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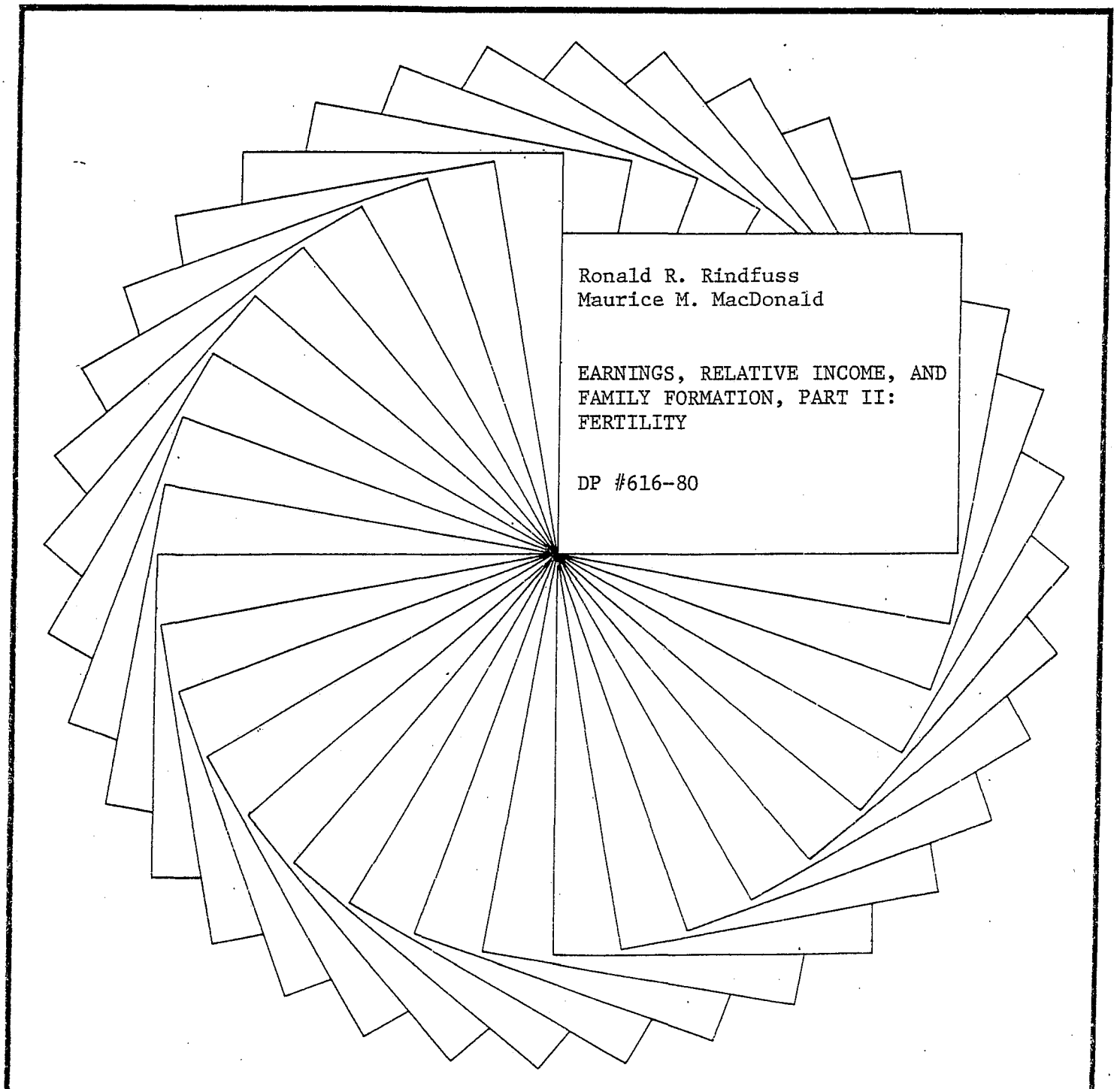

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EARNINGS, RELATIVE INCOME, AND FAMILY FORMATION, PART II: FERTILITY

DP #616-80

# Earnings, Relative Income, and Family Formation, Part II: Fertility

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July 1980

This analysis was supported in part by a National Institutes of Health grant, HD10751; by a "Center for Population Research" grant, HD05876, to the Center for Demography and Ecology of the University of Wisconsin from the Center for Population Research of the National Institute of Child Health and Human Development; and by a "Center for Population Research" grant, HD05798, to the Carolina Population Center of the University of North Carolina from the Center for Population Research of the National Institute of Child Health and Human Development.
Dr. MacDonald was also supported by funds granted to the Institute for Research on Poverty at the University of Wisconsin-Madison by the Department of Health and Human Services pursuant to the provisions of the Economic Opportunity Act of 1964. We would like to thank William H. Sewell and Robert M. Hauser for letting us use the data on which the analysis is based. Thanks also to Yen Shan for programming assistance. Finally, we would like to thank our colleague Wendy C. Wolf for her help in the project.

ABSTRACT

Annual probabilities of fathering children for men who graduated from Wisconsin high schools in 1957 are analyzed for 14 years with respect to their Social Security earnings records, Wisconsin income tax reports for their parents, and other variables. The findings provide little support for Easterlin's hypothesis that fertility will increase when young men judge their economic prospects favorably, compared to their parents' income. Relative income has the expected effect on fertility for only two years. Other results stem from models that investigate the role of current earnings, earnings relative to peers' earnings, and permanent income. Net of commitment to school or the military, higher earnings encourage fertility in most years. Support for the hypothesis that young men's fertility is influenced by their income relative to their peers' is found for the early years after high school. However neither the timing nor the quality of fertility is significantly related to indicators of permanent income.

# EARNINGS, RELATIVE INCOME, AND FAMILY FORMATION, PART II: FERTILITY

Demographers are often asked to predict fertility. The sources of these requests vary from local school boards, to regional planning commissions, to national corporations that need to anticipate market potential, to federal agencies such as the Social Security Administration. The initial reaction of most demographers is to offer a multitude of reasons why fertility projections are different and quite likely to be inaccurate. The litany of reasons includes the fact that period fertility levels are affected by changes in both the quantity and timing of fertility, that a wide range of factors affect period fertility rates, that demographers do not possess any occult powers to predict future nondemographic events, and, finally, that recent period fluctuations have occurred among all racial and social groups within the country, rendering the standard demographic technique of decomposition much less powerful as a predictive aid.

Nevertheless, there is a need for forecasts and they are being made--by demographers and nondemographers alike. Most of the current demographic forecasting is atheoretical, couched in vague, qualitative terms, extrapolated from one or a few current trends, and predicting a steady state at some future point beyond which there will be no further change.

A major exception is the relative income hypothesis put forth by Easterlin in a series of papers (1962, 1966, 1973, 1978). The power of the relative income hypothesis is that it purports to explain fertility fluctuations in a number of countries over the past 40 to 60 years and that it predicts the dating of future turning points. Furthermore, it has a behavioral component which is testable with micro data.

The relative income hypothesis is that the marriage and fertility plan of young men are influenced by their current income and income prospects relative to their tastes or their material aspirations. A critical, and from an economic perspective unique, feature of the hypothesis is that it includes an assertion about the determinants of tastes. Tastes or material aspirations of young men are formed while the individual is in the parental household. Thus, tastes are determined by the family income of the parental family, the number of individuals that this income was divided among (see Ben-Porath, 1975), and period economic factors. Since tastes are formed during adolescence, there is a lag between the formation of tastes and the knowledge of income and income prospects that enters marriage and fertility decisions. It is this lag which permits the prediction of turning points in marriage and fertility trends.

Most of the empirical work examining the relative income hypothesis has been at the macro level (Easterlin, 1962, 1966, and 1973; Easterlin and Condron, 1976; Lee, 1976; Butz and Ward, 1977; Lindert, 1978). With few exceptions (e.g., Butz and Ward, 1977), the aggregate data support the relative income hypothesis.

The relative income hypothesis has a micro counterpart, as is clearly indicated in the following passage:

> A young man's view of his earning potential is likely to be shaped by his labor-market experience. If times have been good and jobs easy to come by, then his assessment of his income prospects is likely to be correspondingly favorable. On the other hand, while recent experience may play some part, the material aspirations of a young adult are probably largely formed by his earlier economic socialization experience. Thus, young persons who have been raised in households where goods were abundant are likely to have developed relatively high standards of consumption. The state of affluence of one's parents' household depends, in turn, on the parents' income,

> and this is typically a function of the labor-market experiences of the father. Thus, the balance between income-earning possibilities of young adults and their desired living levels may be seen as depending largely on the comparative earnings experience (or labor-market experience) of young adults and their parents. (Easterlin, 1973, p. 181)

Because of the greater potential variability at the micro level, micro tests of the relative income hypothesis can be much stronger than those macro tests which are possible currently. However, considerable information is needed to examine the relative income hypothesis at the micro level. At the minimum, information is needed on the timing of both the individual's marriages and the births of his children, on his earnings over a period extending from the end of adolescence, on the income of his parents' household when he was an adolescent, on his education, and on his military experience. There have been a number of micro-level examinations on the relative income hypothesis (Crimmins-Gardner and Ewer, 1978; MacDonald and Rindfuss, 1978; Olneck and Wolfe, 1978; Thornton, 1978), but none of them have had all the requisite information available. Although the results of these micro-level analyses have been uniformly negative, the linkages between the operational measures and the underlying theoretical constructs have been so weak that these negative findings are suspect.

The present paper again examines Easterlin's relative income hypothesis with respect to fertility at the micro level. An earlier paper (MacDonald and Rindfuss, forthcoming) examined the relative income hypothesis with respect to first marriage. As in that paper, the Wisconsin Study of Social and Psychological Factors in Socioeconomic Achievement data (Sewell and Hauser, 1975, 1976) are used. These Wisconsin data contain all the information necessary to examine the Easterlin hypothesis at the micro level.

## INDIVIDUAL AND PERIOD CHANGE: CONCEPTUALIZING THE FERTILITY PROCESS

Our analysis is based on a cohort of young males who were high school seniors in 1957. We have information on them until they are in their early thirties. Thus, the data span a period of substantial change in young men's lives. In this period they finish their education, are engaged in one job (or a series of jobs), perhaps enter the military service, and begin the family-building process. It is a period during which their income and income prospects are changing quite rapidly. Furthermore, there is substantial variance within cohorts with respect to the timing of the change and the amount of change (see Hauser, 1979). As young men age, their characteristics and their perceptions about their characteristics change. This means that their relative income will change, or at least the numerator of that measure. When examining the fertility process from the perspective of the Easterlin hypothesis, it is necessary to account for such change.

Furthermore, the Easterlin hypothesis specifically addresses the timing of fertility: young men with high relative incomes are expected to have their children sooner than young men with low relative incomes. The quality of fertility enters the hypothesis only tangentially in that those who start their families at a relatively young age are likely to decide to have more children than those who begin at a relatively old age. Thus, our central concern is with the timing of fertility. Accordingly, we examine the fertility process in a sequential fashion by modeling the probability of having a child in each of a series of successive time periods.

The number of children an individual has at any one point in time is expected to have a strong influence on the probability of having additional

children in subsequent time periods. Similarly, children can be born within or outside of marriage; but marital status has a strong influence on whether or not a person has a child in a given time period. We control for parity and marital status at the beginning of each time period, and allow for parity and marital status to change over time.

One additional conceptual issue needs to be discussed here, namely, whether we will be able to disentangle age, period, and cohort effects. Since there is limited variability in the ages of high school seniors, it is convenient, for the present, to think of the sample of young men as being members of the same birth cohort (approximately 1939-1940). Thus, from the perspective of the relative income hypothesis, we will be examining individual variability within the framework of a fixed cohort size.

