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ABSTRACT

The primary focus of this paper is on the impact an early birth has on later labor force participation and earnings of women. Variables affecting the participation of women in a given year and factors affecting the total work experience are discussed in detail. These include: hours worked, annual earnings, hourly wages, occupational status, race, geographical region in which the woman grew up, her educational attainment, the number and ages of her children, her own age, family income, marital status, school enrollment, residential changes, and physical limitations. Other factors discussed are environmental: the local labor market, residence in an urban area or a Southern state, in an area characterized by high or low unemployment, and in an area of good or poor employment opportunities for white and black women. Two longitudinal data sets, the National Longitudinal Survey of Young Women and the Michigan Panel Study of Income Dynamics, are used in the analysis. It is concluded that an early first birth does not directly affect a woman's participation in the labor force nor does it affect the occupational status, hours of work, hourly wages, or annual earnings of working women. (Author/EB)

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THE CONSEQUENCES OF AGE AT FIRST CHILDBIRTH: LABOR FORCE PARTICIPATION AND EARNINGS

by

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THE CONSEQUENCES OF AGE AT FIRST CHILDBIRTH: LABOR FORCE PARTICIPATION AND EARNINGS

It has been estimated that as many as 45 percent of all children born in 1977 are likely to live for a period of at least several months as members of a one-parent family (Glick and Norton, 1977). Most of these children will be living with their mothers. Thus it is important to consider a woman's own occupation and earnings as indicators of, if not her current, at least her potential ability to provide for herself and her children. We expect that an early first birth will affect a woman's ability to work and to provide adequate income. However, its effect may be indirect rather than direct, through factors more directly affecting the occupational and income attainment process--years of schooling and the number of children, for example. Therefore, we will first review those variables generally found to be important to the labor force participation of women and to the occupations and incomes of those who are working. Then we will discuss our hypotheses as to the indirect paths through which an early first birth affects later well-being.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

The extent to which women work outside the home, especially married women with children, has been an important subject of research in recent years. In their seminal economic analysis, Bowen and Finegan (1969) organized the factors that affect whether or not a person works outside the home into four major categories: tastes for market work, benefits of market work, costs of market work or benefits of non-market work, and other family resources ("need"). What these factors are has been the subject of a considerable literature. However, the individual variables used to explain labor market supply do not fall simply into one category or another. For example, more years of schooling may provide a woman with a "taste" for work, but it may also increase her potential market wage (a benefit of market work) and, at the same time, increase her value to her children if she were to stay home (a benefit of non-market work) (see Bowen and Finegan, 1969; Leibowitz, 1974). Thus education serves as a proxy for a number of effects, some of which are measurable, some not, each with a differing effect on labor supply (see, for example, Cain, 1978; Crimmins-Gardner and Ewer, 1978).

In addition, women's labor supply is more responsive to situational factors, such as current income from other sources (including the husband or other family member as well as non-earned income), to labor market conditions, and to the relative benefits and costs of market and non-market work, than is that of men. Thus there is more variation to explain. We will first focus our discussion on the factors determining whether or not a woman works in a given year.

However, since women move in and out of the labor force depending on

their circumstances in a given year, labor force status at a point in time is less interesting than total work experience. The latter should be more useful in predicting wages and earnings. Therefore we will spend some time discussing the determinants of the lifetime labor force experience of women. The age at which a woman bears her first child may directly affect the total experience she obtains, as may the age at which she marries. Total work experience is also an important predictor of current labor force participation. Finally, we will discuss the factors affecting the hours worked, annual earnings, hourly wages, and occupational status of those women who are working in a given year.

We will organize our discussion of the factors affecting the labor force variables of interest by whether they are relatively enduring characteristics of the young woman, such as her birth cohort, parental socio-economic status, race, region in which she grew up, her educational attainment, and the number of her children, or whether they are environmental and situational. The latter include such factors as her own age, the ages of her children, the family income other than her own, her marital status, whether she is enrolled in school, whether she has recently moved, and whether or not she has a physical limitation on her activity. Another set of short-lived factors are those characterizing the environment. First, characteristics of the local labor market, such as residence in an urban area or in a southern state, in an area characterized by high or low unemployment, and in an area of good or poor employment opportunities for white and black women should affect the probability of working in a given year and the income from that employment. Second, the availability of AFDC (Aid to Families with Dependent Children) may affect whether or not a woman has an alternative to working outside the home, and whether or not working is worthwhile, given that alternative.

Probability of Working in a Given Year

Researchers have found race, age, years of schooling, work experience, income, the ages and number of children, and marital status to predict the labor force participation of women (Bowen and Finegan, 1969; Cain, 1978; Crimmins-Gardner and Ewer, 1978; Farkas, 1977).[1] In addition, whether her husband is employed or not predicts the participation of the married woman (Bowen and Finegan, 1969). Married women have lower participation rates than non-married women (Mincer and Polachek, 1974), although the gap is narrowing (U.S. Department of Labor, 1977). Factors inhibiting wives from working seem to have decreased (Waite, 1976). Another explanation is that of changes in the age structure of the population and declining relative income (Wachter, 1977). Better educated women are still more likely to work (Bowen and Finegan, 1969). This may be due to a differential taste for work or to the higher wages and better jobs better educated women can obtain. Married black women have higher participation rates than do married white women (Bowen and Finegan, 1969). Since this difference remains even when need and family size are controlled, the race differential in participation rates may reflect differential tastes for working. However, this difference is declining, as participation rates are increasing faster for white than for black women (U.S. Bureau of the Census, 1976: No. 58).

The relationship between age and working appears to be curvilinear; net of cohort and business cycle, the labor force participation rate of women falls during the mid twenties, rising again in the mid-thirties, falling again in the late fifties (Farkas, 1977). Controlling for ages and number of children, the relationship should be relatively weak, or declining with age. Cohort has a somewhat different effect. Older cohorts are less likely to work than recent

1. Not all women in the labor force are "working." Some are unemployed, looking for work. However, the difference is small enough so as not to affect our overall results, and the terms are used interchangeably in this paper.

cohorts, net of age and business cycle (Farkas, 1977). Therefore, the overall undifferentiated cohort-age effect on employment is probably a negative one.

The most important situational factor determining the probability of working is the need for income, usually measured by the amount of income from all sources other than from the woman's own earnings (Bowen and Finegan, 1969; Cain, 1978; Crimmins-Gardner and Ewer, 1978; and others). Situational constraints include a recent birth or the presence of a young child, which reduces labor force participation at least until the child enters school (Bowen and Finegan, 1969). Having a young child affects both the taste for work and the potential costs of working (Gronau, 1973; Leibowitz, 1974). Researchers have found, however, that whether or not a mother works outside the home depends more on her attitude toward the effect of working on the child's development than on the child's age (Crimmins-Gardner and Ewer, 1978). A husband's attitude toward his wife working has also been found to affect the probability of his wife working outside the home (Crimmins-Gardner and Ewer, 1978), although there is some question as to whether his attitude is a cause or an effect of her employment (see, for example, Ferber, 1977). School enrollment (Bowen and Finegan, 1969), a recent move (Hill, 1977; Duncan and Perucci, 1976), and a physical limitation or problem (Schultz, 1975; Kushman and Scheffler, 1975) reduce the probability of the wife working outside the home.

