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**Welfare and Out-of-Wedlock Childbearing:
Evidence from the 1980s**

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Abstract

This study uses the National Longitudinal Survey of Youth, supplemented with state data on welfare policy, to provide new evidence on the link between welfare and teenage out-of-wedlock childbearing in the 1979-1984 period. Logit cross-section and discrete-time hazard models are estimated separately for Hispanics, blacks and whites.

The key finding is that, in contrast to the results shown in other work, state welfare policy appears to influence the behavior of blacks and whites. For whites, the welfare guarantee bears a significant, positive relationship to the likelihood of premarital childbearing. For blacks, an index of stringency of a state's eligibility rules for AFDC and a dummy variable for the presence of an AFDC-UP program are significant and negative. Hispanic behavior is not associated with any indicator of state welfare policy. It seems likely that black and white teens are not responding to any one particular attribute of welfare, but instead to a general perception of the benefits and restrictiveness of the program in their area.

Welfare and Out-of-Wedlock Childbearing: Evidence from the 1980s

INTRODUCTION

The causes, consequences, and cures of teenage out-of-wedlock childbearing have received sustained attention from the public at large, public policymakers, advocacy groups, and social policy analysts. While there may be consensus that the consequences are generally undesirable for mother and child and that reducing the number of out-of-wedlock births is an important policy goal, uncertainty and controversy dominate discussions of the major causes and the most promising and appropriate remedies.

This paper provides new evidence on the relationship between welfare benefits and teenage out-of-wedlock childbearing, a topic of perennial controversy. It uses the National Longitudinal Survey of Youth (NLSY) to follow the fertility and marital history of young girls from 1979 to 1984. The data capture fairly recent behavior, while other research on this topic relies on data from the mid-1970s or earlier. The analysis merges the personal and family background characteristics in the NLSY with state data on welfare policy. It uses logit cross-section and discrete hazard models to explore the impact of welfare policy variables on the probability that a girl will give birth out of wedlock.

Section 1 briefly reviews the literature on welfare and out-of-wedlock childbearing. Section 2 discusses the model, data, and methods. The findings are in section 3. Contrary to those in other recent work, they suggest that state welfare policy is related to out-of-wedlock childbearing by blacks and whites. The fourth section offers a tentative reconciliation of these divergent findings and provides illustrative calculations of the effects of significant variables.

PREVIOUS RESEARCH ON WELFARE AND OUT-OF-WEDLOCK CHILDBEARING

As Moore and Burt (1982) and others have observed, a young girl's route from virginity to bearing a child out of wedlock involves a sequence of choices, which may be implicit or explicit, active or passive:

Whether to initiate (and continue) sexual intercourse;

Whether to practice contraception and, if so, choice of method and diligence in using it;

Whether to carry a pregnancy to term, abort it, marry the father where this is a viable option, place the child for adoption, or raise it as an unmarried mother.

The literature has examined determinants of each of these choices.[1] The decisions to initiate sexual activity and use contraceptives have been extensively analyzed. Factors directly associated with bearing a child when unmarried have, surprisingly, received relatively less attention despite the wide interest in this way of resolving a pregnancy. There are only eleven microdata-based studies which analyze the outcome of having a child out of wedlock.[2]

It seems highly unlikely that welfare would affect decisions about initiating sexual activity. And, given what is known about determinants of contraceptive use by adolescents, it is rather unlikely that welfare would influence this decision either. There is, in any case, no evidence in the literature that welfare affects these decisions.[3]

The eleven microdata-based studies in which having a child when unmarried is a dependent variable follow two general empirical modeling approaches. One examines the pregnancy resolution decisions of unmarried women, conditional on their being pregnant. Six studies take this approach. Of these, only Moore and Caldwell (1977) includes welfare variables among the explanatory factors. The second adopts a reduced-form model by examining factors associated with out-of-wedlock childbearing among all women in the sample regardless of their pregnancy status. Five microdata studies take this second approach.[4] And of them, only Ellwood and Bane (1985) and Moore (1980) examine welfare policy variables.[5]

Moore and Caldwell use data from 1971 to analyze the choices of premaritally pregnant teenagers to abort, marry, or give birth out of wedlock. Regression findings show that higher AFDC benefits have a statistically significant negative impact on the likelihood of abortion. This necessarily implies a greater likelihood of either marriage or premarital motherhood. However, the regressions do not yield statistically significant effects of benefits on either of these outcomes considered singly. Moreover, the acceptance rate (ratio of applications accepted for AFDC to all AFDC applications) has a significant negative impact on out-of-wedlock childbearing, which theory would not predict. The authors view the overall set of findings as not supporting the contention that more generous welfare programs induce premarital childbearing. The study also finds that the presence of an AFDC-UP program is associated with fewer premarital births, as one would expect, since this program allows young couples to marry without automatic disqualification from AFDC payments.