The fact that we have data for only one cohort also means that both the period and age dimensions are changing simultaneously and isomorphically. Thus, we will not be able to distinguish period effects from age effects. For example, in 1961 these young men faced a marked increase in unemployment rates, and this period factor may affect their fertility behavior. But also in 1961 they will have been four years out of high school. If they entered and progressed through college on a normal track, they would have graduated from college in 1961--this age factor may have affected their fertility behavior. The fact that we cannot distinguish between period or age effects should be kept in mind when interpreting our results.

## DATA AND ESTIMATION METHODS

Our analysis uses a sample of men[1] from the Wisconsin Longitudinal Study of Social and Psychological Factors in Achievement (Sewell and Hauser,

1975, 1976). These men were Wisconsin high school seniors in 1957 who were surveyed at that time to obtain college plans and other social and psychological variables. In connection with a 1964 follow-up survey of parents, Wisconsin state income tax returns were used to construct an average of parental income from 1957 to 1960. In 1975, 88.5 percent of the original 1957 sample were reinterviewed (Clarridge, Sheehy, and Hauser, 1978). Among other responses, these interviews obtained detailed marital and fertility histories. Over the years, Social Security earnings records[2] have been matched with the interview data to cover the period from 1957 to 1971.

To obtain earnings variables for analysis, case record values for each calendar year were coded in one hundred dollar units and then inflated by the ratio of the Consumer Price Index for 1972 to the Consumer Price Index for the relevant calendar year. In years for which the young men's total wages were below the taxable Social Security maximum, the earnings variable is based on the raw Social Security record. In other cases, further steps were necessary to obtain more complete earnings measures (see Appendix A).

For persons in noncovered employment, our earnings variables do not provide valid earnings histories. As a result, many zero and low earnings reports for post-schooling years are probably the result of noncoverage of civilian government employees and self-employed persons. Hauser (1979) reports that zero earnings reports are associated with increased educational attainment, such that they "more probably reflect a truncation at the top than at the bottom of the earnings distribution" (p. 13). To deal with these records, we use a missing data indicator (EFLG). For any year after the respondent had completed his schooling and for which his Social Security

earnings were less than $1000, this indicator was assigned a value of 1; otherwise, zero. A sensitivity analysis was also conducted, excluding respondents who had farm background, or who were farmers, farm managers, or self-employed proprietors in 1964. The results of this sensitivity analysis are reported later in the paper.

A logit program provided maximum likelihood estimates of the partial effects of independent variables on the log of the odds that a young man would marry. The dichotomous form of the dependent variable dictated the selection of this technique (Goldberger, 1964; Goodman, 1976). To facilitate understanding of the results, the log odds coefficient estimates were transformed. Each coefficient was multiplied by $(\overline{P})(1 - \overline{P})$, where $\overline{P}$ is the mean of the dependent variable (Hanushek and Jackson, 1977). The resulting transformed coefficients are analogs to regression coefficients, to be interpreted as the estimated effect of a unit change in an independent variable on the probability of marriage, evaluated at the sample mean. For a number of the decision periods we also ran OLS estimates and obtained identical results.

Usually the coefficient estimates refer to the impact of membership in a particular category relative to an omitted category. Because dummy variables restrict the range over which iterations must be computed, their use was encouraged by the decision to use logit. With respect to variables such as parents' income, another advantage is that the dummy variables pull in extreme values subject to greater sampling variability that might otherwise mislead by dominating coefficient estimation.

## EFFECTS OF RELATIVE INCOME AND CURRENT EARNINGS

In this section, the hypotheses guiding specification of the two main estimation models are discussed with respect to period specific fertility. After defining the variables that enter these models, the results are presented.

The formulations that motivate Models 1 and 2 are

(1) $K_2 = f_1[W_1; S_1; P_1; F_0; B_0]$ and

(2) $K_2 = f_2[(W_1/F_0); S_1; P_1; B_0]$,

where

$K_2$ takes on the value of one if a birth occurred during a period dated 2, and zero otherwise;

$W_1$ is the young man's market wage for the immediately prior period;

$S_1$ is his stock of human capital at the end of this prior period;

$P_1$ are parity and marital characteristics at the end of the prior period;

$F_0$ is the income (or wealth) of his family of origin; and

$B_0$ are the social characteristics of the origin family (e.g., religion).

Because Model 2 specifies an interaction between a young man's wage and his parents' income, it corresponds closely to Easterlin's relative income hypothesis. Model 1 is consistent with Easterlin's view in that it specifies an effect of parents' income, but it also specifies effects of parents' income and the market wage for the young man. As such, Model 1, if parents' income were eliminated, bears close resemblance to the economic models of fertility outlined by Becker and his colleagues (e.g., Becker, 1960; Mincer, 1963; Becker and Lewis, 1973; Willis, 1973; Michael, 1974;

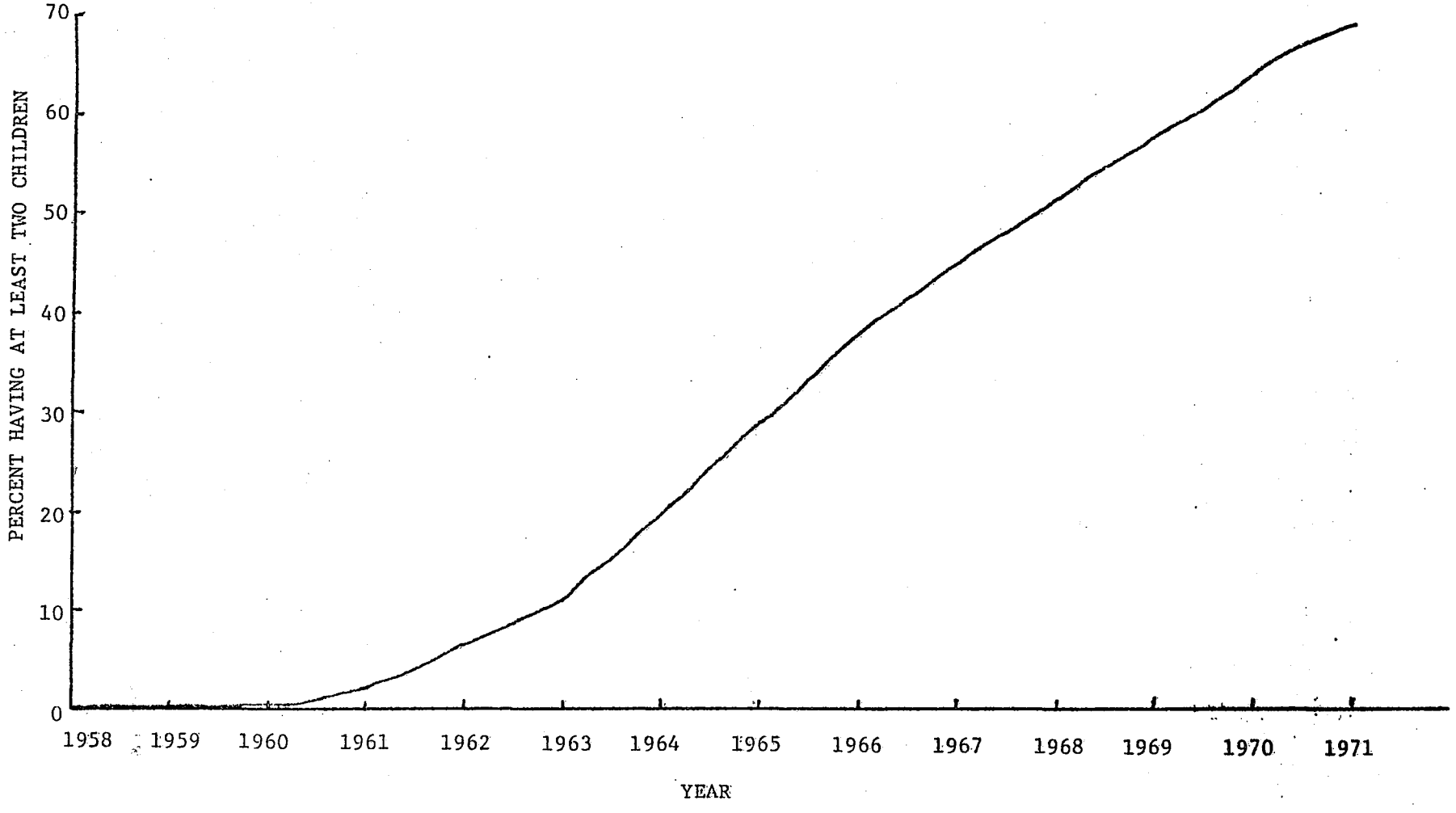
and Sanderson, 1974). However, as outlined below, caution should be exercised in interpreting our results with respect to the now-traditional Becker approach.

Becker is concerned with the quantity of children, that is, the number of children women (or couples) have. The timing of fertility is not considered. The analysis here examines on an annual basis whether or not a child is born, beginning with the year following graduation from high school. Thus, our fertility measure includes both timing and number considerations. We are modeling the family-building process, not simply the end outcome. Ryder (1973) argues that the dominant normative structure with respect to fertility is that individuals ought to marry and have at least two children, provided they can afford to do so. Measures of personal fertility preferences reflect this in that the vast majority prefer at least two children. Thus, considerations involved in whether or not a first or second child is born in a given year will predominantly be timing considerations. After the birth of the second child, number considerations become more and more important. As shown in Figure 1, not until 1968 do more than half of the sample have at least two children.

For both Models 1 and 2, $S_1$ may be thought to capture taste differences that arise from continued education. But, in the early years in particular, $S_1$ may also tap the young man's aspirations for additional human capital. The background characteristics ($B_0$) are included to control for different preferences.

Models 1 and 2 are reduced forms of a more complicated structure that we have not identified. We recognize that the fertility process is likely to involve a number of steps, such as whether or not to use contraception,

Figure 1: Percentage having at least two children: 1958-1971



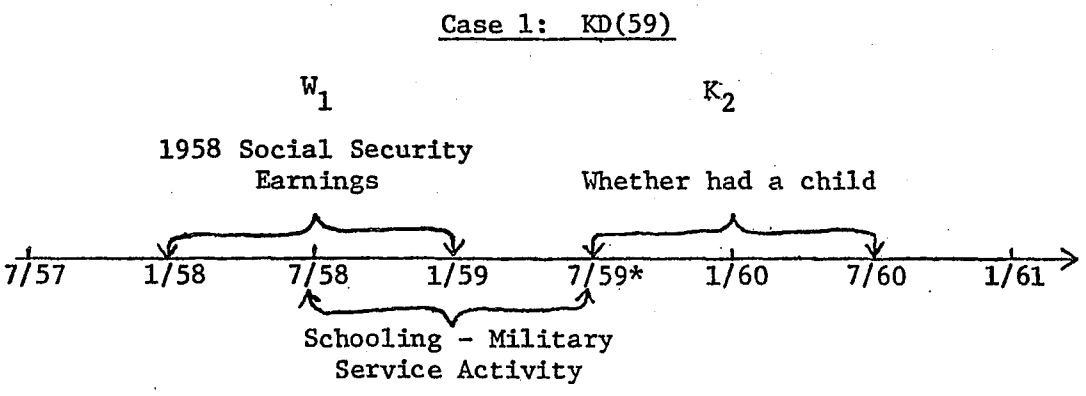
the choice of contraception to use, and, once conception occurs, whether or not to carry the pregnancy to term. However, we have observations on only the birth event itself.

