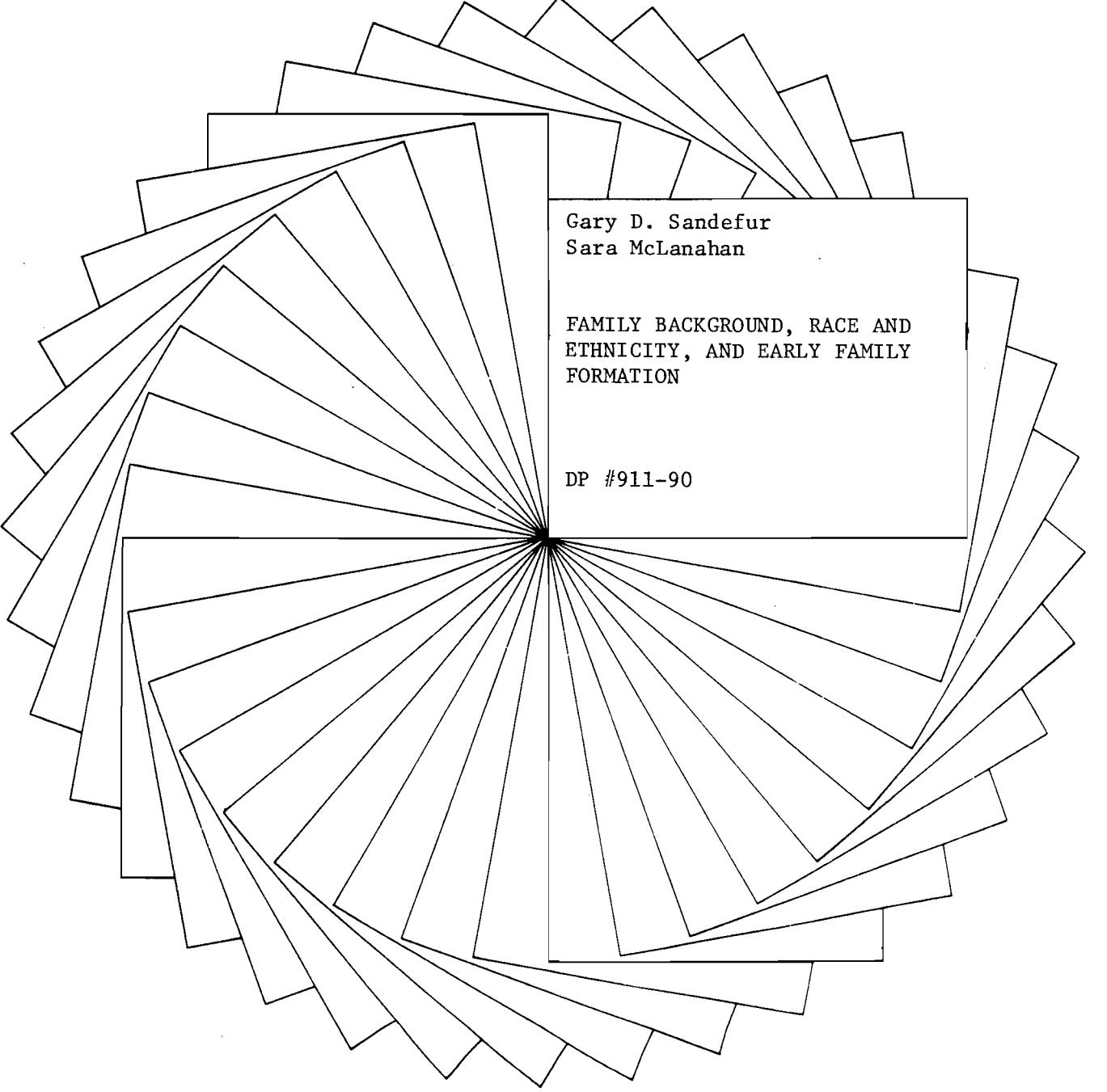




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Discussion Papers



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FAMILY BACKGROUND, RACE AND
ETHNICITY, AND EARLY FAMILY
FORMATION

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Family Background, Race and Ethnicity, and Early Family Formation

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Abstract

This paper examines the effects of race, ethnicity, and characteristics of the family of origin on three aspects of early family formation--teen marriage, teen parenthood, and premarital parenthood--among young blacks, Hispanics, American Indians, and whites. The data come from a sample of individuals aged 14-17 in 1979 who are part of the National Longitudinal Survey of Youth. The results indicate that black men and women are the least likely to marry as teenagers, but the most likely to father or give birth to a child prior to marriage. Puerto Rican men and women are more likely to become a parent before marrying than are Mexican or American Indian men and women, and the latter two groups are more likely to experience premarital parenthood than are white men and women. The structure of the family of origin has, in general, stronger effects for women than for men: residing with only one or neither natural parent increases their likelihood of early family formation. The effects of parental education and test scores, on the other hand, are equally strong in reducing that likelihood among both men and women. Allowing family structure and the effects of family structure to vary over time shows that family structure is especially critical for women at ages 16-17 as a determinant of premarital parenthood.

Family Background, Race and Ethnicity, and Early Family Formation

Recent years have seen a good deal of interest among social scientists in the role of families in the socialization and stratification processes. This interest has generated research that has shown that characteristics of the family of origin (i.e., the family into which an individual was born and/or in which an individual experienced childhood and adolescence) affect the subsequent life chances of adults. The educational and occupational background of parents influence educational and occupational attainment (Featherman and Hauser, 1978). Individuals who live apart from one or both parents when they are growing up are less likely to graduate from high school, more likely to work at low-wage jobs, and more likely to form unstable families themselves than individuals who grow up with both biological parents (Hogan and Kitagawa, 1985; McLanahan, 1985; Krein and Beller, 1986). The effects of parental background and family structure have been replicated in research with other data sets and appear to be present in varying degrees in all major racial and ethnic groups in the United States (Michael and Tuma, 1985; Sandefur, McLanahan, and Wojtkiewicz, 1989).

The importance of families and the importance of the intergenerational transmission of values and status have also been recognized by policymakers. The Family Support Act of 1988 was designed to emphasize and support the positive features of family life in order to avoid long-term welfare dependence, and to improve the life chances of children growing up in disadvantaged and single-parent families (Public Law 100-485, October 13, 1988). Title I of this Act emphasized the responsibility of the absentee parent in single-parent families to provide economic support for his or her children. Title II of the Act emphasized the responsibility of the custodial parent to provide economic support and a healthy role model through work outside the home.