Among the reduced-form analyses, Ellwood and Bane's widely cited study using data from 1976 reports no relationship between AFDC benefits and out-of-wedlock childbearing among blacks or whites in several age groups. This study relies on one basic measure of welfare policy, the AFDC guarantee. Moore (1980) uses the same data base to explore the effect of a large variety of welfare and other policy variables on white, black, and Hispanic teenage out-of-wedlock childbearing. Of fourteen models that considered a measure of welfare benefits, just one found a significant effect in the plausible positive direction. Two found puzzling significant negative effects, while eleven found no significant effect. Among blacks, out-of-wedlock childbearing was significantly higher in states where the income of the mother's parents is not considered in determining the mother's and infant's eligibility for AFDC. Here the acceptance rate was unrelated to out-of-wedlock childbearing, as were several other measures of welfare administrative policies. The weight of the evidence from both studies implies that more liberal welfare benefits and policies do not provide detectable incentives for out-of-wedlock childbearing.

A number of studies using aggregate data on state or SMSA birthrates out of wedlock have also examined welfare effects.[6] With the exception of Janowitz (1976), none finds evidence of a positive association between more liberal welfare policies and premarital births. Thus, such studies are consistent with the message from the analyses of microdata.

MODEL AND EMPIRICAL PROCEDURES

This study adopts the reduced-form approach by focusing on the determinants of births while unmarried among all teenage girls in the sample, not just those who become pregnant. It models the likelihood of such a birth as a function of welfare policy, controlling for family background and personal variables. Some variables may affect the likelihood primarily by influencing, for example, age at first intercourse, while others may matter because they primarily influence contraceptive use or the choice to bear a child, once pregnant. The results show the net impact of each variable's direct and indirect effects on the chances of bearing a child out of wedlock.

For variables having offsetting effects on the choices leading up to becoming an unwed mother, a reduced-form approach will obscure these effects and may show a zero net impact. For example, girls who are more religious might be less likely to have premarital sex but, should pregnancy occur, less likely to abort. But certainly, one would expect any impact of welfare, the principal focus of this study, to show up in a reduced form. If welfare affects this behavior at all, it most likely would tend to increase the likelihood of getting pregnant and, once pregnant, the likelihood of bearing the child and not marrying or aborting. There is no reason to expect welfare to decrease the likelihood of any of the actions that lead to a premarital birth. To the extent that one ultimately cares about the net impact of policy interventions on out-of-wedlock childbearing, a reduced-form approach still provides useful information.

<u>Data, and Sample</u>

The primary data source is the National Longitudinal Survey of Youth (NLSY). The NLSY began in 1979. Reinterviews have been conducted in succeeding years. This study's sample includes girls age 14 or 15 in 1979 who at that time reported never being married and never having had a child. The sample size is 1184, including 311 blacks and 220 Hispanics.[7] The sample represents 3.49 million persons--238,000 Hispanics, 499,000 blacks and 2.76 million nonblack, non-Hispanic persons, hereafter called "whites." All results are based on weighted observations.[8]

The NLSY provides data on many family background and personal characteristics. State data on welfare policy were gathered separately and appended to each NLSY observation. NLSY fertility and marriage information allow determination of whether and when a birth occurred out of wedlock. Of the 1184 sample members, 225 had a child out of wedlock by 1984, the last year for which this information could be constructed with the NLSY data available at the start of this study. The Appendix table defines the variables used in the analysis and gives their means and standard deviations.

The data capture fairly recent behavior from 1979 through 1984, while other microdata studies, as well as analyses of aggregate data, use data from the mid-1970s or earlier. Since the fertility and marital histories of all sample members are complete through age 19, we observe complete teenage out-of-wedlock childbearing behavior.

There are marked differences in the observed birthrate out of wedlock across the three race/ethnic groups. Thirty-five percent of the black girls had a child out of wedlock by age 19. By age 19, 15.4 percent of Hispanics and 5.5 percent of whites had a child out of wedlock. Because of this and, as several studies have shown, because the effects of explanatory variables tend to differ among the groups, each group's data are analyzed separately.[9]

Statistical Method

The study uses logit and discrete hazard methods to analyze determinants of out-of-wedlock childbearing. For the cross-section logit estimates, the variable of interest is the probability of giving birth out of wedlock by the time a girl reaches age 19. The standard logit formulation is

$$\log[P_i/(1 - P_i)] = a + \underline{b}'\underline{X}_i,$$

where P_i is the probability and $\underline{X}_i$ is a vector of explanatory variables. For time-varying variables such as the size of the welfare guarantee, values for the year the girl turned 19 are used. This method, which treats the data as if they are a cross section of 19-year-olds, is similar to methods used in earlier research which used cross-section data sets.[10]