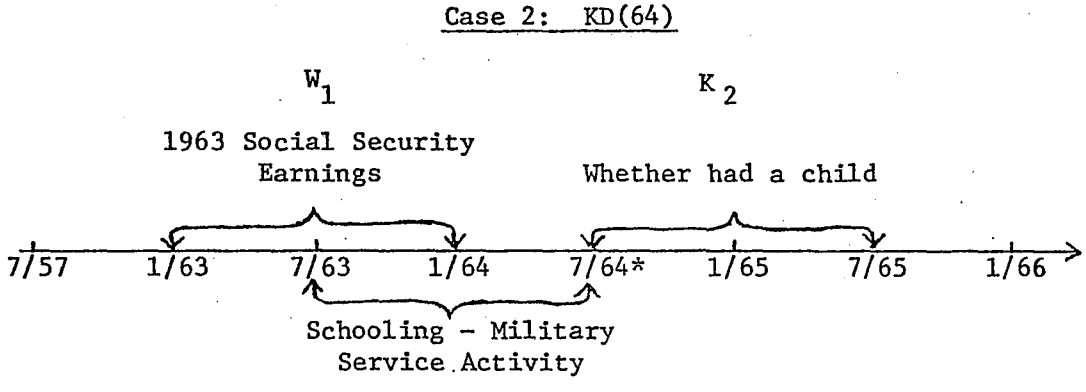
The accounting periods used in each of our analyses are shown in Figure 2. Two years are illustrated: 1959 and 1964. For the dependent variable, whether or not a child is born in a given year, we use fiscal years running from July through June. The fiscal year immediately prior to this one references recent schooling and military service. However, there is a six-month lag between the end of the Social Security calendar year earnings period and the beginning of each marriage decision period. All earnings and income variables refer to calendar years. (In the permanent income models of the next section, some of these variables lead the decision period.)

The variables used in Models 1 and 2 are defined in Table 1, using fiscal year 1959 as the reference period for the dependent variable. Lowercase letters are used to name variables that do not change across all decision periods (e.g., background characteristics). Uppercase letters define variables that do change across decision periods. Appendix B displays the means and standard deviations of all variables used in our study, for 1959, 1962, 1965, 1968, and 1971.[3]

Ideally, a wage-rate variable would measure the value of the young men's time directly. Unfortunately, there are no data on annual employment hours with which to obtain wage rates from Social Security earnings. However, time spent in schooling or the military can be accounted for. For a sample of white high school graduates, it may be reasonable to assume full employment for time not spent in the military or as a student.

Figure 2: Illustrative accounting periods for 1959 and 1964.




*CED ($S_1$) established here for $M_2$

Table 1: Measurement of Variables Used in Models 1 and 2. (For those variables that change across decision periods, 1959 is used as an example decision period. Such variables are denoted by uppercase letters.)

$K_{-2}$ (Dependent Variable)

| | |
|---|---|
| KD(59) | equals one if birth occurred after June 1959 and before July 1960 (7/59-6/60); otherwise zero |

$B_0$ (Social Characteristics)

| | |
|---|---|
| cath | equals one if family of origin was Catholic; otherwise zero. |
| oldr | equals one if 18.5 or more years old in June 1957; otherwise zero. |
| nfrm | equals one if family of origin did not reside on a farm; otherwise zero. |
| nkids | number of siblings in family of origin. |

$F_0$ (Family Income, or Wealth)

| | |
|---|---|
| pay2 | equals one if parents were in the second quartile of the parents' average (1957-1959) income distribution; otherwise zero. |
| pay3 | equals one if parents were in the third quartile of the parents' average income distribution; otherwise zero. |
| pay4 | equals one if parents were in the fourth quartile of the parents' average income distribution; otherwise zero. |
| mpay | equals one if missing data on parents' income; otherwise zero. |
| fin2 | equals one if parents in the second quartile of the needs-adjusted parents' average income distribution; otherwise zero. |
| fin3 | equals one if parents in third quartile of the needs-adjusted average income distribution; otherwise zero. |
| fin4 | equals one if parents in fourth quartile of the needs-adjusted average income distribution; otherwise zero. |
| mfin | equals one if missing data on parents' needs-adjusted average income; otherwise zero. |
| foc2 | equals one if Duncan score for father's occupation is in the second quartile of distribution of Duncan occupation scores; otherwise zero. |
| foc3 | equals one if father's Duncan score is in the third quartile of the occupation score distribution; otherwise zero. |
| foc4 | equals one if father's Duncan score is in the fourth quartile of the occupation score distribution; otherwise zero. |

Table 1 (Cont'd)

| | |
|---|---|
| focu | equals one if missing data on father's occupation; otherwise zero. |
| medl | equals one if mother's education was 8-11 years; otherwise zero. |
| medm | equals one if mother's education was 12 years; otherwise zero. |
| medh | equals one if mother's education was more than 12 years; otherwise zero. |

$W_0$ (Wage Indicators)

| | |
|---|---|
| SRN2 | equals one if in the second quartile of the calendar 1958 Social Security earnings distribution; otherwise zero. |
| SRN3 | equals one if in third quartile of 1958 Social Security earnings distribution; otherwise zero. |
| SRN4 | equals one if in fourth quartile of 1958 Social Security earnings distribution; otherwise zero. |
| EFLG | equals one if completed schooling before July 1959 and 1958 Social Security earnings less than $1000; otherwise zero. |
| RELY | 1958 Social Security earnings divided by parents' 1957-1959 average income. |
| ARLY | 1958 Social Security earnings divided by needs-adjusted parents' 1957-1959 average income. |
| FUL | equals one if enrolled in school or on active military duty for one month or less, from July 1958 through June 1959; otherwise zero. |
| PRT | equals one if enrolled in school or on active military duty for more than one month but less than 9 months, from July 1958 through June 1959; otherwise zero. |
| OUT | equals one if enrolled in school or on active military duty 9 months or more, from July 1958 through June 1959; otherwise zero. |

$S_1$ (Human Capital)

| | |
|---|---|
| CED | total schooling accumulated through June 1959. |

$P_1$ (Prior Marriage and Fertility Indicators)

| | |
|---|---|
| PR1 | equals one if birth parity one as of July 1, 1959; otherwise zero. |
| PR2 | equals one if birth parity two as of July 1, 1959; otherwise zero. |
| PR3 | equals one if birth parity is three or higher as of July 1, 1959; otherwise zero. |
| MSTS | equals one if currently married as of July 1, 1959; otherwise zero. |

If labor supply hours are roughly equivalent for men employed in the civilian labor force, earnings coefficients that net out military and schooling effects may approximate wage rate effects.

Whether or not earnings net of time out of the civilian labor force represent wages, accounting for military and schooling remains necessary. How young men evaluate their earnings performance will depend on the extent of part-year employment. The variables FUL and PPT indicate full and part-year availability for civilian employment. Although the Wisconsin study data are precise about the timing of military duty, it was necessary to impute some schooling activity codes (see Appendix A).

The following variables were included as background characteristics: religion, farm-nonfarm origin, number of siblings in family of origin, and age at high school graduation. Religion is dichotomized as Catholic-nonCatholic, and refers to the family of origin. Catholics have traditionally had higher levels of fertility than non-Catholics. Since the analysis covers a time period from the late 1950s through the mid-1960s, the recent convergence in Catholic-nonCatholic fertility behavior (Bumpass and Westoff, 1973; Westoff and Jones, 1977; Jones and Westoff, 1979) is not applicable.

Nonfarm background is included to control for the more limited educational opportunities available in rural areas (see Duncan and Reiss, 1956) as well as the traditionally higher levels of fertility found in rural areas. We expect those who have large families of origin to have more children and to have them at younger ages. However, given the mixed results reported in the literature to date with respect to completed family size (Berent, 1953; Kantner and Potter, 1954; Duncan et al., 1965; Hendershot, 1969;

McAllister, Stokes, and Knapp, 1974; and Johnson and Stokes, 1976), we expect the effect of number of siblings to be small. Age at high school graduation indexes maturational differentials within our sample. Race is a conspicuously absent variable. Only about 2 percent of the sample are nonwhite. Other potential background variables used in preliminary models, but found unimportant, were the type of high school program (i.e., whether college preparatory or not), percentile rank on the Henmon-Nelson test, and normalized class rank.

Finally, stage in the life cycle is controlled by the prior parity and marriage status variables. We expect those who are married to have higher probabilities of having a child than those who are not, and those having two or more children to be less likely to have another child. We had no expectation with respect to those who had only one child at the beginning of the period.

The results are shown in Table 2 for 14 annual periods, 1958-1971. The goodness of fit measure indicates satisfactory fits for all analysis periods. The parents' 1957-1960 income average enters Model 1 directly (pay2-pay4) and enters Model 2 indirectly as the denominator for the relative income variable (RELY). Looking first at Model 2, it can be seen that relative income has a significant effect on fertility in 1960 and 1961, but not in any of the other years. For Model 1, in no case are all three of the parents' income dummy variables significant in the same year, but one or two of them are significant in three years: 1958, 1961, and 1963. For both models, whatever significant support we find for the effect of parents' income is clustered in the early years of the childbearing period--the years when couples are deciding <u>when</u> to have children rather than <u>how many</u> they

Table 2: Results[1] of logit regressions for Models 1 and 2, for men from the Wisconsin Longitudinal Study of Social and Psychological Factors in Achievement: 1958-1971.

| | 1958[2] | | 1959 | | 1960 | | 1961 | | 1962 | | 1963 | | 1964 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $\bar{P}$=0.01 | | $\bar{P}$=0.04 | | $\bar{P}$=0.07 | | $\bar{P}$=0.14 | | $\bar{P}$=0.18 | | $\bar{P}$=0.23 | | $\bar{P}$=0.23 | |
| | Model 1 | Model 2 | Model 1 | Model 2 | Model 1 | Model 2 | Model 1 | Model 2 | Model 1 | Model 2 | Model 1 | Model 2 | Model 1 | Model 2 |
| $\alpha$ for $\chi^2$ | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| SRN2 | 0.01 | -- | 0.01 | -- | 0.00 | -- | 0.01 | -- | 0.04* | -- | 0.03** | -- | 0.04* | -- |
| SRN3 | 0.01 | -- | 0.00 | -- | 0.00 | -- | 0.01 | -- | 0.05* | -- | 0.01 | -- | 0.05* | -- |
| SRN4 | 0.01 | -- | 0.02 | -- | 0.03* | -- | 0.04** | -- | 0.06* | -- | 0.02 | -- | 0.05* | -- |
| pay2 | -0.01* | -- | 0.01 | -- | 0.01 | -- | -0.01 | -- | 0.02 | -- | 0.04* | -- | 0.01 | -- |
| pay3 | 0.00 | -- | 0.00 | -- | -0.01 | -- | -0.02 | -- | 0.02 | -- | 0.02 | -- | 0.01 | -- |
| pay4 | -0.01 | -- | 0.00 | -- | -0.01 | -- | -0.03** | -- | 0.02 | -- | 0.03** | -- | -0.01 | -- |
| RELY | -- | 0.01 | -- | 0.00 | -- | 0.02** | -- | 0.02* | -- | 0.00 | -- | -0.01 | -- | 0.00 |
| PR1 | -0.07** | -0.07** | -0.15* | -0.15* | -0.17* | -0.16* | -0.18* | -0.18* | -0.13* | -0.13* | -0.04* | -0.04* | 0.01 | 0.02 |
| PR2 | 0.00 | 0.00 | -0.60** | -0.61* | -0.34* | -0.35* | -0.24* | -0.24* | -0.21* | -0.21* | -0.17* | -0.17* | -0.11* | -0.10* |
| PR3 | 0.00 | 0.01 | -0.02 | -0.01 | -0.03 | -0.03 | -0.27* | -0.27* | -0.13* | -0.14* | -0.24* | -0.24* | -0.17* | -0.17* |
| MSTS | 0.08* | 0.08* | 0.57* | 0.57* | 0.52* | 0.52* | 0.53* | 0.53* | 0.43* | 0.43* | 0.40* | 0.40* | 0.30* | 0.30* |
| CED | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| FUL | 0.01* | 0.01* | 0.02* | 0.02* | 0.01 | 0.02* | 0.04* | 0.04* | 0.05* | 0.07* | 0.06* | 0.07* | 0.04* | 0.06* |
| PRT | 0.00 | 0.00 | 0.00 | 0.00 | -0.01 | -0.01 | 0.01 | 0.01 | 0.00 | 0.00 | 0.01 | 0.01 | 0.01 | 0.02 |
| cath | 0.01* | 0.01* | 0.00 | 0.00 | 0.00 | 0.00 | -0.01 | -0.01 | -0.01 | -0.01 | 0.07* | 0.07* | 0.06* | 0.06* |
| oldr | 0.01 | 0.01 | -0.02* | -0.02* | 0.01 | 0.01 | 0.01 | 0.01 | -0.02 | -0.02 | -0.02 | -0.02 | -0.03 | -0.03 |
| nfrm | 0.00 | 0.00 | 0.00 | 0.00 | -0.01 | -0.01 | 0.02 | 0.02 | 0.02 | 0.02** | -0.04* | -0.04* | -0.02 | -0.02 |
| nkids | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01* | 0.01* | 0.00 | 0.00 | 0.00 | 0.01 |