The interest of policymakers in these issues and the research by social scientists on these topics have raised a number of questions that have yet to be addressed satisfactorily. In this paper, we examine a small set of issues that have to do with the intergenerational transmission of family structure, i.e., the question of whether children from single-parent families are more likely themselves to form single-parent families, whereas children from two-parent families are more

likely to form two-parent families. We first examine racial and ethnic differences in the patterns of early family formation. Although there has been a considerable amount of research on the differences between black and white rates of premarital birth, there has been very little research on Mexican and Puerto Rican rates of early birth and early marriage, and almost none on American Indian early family formation. An important part of this question has to do with the role of origin-family characteristics in accounting for racial and ethnic variations in early family formation. For example, Moynihan (1965), Wilson (1987), and others have argued that the higher prevalence of single-parent families among blacks in one generation is part of the reason for the higher incidence of black out-of-wedlock births in the following generation.

Second, we examine gender differences in the patterns of early family formation and gender differences in the effects of family structure on these patterns. Most research on early fertility and marriage has concentrated on women, so we know very little about these processes for men. Third, we examine how the effects of origin-family structure and other family characteristics vary across three aspects of early family formation: teen marriage, teen birth, and premarital birth. Finally, we explicitly consider the fact that family structure changes over time. Most past research has examined the effects of family structure at a particular age, e.g., age 14 or age 17, on early family formation. The structure and composition of one's family can, however, change dramatically over time. We take these changes into account by using event-history techniques that incorporate information on time-varying covariates.

EARLY FAMILY FORMATION

Family Resources, Socialization, and Early Family Formation

A good deal of research has demonstrated that living in a single-parent family is related to the reproduction of female-headed families through early marriage, early fertility, premarital fertility, and marital disruption (Hogan, 1985; Hogan and Kitagawa, 1985; McLanahan, 1988; McLanahan and Bumpass, 1988; Abrahamse, Morrison, and Waite, 1987). Until recently, the

major explanation for these adverse consequences was the "economic deprivation" argument, i.e., single parents have less time and money to invest in their children, which in turn affects the characteristics of offspring as well as their view of the parental household (Becker, 1981; Michael and Tuma, 1985). Adolescents from low-income families may see marriage and parenthood as a means of escaping hardship and establishing an independent adult identity (Rubin, 1976). Studies indicate, however, that income explains less than 30 percent of the difference in teen marriage and teen birth among female offspring (Hogan and Kitagawa, 1985; McLanahan, 1985; Krein and Beller, 1986; McLanahan and Bumpass, 1988).

A second explanation concerning why children from female-headed families are more likely at early ages to marry and have children stresses the importance of parents' values and role models and parents' ability to transmit their values and expectations to offspring (Maccoby and Martin, 1983). Socialization theorists argue that (1) single parents are more accepting of (or serve as role models for) divorce and out-of-wedlock birth, i.e., the "disinhibiting hypothesis" (Mueller and Pope, 1977); (2) single parents have less influence over their children's behavior because of a lack of parental attachment, i.e., the absent-parent hypothesis (Hess and Camara, 1979); (3) single mothers are less likely to monitor their children's behavior, i.e., the supervision hypothesis (Hogan and Kitagawa, 1985); and (4) single mothers are under considerable stress, which undermines parent-child relations and parental control, at least during the first 18 months after a divorce, i.e., the stress hypothesis (Hetherington, Cox and Cox, 1978).

With most data it is very difficult to distinguish among these alternative reasons for the effects of family structure. Some research suggests, however, that living with a stepparent is just as detrimental to high school graduation as living with a single parent or no parent (Astone and McLanahan, 1989; Sandefur, McLanahan, and Wojtkiewicz, 1989). This provides at least some evidence for the importance of stress relative to the importance of supervision. One would expect children with two adults in the household to have more supervision than children with single parents, even if the two adults were not both biological parents. The fact that children from families living with a parent and stepparent have high school graduation rates more similar

to those living with single parents than those living with two biological parents suggests that it is not supervision that is the issue.

The preoccupation with the consequences of family structure has sometimes led researchers to ignore or downplay the importance of other family characteristics that may be important influences on early family formation patterns. One critical family characteristic is the educational level of the parents or parent. The educational experiences and attainment of parents, and the associated decisions to start a family early or delay starting a family, provide an example to young people when they have to make these types of decisions. For example, a teenager with a college-educated mother is less likely to see teen marriage as a reasonable alternative choice, since the mother probably delayed marriage until she was well on her way to completing her education. On the other hand, a teenager with two parents who never finished high school is less likely to see a need to delay family formation until after college. In this argument, education is viewed as a proxy for the family-formation decisions of the parents at earlier stages in their own lives.

A second argument is based on an assumption of a more direct effect of parental education on early family formation patterns. College-educated parents are in a better position to understand and explain the consequences of early family formation for subsequent economic well-being. Such parents are more likely to convince their children that delaying the formation of a family is desirable if one is to be successful in school and in the workplace.

Family structure, parental education, and family income may work through other mechanisms, in addition to their effects through role-modeling, supervision, and stress. The income of a family affects the quality of the neighborhoods in which the family is able to live, and the quality of schools which children are able to attend (Jencks and Mayer, 1988). Neighborhoods and schools provide another set of role models and peers which will influence the behavior of the kids. Family structure, income, and parental education also influence how well young people do in school, how comfortable they feel in school, and their expectations for the future. These factors will also be important in early family-formation decisions.

Racial and Ethnic Variation

A good deal of research has documented racial and ethnic differences in age at first giving birth, age at first marriage, and the rate of premarital births. Rarely, however, have researchers examined the behavior of different Hispanic groups separately or studied other minority groups such as American Indians. There is a good deal of evidence that the marriage and fertility behavior of Puerto Ricans and Mexican Americans, the two largest Hispanic groups, differs considerably (Bean and Tienda, 1987).¹ Other research shows that the prevalence of female headship among American Indians falls between that of blacks and whites, while American Indian family size exceeds that of both blacks and whites (Sandefur and Sakamoto, 1988). This suggests that patterns of early fertility and early marriage among American Indians may be different from those of other groups.