Because the panel nature of the NLSY permits it, the study also uses a discrete-time hazard-rate model. The model analyzes the conditional probability that a birth out of wedlock will occur at time t to girl i, given that it has not already occurred. The discrete-time hazard rate is

$$P_{it} = \Pr[T_i = t \mid T_i \,.\, t, \underline{X}_{it}],$$

where T is the discrete random variable giving the uncensored time of a birth out of wedlock and $\underline{X}_{it}$ is a vector of explanatory variables. I adopt a standard logistic parameterization of the hazard rate:

$$\log[P_{it}/(1 - P_{it})] = a + \underline{b}'\underline{X}_{it}it.$$ [11]

To test for duration dependence I enter separate dummies for each year of age beyond 15, the first age at which a girl appears in the sample.[12] A standard logit program estimates the coefficients using data for all years a girl is in the sample, up to and including the year in which a premarital birth occurs or she is censored.[13]

Censoring occurs for three reasons. Most often the girl neither marries nor gives birth out of wedlock by 1984, the last year in the data set. Attrition from the NLSY creates some censoring.[14] Third, if a girl marries in year t, I treat years t+1 through 1984 as censored.

The logistic hazard-rate model has an advantage over the standard cross-section probability models that have been used in other analyses. A cross-section study might use, say, 1984 data on welfare benefits and other time-varying covariates (along with time-invariant family background and personal characteristics) to analyze the likelihood that a woman would bear a child out of wedlock by 1984. But a woman who had such a birth in a prior year was presumably responding to conditions in that earlier year. Thus, the cross-section regression results would be biased by measurement error.[15] Discrete-time hazard-rate models, in contrast, better incorporate time-varying variables.

Specification

The study examines the effects of five indicators of state welfare policy. The first and principal one is the cash AFDC guarantee for a family of four plus the amount of food stamps the family would receive if its only income was the cash guarantee. Standard incentive arguments imply a positive coefficient for this AFDC plus food stamp guarantee, though earlier work suggests it may not be statistically significant. The second is an index of the stringency of eligibility conditions. Since higher values of the index imply more difficulty in qualifying for AFDC, one would expect this variable to be negatively related to out-of-wedlock childbearing. Third is a dummy for the presence of the AFDC-UP program, which reduces the marginal benefit of raising a child born out of wedlock relative to marrying the father and, thus, would tend to encourage pregnant teenagers to marry the fathers (and vice versa). Hence, theory suggests this variable should have a negative coefficient as well.

Fourth is an index of the availability of welfare benefits to pregnant women before their children are born, scaled so that higher values signify less availability. Since a higher value implies that a teenager faces a less generous welfare program, holding benefit levels constant, one expects a negative relation with premarital childbearing. The last indicator of welfare policy is an index of requirements of AFDC recipients, based on rules about participation in work and rehabilitation programs and assisting in locating absent fathers. Higher values signify more required participation in such activities and a less attractive welfare system, other things equal. Hence, this index would also be expected to have a negative coefficient.

Besides the welfare policy variables, all models include as controls five family background and personal variables that earlier research has suggested are important determinants of out-of-wedlock childbearing. These are mother's education, presence of welfare income in the girl's family in 1978, family income, family structure at age 14, and religiosity. The welfare and family income variables are measured at age 14, which is prior to any premarital birth and, hence, exogenous to it. Family structure is indicated by dummy variables for families with a mother as the only adult present, a mother and stepfather present, or a residual "other" category. The omitted category is a family with both natural parents present. Religiosity is indicated by a series of dummies for the frequency of attendance at religious services.

FINDINGS

Effects of Welfare Policy Variables

Table 1 contains the logit findings for all five welfare policy variables, controlling for family background factors. One message that clearly emerges is that the effects of welfare markedly differ for Hispanics, blacks, and whites. The lack of common significant policy variables across the groups is surprising.

For Hispanics, none of the five are significant. This may result from the small sample and relatively high correlations among some of the welfare variables.

For blacks the indexes reflecting the guarantee, pregnancy benefits, and requirements are not significant. But the index of eligibility stringency and the dummy variable for the presence of the UP program are. The negative coefficients on the eligibility index and UP dummy are consistent with theoretical expectations. Both remain significant when region variables are added.