[1]The figures are transformed log-odds coefficients. For each model, N = 3915. Single asterisks indicate coefficients significant for at least the 0.05 level. Double asterisks indicate coefficients significant at greater than the 0.05 level, but less than 0.10 level. The missing data codes described in Table 1 are included in the analysis but are not shown here because of the lack of substantive interest.

[2]In 1958, the dependent variable is KD(58), i.e., the probability of having a child between July 1958 and June 1959. The dependent variable is defined comparably for the other analysis years.

Table 2 (Continued)

| | 1965 | | 1966 | | 1967 | | 1968 | | 1969 | | 1970 | | 1971 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $\bar{P}$=0.24 | | $\bar{P}$=0.21 | | $\bar{P}$=0.19 | | $\bar{P}$=0.19 | | $\bar{P}$=0.17 | | $\bar{P}$=0.16 | | $\bar{P}$=0.15 | |
| | Model 1 | Model 2 | Model 1 | Model 2 | Model 1 | Model 2 | Model 1 | Model 2 | Model 1 | Model 2 | Model 1 | Model 2 | Model 1 | Model 2 |
| $\alpha$ for $\chi^2$ | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| SRN2 | 0.02 | -- | 0.02 | -- | 0.04* | -- | 0.00 | -- | -0.01 | -- | 0.03 | -- | 0.00 | -- |
| SRN3 | -0.02 | -- | 0.02 | -- | 0.03 | -- | -0.01 | -- | -0.02 | -- | 0.03 | -- | 0.01 | -- |
| SRN4 | 0.02 | -- | 0.08* | -- | 0.03 | -- | 0.01 | -- | 0.00 | -- | 0.02 | -- | 0.01 | -- |
| pay2 | 0.00 | -- | 0.00 | -- | -0.01 | -- | -0.01 | -- | 0.01 | -- | 0.01 | -- | -0.03 | -- |
| pay3 | 0.02 | -- | 0.00 | -- | -0.01 | -- | -0.01 | -- | 0.00 | -- | 0.02 | -- | 0.00 | -- |
| pay4 | 0.02 | -- | 0.02 | -- | 0.00 | -- | -0.01 | -- | 0.03 | -- | 0.01 | -- | -0.01 | -- |
| RELY | -- | 0.00 | -- | 0.01 | -- | 0.00 | -- | 0.00 | -- | 0.00 | -- | -0.01 | -- | 0.00 |
| PR1 | 0.03 | 0.03 | 0.04* | 0.05* | 0.00 | 0.00 | 0.04* | 0.04* | 0.05* | 0.05* | 0.04* | 0.04* | 0.05* | 0.05* |
| PR2 | -0.08* | -0.08* | -0.09* | -0.09* | -0.15* | -0.15* | -0.10* | -0.10* | -0.12* | -0.12* | -0.07* | -0.07* | -0.10* | -0.09* |
| PR3 | -0.10* | -0.10* | -0.15* | -0.15* | -0.17* | -0.17* | -0.15* | -0.15 | -0.15* | -0.15* | -0.11* | -0.11* | -0.11* | -0.11* |
| MSTS | 0.28* | 0.28* | 0.23* | 0.24* | 0.24* | 0.25* | 0.22* | 0.22* | 0.19* | 0.19* | 0.16* | 0.16* | 0.16* | 0.16* |
| CED | 0.01 | 0.01 | 0.00 | 0.00 | 0.01** | 0.01** | 0.00 | 0.00 | 0.01** | 0.01** | 0.01* | 0.01* | 0.00 | 0.00 |
| FUL | 0.01 | 0.00 | 0.01 | 0.03 | 0.01 | 0.02 | 0.02 | 0.02 | -0.02 | -0.02 | 0.00 | 0.02 | 0.04 | 0.04 |
| PRT | 0.01 | 0.02 | -0.02 | -0.01 | -0.06** | -0.06** | 0.00 | 0.00 | -0.07** | -0.07** | 0.00 | 0.01 | 0.05 | 0.04 |
| cath | 0.07* | 0.08* | 0.05* | 0.05* | 0.05* | 0.05* | 0.04* | 0.04* | 0.02 | 0.02 | 0.01 | 0.01 | 0.02** | 0.02** |
| oldr | -0.01 | -0.01 | 0.00 | 0.00 | -0.03 | -0.03 | -0.03 | -0.03 | 0.00 | 0.00 | -0.01 | -0.01 | -0.01 | -0.01 |
| nfrm | -0.03** | -0.03 | -0.03** | -0.03 | -0.05* | -0.05* | -0.02 | -0.02 | -0.07* | -0.06* | -0.02 | -0.02 | 0.01 | 0.01 |
| nkids | 0.01 | 0.00 | 0.01* | 0.01* | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | 0.00 | 0.01** | 0.01** | 0.00 | 0.00 |

want to have. This, of course, is what is expected from the Easterlin hypothesis; that is, relative income affects the timing of fertility rather than the quantity.

The case for the relative income hypothesis in Table 2 is certainly not overwhelming. To further explore Easterlin's hypothesis, we created other measures of parental status that might indicate the standard of living of the respondent in his family of origin and thus determine his consumption tastes.

It might be argued that parents' income during the period 1957-1960 does not adequately capture the earlier economic socialization experience. Among other possible indicators of parental characteristics, the Duncan SES score for the father's occupation and the mother's educational attainment seemed sufficient to tap sociological aspects of the environment of the family of origin, as well as to proxy for parental wealth, which might be measured poorly by reported income.

The number of household members who shared the parents' income is also important to the standard of living experienced in the family of origin. We adjusted parental income for the ages and numbers of siblings living in the respondent's household while he was in high school. We had to assume there were no other relatives or dependents living in the household, and that siblings left the household on their twentieth birthday. The age-size composition of the parents' household was used to rescale parents' income using the North Central Region family equivalence scales for the Bureau of Labor Statistics moderate income level. Rural incomes were inflated to urban standards, based on work by Reed and MacIntosh (1972) and Espenshade (1973) on the cost of raising children.

Model 1 was rerun twice--once substituting father's occupation and mother's education for parents' income, and, again, substituting adjusted parents' income. Model 2 was also rerun, but only once, substituting needs-adjusted parents' income in the denominator of the relative income measure (ARLY). These results are shown in Table 3, which also includes the initial results for Models 1 and 2 (labeled "version A") for ease of comparison. The coefficients for variables other than earnings, parents' income, relative income, father's occupation, and mother's education are not shown in Table 3 because their effects did not change across the various versions of the same model.

Looking first at Model 2, it can be seen that the revised version of relative income (ARLY) also has a significant effect in only two of the 14 years. Although they are not the same two years as was the case with version A, they are quite similar: 1960 and 1961 in one case, and 1961 and 1962 in another case. With respect to Model 1, neither father's occupation nor mother's education has a pattern of significant effects on fertility. The needs-adjusted parents' income (fin2-fin4) has a significant effect only in 1963. In brief, the results from these alternative specifications of Models 1 and 2 are quite similar to the results from the earlier versions. We find some support for the relative income hypothesis, but it is very tenuous. More often than not, the relative income measures have no effect on fertility; and even when there is an effect, it is very weak.[4]

The earnings of the young men are positively associated with the probability of having a child in any given year. Net of commitment to school or the military, higher earnings apparently encourage fertility. However, earnings effects are not significant in every year. They are not significant

Table 3: Results[1] from logit regressions for alternative specifications of Models 1 and 2 for men from the Wisconsin Longitudinal Study of Social and Psychological Factors in Achievement: 1958-1971.