These racial and ethnic variations may come about for a number of reasons. First, intergenerational effects are undoubtedly important in explaining them. The fact that the current family structure of racial and ethnic minorities is characterized by a higher incidence of single parents will be reflected in the early family-formation patterns of subsequent generations. Further, the lower educational levels of the current generation of parents among minority groups will help encourage early family formation in the next generation. Second, the greater economic disadvantage of minority groups will lead to earlier family formation. Finally, some argue that there are important cultural differences across minority groups in the normative patterns of family formation. Thus, Mexican women may marry earlier because that is considered appropriate and desirable in many Mexican communities throughout the United States. Black women may have a higher incidence of premarital birth because this is considered acceptable in many black communities. Although most data, including those used in this paper, do not allow us directly to examine cultural explanations, we can examine the extent to which racial and ethnic differences are due to measured variables such as parental education, family structure, and other family characteristics. The residual difference may be due to cultural variations or to other unmeasured characteristics that vary across racial and ethnic groups.

Gender Variations

Most research on early family formation has concentrated on the behavior of women. This is understandable, since women marry at a younger average age than men, and measures of fertility among women are probably more reliable than reported fathering, especially premarital fathering.² Several data sets now include fertility histories for both men and women, however, and this creates the possibility of studying early family formation among men.

Since men have traditionally married at older ages than women, one would expect the incidence of teen marriage, teen birth, and premarital birth to be higher among young women than among young men. On the other hand, there are no theoretical reasons to expect that family effects would be smaller for men than for women. Zaslow (1987) points out that there is considerable disagreement over whether the effects of parental divorce are stronger for boys or girls at very young ages.

The Effects of Families on Teen Marriage, Teen Birth, and Premarital Birth

Although very little effort has been made to distinguish among different early family-formation events as outcomes of earlier family experiences, there is good reason to expect that teen marriage, teen fertility, and premarital fertility will be related in different ways to race and family structure. Teen marriage involves the acceptance of the role of spouse at an earlier age than is considered normative by most Americans; teen fertility involves the acceptance of the role of parent at an earlier age than is considered normative by most Americans. Both roles, however, are valued and respected in American society, and in earlier times and among some current subcultures, adopting these roles early in life is not viewed with the same dismay as it is by most Americans. People may choose these roles because of the role models in their subcultures or communities, to escape from their childhood home for rational reasons, because the opportunity costs of early marriage or parenting are low, or because they do not know that assuming these roles early in life will cause them to forgo for some time educational opportunities and asset

accumulation. Premarital birth either during or after the teen years, on the other hand, is considerably different in that it involves the separation of the spousal and parental roles.

The effects of family structure on early family formation might also provide some evidence about the importance of role modeling and stress in explaining family structure effects. One would expect role modeling to play a part in the effects of growing up in a single-parent family on premarital birth among both men and women. That is, having a single parent causes both young men and women to view premarital births as acceptable to themselves or their sexual partners. One would not, on the other hand, expect the offspring from single-parent families to marry earlier than those from two-parent families if role modeling is involved. If family disruption creates stress, then we would expect youth from any type of disrupted family to start their own families earlier in order to escape stress in the parental home. Consequently, we would expect higher rates of teen marriage, teen birth, and premarital birth among persons in any type of disrupted family.

Changes in Family Structure and the Effects of Family Structure

Zaslow (1987) points out that there is a good deal of disagreement over the ages at which a divorce is most detrimental for children. Most research that has examined the effects of family structure on early family formation has ignored this issue, largely because existing data provide information on family structure at a point in time or at a particular age, such as age 14, or because the techniques used in the analysis did not easily permit the consideration of time-varying covariates and effects. Existing longitudinal data sets now provide information on family composition and other family characteristics at several points in time, however, and event-history analysis provides a methodological tool for taking advantage of this information.

In our analyses of teen marriage and teen birth, we are simply interested in predicting whether or not an event occurred during the teen years, so we use probit models rather than event-history models to study these outcomes. Premarital births may occur at any age during the childbearing years, and we use event-history models to study this outcome. We define the

beginning of the age of risk of a premarital birth as 14. For some members of our sample, we have information on household structure from age 14 on up, and for others we have information on household structure up to age 23.

Within the context of event-history analysis, there are a number of ways to take advantage of this information. We are most interested in testing whether the effects of family structure vary as individuals grow older. More specifically, we expect that the effect of family structure will be larger at younger ages than at older ages. This is because parents exert more influence over younger teenagers than over older teenagers, and as teenagers mature their points of reference and role models are increasingly drawn from outside the home.

DATA AND METHODS

Data

The data are taken from the 1979-1985 waves of the National Longitudinal Survey of Youth (NLSY). The NLSY was initiated in 1979 with a national sample of men and women aged 14-21. We confine our sample to individuals aged 14-17 in 1979 and for whom we have information on family income and parents' marital status. We also exclude respondents in the special military sample and the supplemental poor white sample. The racial, ethnic, and sexual composition of the sample is indicated by the last column in Table 1.

Measures

There are three dependent variables in the analysis. We define a **teen marriage** as occurring if an individual reported marriage prior to his or her twentieth birthday. An individual is coded as being a **teen parent** if he or she reported fathering or giving birth to a child prior to the twentieth birthday. The birth may or may not be out-of-wedlock. A **premarital birth** is one that occurs prior to the parent's first marriage (or within the first six months of the first marriage), and may occur after age 20.

Table 1

Percentage of Individuals Who Experience a Family-Formation Event after
January 1, 1979

	Teen Marriage	Teen Parenthood	Premarital Parenthood	N
A. Men				
Black	3.3%	12.7%	22.1%	775
Indian	12.9	5.0	5.9	101
Mexican	14.7	14.0	10.5	286
Puerto Rican	12.1	18.5	12.9	93
Other	9.0	4.6	4.4	412
White	7.3	4.9	3.0	965
B. Women				
Black	9.3%	31.3%	33.6%	707
Indian	33.0	23.5	14.6	103
Mexican	26.4	32.4	16.7	311
Puerto Rican	18.2	24.7	23.1	78
Other	23.1	15.0	7.8	384
White	24.8	14.1	7.6	910

Source: Computations using the National Longitudinal Survey of Youth, 1979-1985, for individuals aged 14-17 in 1979 (excluding the military and supplemental poor white samples).

Note: Definitions: teen marriage = individual married prior to his/her 20th birthday; teen parent = individual bore or fathered a child prior to his/her 20th birthday; premarital birth = individual bore or fathered a child prior to or six months after marriage.

Panel A of Table 1 displays the percentage of men who reported experiencing each of the three events. Black men are the least likely to marry as teenagers, but the most likely group of men to father a child prior to marriage. Mexican, Puerto Rican, and American Indian men are considerably more likely than black, white, or other men to marry as teenagers. Puerto Rican men are those most likely to father a child as teenagers, while American Indians, whites, and others are those least likely to do so. The latter three groups are also least likely to report fathering a child out of wedlock.