Table 1

Effects of Welfare and Family Background on the Probability of Having an Out-of-Wedlock Birth by Age 19, Logit Results
(Standard errors in parentheses)

	Hispanics	Blacks	Whites
AFDC + food stamp guarantee	.376 (.575)	.024 (.381)	.837** (.350)
Index of eligibility stringency	3.398 (3.554)	- 5.597*** (1.844)	-1.343 (2.538)
Presence of AFDC-UP	.251 (1.187)	- 1.070* (.551)	.526 (.890)
AFDC pregnancy benefits	- .231 (.427)	.087 (.274)	.209 (.303)
Recipient requirements	.250 (1.086)	- .654 (.609)	-1.866** (.967)
Mother's education	-.115 (.081)	- .094 (.068)	- .356*** (.113)
Family income at age 14 (in $000's)	.045 (.045)	- .063*** (.023)	.001 (.021)
Welfare income in 1978	.065 (.699)	.628* (.372)	1.056 (.771)
Family structure:			
Mother only	1.337* (.790)	- .315 (.381)	- .745 (.892)
Mother and stepfather	- .598 (1.404)	1.189** (.587)	- 3.623 (3.145)
Other	- .447 (1.322)	- .454 (.520)	1.598** (.738)

Table 1 (continued)

	Hispanics	Blacks	Whites
Religious attendance:			
Never	- 12.19 (177)	.652 (.690)	- .012 (.687)
Rare	- .178 (.705)	.088 (.396)	.459 (.664)
Occasionally	.685 (.631)	- .166 (.378)	1.153 (.649)
Mexican-American ethnicity	1.427* (.782)		
Mexican ethnicity	- .934 (1.144)		
Puerto Rican ethnicity	.743 (.952)		
Constant	-5.191 (5.118)	5.225 (3.532)	- 3.800 (3.744)
N (unweighted) =	165	230	488
Log-likelihood =	- 52.4	- 133.8	- 89.4
Chi-squared	32.4	38.2	37.8

* = significant at 10%, ** = significant at 5%
*** = significant at 1%.

For whites, two other welfare variables appear important. The welfare guarantee is strongly significant and has the expected positive sign. The requirements index is also significant in the expected direction. The other three are not associated with out-of-wedlock childbearing. When region variables are added, the guarantee remains strongly significant but the requirements index does not.

The premarital-birth incentive effect of welfare benefits has been a major source of controversy with important policy implications and a focus of earlier work. Thus, this study explored a variety of specifications to check the robustness of its findings.

For Hispanics, the guarantee remained insignificant whether entered alone or with the other welfare policy indicators, in linear, squared, or logged form, or as the ratio of the guarantee to state per capita income (a measure of welfare income relative to other financial opportunities). The same was true when either the cash AFDC guarantee or a guarantee measuring AFDC cash plus food stamps plus the insurance value of Medicaid was examined. Spline specifications, to examine whether welfare's behavioral effect has a "tipping" point above which the incentives for out-of-wedlock childbearing become sharply stronger failed to uncover a significant relation. The other four indicators of welfare policy also consistently remained insignificant under alternative specification. Thus, there is no evidence from this sample that welfare policy influences Hispanic out-of-wedlock childbearing.

For blacks, similar trials yielded the same conclusion about the insignificance of the welfare guarantee, while the significant effects of the AFDC-UP and eligibility-stringency variables consistently appeared.

For whites, the significant association between the welfare guarantee and births out of wedlock was robust under nearly all variations. Only when the AFDC cash guarantee plus food stamps plus insurance value of Medicaid was used did the coefficient become insignificant.[16]

Discrete-time hazard-rate models which replicate the specifications in Table 1 appear in Table 2. The only variables added to the specification are age dummies to examine the time pattern of out-of-wedlock childbearing, holding other things constant. Since the results for the coefficients on the family background variables are similar to those in Table 1, they do not appear, though they were included in the models.

For whites the hazard and cross-section results generally agree. The AFDC-food stamp guarantee and the requirements index remain significantly associated with out-of-wedlock childbearing in the hazard model. When region variables are added, again the guarantee remains significant but the requirements index does not. The hazard estimate yields a significantly positive coefficient on the pregnancy-benefits index. This is contrary to expectation, since it indicates that the less available are these benefits the more likely is a premarital pregnancy, and presents a puzzle without clear explanation.

For blacks the eligibility-stringency index is again significant in the expected negative direction, though the size of the coefficient is much smaller. The AFDC-UP dummy is no longer associated with out-of-wedlock childbearing. The other three welfare variables are insignificant in both tables. The addition of region dummies does not change the results for the eligibility or AFDC-UP variables, but the

Table 2

Effects of Welfare Policy Variables on the Probability of Having an Out-of-Wedlock Birth in a Year, Controlling for Family Background, Hazard-Rate Results
(Standard errors in parentheses)

	Hispanics	Blacks	Whites
AFDC + food stamp guarantee	- .242 (.430)	- .042 (.205)	.532** (.271)
Index of eligibility stringency	3.869** (1.745)	- 1.492* (.766)	.954 (1.180)
Presence of AFDC-UP	1.788 (1.175)	- .032 (.395)	.685 (.612)
AFDC pregnancy benefits	.086 (.205)	.122 (.094)	.365** (.169)
Recipient requirements	1.093 (.866)	- .60 5 (.429)	-1.467* (.877)
N (unweighted) =	776	1077	2334
Log-likelihood =	- 81.9	- 290.1	- 116.3
Chi-squared	47.3	54.3	44.5

Note: Estimates included constant term and all family background variables shown in Table 1.