| | 1958[2] | | | 1959 | | | 1960 | | | 1961 | | | 1962 | | | 1963 | | | 1964 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $\bar{P}$ = 0.01 | | | $\bar{P}$ = 0.04 | | | $\bar{P}$ = 0.07 | | | $\bar{P}$ = 0.14 | | | $\bar{P}$ = 0.18 | | | $\bar{P}$ = 0.23 | | | $\bar{P}$ = 0.22 | | |
| | Model 1, version: | | | Model 1, version: | | | Model 1, version: | | | Model 1, version: | | | Model 1, version: | | | Model 1, version: | | | Model 1, version: | | |
| | a | b | c | a | b | c | a | b | c | a | b | c | a | b | c | a | b | c | a | b | c |
| $\alpha$ for $\chi^2$ | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| SRN2 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.00 | 0.00 | 0.00 | 0.01 | 0.01 | 0.01 | 0.04* | 0.04* | 0.04* | 0.03** | 0.03** | 0.03** | 0.04* | 0.04* | 0.04* |
| SRN3 | 0.01 | 0.01 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.01 | 0.02 | 0.01 | 0.05* | 0.05* | 0.05* | 0.01 | 0.01 | 0.01 | 0.05* | 0.05* | 0.05* |
| SRN4 | 0.01 | 0.01 | 0.01 | 0.02 | 0.02 | 0.02 | 0.03* | 0.03** | 0.03** | 0.04** | 0.04** | 0.04** | 0.06* | 0.06* | 0.06* | 0.02 | 0.02 | 0.02 | 0.05* | 0.05* | 0.05* |
| pay2 | -0.01* | -- | -- | 0.01 | -- | -- | 0.01 | -- | -- | -0.01 | -- | -- | 0.02 | -- | -- | 0.04* | -- | -- | 0.01 | -- | -- |
| pay3 | 0.00 | -- | -- | 0.00 | -- | -- | -0.01 | -- | -- | -0.02 | -- | -- | 0.02 | -- | -- | 0.02 | -- | -- | 0.01 | -- | -- |
| pay4 | -0.01 | -- | -- | 0.00 | -- | -- | -0.01 | -- | -- | -0.03** | -- | -- | 0.02 | -- | -- | 0.03** | -- | -- | -0.01 | -- | -- |
| foc2 | -- | 0.00 | -- | -- | 0.00 | -- | -- | 0.01 | -- | -- | -0.01 | -- | -- | 0.00 | -- | -- | 0.01 | -- | -- | -0.01 | -- |
| foc3 | -- | 0.01 | -- | -- | 0.01 | -- | -- | 0.01 | -- | -- | -0.01 | -- | -- | -0.01 | -- | -- | -0.01 | -- | -- | -0.02 | -- |
| foc4 | -- | 0.00 | -- | -- | 0.00 | -- | -- | 0.01 | -- | -- | 0.00 | -- | -- | 0.00 | -- | -- | -0.02 | -- | -- | -0.01 | -- |
| med2 | -- | 0.00 | -- | -- | -0.01 | -- | -- | 0.01 | -- | -- | 0.02 | -- | -- | 0.02 | -- | -- | 0.00 | -- | -- | 0.02 | -- |
| med3 | -- | -0.01 | -- | -- | -0.01 | -- | -- | 0.01 | -- | -- | -0.02 | -- | -- | 0.03 | -- | -- | 0.02 | -- | -- | 0.01 | -- |
| med4 | -- | -0.01 | -- | -- | -0.01 | -- | -- | 0.00 | -- | -- | 0.01 | -- | -- | 0.04** | -- | -- | 0.00 | -- | -- | 0.03 | -- |
| fin2 | -- | -- | 0.00 | -- | -- | 0.00 | -- | -- | 0.01 | -- | -- | 0.00 | -- | -- | 0.02 | -- | -- | 0.05* | -- | -- | 0.02 |
| fin3 | -- | -- | 0.01 | -- | -- | 0.01 | -- | -- | 0.01 | -- | -- | -0.01 | -- | -- | 0.01 | -- | -- | 0.04** | -- | -- | -0.01 |
| fin4 | -- | -- | 0.00 | -- | -- | 0.00 | -- | -- | 0.00 | -- | -- | -0.02 | -- | -- | 0.03 | -- | -- | 0.04* | -- | -- | -0.01 |
| | Model 2, Version: | | | Model 2, Version: | | | Model 2, Version: | | | Model 2, Version: | | | Model 2, Version: | | | Model 2, Version: | | | Model 2, Version: | | |
| | a | b | | a | b | | a | b | | a | b | | a | b | | a | b | | a | b | |
| $\alpha$ for $\chi^2$ | 0.00 | 0.00 | | 0.00 | 0.00 | | 0.00 | 0.00 | | 0.00 | 0.00 | | 0.00 | 0.00 | | 0.00 | 0.00 | | 0.00 | 0.00 | |
| RELY | 0.01 | -- | | 0.00 | -- | | 0.02** | -- | | 0.02* | -- | | 0.00 | -- | | -0.01 | -- | | 0.00 | -- | |
| ARLY | -- | 0.00 | | -- | 0.00 | | -- | 0.00 | | -- | 0.004* | | -- | 0.004** | | -- | 0.0 | | -- | 0.00 | |

[1] The figures are transformed log-odds coefficients. For each model, N = 3915. The findings for PR1, PR2, PR3, MSTS, CED, FUL, PRT, cath, oldr, nfrm, nkids, and all missing data categories.

[2] In 1958, the dependent variable is KD(58), i.e., the probability of having a child between July 1958 and June 1959. The dependent variable is defined comparably for the other analysis years.

Table 3 (Continued)

| | 1965 $\bar{P}$ = 0.24 | | | 1966 $\bar{P}$ = 0.21 | | | 1967 $\bar{P}$ = 0.19 | | | 1968 $\bar{P}$ = 0.19 | | | 1969 $\bar{P}$ = 0.17 | | | 1970 $\bar{P}$ = 0.16 | | | 1971 $\bar{P}$ = 0.15 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Model 1, version: | | | Model 1, version: | | | Model 1, version: | | | Model 1, version: | | | Model 1, version: | | | Model 1, version: | | | Model 1, version: | | |
| | a | b | c | a | b | c | a | b | c | a | b | c | a | b | c | a | b | c | a | b | c |
| α for $\chi^2$ | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| SRN2 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.04* | 0.04* | 0.04* | 0.00 | 0.00 | 0.00 | -0.01 | -0.01 | -0.01 | 0.03 | 0.03 | 0.03 | 0.00 | 0.00 | 0.00 |
| SRN3 | -0.02 | -0.02 | -0.02 | 0.02 | 0.02 | 0.02 | 0.03 | 0.03 | 0.03 | -0.01 | -0.01 | -0.01 | -0.02 | -0.02 | -0.02 | 0.03 | 0.03 | 0.03 | 0.01 | 0.02 | 0.02 |
| SRN4 | 0.02 | 0.02 | 0.02 | 0.08* | 0.08* | 0.08* | 0.03 | 0.03 | 0.03 | 0.01 | 0.01 | 0.01 | 0.00 | 0.00 | 0.00 | 0.02 | 0.02 | 0.02 | 0.01 | 0.01 | 0.01 |
| pay2 | 0.00 | -- | -- | 0.00 | -- | -- | -0.01 | -- | -- | -0.01 | -- | -- | 0.01 | -- | -- | 0.01 | -- | -- | -0.03 | -- | -- |
| pay3 | 0.02 | -- | -- | 0.00 | -- | -- | -0.01 | -- | -- | -0.01 | -- | -- | 0.00 | -- | -- | 0.02 | -- | -- | 0.00 | -- | -- |
| pay4 | 0.02 | -- | -- | 0.02 | -- | -- | 0.00 | -- | -- | -0.01 | -- | -- | 0.03 | -- | -- | 0.01 | -- | -- | -0.01 | -- | -- |
| foc2 | -- | -0.01 | -- | -- | -0.03** | -- | -- | 0.00 | -- | -- | -0.01 | -- | -- | -0.03** | -- | -- | 0.02 | -- | -- | 0.01 | -- |
| foc3 | -- | 0.04** | -- | -- | -0.03 | -- | -- | -0.02 | -- | -- | -0.01 | -- | -- | -0.03 | -- | -- | 0.01 | -- | -- | 0.01 | -- |
| foc4 | -- | 0.01 | -- | -- | -0.03 | -- | -- | -0.04** | -- | -- | -0.02 | -- | -- | -0.01 | -- | -- | 0.03** | -- | -- | -0.02 | -- |
| med2 | -- | -0.01 | -- | -- | 0.03 | -- | -- | 0.00 | -- | -- | 0.01 | -- | -- | 0.03 | -- | -- | -0.01 | -- | -- | -0.01 | -- |
| med3 | -- | -0.02 | -- | -- | 0.04 | -- | -- | 0.00 | -- | -- | -0.01 | -- | -- | 0.04** | -- | -- | -0.02 | -- | -- | 0.00 | -- |
| med4 | -- | -0.06* | -- | -- | 0.02 | -- | -- | -0.01 | -- | -- | 0.04 | -- | -- | 0.00 | -- | -- | -0.01 | -- | -- | 0.00 | -- |
| fin2 | -- | -- | 0.00 | -- | -- | 0.01 | -- | -- | -0.03 | -- | -- | 0.01 | -- | -- | -0.01 | -- | -- | 0.01 | -- | -- | -0.03* |
| fin3 | -- | -- | 0.00 | -- | -- | 0.01 | -- | -- | 0.00 | -- | -- | 0.00 | -- | -- | 0.00 | -- | -- | -0.03** | -- | -- | -0.02 |
| fin4 | -- | -- | 0.01 | -- | -- | 0.00 | -- | -- | -0.02 | -- | -- | 0.02 | -- | -- | 0.01 | -- | -- | 0.01 | -- | -- | -0.02 |
| | Model 2, Version: | | | Model 2, Version: | | | Model 2, Version: | | | Model 2, Version: | | | Model 2, Version: | | | Model 2, Version: | | | Model 2, Version: | | |
| | a | b | | a | b | | a | b | | a | b | | a | b | | a | b | | a | b | |
| α for $\chi^2$ | 0.00 | 0.00 | | 0.00 | 0.00 | | 0.00 | 0.00 | | 0.00 | 0.00 | | 0.00 | 0.00 | | 0.00 | 0.00 | | 0.00 | 0.00 | |
| RELY | 0.00 | -- | | 0.01 | -- | | 0.00 | -- | | 0.00 | -- | | 0.00 | -- | | -0.01 | -- | | 0.00 | -- | |
| ARLY | -- | 0.00 | | -- | 0.00 | | -- | 0.00 | | -- | 0.00 | | -- | 0.00 | | -- | 0.00 | | -- | 0.00 | |

in the first two years following high school--a period during which few couples have children; nor are they significant in the later years examined--a period during which decisions on the size of the family begin to dominate. This suggests that earnings play an important role in decisions about the timing of fertility--a finding supported by earlier work with census data (Rindfuss and Sweet, 1977).

It might be argued that the model is misspecified with respect to earnings, because young men might increase their earnings in response to increased familial responsibilities. However, the fact that we are using earnings for a calendar year ending six months prior to the start of the year in which a birth may or may not occur argues strongly against this.

Both parity and marital status at the beginning of the period under investigation have strong and expected effects on whether or not a child is born in a given year. Those who had two or more children at the beginning of the year are less likely to have a child during the year than those who had fewer. Those who were currently married at the beginning of the year were more likely to have a child during the year than those who had never married and those who were widowed, divorced, or separated at the beginning of the year.

The effect of having only one child (parity one) changes during the 14-year period following high school. In the first few years, being at parity one had a strong negative effect on the probability of having another child during the year. This then changes to essentially no relationship during the middle years, and then to a positive relationship. Although we had no expectations for those in parity one, there are a number of reasons why this pattern may exist. Negative forces operating throughout are the time

required for postpartum amenorrhea, waiting time for conception, and the gestation itself for those at parity one; whereas, for those at parity zero, the only time involved is that of gestation, and the wife could be pregnant at the beginning of the year. Further, those who had the child soon after high school may have done so unintentionally, and may try to postpone their second, relative to those who have not yet had their first child. (Remember that marital status is being controlled.) As time passes, those who have not had their first child by their early thirties are more likely to remain childless--whether for voluntary or involuntary reasons. Thus, comparing those at parity one to those at parity zero in the later years might be expected to demonstrate a positive effect.

During the first seven years after high school, those who were employed 11 months or more in the previous year (FUL) are more likely to have a child than those who were in school or in the military. In subsequent years, the effect is not significant. This suggests that those who enter the labor force earlier also begin having their children earlier. The fact that the effect weakens as the cohort ages suggests that whether or not the man is employed has little effect on number of decisions.

Whether or not the young man was employed part time has no effect on the probability of having a child. The only exceptions are 1967 and 1969, where it is marginally significant; we have no explanation for these two particular years. Evidently, part-time labor force participation does not affect decisions about either the timing or the quantity of fertility.

Additional schooling, per se, has no effect on the annual likelihood of having a child (with a few exceptions). It is important to remember that the time spent acquiring additional education is controlled by including

FUL and PRT. Thus, additional schooling (CED) represents such aspects of education as the acquisition of additional knowledge and changes in values and tastes. Evidently these aspects do not affect fertility. This interference is corroborated by evidence that education affects fertility because of the time required to complete a given amount of education, and not directly via differences in knowledge or tastes (Rindfuss, Bumpass, and St. John, forthcoming).

Among the background variables, religion shows the most consistent significant effect. Catholics are more likely to have a child, in most years, than non-Catholics. Note that during most of the college years religion is not significant, but it is consistently significant thereafter. The fact that religion is significant in the later years suggests that it is affecting decisions concerning both the number and timing of children. Age at graduation and number of siblings tend not to have any effect on whether or not a young man has a child in a given year. Finally, those who did not grow up on a farm tend to be less likely to have a child in many of the years examined. This confirms the traditional expectations.