The statistics in Panel B show that women are more likely to experience each of these events than are men. One reason for this difference is that we are observing a cohort aged 14-17 in 1979 for the period from 1979 to 1985, when they would have been 20-23. The women are probably marrying and/or conceiving children with older men. Black women are those least likely to marry as teenagers, and in fact are less likely to do so than are American Indian, Mexican, and Puerto Rican men. On the other hand, black women are those most likely to report a teen birth or a premarital birth. Almost 40 percent of black women reported giving birth before marriage. On the other hand, approximately one-third of American Indian women marry as teenagers. Mexican women are those most likely to give birth as teenagers. Puerto Rican women rank between blacks and whites in the propensity to marry as teenagers, rank third in likelihood of becoming a teen mother, and second in likelihood of bearing a child before marriage.

These descriptive statistics suggest that there are definite racial/ethnic differences in early family formation processes. Further, these differences are complex, extending beyond simple black-white contrasts.

We examine the effects of a number of independent variables that might help explain these racial/ethnic differences. There are four basic categories: background variables, family variables, community variables, and individual variables. Table 2 contains means and proportions for these variables among the men and women in our sample.

The set of background variables includes race, region, and residence in an SMSA (Standard Metropolitan Statistical Area). Our family variables include measures of human capital, financial capital, and social capital. We measure family human capital by mother's education, father's

Table 2

Definitions and Proportions or Means of Variables for Men and Women

Variable and Definition	Proportion or Mean among Men in Sample	Proportion or Mean among Women in Sample
A. Background Variables		
Race		
Black, Mex/PR, Nat Am, Other, White (see Table 1 for sample sizes)		
Region		
North East	.20	.19
North Central	.26	.25
South	.35	.38
West	.19	.18
SMSA		
Residing in an SMSA	.71	.71
B. Family Variables		
Mother's Education		
Less than high school	.39	.43
High school diploma	.38	.37
Some college	.16	.15
Never knew mother	.05	.03
Information missing	.02	.02
Father's Education		
Less than high school	.33	.35
High school diploma	.29	.30
Some college	.22	.20
Never knew father	.12	.11
Information missing	.04	.04
Family Structure (at age 14)		
Two parents	.65	.66
Stepparent/parent	.09	.08
Single parent, no grandparent	.20	.21
Single parent, grandparent	.02	.01
No parent, no grandparent	.02	.03
No parent, grandparent	.02	.01
Siblings		
Number of siblings	3.76	3.74

Table 2, continued

Variable and Definition	Proportion or Mean Among Men in Sample	Proportion or Mean Among Women in Sample
Adjusted Family Income 1979 family income in \$000/(fam size x .5)	7.74	7.99
Newspaper Subscription 1=at least one person in home subscribed to a newspaper; 0=no newspaper subscription	.55	.57
Magazine Subscription 1=at least one person in home subscribed to a magazine; 0=no magazine subscription	.73	.72
C. Community Characteristics		
Dropout Rate Percentage of tenth graders who drop out prior to completing the 12th grade	13.21	13.12
Dropout Information Missing School did not have tenth grade or refused to participate	.38	.37
County Unemployment Rate 1970 unemployment rate for 1979 county	4.60	4.64
County Rate of Female Headship 1970 percentage of families headed by women for 1979 county	11.41	11.44
D. Individual Characteristics		
Test Score Respondent's 1979 standardized score on verbal and math parts of Armed Services Vocational Aptitude Battery	-.16	-.11
Esteem Standard self-esteem scale	3.60	3.59
Esteem Information Missing Did not answer self-esteem questions	.04	.03

Table 2, continued

Variable and Definition	Proportion or Mean Among Men in Sample	Proportion or Mean Among Women in Sample
Influential Other's Perceived Attitude toward College		
Respondent perceives parent desires that he/she to go to college	.47	.48
Respondent perceives parent does not care if he/she goes to college	.18	.16
Respondent perceives other influential other desires that he/she to go to college	.16	.20
Respondent perceives other influential other does not care if he/she goes to college	.09	.07
Respondent reports no influential other person in his/her life or refuses to answer	.11	.11

Source: Computations using the National Longitudinal Survey of Youth, 1979-1985.

education, newspaper subscriptions, and magazine subscriptions. Note that each of the parental education variables includes two missing categories. One of these, "never knew mother (father)," refers to situations in which the respondent reported that he/she could not answer the question because he/she had never known this parent. Thus, this category is an indicator of family structure and social capital as well as missing parental education.

We measure financial capital by using **adjusted family income in 1979**. We adjusted family income by applying a standard equivalence scale, taking into account the size of the family. Our measures of family social capital are **family structure at age 14** and **siblings**. In some analyses of premarital birth, we also treat family structure as a changing covariate. That is, we take into account the fact that individual's families can change as they age from 14 upwards.

Our set of community characteristics includes **school dropout rate, county unemployment rate, and county rate of female headship**. The school dropout rate is a measure of the investment of the community in its schools, but it could also be viewed as a reflection of the behavioral patterns in the community. The unemployment rate is a measure of general economic conditions. The rate of female headship reflects the availability of husbands and the behavioral patterns in the community.³

The measures of individual characteristics include a test score based on the verbal and math components of the Armed Services Qualifying Test, a self-esteem score based on a standard self-esteem scale, and self-reports of the perceived attitudes of an influential other.

Methods

Two of our outcomes are dichotomous variables, i.e., both teen marriage [$y(1)$] and teen birth [$y(2)$] are equal to 1 if an event occurred, and 0 otherwise. Each is an observed indicator of an underlying continuous variable. When the propensity to marry [$Y^*(1)$] reaches a certain level, a teen marriage occurs; similarly, when the propensity to father a child or to give birth [$Y^*(2)$] reaches a certain level, a teen birth occurs. In these situations, it is appropriate to estimate the effects of independent variables on these events with probit models:

$$(1) \quad Y^*(1) = B(1)X + e(1),$$

$$(2) \quad Y^*(2) = B(2)X + e(2),$$

where $B(1)$ and $B(2)$ refer to vectors of coefficients, X refers to a common set of independent variables, and $e(1)$ and $e(2)$ are the error terms.⁴

Although whether one participates in a premarital birth or not is also indicated by a dummy variable, we are interested as well in the timing of this event; it may take place during or after the teen years. To consider both whether or not the event occurs and the timing of the event, we use the technique of event-history analysis. More specifically, we utilize what have come to be known as piecewise constant hazard models:

$$(3) \quad h(t) = \exp[A(p)W + B(p)Z(p) + c(p)],$$

where $h(t)$ refers to the hazard rate of premarital birth at time t , p denotes one of P age groups (τ_1, τ_2 , and so forth) and t falls in period p if $\tau_p < t < \tau_{p+1}$. Parameters in the model are the P $A(p)$ vectors, the P $b(p)$ vectors, and the P scalars $c(p)$. The vector W consists of covariates that do not change over time and the vector $Z(p)$ consists of covariates that can change from one period to another. Including covariates in a model like (3) was proposed by Holford (1976) and independently by Tuma et al. (1979), who also showed how to estimate it from event histories using maximum likelihood (ML). Although the survey was initiated in 1979, complete birth histories were collected from both men and women and are updated each year. However, we do not have complete histories on the covariates $Z(p)$. To deal with this left-censoring problem, we exclude events that occur prior to 1979.