* = significant at 10%, ** = significant at 5%
*** = significant at 1%.

requirements index then becomes significant with the expected negative coefficient.

All welfare variables were insignificant in the Hispanic logit model. The Hispanic hazard estimates are similar, except that the eligibility index is significant and, contrary to expectation, positive. This, too, is a puzzling result with no obvious explanation.

One may reasonably infer from the totality of the empirical results that welfare policy was related to out-of-wedlock childbearing by black and white adolescents during the early 1980s. The lack of common significant policy variables across the groups is surprising. Perhaps different attributes of AFDC do affect blacks and whites differently, but it is more likely that the correlation among program attributes makes it difficult to pin down the exact source of the effect. And it is certainly possible that individuals are not responding to any one attribute in particular, but instead to their general perceptions of the benefits and restrictiveness of the program in their area. It would, then, be unwise to draw conclusions or recommendations that hinge on the precise magnitudes of those coefficients which pass significance tests. The overall impression, however, is that there is a link between more generous, less restrictive welfare programs and greater out-of-wedlock childbearing.

Family Background Effects

Though effects of family background variables are not the focus of this study, they merit brief discussion. As for the welfare variables, these effects markedly differ among Hispanics, blacks, and whites. For each group the directions of impact of those variables that proved significant are in the anticipated directions. Again, the lack of common significant family background variables across the three groups is surprising.

Mother's education is a significant determinant of out-of-wedlock childbearing only for whites and has the predicted negative coefficient. The coefficient is also negative for Hispanics and blacks, but fails a 10 percent t-test. Family income has a significant negative effect on black girls' premarital childbearing, and the presence of welfare income has a significant positive effect. Neither appears to affect Hispanics and whites.

The coefficients on the dummy variables for family structure at age 14 indicate the impact of each structure relative to the omitted category of living in a family with both natural parents present. Positive effects would be consistent with expectations. One variable is significant for each group, but it is a different one for each. For Hispanics, living in a mother-only family raises the likelihood of giving birth out of wedlock. For blacks, living in a mother-stepfather family raises the likelihood. And for whites, living in the residual "other" category raises the likelihood.

Religiosity is insignificant for all groups. This may reflect offsetting forces in that more religious girls might be less likely to have premarital sex but, should pregnancy occur, less likely to abort.[17]

For Hispanics, ethnic background is a significant predictor of out-of-wedlock childbearing. A dummy variable for Hispanics reporting Mexican-American ethnicity is associated with sharply higher chances of having a child out of wedlock.[18]

DISCUSSION AND ILLUSTRATION OF THE FINDINGS

Welfare Policy Results Compared to Other Studies

Few would disagree with the plausibility of a theoretical link between welfare policy and out-of-wedlock childbearing. Yet careful recent empirical work has not uncovered evidence of it. Hence, this study's findings, especially the strong effect of the guarantee on white births out of wedlock, are unexpected and, given the heated rhetoric surrounding this issue, potentially provocative. What might reconcile these findings with earlier ones?

Other studies provide strong empirical evidence that welfare affects other demographic choices such as divorce, remarriage, and choice of living arrangement by female heads of families, but fail to find a link between welfare and out-of-wedlock childbearing. Ellwood and Bane (1985) reconcile the body of evidence by suggesting that, the greater the long-run consequences of a demographic decision, the weaker the effects of financial incentives such as those created by welfare. Thus, finding no effect of welfare on out-of-wedlock childbearing, an event with profound long-run consequences, is not inconsistent with finding significant effects of welfare on the other behaviors.

Why does this study find significant effects of the welfare guarantee for whites whereas others do not? While one can always attribute these results to differences in sample, variable construction, and estimation methods, a tentative alternative explanation is also available. One can plausibly argue that by the 1980s the stigma associated with bearing a child out of wedlock and the broad social controls that inhibited out-of-wedlock childbearing had declined relative to their strength in prior years.[19] In earlier years these psychological controls may have sufficiently damped down potential responses to the economic incentives of welfare to make these responses too small to achieve statistical (or substantive) significance. If psychological constraints on behavior have weakened in more recent years, economic incentives would have greater influence on behavior.

