and the support provided by the AFDC program is quite small relative to these costs. My findings suggest that the generosity of a state's AFDC program has little impact on women's childbearing decisions through the age of twenty-three. This conclusion is substantially similar to the results of previous studies that have focused on births to teenagers.

By considering AFDC's impact on young mothers' subsequent childbearing decisions, I address the concerns of policymakers who seek to discourage long-term dependence by restricting benefits for women who have additional children while on welfare. I find that neither the baseline benefit level nor the incremental benefit for additional children influences young mothers' decisions to have second children through the age of twenty-three. Furthermore, mothers who received AFDC to support their first children are not more likely to have subsequent children than other mothers; however, if they do have a second child, they are more likely to receive AFDC to support that child.

Thus, while restricting benefits for young mothers who have additional children while on welfare may carry a significant symbolic message--that long-term dependence on public assistance is not an acceptable lifestyle--it is unlikely to have a substantial affect on women's childbearing

decisions and reduce state welfare spending. Consequently, restricting or sharply reducing AFDC benefits for needy women and children is difficult to justify.

Endnotes

[1]Censoring cases in which women marry is appropriate for Plotnick (1990) because he focuses on out-of-wedlock births. The "insurance value" of AFDC, however, may affect the fertility decisions of married women, too. Furthermore, a married woman can have an AFDC birth if she lives in an AFDC-UP state or is abandoned by her husband shortly after giving birth.

[2]The NLSY oversamples individuals from low-income households. Since I use unweighted data, tables 1 and 2 describe only my sample and are not intended to be nationally representative.

[3]All monetary values in this paper reflect 1988 CPIX dollars.

[4]Duncan and Hoffman (1990) allow receipt to begin within two years of the birth.

[5]This research focuses on the "economic" determinants of young women's childbearing decisions. For a comprehensive discussion of the effects of attitudes on teenage childbearing, see Plotnick (1992).

[6]For cases in which some of the data are missing, I impute values using the means from the sample that had valid responses. This procedure will not affect the estimated coefficients and will preserve sample size if the data are missing at random. To test this, all models were estimated with imputation flags; the flags were uniformly statistically insignificant and did not perturb the estimated coefficients. Thus, all reported regressions exclude the imputation flags.

[7]Factors other than the maximum benefit level affect AFDC's generosity. For example, states with very similar benefit levels may have very different asset tests. Also, a woman receiving AFDC may also receive Food Stamp benefits; the variation in AFDC plus Food Stamps across states is considerably lower than the variation in AFDC benefits alone.

[8]Even though less-educated women may have children at younger ages, it is difficult to assign causality: having a child at a young age makes it difficult to obtain more education. To test the importance of this potential endogeneity, I reestimated all three models omitting the education

variables. The estimated coefficients on the remaining regressors were not particularly sensitive to this change in specification.

[9]Women with good economic opportunities may be more likely to marry a man with good earnings prospects, and this may encourage marital births (see Goode [1964] and Mare [1991]).

[10]Note that there are fewer birth events reported in the hazard models than in the description of the sample (table 2). This occurs because some women leave the sample for a year and then return. As such they are included in the description of the sample of twenty-three-year-olds but are censored in the hazard models. Also, several women had births prior to 1979; these women are included in the tabular analysis but omitted from the hazard models. To assess the importance of this selection, I tested several models registering births in 1978 and using 1979 values for the time-varying independent variables. My findings were robust to this specification change.

[11]I calculate the average change in probability of a birth in a given year as:

$$d\hat{P}(t) = P(t) * (1 - P(t)) * \hat{\beta}_{AFDC} * dAFDC =$$
$$d\hat{P}(t) = (0.068) * (0.932) * (0.0211) * 100 = 0.0013$$

where P(t) represents the ratio of births to person-years.

[12]The estimated impact of AFDC's generosity on the probability of an out-of-wedlock birth by age twenty-three is similar in magnitude and significance to the estimates obtained by Duncan and Hoffman (1990) in their study of births to black teenagers. Plotnick (1990), on the other hand, finds that generosity has a significant pro-natalist affect on the childbearing decisions of white teenagers. When I restrict my sample to white teenagers and measure generosity as AFDC plus Food Stamps, welfare's estimated impact does in fact increase in magnitude but remains statistically insignificant.

Plotnick's model contains four additional welfare policy variables and slightly different control variables, which may account for the remaining difference in our findings.

[13]In alternative specifications, I measured generosity using the maximum benefit from AFDC plus Food Stamps. While the coefficients on the generosity measure increased in magnitude, there was no change in statistical significance. The estimated coefficients on the other independent variables were largely unaffected by this change.

[14]There are no cases in which a woman has two births in the same year in my sample.

[15]Note that I do not estimate a model for out-of-wedlock second births; rather I simply control for marital status in the hazard models for any second birth and AFDC-linked second births. Also, I only estimate models pooling women from the three racial/ethnic groups.

[16]The AFDC benefit level for a family of three and the incremental benefit for an additional child are somewhat collinear. I fitted models including only the benefit level and only the increment and found that the estimated coefficients remained trivially small and statistically insignificant.

[17]The measured impact of exposure, however, is quite sensitive to the way in which the exposure variable is constructed. For example, when I measure exposure narrowly, counting only women who had AFDC first births as being exposed to welfare and ignoring all later AFDC spells, the impact is half as large. On the other hand, when I extend exposure up until one month before the birth of a second child, the impact quadruples. This measure, however, can only be defined asymmetrically--women who have no birth in year t can only be exposed through December of year t-1, while women having a child can be exposed up until the month prior to the birth. Furthermore, this measure picks up women who begin receiving AFDC after they are already pregnant with their second child and may not be able to work. Although the models presented in the text use the most appropriate measure of exposure, the relationship between the timing of AFDC receipt and second births merits further research.

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