Labor market characteristics indicate the attractiveness of working outside the home. Labor force participation rates have been found to be higher in areas of higher wages--in urban, non-southern states--and where women are more likely to find work--in areas with low unemployment rates and favorable opportunities for women (Bowen and Finegan, 1969; Cain, 1966). Finally, the availability of AFDC payments and the level of those benefits in the state might affect the participation decision of single mother of young children. AFDC provides a disincentive to work for those eligible women.

Work Experience

Since it is only recently that researchers have begun to collect complete retrospective work histories from their respondents and longitudinal studies have collected enough years of work information, there is little research exploring the determinants of work experience (however, see Mincer and Polachek, 1974; Hill, 1977). It is a more interesting question for women than for men; the latter spend most of their adult lives in the labor force.

Background factors and stable personal characteristics can be expected to be more important in determining the total amount of time a woman spends in the labor force than her situation or environment in any given year. Background variables available in the PSID include such factors as the socio-economic status of the parental family, whether the respondent grew up in an urban area or on a farm, and whether that was in the south. The respondent's race and birth cohort have been shown to affect work experience (Hill, 1977).

If greater completed schooling is associated with a higher probability of working in a given year, as was reported earlier, it should also result in greater overall labor force experience (Mincer and Polachek, 1974, Hill, 1977). The number of children born should affect the number of years a woman spends in the labor force (Hill, 1977; Mincer and Polachek, 1974). Besides the number of children, Hill found that their ages affected work experience over the limited period of time he studied. Over a woman's total lifetime, however, the number of children should be the relevant predictor. Whether a woman marries or not has a substantial effect on work experience; never married women are most likely to have uninterrupted work histories (Mincer and Polachek, 1974).

Thus, we expect early events in a woman's life, such as a first marriage, a first birth, or dropping out of school, to have important effects on total work experience, because of their impact on whether a woman enters or

leaves the labor force (see, for example, Cain, 1966). Early work experience may, in fact, be the most important predictor of the probability of working in any given year (see, for example, Heckman, 1977). However, the effect of an early first birth on experience may be indirect, lowering experience only because it increases total family size or decreases the amount of schooling a woman obtains.

There is some question as to whether experience is the cause or the effect of more children. That is, women who expect to spend more years working may restrict childbearing. Waite and Stolzenberg (1976) found a substantial effect of work plans on fertility expectations and a weak effect of fertility expectations on work plans. However, since our focus is on labor force participation we will examine only the effect of children on employment. A similar problem is faced when exploring the relationship between wage and experience. Mincer and Polachek (1974) tested the simultaneity of the wage-experience relation for women and concluded that alternative estimation techniques did not significantly affect the results.

Hours Worked

Do the same factors that affect the decision to work also affect the number of hours worked? Are their effects the same? In general the decision to work has been treated separately from that of number of hours worked. It is assumed that a woman decides first whether or not to work. Those who decide to work then decide separately and perhaps on the basis of different criteria on their schedules. However, an alternative approach assumes that women decide on the number of hours to work; above a certain threshold a woman works, below that threshold she will not work. All those who do not work are then assigned 0 hours. Although using either of these assumptions

presents certain analytical problems (see, for example, Heckman, 1974), we will follow the two step procedure, testing to see whether the factors affecting the decision to work are the same as those affecting the number of hours once a woman has decide to work.

Need for income is probably the most important factor determining hours worked. Thus we would expect married women and those with higher family incomes to work fewer hours than non-married women and those with lower other family incomes. Controlling for level of need, level of hourly wages, which is available for the sample of working women, should affect hours worked: women with higher wages can earn the same income by working fewer hours, and should be expected to adjust their hours accordingly. (However, the relationship may be the opposite. See the discussion of wages.)

Personal characteristics of the woman that should affect hours worked include years of schooling, work experience, race and age. Situational constraints include having young children, a husband who disapproves of his wife working outside the home, a physical limitation, or being enrolled in school. (See also the discussion of the probability of working).

Occupational Status

An individual's occupation is an important indicator of his or her social standing. "Occupation" is commonly used in the study of stratification and in the study of inter- and intra-generational occupational mobility (see, e.g. Tyree and Treas, 1974). The most commonly used measure of this concept is Duncan's socio-economic index of occupations or "SEI" (Duncan, 1961). This index is a ranking of the detailed census categories of occupations based on the mean levels of education and income of their incumbents. Alternative measure of status are the prestige scales originally created by NORC (Siegel, 1971), by Treiman (1975) and by Bose (1973). The relative merits

of these scales have been widely discussed and argued; however, the Duncan scale is most commonly used and has been shown to have a number of desirable qualities (see, for example, Featherman and Hauser, 1976).

The strongest predictor of the socio-economic status of the occupation of an individual is his or her educational level (McClendon, 1976; Treiman and Terrell, 1975; Featherman and Hauser, 1976). A higher level of education implies the acquisition of the skills that are prerequisites for higher status positions and higher rates of pay. The socio-economic status of a woman's family of origin has been found to translate into occupational status (McClendon, 1976; Treiman and Terrell, 1975; Featherman and Hauser, 1976). Race is associated with the socioeconomic status of an individual's occupation, although its effect has been found to disappear with controls for other factors for men (Portes and Wilson 1976). Occupational status has been found to increase with age, but marital status appears to have no affect (McClendon, 1976; Treiman and Terrell, 1975). Other factors that might affect occupational status are those reflecting work commitment: number of hours worked per week, whether full or part-time, and number of young children. McClendon (1976) found the latter but not the former associated with the occupational prestige of white women in the labor force.

Hourly Wages and Annual Earnings

The earnings of a woman should be completely explained by her hourly wage and the hours she works. Therefore, excluding those factors from the model, variables previously found to determine hourly wage and hours worked should be significantly associat[illegible] with earnings. We will not specifically discuss the determinants of annual earnings, referring the reader to the previous discussion of hours worked and to the following discussion of hourly wages.

Education and experience are the two most important factors associated with hourly wage level, being the two principle components of what is called "human capital." Both should be associated positively with wages. Educational attainment is approximated by number of years of schooling completed. For experience there are several measures. The proportion of years worked since age 18 is the most widely used measure. However, Mincer and Polachek (1974) have suggested that for women who have returned to work after a period of absence, besides the number of years of experience, the number of interruptions of that experience affects a woman's wage rate, as does the amount of experience on the current job or with the current employer.

Race is also an important determinant of the wage a worker can command (see, for example, Porter, 1974; Portes and Wilson, 1976; Hudis, 1977; and others). The impact of age on wage appears to be curvilinear - it rises and then declines (Stolzenberg, 1975). The impact of cohort, with which age is entangled, is probably negative. Older cohorts have less education than younger cohorts, in spite of their greater years of experience. The socioeconomic status of a woman's family of origin has found to affect her wage rate, net of her own educational attainment (Featherman and Hauser, 1977; Duncan, Featherman and Duncan, 1972). The woman's occupation has also been shown to affect her earnings, though it is not clear whether occupation has an impact separate from that of years of schooling.

Again, the respondent's need for income is measured by her marital status; most married women have husbands who work, reducing their own need to maximize earnings. The family income minus the respondent's own income captures the degree of need for the woman to maximize earnings, whether married or not. In a situation in which her husband has high earnings, or she obtains substantial income from other sources, a woman

has greater flexibility to maximize the interest of her job, its hours, location, or flexibility of her schedule over the rate of pay (Darian, 1975). In addition, the presence of young children could be expected to constrain the ability of a woman to maximize wages, and therefore, lower her wage rate. A physical limitation, being enrolled in school and recent move should also limit a woman's ability to command a high wage.