Now, the findings of no impact of welfare benefits in Ellwood and Bane's (1985) influential study, in Moore (1980), Moore and Caldwell (1977), and studies that used aggregate-level data, are all based on data from the mid-1970s or earlier. The results reported here, based on data covering 1979 to 1984, could reflect a shift in behavior resulting in greater sensitivity to financial incentives if the above-hypothesized change in the social environment had occurred.[20]

The finding that black out-of-wedlock childbearing is lower in states with the AFDC-UP program is consistent with Moore and Caldwell (1977), the only other microdata study that included this policy variable.[21] The significant impact of the eligibility-stringency index in the expected direction conflicts with their and Moore's (1980) findings for a similar administrative variable, the AFDC acceptance rate.

Illustrative Calculations of Effects of Significant Variables

Since logistic estimates are difficult to interpret directly, Table 3 illustrates the impact of changes in significant welfare policy variables on the probability that a girl would give birth out of wedlock by age 19. As observed earlier, it would be misguided to draw strong conclusions or policy recommendations that hinge on the precise results

Table 3

Illustrative Impacts of Welfare Policy Variables on the Probability of Having an Out-of-Wedlock Birth by Age 19

	Probability for Blacks	Probability for Whites
1. Base Case[a]	.442	.009
Same as base case except:		
2a. Eligibility index = .82	.266	
2b. Eligibility index = .54	.635	
3. State has AFDC-UP program	.214	
4a. Welfare guarantee = $400		.004
4b. Welfare guarantee = $600		.021
5a. Recipient requirement index = .1		.013
5b. Recipient requirement index = .5		.004
Unfavorable family background[b] and:		
Blacks		
6. No AFDC-UP, elig. index = .54	.936	
7. No AFDC-UP, elig. index = .68	.870	
8. No AFDC-UP, elig. index = .82	.753	
9. AFDC-UP, elig. index = .54	.834	
10. AFDC-UP, elig. index = .68	.697	
11. AFDC-UP, elig. index = .82	.511	
Whites		
12. Guarantee = $600, recip. req. = .1		.651
13. Guarantee = $600, recip. req. = .3		.562
14. Guarantee = $500, recip. req. = .1		.446
15. Guarantee = $500, recip. req. = .3		.357
16. Guarantee = $400, recip. req. = .1		.259
17. Guarantee = $400, recip. req. = .3		.193

Note: Estimates derived from results in Table 1.

[a]For black case, mother's education = 11 years, two-parent family, no welfare income, attends religious services frequently, family income = $13,000, guarantee = $500, eligibility index = .68, AFDC-UP dummy = 0 (no program), pregnancy benefit index = 3.2, and recipient requirements index = 0.3. For white case, identical values, except mother's education = 12 years and family income = $24,000.

[b]For black case, mother-stepfather family, had welfare income, income = $8,000. For white case, mother's education = 8 years, "other" family, had welfare income. Other variables' values same as base cases.

of this sort of exercise. Results are based on the estimates in Table 1 and, since no policy variables are significant for Hispanics, appear only for blacks and whites.

For each group the base case in row 1 is for a girl with approximately the mean values of her group's continuous explanatory variables and with modal values for the dummy variables. For blacks and whites the base-case probabilities are .442 and .009.

The cases in rows 2a and 2b have the same characteristics as the black base case except for the eligibility index. The probability where eligibility is tightened (index = .82), .266, is less than half the level where eligibility is loosened (index = .54), .635. Row 3 shows that the predicted black probability in states with an AFDC-UP program is about half the level in states without it. Note in rows 4a and 4b the rather large relative impacts on whites of a $100 change in the welfare guarantee from the base value of $500.[22] Changes in the recipient requirements index exert smaller impacts.

The remainder of Table 3 looks at the effect of policy variables on cases with disadvantaged family backgrounds. Rows 6 - 11 consider a black girl living in a welfare family with relatively low income and a stepfather. In a state with no AFDC-UP program and loose eligibility conditions for AFDC (row 6), the probability of a premarital birth by age 19 is projected at an astounding .936. Rows 7 and 8 show that as eligibility tightens, the probability drops to .870 and .753. Rows 9 to 11 repeat the calculations for a state that has the UP option. Note that even with policies least conducive to an out-of-wedlock birth (row 11), girls with this set of background characteristics have about a 50 percent chance of becoming an unwed mother. Under the same policies, a girl with the base-case background has a chance of merely 11 percent (not shown).