As noted earlier, Social Security data and tax records tend to understate the actual income of farmers as well as of those who are self-employed. In order to see whether this might affect our results, we reran the analysis for version A of Model 1, excluding men with farm background as well as those who, in 1964, were reported by their parents to be farmers, farm managers, or self-employed proprietors. This subsample analysis is shown in Table 4 for the following years: 1959, 1962, 1965, 1968, and 1971. By comparing the results in Table 4 with those for Model 1 in Table 2, it can be seen that the inclusion or exclusion of the self-employed and farmers does not materially affect our results.

Table 4: Results[1] from logit regression analyses for Model 1, Version A for men from the Wisconsin Longitudinal Study of Social and Psychological Factors in Achievement, excluding farmers, farm managers, self-employed and those with a farm background: 1959, 1962, 1965, 1968, and 1971.

| | 1959[2] | 1962 | 1965 | 1968 | 1971 |
|---|---|---|---|---|---|
| | $\bar{P}$=0.04 | $\bar{P}$=0.18 | $\bar{P}$=0.24 | $\bar{P}$=0.19 | $\bar{P}$=0.15 |
| $\alpha$ for $\chi^2$ | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| SRN2 | 0.01 | 0.04** | 0.02 | -0.01 | 0.01 |
| SRN3 | 0.00 | 0.04** | 0.00 | 0.00 | 0.03 |
| SRN4 | 0.02 | 0.06* | 0.03 | 0.03 | 0.06 |
| pay2 | 0.01 | 0.01 | 0.00 | -0.01 | -0.02 |
| pay3 | 0.01 | 0.00 | 0.02 | -0.03 | 0.01 |
| pay4 | 0.00 | 0.00 | 0.01 | -0.03 | 0.00 |
| PR1 | -0.16* | -0.13* | 0.05* | 0.05* | 0.03* |
| PR2 | -0.60* | -0.22* | -0.08* | -0.10* | -0.10* |
| PR3 | -0.02 | -0.14* | -0.11* | -0.16* | -0.12* |
| MSTS | 0.57* | 0.43* | 0.28* | 0.21* | 0.17* |
| CED | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| FUL | 0.02* | 0.05* | -0.02 | 0.01 | 0.05 |
| PRT | 0.00 | -0.01 | -0.03 | 0.00 | 0.05 |
| cath | 0.00 | 0.00 | 0.07* | 0.03* | 0.03* |
| oldr | -0.02 | -0.02 | 0.01 | -0.03 | -0.02 |
| nkids | 0.00 | 0.01* | 0.01 | 0.01 | 0.00 |

[1]These analysis samples omit respondents with farm background, or who were employed as farmers, farm managers, or self-employed proprietors in 1964. The figures are transformed log-odds coefficients. For each model, N = 3185. Single asterisks indicate coefficients significant for at least the 0.05 level. Double asterisks indicate coefficients significant at greater than the 0.05 level, but less than the 0.10 level. The missing data codes described in Table 1 are included in the analysis but are not shown here because of the lack of substantive interest.

[2]In 1959, the dependent variable is KD(59), i.e., the probability of having a child between July 1959 and June 1960. The dependent variable is defined comparably for the other analysis years.

## OTHER SPECIFICATIONS OF RESPONDENTS' INCOMES

Models 1 and 2 only used information which would have been known by the respondent prior to the fertility decision period. This strategy has the important advantage of avoiding a potential simultaneity bias that could arise in a model that includes post-decision earnings. If childbearing has an effect on male earnings, then fertility affects earnings, as well as vice versa. Models 1 and 2 are free of this possible simultaneity bias. However, various fertility analysts would argue that the expected path of wages is important for fertility decisions--that is, when young men make fertility decisions they consider their anticipated income growth or their permanent income.

Also, there exists a second "relative income hypothesis." This hypothesis argues that the appropriate reference group is one's peers rather than one's parents (Freedman, 1963). This hypothesis is tested in a manner that avoids the simultaneity problem discussed above. It presumably tests whether young men gauge their economic prospects by comparing their prior-period wages to those of their peers, where peers are young men with similar productive attributes.

This section examines both the income-relative-to-peers hypothesis and the permanent income hypothesis. In the case of the latter, we run the risk of a simultaneity bias, which we must keep in mind when interpreting our results. The models are

$$(3)\quad K_2 = f_3[(W_1/\hat{W}_1);\ S_1;\ P_1;\ F_0;\ B_0]$$

$$(4)\quad K_2 = f_4[Y;\ S_1;\ P_1;\ F_0;\ B_0],$$

where

$(W1/\hat{W}_1)$ is the ratio of the actual prior-period wage to that predicted from an earnings regression; and

Y measures earnings or income for periods subsequent and prior to the decision period.

Also, $S_1$, $P_1$, $F_0$, and $B_0$ are as described earlier.

For (3) the hypothesis is that young men whose wage rates exceed those that would be expected on the basis of earnings predicted from their own and their peers' characteristics will expect to continue earning more than their peers.

Results derived from (4) have the potential to reveal how the short-run impacts of an earnings change might differ from any permanent income effects. The findings have to be considered very tentative, as we have not attempted to purge any simultaneity from impacts of fertility on earnings.

Four additional sets of categorical dummy variables were developed. Table 5 contains brief definitions. For those variables that change across decision periods, 1959 is used as an example.

Our analysis of Models 3 and 4 was restricted to 1959, 1962, 1965, 1968, and 1971. This reduces the number of earnings regressions needed to define earnings relative to peers for Model 3, but reveals the pattern of effects in the sample ages. The results are shown in Table 6, which also includes the first version of Model 1 for comparison.[5]

As mentioned above, relative income has been considered with reference to the earnings of young men's peers. Although our data do not identify such peers or their earnings, we are able to estimate earnings variables for young men with the same characteristics as individual respondents. For

Table 5: Definitions of alternaitve specifications of the respondents' incomes. (For those variables that change across decision periods, 1959 is used as an example decision period. Such variables are denoted by uppercase letters.)

$(W_1/W_1)$ (Earnings Relative to Peers)

| | |
|---|---|
| EXLS | Equals one if 1958 Social Security earnings divided by predicted 1958 earnings exceeds 1.25; otherwise zero. |
| EXMR | Equals one if 1958 Social Security earnings divided by predicted 1958 earnings is less than 0.75; otherwise zero. |
| MDEX | Equals one if missing data on predicted 1958 earnings. |

$P_3$ (Components of Permanent Income)

| | |
|---|---|
| av59 | three-year average Social Security earnings for 1958-1960, in hundred dollar units. |
| av63 | three-year average Social Security earnings for 1962-1964. |
| av69 | three-year average Social Security earnings for 1968-1970. |
| y742 | equals one if in the second quartile of the 1974 own income report distribution; otherwise zero. |
| y743 | equals one if in the third quartile of 1974 own income report distribution; otherwise zero. |
| y744 | equals one if in the fourth quartile of 1974 own income report distribution; otherwise zero. |
| my74 | equals one if did not report 1974 own income; otherwise zero. |
| per2 | equals one if in the second quartile of the projected 1984 income distribution; otherwise zero. |
| per3 | equals one if in the third quartile of the projected 1984 income distribution; otherwise zero. |
| per4 | equals one if in the fourth quartile of the projected 1984 income distribution; otherwise zero. |
| mper | equals one if missing data on projected 1984 income; otherwise zero. |

Table 6: Results[1] of logit regressions for Models 3 and 4 for men from the Wisconsin Longitudinal Study of Social and Psychological Factors in Achievement: 1959, 1962, 1965, 1968, and 1971.

| | 1959[2] | | | | | 1962 | | | | | 1965 | | | | | 1968 | | | | | 1971 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $\bar{P}$ = 0.04 | | | | | $\bar{P}$ = 0.18 | | | | | $\bar{P}$ = 0.24 | | | | | $\bar{P}$ = 0.19 | | | | | $\bar{P}$ = 0.15 | | | | |
| | Model 1 version: | | Model 4, version: | | | Model 1 version: | | Model 4, version: | | | Model 1 version: | | Model 4, version: | | | Model 1 version: | | Model 4, version: | | | Model 1 version: | | Model 4, version: | | |
| | A | Model 3 | A | B | C | A | Model 3 | A | B | C | A | Model 3 | A | B | C | A | Model 3 | A | B | C | A | Model 3 | A | B | C |
| for $\chi^2$ | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| [illegible]N2 | 0.01 | — | — | — | — | 0.04* | — | — | — | — | 0.02 | — | — | — | — | -0.00 | — | — | — | — | 0.00 | — | — | — | — |
| [illegible]N3 | 0.00 | — | — | — | — | 0.05* | — | — | — | — | -0.01 | — | — | — | — | -0.01 | — | — | — | — | 0.01 | — | — | — | — |
| [illegible]N4 | 0.02 | — | — | — | — | 0.06* | — | — | — | — | 0.02 | — | — | — | — | 0.01 | — | — | — | — | 0.01 | — | — | — | — |
| [illegible]42 | — | -0.01 | — | — | — | — | -0.01 | — | — | — | — | -0.01 | — | — | — | — | -0.01 | — | — | — | — | -0.01 | — | — | — |
| [illegible]43 | — | -0.01 | — | — | — | — | -0.01 | — | — | — | — | 0.01 | — | — | — | — | -0.02 | — | — | — | — | 0.02 | — | — | — |
| [illegible]44 | — | 0.00 | — | — | — | — | -0.07 | — | — | — | — | 0.03 | — | — | — | — | 0.00 | — | — | — | — | 0.00 | — | — | — |
| [illegible]er2 | — | — | 0.00 | — | — | — | — | 0.00 | — | — | — | — | 0.02 | — | — | — | — | -0.01 | — | — | — | — | 0.01 | — | — |
| [illegible]er3 | — | — | 0.00 | — | — | — | — | -0.01 | — | — | — | — | 0.00 | — | — | — | — | -0.02 | — | — | — | — | 0.00 | — | — |
| [illegible]er4 | — | — | 0.00 | — | — | — | — | -0.01 | — | — | — | — | 0.02 | — | — | — | — | -0.01 | — | — | — | — | -0.01 | — | — |
| [illegible]59 | — | — | — | 0.01* | — | — | — | — | 0.00 | — | — | — | — | 0.00 | — | — | — | — | -0.01 | — | — | — | — | 0.00 | — |
| [illegible]60 | — | — | — | 0.00 | — | — | — | — | 0.01* | — | — | — | — | 0.00 | — | — | — | — | -0.01 | — | — | — | — | 0.00 | — |
| [illegible]59 | — | — | — | 0.00 | — | — | — | — | -0.00 | — | — | — | — | 0.00 | — | — | — | — | 0.00 | — | — | — | — | 0.00 | — |
| [illegible]5S | — | — | — | — | 0.01** | — | — | — | — | 0.01 | — | — | — | — | 0.03 | — | — | — | — | 0.00 | — | — | — | — | 0.01 |
| [illegible]5S | — | — | — | — | 0.00 | — | — | — | — | -0.02** | — | — | — | — | 0.01 | — | — | — | — | 0.00 | — | — | — | — | 0.01 |
| [illegible]L | 0.00 | -0.01* | -0.01* | -0.00 | -0.01* | 0.00 | -0.01* | -0.01* | -0.01 | -0.01* | 0.00 | -0.01* | -0.01* | 0.03 | 0.03 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| [illegible]TL | 0.02* | — | — | — | — | 0.05* | — | — | — | — | -0.01* | — | — | — | — | 0.02 | — | — | — | — | 0.04 | — | — | — | — |
| [illegible]T | 0.00 | — | — | — | — | 0.00 | — | — | — | — | -0.01 | — | — | — | — | 0.00 | — | — | — | — | 0.05 | — | — | — | — |
| [illegible]1 | -0.15* | -0.14* | -0.15* | -0.15* | -0.14* | -0.13* | -0.13* | -0.12* | -0.13* | -0.12* | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.04* | 0.04* | 0.04* | 0.05* | 0.04* | 0.04* | 0.05* | 0.04* | 0.05* | 0.04* |
| [illegible]T2 | -0.60* | -0.60* | -0.60* | -0.56* | -0.60* | -0.21* | -0.20* | -0.20* | -0.20* | -0.20* | -0.08 | -0.08 | -0.08* | -0.08 | -0.08 | -0.10* | -0.10* | -0.10* | -0.09* | -0.10* | -0.10* | -0.10* | -0.10* | -0.09* | -0.10* |
| [illegible]T3 | -0.02* | -0.03 | -0.03 | -0.02 | -0.03 | -0.13* | -0.13* | -0.13* | -0.13* | -0.12* | -0.10* | -0.10* | -0.10* | -0.10* | -0.10* | -0.15* | -0.15* | -0.15* | -0.15* | -0.15* | -0.11* | -0.11* | -0.11* | -0.10* | -0.11* |
| [illegible]STS | 0.57* | 0.57* | 0.57* | 0.56* | 0.57* | 0.43* | 0.44* | 0.44* | 0.43* | 0.43* | 0.28* | 0.27* | 0.27 | 0.27* | 0.27* | 0.22* | 0.22* | 0.22* | 0.22* | 0.22* | 0.16* | 0.16* | 0.16* | 0.16* | 0.16* |
| [illegible]42 | 0.01 | — | — | — | — | 0.02 | — | — | — | — | 0.00 | — | — | — | — | -0.01 | — | — | — | — | -0.03 | — | — | — | — |
| [illegible]43 | 0.00 | — | — | — | — | 0.02 | — | — | — | — | 0.02 | — | — | — | — | -0.01 | — | — | — | — | 0.00 | — | — | — | — |
| [illegible]44 | 0.00 | — | — | — | — | 0.02 | — | — | — | — | 0.02 | — | — | — | — | -0.01 | — | — | — | — | -0.01 | — | — | — | — |
| [illegible]ath | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 | 0.07* | 0.08* | 0.07* | 0.07* | 0.08* | 0.04* | 0.04* | 0.04* | 0.04* | 0.04* | 0.02** | 0.02** | 0.02** | 0.02* | 0.02** |
| [illegible]ther | -0.02* | -0.02** | -0.02** | -0.02** | -0.02** | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 | -0.03 | -0.03 | -0.04 | -0.03 | -0.03 | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 |
| [illegible]ffa | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | -0.04** | -0.03* | -0.03** | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | 0.01 | 0.01 | 0.01 | 0.00 | 0.01 |
| [illegible]kids | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01* | 0.01* | 0.01* | 0.01* | 0.01* | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