The hours a woman works, whether full- or part-time, may affect her wage. We might expect that employers pay full-time workers more than part-time workers, and thus fewer hours worked would be associated with lower hourly wages (Suter and Miller, 1973). However, women who make higher wages are able to cut their hours and still make the same amount of money as women with lower hourly wages. If, in fact, fewer hours are associated with a higher wage, then hours may be a result of wage rather than a causal factor (see, for example, Mincer and Polachek, 1974; Heckman, 1974).

For married women, the attitudes of their husbands may have an impact on the wage rate they accept. However, it is not clear whether women whose husbands favor their employment will be willing to work for lower wages (a negative effect) or whether they will be better able to maximize their wages (a positive effect).

Finally, the local labor market should have an impact on the wage a woman can make. Wages are higher in urban as opposed to rural areas, in non-southern as opposed to southern states (Statistical Abstract, 1977). Wrokers may accept lower wages in areas of high unemployment, women may accept lower wages where the market for women is poor, and black women may accept lower wages where the market for blacks is poor. Finally single women with children may not accept low wages where it is relatively easy to obtain AFDC or where AFDC benefit levels are relatively high.

The Effect of an Early First Birth: Hypotheses

How extensive are the disruptions created by an early birth? We have seen that early childbearers complete less education. Given the importance of education in previous studies of occupational attainment (McClendon, 1976; Treiman and Terrell, 1975; Featherman and Hauser, 1975; and others) it seems likely that termination of education poses the young mother with serious obstacles to later occupational success. Other research has shown that their fertility is considerably higher than that of women who delay their first birth (Moore et al., 1977). Given the generally negative effect of the presence of young children on women's labor force participation (Sweet, 1970, 1971; Waite, 1976; Darian, 1976; Kelley, 1976) we also expect that early childbearers will be significantly disadvantaged in their labor force status. Although it could be argued that early childbearers can complete their families early and then move quickly into the labor force, this seems unlikely. Prior work experience is one of the best predictors of participation in any given year (Heckman, 1977). Early childbearers, not having made the initial entry into the labor force with their age peers, will have less such experience than later childbearers, even controlling for family size. Therefore, they are likely to find such the transition more rather than less difficult later on. In either case, we do not anticipate that early childbearing will have a direct negative effect, but rather that its influence will be mediated by education and family size. That is, when educational attainment and family size are included in an equation, an early first birth may not have any effect on labor force participation and earnings. Specifically, then, our hypotheses for this chapter are: (1) early childbearing is associated with less work experience, and with lower occupational prestige, hourly wages, and annual income, (2) the negative association between early childbearing and labor force participation and earnings is not direct, but mediated through the fewer years of school completed and larger family sizes of early childbearers.

DATA

Analyses were conducted on two national longitudinal data sets, the National Longitudinal Survey of Young Women (NLS) and the Panel Study of Income Dynamics (PSID). Both surveys were initially fielded in 1968 and in each case respondents were interviewed annually. Analyses reported here include interviews through the year 1972 for the NLS and up through 1976 for the PSID. While similar in their focus on economic and employment issues, the two surveys sample quite different populations, and consequently complement one another. Each data set will be described in turn.

The National Longitudinal Survey of Young Women

The National Longitudinal Survey of Young Women (NLS) is funded by the U.S. Department of Labor to study the labor market experiences of contemporary young women. It is designed by the Center for Human Resource Research of Ohio State University and fielded by the U.S. Census Bureau. The initial wave in 1968 sampled over 5,000 young women between the ages of 14 and 24. Attempts to reinterview these young women were made annually from 1969 through 1975. Sample retention has been very good. By 1972, the last year considered here, 4625 respondents--90 percent of the original sample--remained in the survey. Since the initial response rate was 94 percent, data on nearly 85 percent of the sample that was initially drawn are available for the current analysis. While these data are among the best available, sample attrition may have reduced the original representativeness, and some caution in generalizing to the entire population is necessary.

In order to produce statistically reliable estimates for black women, households in enumeration districts known to be predominantly black were selected at a rate three times greater than the rate for white enumeration districts.

In 1968, 3638 white women and 1459 black women were interviewed. (Sixty-two young women of other races were interviewed but have been consistently excluded from these analyses because of their diversity.) A sample weight was assigned to each individual case to correct for the fact that different groups of the population had different probabilities of selection. The weights were computed so that the sum of the weights would equal the sample size of 5159.

The NLS data are especially well-suited for a study of the consequences of early childbearing because they follow young women through the teenage and young adult years when family-building typically takes place. For a large proportion of the sample, data on marriage and childbearing are not retrospective but are gathered as the events occur. Because extensive information on the educational and work experience as well as the social and economic background of respondents was obtained, detailed comparisons can be made between women who became mothers while teenagers and other young women who postponed their childbearing can be made. Such extensive data are not frequently available for so large or contemporary a sample.

The changes occurring in respondents' lives are illustrated in the table. The number never-married, the number currently enrolled in school, and the number who have never been employed shrink dramatically as time goes by. Large numbers of respondents initiated child-bearing during the years of the survey. While 23 percent had had a birth by 1968, an additional 24 percent had a birth during the survey. Of the respondents having at least one child by 1972, 751 or 31 percent of the respondents bore their first child by age 18.

CHANGES IN LIFE STATUS AMONG RESPONDENTS IN THE NATIONAL LONGITUDINAL SURVEY BETWEEN 1968 and 1972 (UNWEIGHTED N's)

Marital Status	1968	1972
Married, spouse present	1,473	2,527
Married, spouse absent	114	68
Widowed	3	13
Divorced	56	137
Separated	73	194
Never married	3,440	1,686
N/A	0	534
School Enrollment Status		
Currently enrolled	2,381	785
Not Currently enrolled	2,628	3,840
N/A	0	534
Labor Force Status		
Employed	2,051	2,403
Unemployed	409	344
Out of labor force	1,453	1,744
Never worked	1,246	134
N/A	0	534
Childbearing Status		
Respondent has had at least one child	1,179	2,199
Respondent has had at least one child by age 18	480	751

Two distinct conceptual approaches to the analysis have been utilized. In the first, the "status attainment approach," the respondent's social and economic attainment by a certain age is evaluated as a function of her age at first birth. Initially, this has been done in table format. For example, mean years of school completed by age 18, by age 21, and by age 24 are arrayed by the respondent's age at first birth, with controls for respondent's race and socioeconomic origin. The ages 18, 21, and 24 were chosen to permit comparison of the progress of the young women at three-year intervals.

Since many of the variables needed for this analysis were measured only for the survey years, 1968 to 1972, and not for earlier periods, only young women who turned 18, 21, or 24 during those years were included in the analysis for each of those ages. Thus, for example, the analyses of attainment by 18 include only those respondents who were 14 to 18 in 1968--those who were or who became 18 during the survey period. The dependent variable in each analysis was measured for each respondent in the year that she turned 18, 21, or 24. The reader should keep in mind that the young women who are included in the analysis of attainment by age 18 are not the same ones who are included in the analysis of attainment by age 24, as shown below:

	Attainment at Age 18 Analysis	Attainment at Age 21 Analysis	Attainment at Age 24 Analysis
Respondent's Age in 1968	14-18	17-21	20-24

Some respondents may appear in two of the analyses, but none appear in all three and the oldest and youngest are included in only one of the analyses. So some care must be used in comparing the results of the three analyses.