The actual model we report is a more restricted version of (3). We assume that the effects of W (unchanging covariates) are constant over time, and thus we report A rather than $A(p)$. We do allow the effects of changing covariates $Z(p)$ to change over time $B(p)$.

RESULTS

Race and Gender Differences in Early Family Formation

Although Table 1 showed apparent differences in the family formation patterns of different racial and ethnic groups, it did not show whether these differences were statistically significant. To examine this, we estimated probit models of teen marriage and teen birth, and piecewise constant event-history models of premarital birth for men and women separately, which included the background variables in Table 2 as covariates. The results from this analysis are reported in Table 3.

The results for teen marriage show that black men and women are less likely than other men and women to marry as teenagers, whereas Mexican and Puerto Rican men are more likely than other men to marry as teenagers. The other differences are not statistically significant. It is important to bear in mind, however, that whether these differences are statistically significant is in part a function of the number of each group in our sample.

The results for teen birth show that black, Mexican, and Puerto Rican men are more likely than white men to report fathering a child prior to age 20, and black, Mexican, Puerto Rican, and American Indian women are more likely than white women to report giving birth prior to age 20.

The results for teen marriage and teen birth are based on probit models, whereas the results for premarital birth are based on piecewise constant hazard models. As the name of this technique implies, there is a separate constant for each of the specified time periods, $c(p)$, in equation (3). We observe the youngest members of our sample beginning at age 14, and we observe the oldest members of our sample until age 23. Since our data are monthly, i.e., we know which month a premarital birth occurred, it is possible to have a separate constant for each month. This would, however, make estimation quite cumbersome and difficult.

We tested some more restricted alternative specifications of the constants. Our most general specification was one in which there was a separate constant for each age 14, 15, 16, 17, 18, 19, 20, 21 and over. The model in Table 3, on the other hand, specifies four time periods based on

Table 3

**Racial and Ethnic Differences in the Likelihood of Teen Marriage,
Teen Parenthood, and Premarital Parenthood**

Variables	Teen Marriage		Teen Parenthood		Premarital Parenthood	
	Men	Women	Men	Women	Men	Women
Constant	-1.146	-.522	-1.591	-1.067		
14-15					.0002	.0021
16-17					.0015	.0079
18-20					.0035	.0119
21 +					.0029	.0067
Black	-.509*	-.781*	.507*	.620*	8.140*	5.814*
	(-4.70)	(-9.50)	(5.52)	(8.59)	(10.01)	(12.38)
Mexican	.309*	-.045	.523*	.595*	3.663*	2.233*
	(2.52)	(-.48)	(4.06)	(6.19)	(4.52)	(4.00)
Puerto Rican	.544*	.127	.735*	.590*	4.737*	3.829*
	(2.88)	(.75)	(4.17)	(3.61)	(4.33)	(4.76)
Other	.069	-.042	-.040	.038	1.459	1.024
	(.65)	(-.51)	(-.32)	(.41)	(1.26)	(.11)
American Indian	.151	.148	-.035	.365*	2.278*	2.096*
	(.87)	(1.10)	(-.16)	(2.59)	(1.82)	(2.50)
Chi square	81.45	166.98	76.61	143.84	231.47	310.47
df	13	13	13	13	16	16

Source: Computations with the 1979-1985 waves of the National Longitudinal Survey of Youth for individuals aged 14-17 in 1979.

Notes: An * indicates that the effect is significant at or below the .05 level in a one-tailed test. The numbers in parentheses are the t-tests for the coefficients. The equations also included region, SMSA, region*SMSA, and a dummy variable for those with no self-reported race.

the age of the individual. Each time period extends until the beginning of the next, e.g., 14-15 includes ages up to the 16th birthday. The model in Table 3 fits the data for women as well as the more general specification; however, for men the more general specification fits slightly better than the four-constant model. The major reason for this is that the rate of premarital fatherhood for men doubles between ages 16 and 17 and is cut in half between ages 21 and 22. The values of the other coefficients are not sensitive to the manner in which the constants are specified, however, and to facilitate comparison we report the four constants for both men and women.

The results are reported as multiplicative coefficients or, in the case of the constants, as the underlying hazard for individuals who are in the excluded category for each independent variable, i.e., white individuals living in non-SMSA areas in the North Central region of the United States. The constants show that men are less likely than women to report premarital parenthood at each age, but that the difference narrows as individuals grow older. Further, the rate of first premarital birth is quite small prior to age 16 and peaks between 18 and 21 for both men and women.⁵

The pattern of racial differences is the same for premarital births as for teen births, but blacks are markedly more likely than the other minority groups to report a premarital birth, whereas the differences in reported rates of teen birth are not so large. This is because teen births include births that occur in or out of wedlock.

The Impact of Intergenerational Effects on Racial and Ethnic Differences

Our theoretical arguments suggest that part of the differences in patterns of family formation are due to two intergenerational factors: the type of family in which an individual was raised and the level of education of the parents. Table 4 contains the results of models that include measures of these two factors.