[1] The figures are transformed log-odds coefficients. For each model, N = 3915. Single asterisks indicate coefficients significant for at least the 0.05 level. Double asterisks indicate coefficients significant at greater than the 0.05 level, but less than the 0.10 level. The missing data codes described in Table 5 are included in the analysis but are not shown here because of the lack of substantive interest.

[2] In 1959, the dependent variable is KD(59), i.e., the probability of having a child between July 1959 and June 1960. The dependent variable is defined comparably for the other analysis years.

Model 3, a separate regression to predict earnings for the year prior to each of the five years was obtained to provide the denominator for the ratio that represents the young men's earnings relative to their peers. The details of this are presented in Appendix A. The results in Table 6 are for categories of this ratio of actual earnings to predicted earnings. EXLS refers to men who would be expected to earn less than they actually did. The men in this category have actual earnings that exceed their predicted earnings by 25 percent or more. Conversely, EXMR indicates men who earned three-quarters (or less) of the amount predicted for them. There is some support for the hypothesis that young men's fertility decisions are influenced by their income positions relative to their peers. However, the support is very modest and is concentrated in the early years, suggesting that income relative to peers affects the timing of entry into parenthood.

Three indices of permanent incomes were constructed, and thus we have three versions of Model 4. The first, and simplest, is the respondent's report of his 1974 income, as obtained in the 1975 reinterview, coded into quartiles. For the early years, this is a reasonable proxy for long-run permanent income. For the later years, it tends to include a component of current income. As can be seen from version A of Model 1, in no case is this measure of permanent income significantly related to fertility.

In order to minimize the current aspect of the previous measure of permanent income and to minimize the possibility that 1974 was an atypical year, income at age 45 was estimated using 1970 and 1971 Social Security earnings, 1974 income, 1974 occupation, and census data for the North Central region. The details for this measure of permanent income are found in Appendix A. As can be seen from version B of Model 4, in no case is this alternative measure of permanent income significantly related to fertility.

Because raising children may be financed from savings as well as from borrowing, it seemed reasonable to study whether our results are sensitive to including both prior and subsequent earnings in the same model. The final version of Model 4 uses three three-year Social Security earnings averages, centered respectively about 1959, 1963, and 1969.[6] (Note that the metric for these variables differs from those for quartile income categories.) The rationale for this final version of Model 4 is that the time horizon on the two previous indicators of permanent income might be too distant. In two instances, these final measures are related to fertility; and in both cases it is the Social Security earnings average closest to the decision year which is significant. In short, only when this final measure is, in reality, a current income measure is it significantly related to fertility. Thus, we find no support for the relationship between permanent income and fertility--neither its timing nor its quantity.

## DISCUSSION AND CONCLUSIONS

For the first time, we have the appropriate data for looking at the micro component of the relative income hypothesis, specifically that those who have high relative incomes will have children sooner and will have more children. We find what can, at best, be described as moderate support for this hypothesis. In two of the 14 years examined, relative income has the expected effect on fertility; in the other 12 years, it does not. The fact that the two years are adjacent suggests that it is not due to chance. However, it is currently not a powerful effect. In an earlier work (MacDonald and Rindfuss, forthcoming), we examined the relationship between relative income and the timing of marriage, which is a major component of the Easterlin

thesis. There we found no support for Easterlin's assertion that marriage timing depends on an interaction between young men's earnings and their parents' income. Thus, on balance, we find no compelling evidence to suggest that relative income plays a major role in the marriage or fertility decision-making process.

What are the implications of these results for Easterlin's relative income hypothesis? Is anything left? First, it might be argued that our results are based on a single cohort, and that somehow this cohort was atypical. This, of course, is possible, but it is extremely unlikely. The Easterlin hypothesis has been advanced to explain, essentially single-handedly, the course of fertility in the United States since World War II. It is extremely unlikely that a hypothesis as powerful as this would somehow skip a cohort.

It also might be argued that, since this study is based on high school seniors from one state, it is not representative of the entire country. This is unquestionably the case. For example, blacks are underrepresented in Wisconsin, as are urbanites. By definition, those who did not reach the senior year in high school are not included in the sample. However, there is nothing in the relative income hypothesis which argues that it only applies to particular types of groups. Furthermore, there is sufficient heterogeneity in the sample to suggest that, if the hypothesis does not apply to persons of those characteristics, it is unlikely to be powerful enough to explain the American fertility swings.

Finally, it might be argued that, since we are only looking at one cohort, we are missing the effects of cohort size, and this is, in fact, the case. Also, in the more recent versions of the relative income hypothesis,

Easterlin (1978) stresses the consequences of changing cohort size--almost to the exclusion of any other factor. However, at the individual level, one must ask what the mechanism is whereby changing cohort size is translated into marriage and fertility decisions. The usual mechanism, as shown in the quote in the introduction to this paper, is through changes in relative income. But, as the results from this paper and our paper on marriage indicate, there is little support for the relative income mechanism.

Nevertheless, it is possible that changing cohort size operates through another mechanism. It is possible that the effect operates at the cohort level, that is, at the aggregate level. The sociology of fertility argues that there are a set of norms governing family formation and fertility. When a cohort faces a new situation--i.e., prosperous times relative to what it had expected--the cohort may alter the interpretation of the fertility norms accordingly. This is particularly the case with respect to the timing of marriage and fertility. The fact that the reaction is cohort-wide means that, at the individual level, it is reinforced by the behavior of one's peers. It is easier to postpone marriage when everyone is doing it.

Given the data we currently have, it is not possible to argue against this possibility, nor can we argue for it. If this is the mechanism through which changing cohort size operates, then data for a number of cohorts will be needed. Since we currently have an N of 2 (a boom and bust) for aggregate fertility fluctuations, it will be a considerable while before we can adequately address this problem. Since the most likely mechanism for the changing-cohort-size thesis (relative income) is not supported by the data, and since it will be many years until enough time has elapsed for us to test this other possibility, those predicting future fertility levels based on Easterlin's work are well advised to hedge their bets.

# NOTES

[1]Note that the women from the Wisconsin Longitudinal Study of Social and Psychological Factors in Achievement could not be used in the present analysis because the required earnings data were not obtained for women. Furthermore, the relative income hypothesis, as originally formulated by Easterlin, only addresses the relative income of males.

[2]We should point out that elaborate procedures have been designed and utilized to safeguard the confidentiality of these Social Security earnings data. At no time did we, or any member of our staff, have access to the individual records. Instead, certified individuals had to request Madison Academic Computer Center officials for runs from the source tape. The output from these runs was then checked by the Computer Center officials to ensure that no listings were obtained, and that no cross-tabulations were obtained which provided information on a cell with fewer than five cases.

[3]For the purpose of economy, they are not shown for every year.

[4]Some might want to argue that the effect of relative income is indirect, through age at marriage, and that by not looking explicitly for this indirect effect, we may be missing the primary effect. We did not allow for an indirect effect through age at marriage because our earlier analysis (MacDonald and Rindfuss, forthcoming) showed that relative income has no effect on age at marriage.

Others might want to argue that it is necessary to control for the additive effects of current income and parents' income, and then examine the interactive effect of relative income. (This is the typical procedure used in the social mobility tradition.) We have done so, and our results are not altered appreciably.

[5]Note that in Models 3 and 4 for 1959, 1962, and 1965, additional schooling is associated with remaining unwed, but in Model 1 for the same years, schooling has no effect. This difference results from deleting FUL for Models 3 and 4, based on our reasoning that the schooling-military adjustment is redundant when permanent income indicators are included. Nevertheless, CED picks up the time component of education, and is significant in these years.

[6]The correlations between three-year earnings averages centered closer together than those are too high.

APPENDIX A

This appendix discusses how some of the more complex variables were constructed.

Social Security Earnings

If earnings exceeded the taxable ceiling, an annual figure had been imputed by the staff of the Wisconsin Study of Social and Psychological Factors in Socioeconomic Achievement. For this purpose, the highest reported figure for any quarter prior to and including that in which the taxable maximum was reached was assigned to each subsequent quarter for which there was no reported earnings figure. In addition, an algorithm projected total earnings for cases involving more than one employer. If the earnings from each employer were below the ceiling, all employer records were summed. To obtain an estimated total for multiple employer cases that did exceed the ceiling, the algorithm adds projected and reported earnings.

Because the self-employed provide annual reports, net earnings from self-employment was used regardless of the amount of self-employment taxable income. If an earner had a wage record and reported self-employment income, the two types of records were summed.

Measuring farmers' income is known to be fraught with difficulty. For young men whose farm income exceeded the taxable income, annual estimates were assigned uniformly. These farm maximum estimates rose as the ceilings increased: 1957-1958, $7400; 1959-1965, $8000; 1966-1967, $10,700; and 1968-1971, $12,600.