While the first strategy focuses on achieved status at ages 18, 21, and 24, the second strategy examines the year by year processes by which the ultimate achieved statuses are attained. For example, while the status attainment strategy focuses on the impact of childbearing age on grades of formal schooling completed, the annual transitions strategy examines childbearing age effects on separate school continuation decisions. The two strategies complement one another. While the attainment strategy is a far more familiar research methodology, the mobility approach provides unique insights. It focuses on the population at risk of an event, for example, The population attending school who are at risk of dropping out or the population of women who are employed who might become unemployed. Within that population, the impact of an event, such as a birth, on a change such as dropping out, can be estimated.

Because the accumulation of schooling takes a number of years, the determinants of school continuation decisions may not be the same at all levels of schooling. In short, to examine separately the sequence of annual transitions in schooling, marital status, working and welfare is to further unravel the impact of first birth on women's lives.

The Michigan Panel Study of Income Dynamics

The Panel Study of Income Dynamics was inaugurated in 1968 to provide information on short run changes in the economic status of families and individuals. To this end, approximately 5,000 families have been interviewed annually through 1978. Data obtained through 1976 are included in the current analyses.

The original sample consisted of a cross-section sample of dwelling units within the continental United States plus a subsample of families interviewed in 1967 by the U.S. Bureau of the Census. Since 1968, the sample has consisted of all panel members living in families that were interviewed the previous year plus newly-formed families that include any adult panel member who had moved out of the sample household since 1968. The addition of newly formed families has resulted in an increased sample size despite sample attrition.

Panel losses were considerable (24 percent) in the first year but have been relatively minor in recent years. However, the cumulative response rate including initial and subsequent losses, is only 55 percent. The data were weighted in 1972 to adjust both for different sample fractions and for different rates of nonresponse. Since that time, attrition has not been sufficiently great to warrant further adjustment, and the authors present evidence that estimates made from the PSID correspond closely with estimates obtained from the Current Population Reports (Survey Research Center, 1976, pp. 499-510).

The PSID was explicitly initiated to provide the best possible measures of respondents' family incomes, individual wages, and employment history. The income measures are generally considered to be superior to estimates from the Current Population Survey (Minarik, 1975), and tabular comparisons of both data sets show a high degree of congruence on the weighted distributions of most standard demographic variables (Sawhill et al., 1975). Despite the reassurance that this provides, it seems extremely important to use caution in generalizing from results to the entire United States population.

For the years 1968 to 1975, all information is related to the head of the household. Consequently, little information is available on married women, since they are not defined as heads. Fortunately, in 1976, wives were also interviewed, and detailed information on wive's labor force participation, family background, and earnings was obtained. In addition, wives supplied information on their age at marriage and age at first childbirth, data that cannot be reliably obtained from some of the interviews held with the husband, who is defined as the head of the household.

Although initial plans called for analyses on all women who turned 24, 30, 36, and 42 during the course of the survey, it soon became clear that a far richer and more complete analysis could be done if emphasis were placed on the sub-set of wives and female heads who were interviewed in 1976. Moreover, the number of women available for analysis was not greatly diminished. Of 2630 wives and female heads aged 16 to 42 in 1968, 156 (6 percent) were not interviewed in 1976. For the 2474 wives and female heads in our sample who were interviewed, there is a wealth of information. The slight loss in sample size seems far outweighed by the additional information available on these women and their experiences.

MEASUREMENT OF AGE AT FIRST BIRTH

Neither the NLS nor the PSID contains a childbearing history for women. Consequently it was necessary to construct such a record for all respondents. The procedure by which this was done for each data set will be described.

The National Longitudinal Survey of Young Women. To develop a measure of the young woman's age at first birth, the household record in 1968 was searched for any sons or daughters of the respondent. The age of the oldest of the respondent's children was subtracted from the respondent's age in 1968 to yield age at first birth. First births which occurred in subsequent survey years were identified by searching the household records of childless respondents. When a first birth was identified, the respondent's age at the last interview was assigned as her Age at First Birth. Since exact birth dates are not known for either the respondent or her children and age is coded only in full years for respondents and children over three, the measure of age at first birth contains some error. Where some uncertainty existed our decision rule erred by assigning the older age at first birth.

The measure of age at first birth used here does not include children who were given up for adoption shortly after birth, who were stillborn, who died in early childhood, or those who were sent to live outside the respondent's household. Own children of the respondent cannot be distinguished from adopted children. We are, then, in effect, measuring the impact of the age at which a young woman takes on the duties and responsibilities of motherhood, the age at which she becomes a parent in a social sense. The variable used here should be a fairly unbiased measure of sociological, if not of biological, motherhood.

Panel Study of Income Dynamics. The measure of age at first birth was determined differently for wives and for female heads. For the 1701 women in

the sample who completed the survey for wives in 1976, the age of her oldest child as reported by the wife was subtracted from the wife's age. No similar information was available for female household heads; consequently the measure of age at first birth for the 773 women who were household heads in 1976 was based on the household record. If a first birth occurred during the survey years, the woman's age in the year of the birth was assigned. Otherwise, the household record for 1968 was searched for the age of the oldest child and this age was subtracted from the woman's own age. Since women in the sample in 1968 could have been as old as 42 in that year, it is possible that some of their children would have grown up and left home. This, of course, would result in an incorrect assignment of age at first birth. This is potentially a problem for heads approximately 32 to 42 years of age in 1968--38 percent of the sample of female household heads or 12 percent of the total sample of women. However, the children most likely to be missed are those born to the youngest mothers, since they are most likely to have grown up and left home before she turned 40. Because of this problem, results were checked on samples of women under age 35, since analyses of younger women should not be affected by this problem. Results were not found to differ substantially from those using women of all ages, heads and wives.

Comparison of Age at First Birth Distributions with Current Population Reports

The table shows the weighted proportions of women in the NLS and PSID samples in several age-at-first-birth categories. These distributions can be compared with distributions calculated from data from the 1971 and 1975 Current Population Reports for first births that occurred after the year 1960. The distributions are strikingly similar, although both NLS and the PSID samples have a higher proportion of births among women at older ages. The highest proportion occurs among the total PSID sample, which, as noted above, is

probably elevated by the loss of some early births among older family heads. The young women in the NLS and in the young women PSID sub-sample have few first births that occurred as early as 1960, and since the younger the sample,

The Distribution of Women by their Age at First Birth, 1971 and 1975 Current Population Survey (First Births Occurring After 1960), National Longitudinal Survey and Panel Study of Income Dynamics

Age at First Birth	1971 CPS	1975 CPS	NLS at age 24	PSID Total	PSID <35
17	.128	.129	.113	.112	.113
18	.095	.092	.095	.062	.071
19-20	.259	.248	.186	.214	.212
21+	.518	.530	.607	.633	.605

the more likely the women would have taken part in the trend toward delayed childbirth (U.S. Bureau of the Census, 1978), it seems likely that some of the difference represents true societal changes over time. While the overall correspondence of the NLS and PSID data with Census Bureau data is most encourgaging, it should be kept in mind that some inaccuracy due to coding and missing information was unavoidable. As always, our results should be considered within the context of the findings of other researchers, as well as one's own theoretical expectations.