The addition of these variables results in a significant improvement over the corresponding models in Table 4 as indicated by comparing the chi-square statistics at the bottom of Table 4 with those at the bottom of Table 3. For example, the new model of teen marriage for men in Table 4 can be compared to the corresponding model in Table 3 by taking the difference in the

Table 4

Family Structure and Parental Educational Effects on Outcomes

Variables	Teen Marriage		Teen Parenthood		Premarital Parenthood	
	Men	Women	Men	Women	Men	Women
Constant	-.851	-.181	-1.338	-.788		
14-15					.0005	.0024
16-17					.0026	.0092
18-20					.0064	.0148
21 +					.0055	.0089
Black	-.665*	-1.026*	.349*	.354*	5.601*	3.755*
	(-5.74)	(-11.31)	(3.55)	(4.43)	(7.88)	(8.71)
Mexican	.079	-.347*	.285*	.279*	2.141*	1.390
	(.60)	(-3.37)	(2.07)	(2.68)	(2.52)	(1.32)
Puerto Rican	.328	-.127	.505*	.239	2.779*	2.380*
	(1.66)	(-.72)	(2.76)	(1.40)	(2.76)	(3.01)
Other	.004	-.092	-.099	-.017	1.293	.899
	(.03)	(-1.06)	(-.76)	(-.18)	(.75)	(-.48)
American Indian	.022	.016	-.121	.236	1.943	1.661*
	(.13)	(.12)	(-.53)	(1.61)	(1.07)	(1.70)
Family Structure at Age 14						
Single parent	.043	.083	.122	.241*	1.337*	1.505*
	(.41)	(1.01)	(1.35)	(3.16)	(1.91)	(3.38)
Stepparent/parent	.352*	.353*	.131	.351*	.769	1.483*
	(2.94)	(3.46)	(1.03)	(3.48)	(-.98)	(2.25)
No parent	.336*	.368*	.077	.620*	.891	1.825*
	(1.85)	(2.58)	(.45)	(4.79)	(-.42)	(3.18)
Parental Education						
Mother HS graduate	-.297*	-.242*	-.279*	-.454*	.688*	.659*
	(-3.11)	(-3.34)	(-3.06)	(-6.47)	(-2.27)	(-3.43)
Mother some college	-.479*	-.808*	-.382*	-.905*	.791	.318*
	(-3.15)	(-6.67)	(-2.68)	(-7.43)	(-.91)	(-9.32)
Never knew mother	-.267	-.178	.222	-.037	.812	.965
	(-1.30)	(-.97)	(1.41)	(-.23)	(-.45)	(-.13)
Father HS graduate	.038	-.140*	-.056	.036	.704*	1.180
	(.39)	(-1.83)	(-.58)	(.48)	(-2.02)	(1.16)
Father some college	-.319*	-.381*	-.285*	-.328*	.378*	.593*
	(-2.36)	(-3.77)	(-2.15)	(3.09)	(-5.78)	(-2.44)
Never knew father	-.097	-.044	-.082	.176*	.461*	1.275
	(-.71)	(-.40)	(-.70)	(1.78)	(-1.94)	(1.03)
Chi square	132.52	300.55	119.07	347.48	282.38	434.44
df	24	24	24	24	27	27

Table 4, continued

Source: Computations using the 1979-1985 waves of the National Longitudinal Survey of Youth for individuals aged 14-17 in 1979.

Note: An * indicates that the effect is significant at or below the .05 level in a one-tailed test. The numbers in parentheses are the t-tests for the coefficients. The equations also included region, SMSA, region*SMSA, a dummy variable for those with no self-reported race, and dummy variables for missing values on parental education.

chi-square values and the degrees of freedom ($132.52 - 81.45 = 51.07$; $df = 24 - 13 = 11$). The coefficients in this model show that Mexican and Puerto Rican men are not significantly more likely than white men to marry as teenagers after controlling for family structure and parental education. The difference between black and white men, however, becomes more pronounced after these controls. Among men, parental education seems to play a more important role than does family structure at age 14: Those whose mothers have finished high school or attended college and those whose fathers have attended college are less likely to marry as teenagers. Those who lived with a parent and stepparent at age 14 are more likely to marry as teenagers. This may be due to the desire to escape an uncomfortable situation created by the presence of a stepparent in the household.

Among women, the difference between blacks and whites increases after controlling for family structure and parental education, and Mexicans become significantly less likely than white women to marry as teenagers after controlling for these effects. The pattern of effects of family structure and parental education among women looks very similar to that for men, although living with no parent has a statistically significant effect among women but not among men.

The results for teen parenthood among men show that controlling for intergenerational effects reduces the difference between blacks, Mexicans, and Puerto Ricans on the one hand and whites on the other, but these differences remain statistically significant. None of the family structure variables is significant as a determinant of teen fatherhood, but the educational variables have effects similar to those on male teen marriage--higher parental education lowers the likelihood. Among women, the racial differences are also diminished, and the difference between Puerto Rican and white women becomes insignificant. The size of the difference, however, is very similar to that between Mexican and white women. Family structure seems to be much more important as a determinant of teen marriage among women than among men. The likelihood of teen marriage is higher for women from each type of nonintact family relative to those who resided with both natural parents at age 14. The pattern of educational effects is very similar to that for men.

The results from the piecewise constant hazard models for premarital birth indicate that intergenerational effects provide a partial explanation for racial differences in premarital birth. Among both men and women, the size of the racial/ethnic differences decreases, and the difference between Mexican women and white women becomes insignificant. Parental education is important for both men and women, although the patterns of effects are less similar than for the other two outcomes. The major difference between men and women is that family structure at age 14 seems to be considerably more important for women than for men.

Thus, the results in Table 4 indicate that family background effects are important in explaining racial and ethnic differences in teen marriage, teen birth, and premarital birth. Parental education seems to be very important for both men and women, but family structure seems to be much more important for women than for men.

The Effects of Other Forms of Family, Community, and Individual Resources on Early Family Formation

Although past sociological research has demonstrated again and again the importance of parental background and family structure as determinants of many outcomes, there are other types of family, community, and individual resources that may also act as determinants of these outcomes. Table 5 contains the results of estimating models that include some of these other characteristics and resources.

The results show that the importance of these resources varies across outcomes and differs between men and women. Among men, none of the measures of other family capital (adjusted income, number of siblings, newspapers, or magazines) have effects in the expected direction on any of the outcomes. Among community characteristics, the only significant finding is a negative effect of the percentage of female headship on the likelihood of teen marriage among men. Among individual characteristics, only test scores have significant effects among men: As the scores increase, the likelihood of a teen marriage, teen birth, or premarital birth decreases.