Military and Schooling Activity

For about 20 percent of the sample, schooling codes had to be imputed uniformly across years in which schooling may not have been distributed uniformly. If, for example, a bachelor's degree was completed five years after entering college and no military duty intervened, each month of the five years was imputed a schooling activity code to assign four-fifths of a school year to each of the five years. When military service interrupted schooling, the active-duty months would instead be assigned military activity codes, and the codes assigned to months not on military duty would reflect the reduction of time during the five years that could have been devoted to schooling. This procedure maintains equivalent schooling years across all recipients of the bachelor's degree, and assumes that part-year schooling delayed the degree when there was no military service. If, in our example, a young man actually dropped out of school to work for a year, he would incorrectly be assigned to the PRT category for that year. Furthermore, such an error will contaminate CED (completed school years at the onset of the decision period), because a drop-out year not spent in the military is then imputed four-fifths of a school year.

Earnings Regressions for Peers' Earnings

The sample for each earnings regression included all men in the relevant analysis sample for whom information was available to predict earnings. Characteristics used as explanatory variables included the missing data indicator for zero earnings reports (EFLG), age at graduation from high school, parents' income, completed years of schooling, the military-schooling categories (FUL and PRT), and other social background characteristics

(cath, oldr). In addition to these, other explanatory variables were normalized high school rank, Henmon-Nelson test score, and whether the young men had been in a college preparatory program. Together, these variables explained about 40 percent of the sample earnings variation for each of the relevant calendar years.

Projecting 1984 Income

A weighted average of earnings and income was multiplied by the 1970 census ratio for North Central region men's earnings at age 45 to those at age 35, specific to the 3-digit census occupation code for each young man's reported 1974 occupation. The earnings-income average weighted 1970 and 1971 Social Security earnings each at 0.20, with 1974 income weighted by 0.60. (We had no information about 1972 and 1973 incomes.) These weights smooth out inter-annual fluctuations, but assign more importance to the 1974 income report.

## APPENDIX B

Table B-1: Means and standard deviations for selected analysis years.

| | | 1959 | | 1962 | | 1965 | | 1968 | | 1971 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $\bar{X}$ | S.D. | $\bar{X}$ | S.D. | $\bar{X}$ | S.D. | $\bar{X}$ | S.D. | $\bar{X}$ | S.D. |
| origin family Catholic | cath | 0.40 | 0.49 | 0.40 | 0.49 | 0.40 | 0.49 | 0.40 | 0.49 | 0.40 | 0.49 |
| 18.5 or older on 7/1/57 | oldr | 0.07 | 0.26 | 0.07 | 0.26 | 0.07 | 0.26 | 0.07 | 0.26 | 0.07 | 0.26 |
| non-farm background | nfrm | 0.81 | 0.39 | 0.81 | 0.39 | 0.81 | 0.39 | 0.81 | 0.39 | 0.81 | 0.39 |
| parents' 1958-60 average income in 2nd quartile | pay2 | 0.26 | 0.44 | 0.26 | 0.44 | 0.26 | 0.44 | 0.26 | 0.44 | 0.26 | 0.44 |
| parents' 1958-60 average income in 3rd quartile | pay3 | 0.24 | 0.43 | 0.24 | 0.43 | 0.24 | 0.43 | 0.24 | 0.43 | 0.24 | 0.43 |
| parents' 1958-60 average income in 4th quartile | pay4 | 0.25 | 0.44 | 0.25 | 0.44 | 0.25 | 0.44 | 0.25 | 0.44 | 0.25 | 0.44 |
| missing data for parents' income | mpay | 0.03 | 0.16 | 0.03 | 0.16 | 0.03 | 0.16 | 0.03 | 0.16 | 0.03 | 0.16 |
| 2nd quartile for needs-adjusted parents' income | fin2 | 0.24 | 0.43 | 0.24 | 0.43 | 0.24 | 0.43 | 0.24 | 0.43 | 0.24 | 0.43 |
| 3rd quartile for needs-adjusted parents' income | fin3 | 0.24 | 0.43 | 0.24 | 0.43 | 0.24 | 0.43 | 0.24 | 0.43 | 0.24 | 0.43 |
| 4th quartile for needs-adjusted parents' income | fin4 | 0.24 | 0.43 | 0.24 | 0.43 | 0.24 | 0.43 | 0.24 | 0.43 | 0.24 | 0.43 |
| missing data for needs-adjusted parents' income | mfin | 0.03 | 0.18 | 0.03 | 0.18 | 0.03 | 0.18 | 0.03 | 0.18 | 0.03 | 0.18 |
| 2nd quartile Duncan father's occupation score | foc2 | 0.21 | 0.41 | 0.21 | 0.41 | 0.21 | 0.41 | 0.21 | 0.41 | 0.21 | 0.41 |
| 3rd quartile Duncan father's occupation score | foc3 | 0.21 | 0.41 | 0.21 | 0.41 | 0.21 | 0.41 | 0.21 | 0.41 | 0.21 | 0.41 |
| 4th quartile Duncan father's occupation score | foc4 | 0.24 | 0.43 | 0.24 | 0.43 | 0.24 | 0.43 | 0.24 | 0.43 | 0.24 | 0.43 |
| missing data on father's occupation | focu | 0.01 | 0.08 | 0.01 | 0.08 | 0.01 | 0.08 | 0.01 | 0.08 | 0.01 | 0.08 |
| mother's education: 8-11 years | med1 | 0.36 | 0.48 | 0.36 | 0.48 | 0.36 | 0.48 | 0.36 | 0.48 | 0.36 | 0.48 |
| mother's education: 12 years | medm | 0.40 | 0.49 | 0.40 | 0.49 | 0.40 | 0.49 | 0.40 | 0.49 | 0.40 | 0.49 |
| mother's education: 13+ years | medh | 0.14 | 0.34 | 0.14 | 0.34 | 0.14 | 0.34 | 0.14 | 0.34 | 0.14 | 0.34 |
| 2nd quartile of Social Security earnings | SRN2 | 0.22 | 0.42 | 0.26 | 0.44 | 0.22 | 0.41 | 0.24 | 0.42 | 0.25 | 0.43 |
| 3rd quartile of Social Security earnings | SRN3 | 0.30 | 0.46 | 0.25 | 0.43 | 0.29 | 0.45 | 0.28 | 0.45 | 0.28 | 0.45 |
| 4th quartile of Social Security earnings | SRN4 | 0.27 | 0.44 | 0.27 | 0.45 | 0.29 | 0.45 | 0.28 | 0.45 | 0.28 | 0.45 |
| earnings < $1,000 and schooling completed | EFLG | 0.09 | 0.29 | 0.05 | 0.21 | 0.04 | 0.21 | 0.04 | 0.20 | 0.05 | 0.22 |
| S.S. earnings ÷ parents' income | RELY | 0.62 | 1.62 | 0.90 | 1.68 | 1.13 | 1.78 | 1.59 | 1.82 | 1.78 | 1.90 |
| S.S. earnings ÷ needs-adjusted parents' income | ARLY | 0.94 | 1.24 | 1.40 | 2.99 | 2.04 | 3.77 | 2.59 | 4.34 | 2.92 | 4.57 |
| in school or on active military duty $\leq$ 1 month | FUL | 0.43 | 0.49 | 0.52 | 0.50 | 0.73 | 0.44 | 0.84 | 0.37 | 0.90 | 0.30 |

Table B-1 (Continued)

| | | 1959 | | 1962 | | 1965 | | 1968 | | 1971 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $\bar{X}$ | S.D. | $\bar{X}$ | S.D. | $\bar{X}$ | S.D. | $\bar{X}$ | S.D. | $\bar{X}$ | S.D. |
| in school or military more than 1 but < 9 months | PRT | 0.19 | 0.39 | 0.29 | 0.45 | 0.18 | 0.39 | 0.13 | 0.33 | 0.08 | 0.27 |
| total years of schooling | CED | 12.43 | 0.65 | 13.06 | 1.56 | 13.42 | 2.07 | 13.59 | 2.34 | 13.68 | 2.47 |
| earnings relative to peers was > 1.25 | EXLS | 0.25 | 0.43 | 0.25 | 0.44 | 0.23 | 0.42 | 0.20 | 0.40 | 0.18 | 0.38 |
| earnings relative to peers was < 0.75 | EXMR | 0.38 | 0.48 | 0.35 | 0.48 | 0.26 | 0.44 | 0.21 | 0.40 | 0.23 | 0.42 |
| 1958-60 S.S. earnings average | av51 | 28.84 | 18.61 | 28.84 | 18.61 | 28.84 | 18.61 | 28.84 | 18.61 | 28.84 | 18.61 |
| 1962-64 S.S. earnings average | av63 | 55.60 | 27.93 | 55.60 | 27.93 | 55.60 | 27.93 | 55.60 | 27.93 | 55.60 | 27.93 |
| 1968-70 S.S. earnings average | av69 | 99.38 | 45.85 | 99.38 | 45.85 | 99.38 | 45.85 | 99.38 | 45.85 | 99.38 | 45.85 |
| 2nd quartile of 1974 own income | y742 | 0.25 | 0.43 | 0.25 | 0.43 | 0.25 | 0.43 | 0.25 | 0.43 | 0.25 | 0.43 |
| 3rd quartile of 1974 own income | y743 | 0.26 | 0.44 | 0.26 | 0.44 | 0.26 | 0.44 | 0.26 | 0.44 | 0.26 | 0.44 |
| 4th quartile of 1974 own income | y744 | 0.26 | 0.44 | 0.26 | 0.44 | 0.26 | 0.44 | 0.26 | 0.44 | 0.26 | 0.44 |
| missing data for 1974 income | my74 | 0.00 | 0.06 | 0.00 | 0.06 | 0.00 | 0.06 | 0.00 | 0.06 | 0.00 | 0.06 |
| 2nd quartile of 1984 projected income | per2 | 0.24 | 0.43 | 0.24 | 0.43 | 0.24 | 0.43 | 0.24 | 0.43 | 0.24 | 0.43 |
| 3rd quartile of 1984 projected income | per3 | 0.26 | 0.44 | 0.26 | 0.44 | 0.26 | 0.44 | 0.26 | 0.44 | 0.26 | 0.44 |
| 4th quartile of 1984 projected income | per4 | 0.26 | 0.44 | 0.26 | 0.44 | 0.26 | 0.44 | 0.26 | 0.44 | 0.26 | 0.44 |
| missing data for 1984 income | mper | 0.02 | 0.13 | 0.02 | 0.13 | 0.02 | 0.13 | 0.02 | 0.13 | 0.02 | 0.13 |
| currently married at beginning of year | MSTS | 0.03 | 0.18 | 0.34 | 0.47 | 0.68 | 0.46 | 0.86 | 0.35 | 0.92 | 0.27 |
| parity 1 at beginning of year | PR1 | 0.01 | 0.11 | 0.15 | 0.36 | 0.23 | 0.42 | 0.21 | 0.41 | 0.16 | 0.37 |
| parity 2 at beginning of year | PR2 | 0.00 | 0.02 | 0.05 | 0.21 | 0.20 | 0.40 | 0.28 | 0.45 | 0.32 | 0.47 |
| parity 3+ at beginning of year | PR3 | 0.00 | 0.02 | 0.01 | 0.09 | 0.09 | 0.29 | 0.23 | 0.42 | 0.37 | 0.48 |
| number of siblings | nkids | 3.79 | 2.31 | 3.79 | 2.31 | 3.79 | 2.31 | 3.79 | 2.31 | 3.79 | 2.31 |
| whether gave birth in year | $\bar{p}$ | 0.04 | 0.19 | 0.18 | 0.39 | 0.24 | 0.43 | 0.19 | 0.39 | 0.15 | 0.35 |
| sample size | n | 3915 | | 3915 | | 3915 | | 3915 | | 3915 | |

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