ANALYTIC STRATEGY

The attainment analysis of the association between labor force measures and the woman's age at the birth of her first child will be conducted in two steps. First, we will explore the relationship of a first birth to the probability of being employed at all in a given year and the total amount of work experience accumulated up to that point. Second, we will explore the hours worked, occupational statuses, wages, and annual incomes of those women who are employed in that year. Because there is evidence that women who work the full-year differ from those who work part-year, (Suter and Miller, 1973) we will explore the relationship of first birth to labor force outcomes for women who work at all during the year and for women who worked the full year. In addition, black and white women, married and not married, have been shown to differ substantially in their patterns of labor for participation and the responsiveness of their wages and earnings to education and experience (Mincer and Polachek, 1974; Hudis, 1977). Therefore, will also explore these associations separately for black and white women, married and not married. Only where differences appear important will results will be reported separately. Comparable analyses are conducted on the National Longitudinal Survey of Young Women and the Panel Study of Income Dynamics, with two exceptions: a measure of total work experience was not available for the NLS young women up to 1972, and a detailed measure of occupation was not available for the PSID women. Therefore, analyses of current work status, work experience, and hours worked were conducted only on the PSID. Occupational status was analyzed only using the NLS. For the analyses of wage and earnings, both data sets were used.

We will first explore the simple association between age at first birth

and the timing of the first birth for each outcome variable. Whether age at first birth remains an important predictor of socio-economic status, hourly earnings, and annual income net of other factors in a multivariate model, will then be addressed using least squares regression. Finally, in those cases in which age at first birth does not retain a direct effect, controlling for other factors, we will then turn our attention to identifying those paths through which age at first birth has its indirect effects. To identify these paths we present the models of experience, current participation, hours, occupation, wages, and earnings with and without years of schooling and family size. The variable through whose inclusion the effect of age at first birth is reduced to nothing defines the path through which age at first birth has its indirect effects. Finally, we can address the question of whether the effects of number of children and education operate on wages and earnings principally through their effects on total labor force experience, or whether their effects are due to tradeoffs such as exchanging higher wages for convenience and accesibility of work; or through being able to command a higher wage regardless of work experience (see, for example, Mincer and Polachek, 1974).

RESULTS

Means and standard deviations of the variables used in the analyses of labor force participation and work experience are reported in Table 1; those used in the analyses of occupational status, hourly wages, and annual earnings are reported in Tables 2 and 3.

The differences between the data sets, the National Longitudinal Survey (NLS) and the Panel Study of Income Dynamics (PSID), should first be pointed out. Comparing only those respondents who worked at all during the year, we see that the average age of women in the PSID in 1976 is 37 years, while we are looking at NLS women at age 24. Almost twice as large a proportion of women in the PSID as in the NLS is black (21 percent compared with 11 percent). Although a similar proportion is currently married, a much larger proportion of the NLS sample is childless. The number of children averages less than one per family in the NLS, about 2 in the PSID. A larger proportion of the NLS sample lives in the south, though a similar proportion of both samples lives in metropolitan areas. Parental socioeconomic status is similar across samples. Mean years of schooling completed are similar in both samples (12.86 for the NLS, 12.66 for the PSID women). To compare income and wage levels for the two samples of women we need to adjust the NLS numbers, which are based on 1972 prices, for the amount of inflation between 1972 and 1976, 36 percent. Adjusting for inflation, we obtain an average annual earnings of $5745 for the NLS women, compared with an average annual earnings of $5966 for the PSID women. Comparing hourly wages, we obtain an adjusted average of $4.31 for the PSID women.[1] Thus, adjusting for inflation,

1. These wage levels are high. In 1976 median hourly earnings of full time female workers over 24 was $3.85; mean hourly earnings was $4.23. This may be a result of the manner in which average hourly earnings were calculated in the PSID--by dividing annual earnings by annual hours worked. An underestimate of hours will result in an overestimate of wages.

Table 1: Means and Standard Deviations of Variables Used in the Analyses of Current and Total Cumulative Labor Force Experience (Panel Study of Income Dynamics)

Variables	Mean	Standard Deviation
Race (1 = White)	.824	.381
Parental Socioeconomic Status	10.734	2.464
Age in 1976	37.272	8.176
Southern Residence (1 = Yes)	.275	.447
Metropolitan Residence (1 = Yes)	.742	.438
Physical Limitation (1 = Yes)	.125	.330
Child Under 6 (1 = Yes)	.261	.439
Married (1 = Yes)	.760	.427
Other Family Income	$13,540.87	$11,347.24
Student in 1976	.014	.119
Number of Years Worked Since 18	10.836	7.945
Proportion of Years Worked Since 18	.583	.314
AFDC Acceptance Rate	.817	.772
AFDC Benefit Level	$ 316.98	$ 104.52
Unemployment Rate	4.270	1.442
Age at First Birth		
≤15	.014	.115
16-17	.098	.297
18	.062	.240
19-20	.194	.395
21-23	.214	.410
≥24	.420	.494
Age at First Marriage		
≤15	.032	.175
16-17	.168	.374
18	.126	.332
19-20	.232	.422
21-23	.238	.426
≥24	.205	.404
Education		
<12	.278	.448
12	.442	.497
>12	.280	.449
Husband's Attitude Toward Wife Working (1 = Husband in favor of wife working)	.660	.474
Number of Children in 1976	2.529	1.990
Southern Background	.299	.458
Urban Background	.355	.479
Market for Males, Females	2.059	.869
Employed at Least 10 hours Last Year	.670	.470

Table 2: Means and Standard Deviations of Variables Used in the Analyses of the Occupational Status, Hourly Wages, and Annual Earnings at Age 24 of Respondents Who Worked the Full-Year and Who Worked At All During the Year (National Longitudinal Survey)

	Worked Full-Year		Worked At All	
Definitions	Mean	Standard Deviation	Mean	Standard Deviation
Education at Age 24	13.080	2.150	12.864	2.270
Occupational Status	48.990	20.480	45.922	21.372
Hourly Wages	$ 2.869	$ 1.096	$ 2.661	$ 1.080
Annual Earnings	$5,398.754	$2,201.476	$4,223.847	$2,639.622
Age at First Birth:				
≤15	.017	.130	.020	.140
16-17	.057	.231	.069	.254
18	.039	.193	.058	.233
19-20	.100	.301	.124	.329
21-23	.078	.269	.146	.353
≥24	.709	.455	.584	.493
Race (1 = white)	.887	.316	.883	.321
Parental Socioeconomic Status	10.900	2.373	10.674	2.348
Age in 1968	22.467	1.132	22.480	1.152
Number of Children Under 6:				
No Children	.736	.441	.608	.488
One Child	.182	.386	.242	.428
Two or More Children	.082	.275	.151	.358
Employed:				
Part-time/full year	.121	.326	.079	.270
Part-time/part year	-	-	.159	.366
Full-time/part year	-	-	.188	.391
Full-time/full-year	.879	.326	.574	.495
Southern Residence	.342	.475	.345	.476
Metropolitan Residence	.730	.444	.701	.458
Married	.601	.490	.666	.472
Unmarried with Children Under 6	.055	.228	.068	.251
Other Family Income	$7,114.930	$6,593.469	$7,111.421	$6,037.517
Number of Children by Age 24:				
No Children	.709	.455	.584	.493
One Child	.173	.379	.227	.419
Two or More Children	.114	.318	.187	.390
Number of Children	.447	.824	.689	.999

- = omitted from analysis

Table 3: Means and Standard Deviations of Variables Used in the Analyses of Hourly Wages and Annual Earnings of Respondents Who Worked the Full Year and Who Worked at All During the Year (Panel Study of Income Dynamics)