The results show that these characteristics are in general more important in determining the behavior of women than of men. Among measures of family capital, adjusted income and the

Table 5

The Effects of Family Capital on Early Family Formation

Variables	Teen Marriage		Teen Parenthood		Premarital Parenthood	
	Men	Women	Men	Women	Men	Women
Constant	-.765	-.084	-1.422	-.655		
14-15					.0003	.0021
16-17					.0016	.0084
18-20					.0039	.0139
21 +					.0035	.0089
Black	-.650*	-1.097*	.232*	.149	4.089*	2.502*
	(-5.11)	(-10.78)	(2.07)	(1.62)	(5.87)	(5.53)
Mexican	.099	-.391*	.217	.135	1.900*	1.034
	(.70)	(-3.62)	(1.50)	(1.23)	(2.87)	(.15)
Puerto Rican	.409	-.251	.430*	.038	2.318*	1.615
	(1.91)	(-1.36)	(2.17)	(.21)	(2.15)	(1.27)
American Indian	.038	-.002	-.151	.167	1.767	1.502
	(.21)	(-.01)	(-.64)	(1.11)	(1.25)	(1.35)
<u>Family Structure at Age 14</u>						
Single parent	.025	.044	.115	.160*	1.307*	1.351*
	(.23)	(.51)	(1.22)	(2.01)	(1.69)	(2.42)
Stepparent/parent	.344*	.338*	.101	.302*	.682	1.412*
	(2.82)	(3.27)	(.78)	(2.93)	(-1.41)	(1.96)
No parent	.314*	.306*	.086	.539*	1.026	1.596*
	(1.66)	(2.11)	(.48)	(4.06)	(.09)	(2.41)
<u>Parental Education</u>						
Mother HS graduate	-.245*	-.168*	-.213*	-.297*	.801	.796*
	(-2.45)	(-2.20)	(-2.22)	(-4.01)	(-1.28)	(-1.82)
Mother some college	-.379*	-.666*	-.276	-.633*	.988	.479*
	(-2.38)	(-5.25)	(-1.84)	(-4.90)	(-.04)	(-3.08)
Father HS graduate	.085	-.086	-.010	.168*	.772	1.451*
	(.83)	(-1.09)	(-.10)	(2.15)	(-1.46)	(2.73)
Father some college	-.205	-.283*	-.154	-.088	.514*	.887
	(-1.45)	(-2.68)	(-1.11)	(-.78)	(-2.28)	(-.57)
<u>Other Family Capital</u>						
Adjusted income	-.005	-.005	-.005	-.021*	1.000	.975*
	(-.52)	(-.64)	(-.49)	(-2.66)	(-.96)	(-1.83)
Number of siblings	-.027*	-.020	-.004	.069	1.014	1.040*
	(-1.67)	(-1.54)	(-.27)	(.59)	(.62)	(2.28)
Newspapers	.075	-.092	-.013	-.183*	.844	.841
	(.86)	(-1.33)	(-.15)	(-2.75)	(-1.17)	(-1.55)
Magazines	-.036	-.048	.078	.037	1.401*	1.053
	(-.39)	(-.66)	(.92)	(.53)	(2.33)	(.46)

Table 5, continued

Variables	Teen Marriage		Teen Parenthood		Premarital Parenthood	
	Men	Women	Men	Women	Men	Women
Community Characteristics						
County unempl. rate	.022 (.86)	-.004 (-.21)	.014 (.55)	.016 (.82)	1.070 (1.60)	.986 (-.46)
Percentage female heads	-.045* (-2.95)	.077 (.68)	-.010 (-.80)	-.015 (-1.35)	.987 (-.61)	.993 (-.41)
Dropout rate	.004 (1.15)	-.003 (-.10)	.001 (.37)	.004 (1.30)	1.001 (.11)	1.008 (1.49)
Individual Capital						
Self-Esteem	.019 (.39)	-.020 (-.53)	-.002 (-.04)	-.048 (-1.29)	1.004 (.18)	1.002 (.10)
Perceived attitudes of most influential other person:						
Parent does not want college	-.008 (-.07)	.124 (1.43)	-.056 (-.54)	.075 (.87)	.969 (-.18)	1.206 (1.29)
Other wants college	.046 (.42)	.103 (1.28)	.024 (.23)	.054 (.68)	.095 (-.56)	1.167 (1.20)
Other does not want college	.164 (1.25)	.347* (3.17)	-.062 (-.45)	.196* (1.76)	1.199 (.73)	1.224 (1.08)
No influential other	.088 (.71)	.294* (3.02)	.082 (.71)	.222* (2.34)	1.165 (.74)	1.403* (2.21)
Test score	-.204* (-3.85)	-.137* (-2.99)	-.228* (-4.40)	-.273* (-5.95)	.665* (-4.32)	.548* (-6.77)
Chi-square	168.42	343.47	151.27	446.32	322.48	534.72
df	42	42	42	42	46	46

Source: Computations using the 1979-1985 waves of the National Longitudinal Survey of Youth for individuals aged 14-17 in 1979.

Note: An * indicates that the effect is significant at or below the .05 level in a one-tailed test. The numbers in parentheses are the t-tests for the coefficients. The equations also included region, SMSA, region*SMSA, a dummy variable for those with no self-reported race, and dummy variables for missing values on parental education.

presence of newspapers have significant effects on teen birth, and the rate of premarital birth increases with the number of siblings. Although none of the community characteristics have significant effects on the outcomes for women, the identity and attitudes of the most influential other person in an individual's life affect all three outcomes. Women who say they have no influential other are more likely to experience teen birth, teen marriage, and have a higher rate of premarital birth. Finally, the likelihood of each of the outcomes decreases as test scores rise.

The Importance of Family Background at Different Ages

The previous analyses of premarital birth assume that neither the characteristics of individuals nor the effects of independent variables change over time. Some of the variables, e.g., racial and ethnic self-identification and parental education, probably do remain the same over the years. Others, however, such as family structure, family income, and county characteristics, do change. There is good reason to expect that the effects of family structure might change over time as well. One would expect that family structure would exert a more powerful influence on premarital birth at earlier ages, when parents have more direct control over their children, than at later ages.

To test this possibility, we estimated models that allowed the values and effects of family structure to change with the passage of time. The results are reported in Table 6. To avoid estimation problems, we recoded family structure as a two-category variable in which "nonintact" refers to living in some arrangement other than with both biological parents. The first model for men treats this new variable as a time-invariant covariate with time-invariant effects; the second model allows both the value and effect to vary over time. The results show that allowing the value and effect to vary over time represents a significant improvement over the first model for both men and women.