Rows 12 - 17 provide similar illustrations for a white girl with background characteristics associated with higher chances of premarital childbearing. In a state with relatively high AFDC benefits and low recipient requirements (row 12), the chances are .651, far above the levels for more typical cases in this table. Row 13 shows that more requirements, holding the benefit constant, reduces the chances to .562. The remaining rows repeat the calculations for other combinations of requirements and lower benefits. Note that here, too, even with policies least conducive to an out-of-wedlock birth (row 17), girls with this set of background characteristics have a 19 percent chance of becoming an unwed mother, far above the levels for cases with more typical family backgrounds. With the same policies, a girl with the base-case background has a chance of merely 0.3 percent (now shown).

SUMMARY AND CONCLUSION

This study used the National Longitudinal Survey of Youth, supplemented with state data on welfare policy, to provide new evidence on the relationship between welfare and teenage out-of-wedlock childbearing in the 1979-1984 period.

State welfare policy appears to be related to the behavior of blacks and whites. The welfare guarantee bears a significant, positive relationship to the likelihood of premarital childbearing for whites. For blacks, an index of stringency of a state's eligibility rules for AFDC and a dummy variable for the presence of an AFDC-UP program are significantly negative. Hispanic behavior, in contrast, is not associated with any indicator of state welfare policy.

It is likely that black and white teens are not responding to any one particular attribute of welfare, but instead to a general perception of the benefits and restrictiveness of the program in their area. It would, then, be unwise and premature to draw conclusions or offer policy recommendations that hinge on the nature and precise magnitudes of those variables' coefficients which pass significance tests. The overall impression, though, is that there is a link between more generous, less restrictive welfare programs and greater out-of-wedlock childbearing.

The study also finds that the family background factors associated with premarital childbearing markedly differ among Hispanics, blacks, and whites. While several family background variables are significantly associated with out-of-wedlock childbearing for at least one group, there is little consistency across groups in the pattern of significance.

Some of the results on personal and family background variables closely match those in related studies. Others differ. Overall, though, the findings reported here for such variables are unlikely to be controversial.

Not so for the findings on the welfare variables. Few would disagree with the plausibility of a theoretical link between welfare policy and out-of-wedlock childbearing. But previous empirical work using data from the mid-1970s or earlier has failed to show its existence. Has behavior changed in the 1980s? Further analysis which moves towards development of more structural models of the decision processes leading to births out of wedlock and uses other data sets from recent years may provide a more definitive answer to this important question with major policy implications.

Appendix Table

List of Explanatory Variables with Descriptive Statistics
(Means, with standard deviations in parentheses)

	Hispanic	Black	White
Family Background			
Mother's education	8.3	11.0	11.9
(years of schooling)	(3.7)	(2.6)	(2.4)
Family type at age 14			
Both parents present	.68	.41	.76
Mother only	.19	.37	.12
Mother/stepfather	.09	.10	.08
Other	.04	.12	.04
Welfare income in household in 1978 (1=yes)	.23	.29	.07
Family income, age 14	15,536	12,698	24,121
(1979 dollars)	(9,678)	(10,525)	(13,860)
Religious attendance			
Never	.09	.07	.16
Rarely	.23	.20	.20
Occasional (1-3 times/month)	.18	.26	.16
Frequently (1/week or more)	.50	.47	.48
Welfare variables in state of residence at age 19:			
AFDC + food stamp guarantee[a]	543	479	522
(1982 dollars)	(121)	(95)	(99)
Presence of AFDC-UP (1=yes)[b]	.59	.49	.65
Eligibility index[c]	.66	.68	.68
	(.15)	(.15)	(.13)
Treatment of pregnancy[d]	2.62	3.35	3.01
	(1.22)	(.99)	(1.07)
Requirements of recipients[e]	.19	.31	.27
	(.26)	(.30)	(.31)

(Notes on next page)

Appendix Table, continued

Note: No standard deviations are listed for dummy variables. Unless a source is listed, the variable either is in the NLSY or is constructed from other variables in the NLSY.

[a]Cash guarantee plus amount of food stamps received if family income was entirely from AFDC and it took the standard food stamp deduction. Values are for a four person family. Source: U.S. Department of Health and Human Services, Characteristics of State Plans for Aid to Families with Dependent Children, 1984 and earlier issues (Washington DC: U.S. Department of Health and Human Services).

[b]Source: see note a.

[c]Based on 7 rules that affect eligibility and ease of obtaining AFDC. Higher values imply less liberal policies. Range = 0 to 1. Source: see note a.

[d]Based on 2 rules about aid to the unborn. Higher values imply less liberal policies. Range = 1 to 5. Source: See note a.

[e]Based on 3 rules about participation in work and rehabilitation programs and assisting in locating absent father. Higher values imply more required participation. Range = 0 to 1. Source: see note a.

NOTES

[1]For review of the connections between a wide variety of variables and these behavior, see chapters 1, 3, 4, and 9 in Hofferth and Hayes (1987).