	Worked the Full Year		Worked at All During The Year (Total)		Worked at All During The Year (Whites)		Worked at All During The Year (Blacks)	
	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
Age at First Birth								
<15	.012	.110	.013	.114	.010	.101	.024	.152
16-17	.045	.207	.054	.226	.047	.212	.079	.270
18	.057	.232	.057	.232	.059	.236	.050	.218
19-20	.178	.382	.192	.394	.213	.410	.113	.317
21-23	.175	.380	.191	.393	.224	.417	.068	.251
>24	.261	.439	.493	.500	.227	.419	.324	.469
Childless	.272	.445			.219	.414	.343	.475
Age at First Marriage								
<15	.022	.147	.026	.158	.026	.159	.024	.153
16-17	.110	.313	.116	.321	.122	.328	.094	.293
18	.122	.327	.125	.331	.146	.353	.047	.212
19-20	.215	.411	.224	.417	.256	.436	.105	.307
21-23	.268	.443	.257	.437	.233	.423	.346	.476
>24	.172	.377	.252	.434	.118	.323	.316	.466
No Marriage	.090	.286			.099	.298	.068	.252
Race (1 = White)	.721	.449	.788	.409	b	b	b	b
Parental Socioeconomic Status	11.024	2.494	10.989	2.525	10.986	2.539	11.002	2.473
Age in 1976	38.263	8.487	37.193	8.452	36.302	8.222	40.515	8.482
Southern Residence	.253	.435	.280	.449	.296	.457	.221	.415
Metropolitan Residence	.797	.403	.756	.430	.719	.450	.894	.309
Physical Limitation (1 = Yes)	.126	.332	.116	.320	.067	.250	.295	.457
Child Under 6 (1 = Yes)	.112	.316	.166	.372	.183	.387	.102	.302
Married (1 = Yes)	.637	.481	.696	.460	.765	.436	.510	.500
Other Family Income	$11,004.40	$9,895.43	$11,946.09	$10,505.50	$13,184.04	$11,064.10	$7,353.78	$6,247.09
Student in 1976 (1 = Yes)	.001	.035	.011	.103	.013	.115	.002	.039
Proportion of Years Worked Since 18	.736	.265	.686	.284	.662	.292	.775	.233
AFDC Acceptance Rate	.835	.868	.821	.816	.817	.811	.832	.833
AFDC Benefit Level	$ 327.16	$ 107.30	$ 317.59	$ 106.55	$ 309.90	$ 103.87	$ 346.22	$ 111.55
Unemployment Rate	4.448	1.529	4.317	1.499	4.020	1.366	5.424	1.455
Typical Male Wage	3.96	.787	3.96	.783	3.98	.749	3.89	.893
Market for Nonwhites vs. Whites	2.530	.727	2.484	.727	2.398	.745	2.788	.566
Market for Females vs. Males	2.014	.856	2.081	.862	2.130	.870	1.908	.812
Education in 1976								
<12	.255	.436	.223	.416	.166	.372	.431	.496
=12	.477	.500	.449	.498	.443	.497	.472	.500
>12	.268	.443	.329	.470	.391	.488	.097	.296
Number of Children in 1976	1.959	1.795	2.083	1.793	2.155	1.761	1.816	1.889
Moved Since Last Year (1 = Yes)	.015	.120	.023	.150	.027	.162	.010	.098
Generally Worked at Same Occupation (1 = Yes)	.644	.479	.624	.485	.637	.481	.576	.495
Months Worked for Present Employer	60.515	58.143	47.518	55.126	45.527	57.049	54.939	46.594
Unmarried With a Child Under 6 (1 = Yes)	.020	.141	.021	.142	.018	.134	.029	.168
Interruptions in Work History								
0	.666	.472	.642	.480	.574	.495	.893	.309
1	.218	.413	.233	.423	.277	.447	.071	.257
>2	.116	.320	.125	.331	.150	.357	.036	.186
Hours Worked:	1,756.412	523.386	1,402.484	707.637	1,336.810	734.277	1,647.120	531.582
Part Time/Full Year	.283	.451	.178	.383	.147	.354	.295	.456
Part Time/Part Year	b	b	.162	.368	.192	.394	.049	.217
Full Time/Part Year	b	b	.207	.405	.231	.421	.120	.325
Full Time/Full Year	.717	.451	.454	.498	.431	.495	.537	.499
Husband's Attitude Toward Wife Working (1 = Favors, 0 = No Husband, Husband Neutral or Opposed	.825	.380	.767	.423	.732	.443	.900	.300
Hourly Wages	$ 4.15	$ 2.09	$ 4.31	$ 3.21	$ 4.40	$ 3.31	$ 3.97	$ 2.75
Annual Earnings	$ 7,374.76	$4,128.02	$ 5,065.96	$ 4,364.09	$ 5,795.52	$ 4,417.07	$6,600.85	$4,104.30

b = Not Appropriate

a differential in the level of hourly wages, favoring the sample of older women, remains. However, there remains a difference of only $221 per year in the annual earnings of these women. This probably reflects the lack of increase in earnings with age that is generally found in studying working women. The adjusted difference between the "other family incomes" of these two samples is much larger, favoring the older sample by $2000.

Labor Force Participation

The Simple Association Between Age at First Birth and the Probability of Working

We will first discuss the simple association between the age at which a woman bears her first child and the probability of being employed. In Tables 4 and 5 we present the proportion of respondents, by race and age at first birth, who are employed at each of four levels--1) part-time/part-year; 2) full-time/part-year, 3) part-time/full-year; and 4) full-time/full-year--as well as summary columns noting the proportions who are employed during the full year and those employed at all during the year. These statistics describe young women in their 24th year surveyed in the NLS and women in 1976 in the PSID.

The results are consistent across samples. First, those young women who do not have children or who have them at age 24 or later are far more likely to be employed at all, especially full-time, full-year. Second, black respondents are more likely to be employed full-time, full-year than white respondents. In the NLS it appears as though black women are more likely to be employed at all than are white women; however, this does not seem to hold up in the PSID. The age of the respondent at the birth of her first child seems to affect neither the probability of employment nor whether she is employed part-time versus full-time or part-year versus full-year. If anything, the relationship is curvilinear, such that the earliest and the latest childbearers are more likely to be employed at all during the year. We will next test to see whether similar relationships (or lack of them) hold, controlling for other factors.[1]

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1. The following analyses were carried out only on the PSID, since an important independent variable (prior work experience) was not available for the NLS young women at that time.

Table 4: Labor Force Participation at Age 24 by Respondent's Age at First Birth and Race (National Longitudinal Survey)

Age of Respondent at Her First Birth	(n)	Percent of All Respondents Who Are Employed at Age 24: Part-time, Part-year	Full-time, Part-year	Part-time, Full-year	Full-time, Full-year	Employed Full-year, Full- or Part-time	Employed at All During Year
Whites							
≤15	(27)	.127	.145	.160	.100	.260	.532
16-17	(106)	.173	.106	.038	.183	.221	.500
18	(122)	.153	.148	.041	.142	.183	.484
19-20	(237)	.176	.101	.051	.169	.220	.497
21-23	(265)	.213	.155	.046	.114	.160	.538
≥24	(540)	.084	.121	.080	.668	.748	.953
	(1297)						
Blacks							
≤15	(15)	.094	.237	.091	.307	.398	.729
16-17	(28)	.149	.158	.063	.379	.442	.749
18	(19)	.171	.112	.076	.182	.258	.541
19-20	(27)	.109	.151	.070	.407	.477	.737
21-23	(26)	.155	.195	.085	.262	.347	.697
≥24	(47)	.097	.183	.086	.510	.596	.876
	(162)						

Table 5: Labor Force Participation by Respondent's Age at First Birth and Race (Panel Study of Income Dynamics)