The results for men show that living in a nonintact household does not have a significant effect until age 21 and over. At this age, many of the men in nonintact households may in fact be living by themselves. Among women, the effect of living in a nonintact household is much larger

Table 6

Time-Varying Measures and Effects of Family Characteristics

Variables	Men		Women	
	Time-Invariant Family Effect	Time-Varying Family Effect	Time-Invariant Family Effect	Time-Varying Family Effect
Piecewise Constants and Time-Varying Effects				
14-15	.0004	.0004	.0024	.0038
Nonintact		1.749 (.40)		.683 (-.55)
16-17	.0026	.0023	.0093	.0078
Nonintact		1.428 (1.10)		2.249* (4.06)
18-20	.0062	.0062	.0149	.0144
Nonintact		1.134 (.71)		1.656* (3.73)
21 +	.0054	.0020	.0090	.0079
Nonintact		3.719* (2.76)		1.719 (1.49)
Time-Invariant Effects				
Nonintact	1.144 (.96)	---	1.540* (4.00)	----
Black	5.677* (7.96)	5.572* (7.92)	3.786* (8.84)	3.834* (9.01)
Mexican	2.170* (2.57)	2.250* (2.69)	1.389 (1.55)	1.429* (1.69)
Puerto Rican	2.812* (2.80)	2.771* (2.76)	2.388* (2.02)	2.273* (2.86)
American Indian	1.895 (1.40)	1.861 (1.37)	1.671* (1.72)	1.672* (1.73)
Parental Education				
Mother HS	.679* (-2.35)	.688* (-2.28)	.656* (-3.47)	.651* (-3.54)
Mother college	.783 (-.95)	.792 (-.91)	.314* (-5.03)	.313* (-5.04)
Father HS	.710* (-1.97)	.698* (-2.08)	1.184 (1.28)	1.185 (1.29)
Father college	.380* (-3.40)	.383* (-3.39)	.595* (-2.43)	.612* (-2.30)
Chi square	276.67	287.82	433.32	449.44
df	25	28	25	28

Table 6, continued

Source: Computations using the 1979-1985 waves of the National Longitudinal Survey of Youth for individuals aged 14-17 in 1979.

Note: An * indicates that the effect is significant at or below the .05 level in a one-tailed test. The numbers in parentheses are the t-tests for the coefficients. The equations also included region, SMSA, region*SMSA, a dummy variable for those with no self-reported race, and dummy variables for missing values on parental education.

at ages 16-17 than at ages 14-15, and then declines as women grow older. Thus, among women there does appear to be a critical age during adolescence when living in a nonintact household makes a big difference.

SUMMARY AND CONCLUSIONS

The results reported in this paper demonstrate that there are substantial racial and ethnic differences in the likelihood of teen marriage, teen birth, and premarital birth. Black men and women are the groups least likely to marry as teenagers but most likely to report a premarital birth. Puerto Rican men and women are more likely to experience premarital parenthood than are Mexican men and women. The rate of premarital fatherhood among American Indian men is lower than that for any of the other minority groups, but higher than that for whites. Among women, American Indians and Mexicans have higher rates of premarital birth than whites, but lower rates than those of the other minority groups. Among every group, women are more likely to report each of the events than are men.

Characteristics of families of origin are important determinants of early family formation, so there is strong evidence of intergenerational effects. Parental education has fairly consistent effects on each of the outcomes for both men and women: The higher the education of the parent, the lower is the likelihood of the event. This may be due to the role modeling provided by educated parents and/or the ability of educated parents to explain the social and economic consequences of early family formation to their children. The effects of family structure appear to be equally important as determinants of teen marriage for men and women, but less important as determinants of teen parenthood and premarital parenthood for men than for women. Further, the effects of family structure vary across the outcomes. Individuals who resided in single-parent families at age 14 have rates of teen marriage that do not differ significantly from those who resided with both biological parents, whereas those who resided with a parent and stepparent or with neither parent have higher rates of teen marriage. Men from single-parent families are more likely to report fathering a child out of wedlock than are those from two-parent

families, whereas women from all types of nonintact families are more likely to report a premarital birth. Among men, the effects of family structure seem to be strongest after they reach 21, whereas among women, the effects are strongest during the middle teen years. Income and the perceived attitude of an influential other are also important determinants of teen births and teen marriages among women.

Individual test scores are very important determinants of each of the outcomes among both men and women. This may indicate that people who are doing well in school or have the potential to be successful in future educational settings are less likely to do things that might impede their ability to take advantage of these opportunities.

The results suggest that family structure does reproduce itself, i.e., young people who grow up in single-parent families are more likely to be involved in forming single-parent families through out-of-wedlock births. Thus, the trend of increasing out-of-wedlock births and divorces will likely lead to even more out-of-wedlock births in the future. On the other hand, increasing levels of education and decreasing racial and ethnic differentials in education works in the other direction. Increasing levels of education of succeeding cohorts of parents will exert a downward effect on the level of premarital birth, teen marriage, and teen parenthood.

There is little that social policy can do in the short run about the prevalence of single-parent families or the level of education of parents. The results do suggest, however, two areas in which interventions might be successful. First, it appears important that young women have an individual to whom they feel they can turn for advice when faced with critical life decisions. Further, the perceived attitudes of this person about future opportunities for the individual are important as well. This suggests that schools and communities need to insure that at-risk children have alternative role models to those that may or may not be available in the home. Second, the results suggest that young people who are doing well in school, and who probably feel that the future is fairly bright, are unlikely to do something to impede their future opportunities. Consequently, interventions that increase the success of at-risk youngsters in school are also likely to reduce the rate of early family formation.

Notes

¹The residual "other Hispanic" group outnumbers Puerto Ricans, but is very diverse. It includes, for example, people from Central and South America and native-born Hispanics who do not identify with any other group.

²There are a number of reasons for expecting more underreporting of premarital fathering than of premarital mothering: men who are involved in a premarital birth may not know that they are responsible; men may wish to avoid legal responsibility for a child born out of wedlock, and thus may be reluctant to report their involvement to interviewers.

³Another reason for including geocode information is that doing so adjusts for the stratified nature of the sample. That is, the sample was stratified by geographical areas, and many respondents share a county with other respondents. This means that the standard errors estimated with standard statistical packages are smaller than the actual standard errors, since standard statistical packages assume a completely random sample. One mechanism for dealing with this stratification is to include county characteristics as covariates (Frankel, McWilliams, and Spencer, 1983).

⁴There are good theoretical reasons for suspecting that e(1) and e(2) are correlated. There are many unmeasured variables, e.g., the desire to be treated as an adult, which may affect both teen birth and teen marriage. For the purposes of this paper, however, we are assuming that these error terms are not correlated.

⁵We tested some alternative specifications of the piecewise constants. For men, a set of five constants fit better than the set of four reported in Table 3, but for women, the set of four constants fit as well as any more detailed age breakdown. None of the results for men were sensitive to the specification of sets of constants, so we reported the results with four constants to make them directly comparable to those for women.

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