[2]They are Moore and Caldwell (1977), Moore (1980), Devaney and Hubley (1981), Zelnik, Kantner, and Ford (1981), Eisen et al. (1983), Ellwood and Bane (1985), Leibowitz, Eisen, and Chow (1986), Hanson, Myers, and Ginsburg (1987), Yamaguchi and Kandel (1987), Abrahamse, Morrison, and Waite (1988), and McLanahan and Bumpass (1988).

[3]See Hofferth and Hayes (1987), chapters 1, 3 and 9. Moore and Caldwell (1977) may be the only study to include welfare policy variables in a regression with the transition to sexual activity as the dependent variable. It finds no consistent pattern of effects.

[4]Studies using aggregate data all also take the reduced-form approach.

[5]Eisen et al. (1983) and Leibowitz, Eisen, and Chow (1986) include a variable for whether a premaritally pregnant girl was receiving welfare. Hofferth (1987) discusses why this is not a proper measure of welfare benefits. A crucial weakness is that it fails to indicate the welfare available to pregnant girls not yet receiving assistance, but who would be eligible once they give birth.

[6]Studies from the past 15 years include other results reported in Moore and Caldwell (1977), as well as Janowitz (1976), White (1977), and Field (1981).

[7]Because of missing data, sample sizes used in the estimates are smaller.

[8]In the regressions the weights are rescaled to sum to the actual sample size to avoid artificially inflating the t-statistics. There are too few Asians in the data to analyze them separately. A dummy variable for Asian race and ethnicity was not significant in the white regressions.

[9]In the raw samples, 38 Hispanics (17%), 119 blacks (38%) and 68 whites (10%) had premarital births. Particularly for Hispanics the low number of "events" may make it hard to obtain good estimates of the impacts of variables.

[10]However, earlier work generally relied on linear regression instead of logit or probit.

[11]This means that any major differences between the logit and hazard results will not possibly be due to differences in distributional assumptions. Comparing logit and hazard results will indicate how sensitive the main findings are to choice of estimation method.

[12]For girls who were 15 in 1979, all six years of data are used. For girls who were 14 in 1979, I omit the data for 1979. By doing so I implicitly assume that the risk of having a child out of wedlock begins for all girls at age 15. (Only 4 of the 446 14-year-olds in the sample gave birth out of wedlock in 1979.)

[13]See Allison (1982) for further discussion of discrete-time hazard models.

[14]Attrition is very low, so assuming that attrition does not bias the estimates appears reasonable.

[15]If persons never left their initial state of residence, measurement of welfare policy variables might not be badly distorted, since such variables tend to be highly correlated over time. But

interstate migration will create measurement error in a cross-section study.

[16]Extending the control variables to include measures of self-esteem, self-control, attitudes towards school and work, educational expectations, and academic ability/achievement (as assessed by the AFQT score) did not change the findings on any of the welfare policy measures. Complete results from this specification are available upon request.

[17]The only notable differences between the hazard-rate results on these control variables and those in Table 1 are that for blacks, the dummy on mother-stepfather becomes insignificant and one of the religious-attendance dummies becomes significant. As for the age dummies, none is significant for Hispanics. For blacks, age bears a strong relation to the chances of premarital childbearing. Other things equal, the likelihood of a birth rises steadily from age 15 to a peak at 18, then declines monotonically to age 20. For whites, too, age is associated with premarital childbearing, but the pattern is not as sharp as for blacks. The hazard rate tends to increase with age and is highest at age 20. Full results are available upon request.

[18]The experience of Hispanics of Cuban origin differs from that of other Hispanics along several socioeconomic dimensions. In this sample there were 11 Cubans. None had an out-of-wedlock birth. With a maximum likelihood method such as logit, adding a dummy for a variable in which one of the two outcomes has no observations would cause the estimation method to fail, so no Cuban dummy was tried.

[19]For example, Zelnik, Kantner, and Ford (1981: 48) show that between 1971 and 1976 there was a clear decline in the proportion of

respondents who believed society and their neighborhoods would strongly or very strongly condemn unwed motherhood. See also evidence cited in Ellwood (1988: 63).

[20]Abrahamse, Morrison and Waite (1988) and Hanson, Myers, and Ginsburg (1987) also examine data from the early 1980s but do not include welfare policy variables. Causality may go the other way, too: increased out-of-wedlock childbearing may have led people to revise their views on the acceptability of such behavior so that it creates less stigma than it once did.

[21]However, they did not find a significant impact of AFDC-UP in their analysis of aggregate state data.

[22]In absolute terms the differences are small, but observe that the ratio of the probability when the guarantee equals \$600 (\$400) to the base case probability is 2.33 (.44).

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