Proportion of All Respondents Who Were Employed in 1976

Age of Respondent at Her First Birth	(n)	Part-time, Part-year	Full-time, Part-year	Part-time, Full-year	Full-time, Full-year	Employed Full year, Full- or Part-time	Employed at all During Year
Whites							
≤ 15	(18)	.056	.222	.167	.167	.334	.611
16-17	(95)	.116	.126	.105	.189	.294	.537
18	(101)	.109	.149	.089	.287	.376	.634
19-20	(306)	.137	.163	.098	.278	.376	.676
21-23	(350)	.143	.131	.114	.231	.345	.620
≥ 24	(536)	.129	.183	.076	.362	.438	.750
	(1406)						
Blacks							
≤ 15	(65)	.092	.200	.123	.262	.385	.677
16-17	(174)	.069	.184	.017	.328	.345	.598
18	(110)	.127	.100	.045	.318	.363	.591
19-20	(197)	.056	.188	.046	.325	.371	.614
21-23	(178)	.062	.135	.067	.404	.471	.669
≥ 24	(208)	.091	.135	.077	.413	.490	.716
	(932)						

The Association between Age at First Birth and Labor Force Participation, Controlling for other Factors (PSID)

As indicated by the lack of a simple association, there is no overall relationship between age at first birth and the probability of being employed when other factors are controlled, although the earliest childbearers and the post high school childbearers appear to have the highest participation rates (Table 6). Nor is there an association between age at first marriage and labor force participation. In addition, when other factors are controlled, there is no significant difference in participation between blacks and whites. The most important factors are education, experience, other family income, husband's attitude, the presence of a young child, and marital status. As could be expected, students were less likely to be working last year, as were those who reported some physical limitation. Interestingly, married respondents were more likely to work last year than single, widowed or divorced respondents, though the relationship is not very strong. As found in most previous studies, respondents with more education are more likely to be working. Having at least a high school diploma increases the probability of being employed by 10 percentage points, and by an additional 5 percentage points for years beyond high school. Having children under 6 decreases the probability of working by 25 percentage points. Having a husband who favors his wife working increases her probability of working by 18 percentage points. However, with each additional $1,000 of other family income the chance of a woman working declines by one half a percentage point. Finally, women who worked sixty percent of the years since 18 have a probability of working in a given year almost 6 percentage points higher than women who worked fifty percent of these years.

Neither the AFDC acceptance rate nor the level of benefits significantly affects the probability of a woman working in 1976, net of other factors. None

Table 6: Partial Regression Coefficients (Standardized and Unstandardized) of Whether Respondent is Employed in 1976 On Age at First Birth, With Controls for Social and Demographic Factors (Panel Study of Income Dynamics)

	(1) All Variables		(2) Without Proportion of Years Worked		(3) Without Number of Children and Proportion of Years Worked		(4) Without Education, Number of Children, and Proportion of Years Worked	
Independent Variables	b	beta	b	beta	b	beta	b	beta
Age at First Birth								
≤15	.144*	.035*	.152	.037	.040	.010	.013	.003
16-17	- .025	- .016	- .046	- .029	- .143***	- .090***	.193***	.122***
18	- .055	.028	.063	.032	- .007	- .004	.032	.016
19-20	.102***	.086***	.084**	.071**	.025	.021	.008	.007
21-23	.038	.034	.004	.004	- .033	- .029	- .047	- .041
≥24	a	a	a	a	a	a	a	a
Age at Marriage								
≤15	.024	.009	- .010	- .004	- .010	- .004	- .040	- .015
16-17	- .040	- .032	- .085*	- .067*	- .099**	- .079**	- .123***	- .098***
18	- .001	- .001	- .010	- .007	- .022	- .016	- .022	- .015
19-20	.008	.008	- .017	- .015	- 030	- .027	.023	.020
21-23	.043	.039	.016	.015	- .005	- .005	.007	.007
≥24	a	a	a	a	a	a	a	a
Education								
<12	a	a	a	a	a	a	-	-
=12	.105***	.111***	.107***	.113***	.112***	.118***	-	-
>12	.149***	.142***	.156***	.149***	.156***	.149***	-	-
Number of Children in 1976	- .007	- .029	- .036***	- .152***	-	-	-	-
Proportion of Years Worked	.564***	.376***	-	-	-	-	-	-
Race	- .031	- .025	- .082***	- .066***	- .087***	.070***	- .072	- .058
Parental Socioeconomic Status	.008	.042	.011**	.057**	.014***	.075***	.019***	.100***
Age in 1976	.002	.033	.001	.016	- .003*	- .049*	- .004***	- .078***
Children Under 6	- .251***	- .235***	- .260***	- .243***	- .296***	- .277***	- .310***	- .290***
Married (1 = Yes)	.070**	.063**	.050*	.045*	.041	.037	.048	.044
Other Family Income	- .000***	- .111***	- .000***	- .167***	- .000***	- .179***	- .000***	- .158***
Physical Limitation (1 = Yes)	- .095***	- .066***	- .112***	- .078***	- .097***	- .068***	- .131***	- .092***
Unemployment Rate	- .006	- .019	- .005	- .014	- .003	- .010	- .006	- .020
AFDC Acceptance Rate	.000	.007	.000	.006	.000	.006	.000	.006
AFDC Benefit Level	.000	.004	- .000	- .014	- .000	- .013	- .000	- .014
Husband's Attitude Toward Wife Working	.186***	.187***	.236***	.238***	.238***	.240***	.245***	.246***
Moved Since Last Year	- .024	- .007	- .077	- .024	- .075	- .023	- .075	- .023
Student in 1976 (1 = Yes)	- .236***	- .060***	- .262***	- .066***	- .265***	- .067***	- .239***	- .060***
Southern Residence	.029	.028	.038	.037	.043*	.041*	.039	.037
Metropolitan Residence	- .004	- .003	- .000	- .000	- .004	- .004	- .002	- .002
Market for Females vs. Males	.003	.006	.008	.016	.013	.023	.019	.035
Constant	.077		.580		.645		.738	
F_2	53.132		36.616		35.963		37.076	
R^2	.332		.291		.281		.272	
N	2611		2611		2611		2611	

* = p < .05
** = p < .01
*** = p < .001

a = omitted category
- = omitted from regression

of the labor market variables--southern residence, metropolitan residence, unemployment rate, market for females versus males--affect the probability of a woman working, net of other variables. This is an interesting result. Labor market factors do not appear to affect individual decisions, net of experience, number of children and other family income, for example.

The Indirect Effect of Age at First Birth on Labor Force Participation (PSID)

Age at first birth has no indirect effect on labor force participation either. When education, number of children, and labor force experience are omitted from the model (columns 2-4 of Table 6), there is still no overall significant association of age at first birth with whether or not a woman is employed in any given year. The effects of the other factors are not changed, only strengthened. The results indicate that besides education and experience, year to year factors are the most critical determinants of labor force participation.

Work Experience[1]

Simple Association between Age at First Birth and Work Experience (PSID)

We can see in Table 7 that white women who bear a child while young do obtain much less total work experience than those who bear a child while older or who are childless. The effect is less apparent for blacks, since most have considerable work experience.

The Association between Age at First Birth and Experience, Controlling for Other Factors (PSID)

When we control for other factors, we find that age at first birth no longer is associated with total work experience (Table 8). Age at first marriage does retain a statistically significant effect on experience, such

1. These analyses were carried out only on the PSID since comparable measures of work experience were not available for the NLS young women.

Table 7: Percentage of Respondents Who Worked Varying Proportions of Years Since Age 18, by Age at First Birth and Race (Panel Study of Income Dynamics)

Age of Respondent at Her First Birth	Number	Proportion of Years Worked Since Age 18				
		0	.1-.25	.25-.50	.50-.75	.75-1.00
Whites						
<15	24	5.0%	49.0%	10.2%	15.8%	20.0%
16-17	219	6.1	11.9	58.9	6.0	17.2
18	131	10.5	25.1	21.2	25.1	18.2
19-20	454	7.5	26.8	25.0	16.9	23.9
21-23	535	2.1	30.3	28.6	19.3	19.8
>24	511	1.0	15.4	32.4	24.7	26.5
Childless	334	6.6	3.1	11.3	12.4	66.7
Total	2,208	4.5%	20.1%	28.5%	18.0%	28.9%
Blacks						
<15	12	7.3%	4.5%	24.8%	13.4%	50.0%
16-17	48	20.7	14.3	17.7	28.2	19.1
18	28	14.6	15.0	10.4	19.6	40.3
19-20	67	3.9	7.9	28.8	21.6	37.7
21-23	37	10.3	7.8	34.0	14.1	33.7
>24	137	1.8	2.9	3.8	81.1	10.5
Childless	139	.4	1.2	2.2	4.7	91.4
Total	469	5.2%	5.5%	11.7%	33.8%	43.8%

Table 8: Partial Regression Coefficients (Standardized and Unstandardized) of the Proportion of Years Worked Since 18 on Respondent's Age at First Birth, with Controls for Social and Demographic Factors (Panel Study of Income Dynamics)

Independent Variables	(1) All Variables		(2) Without Number of Children		(3) Without Education and Number of Children	
	b	beta	b	beta	b	beta
Age at First Birth						
≤15	.009	.003	- .184***	- .06***	- .180***	- .066***
16-17	- .027	- .025	- .210***	- .199***	- .206***	- .195***
18	.012	.009	- .107***	- .082***	- .107***	- .082***
19-20	- .032	- .040	- .135***	- .171***	- .135***	- .171***
21-23	- .070***	- .091***	- .139***	- .18.***	- .138***	- .182***
≥24	a	a	a	a	a	a
Age at First Marriage						
≤15	- .095*	- .053*	- .107**	- .060**	- .105**	- .059**
16-17	- .094***	- .112***	- .137***	- .163***	- .136***	- .163***
18	- .042	- .044	- .079***	- .083***	- .081***	- .086***
19-20	- .077***	- .104***	- .121***	- .163***	- .124***	- .167***
21-23	- .083***	- .113***	- .144***	- .195***	- .147***	- .199***
≥24	a	a	a	a	a	a
Education						
<12	a	a	a	a	-	-
=12	- .017	- .027	- .014	- .022	-	-
>12	- .002	- .003	- .005	- .008	-	-
Number of Children in 1976	- .060 **	- .383***	-	-	-	-
Race	- .141***	- .171***	- .160***	- .194***	- .160***	- .195***
Parental Socioeconomic Status	.003	.022	.009***	.072***	.009***	.074***
Age in 1976	- .003***	- .076***	- .008***	- .208***	- .008***	- .206***
Southern Background	- .016	- .024	- .006	- .008	- .006	- .009
Urban Background	- .022	- .033	- .038**	- .058**	- .038**	- .058**
Constant	1.035		1.121		1.109	
F_2	62.972		44.648		50.553	
R^2	.304		.226		.226	
N	2611		2611		2611	

* = p < .05
** = p < .01
*** = p < .001

a = omitted category
- = omitted from regression

that those who marry before their 18th birthday appear to work 9 percentage points less than those who either marry at 24 or later, or who do not marry. However, it is not just the early marriers that work fewer years: those who marry between 19 and 23 also work a lesser proportion of their lives. One of the factors that most affects the proportion of years worked is the number of children. Each additional child reduces experience by 6 percentage points. As expected, whites obtain considerably less work experience than blacks. Finally, older women appear to obtain less experience than younger women. This is an interesting finding. Younger cohorts of women are obtaining more early labor force experience, and, as a result, can be expected to work more years over their lives. Education has no overall effect on experience. Not even when family size is omitted from the regression (column 2 of Table 8) does education have an impact on experience.

The Indirect Effect of Age at First Birth on Experience (PSID)

In the second and third columns of Table 8 we test through what path(s) age at first birth affects experience. We see that when education and family size are omitted from the regression age at first birth has an effect, and that this effect is not reduced by adding schooling. However, it disappears entirely when number of children is added. We conclude that the reason age at first birth was found to affect experience in the simple association is that an early birth increases total family size, which reduces work experience. Age at first birth has no remaining effect once family size is controlled. It is interesting and important that the effect of an early marriage is not reduced by the control for number of children. This indicates that an early marriage has important effects on a woman's life net of her fertility; we do not have enough information in the PSID available on her early years, during which work habits are being formed, to resolve this issue. For example, is the

difference due to differential need or to differential sex role attitudes of the woman and her family? This is an important question since, as we shall see, total experience is an important contributor to explaining hours worked, wages, and earnings of women.

Hours Worked Last Year[1]

In Tables 4 and 5 we say that later childbearers appear more likely to be employed full-time/full-year than early childbearers, and blacks are more likely to be employed full-time than whites. Although distinctions of part-time and full-time, full-year and part-year are useful, they do not allow us to distinguish between those who work more or fewer hours in any one year. Therefore, among those who worked at all last year, what factors are associated with the actual number of hours a woman worked net of other factors?

The Association between Age at First Birth and Hours Worked Last Year, Controlling for Other Factors (PSID)

In Table 9 we see that not just an early first birth, but any first birth reduces the hours a woman worked last year, although only the coefficients for those whose first birth occurred at 16 or 17 and between 19 and 23 are statistically significant. This indicates that having had a child substantially reduces labor force participation, net of the presence of a young child, which has a substantial negative effect, and net of the total number of children, which has no effect.

Work experience is one of the most important determinants of hours worked last year. Each additional percentage point of years worked since 18 increases hours worked last year by 570. Each additional 10 months a woman has worked for the same employer increases her annual hours by 30. Having worked generally

1. These analyses were conducted only on the PSID.

at the same occupation increases annual hours by 134. The number of interruptions of work experience has no effect.

Table 9 shows an inverse relationship between hourly wages and hours worked such that each additional dollar of hourly income is associated with a 38 hour decline in annual hours. However, rather than indicating that women do trade off wages for fewer or flexible hours, this may be an artifact of the way in which average hourly earnings are calculated in the PSID. Wages and hours are not independently measured; rather, they are inversely related by definition--annual earnings divided by annual hours produces the measure of average hourly earnings. Since an underestimate of hours increases hourly earnings, and an overestimate of hours decreases hourly earnings, the inverse association may simply be due to measurement error. Thus we don't have a clear indication as to the effect of wages on hours. Since the inclusion of this measure of wages in the model is questionable, the model was estimated without the measure of wages. Its exclusion did not significantly affect the results.

Educational attainment has no direct effect on hours worked last year. Since education affects hourly wage, we might expect an indirect effect of education through wages. However, this does not appear to be the case. Education has no effect even when hourly wage is removed from the model (results not presented here). This unexpected lack of an indirect relationship may be due to the way hourly wages was calculated, described above.

Need for income does appear to affect hours worked last year. Married women worked 112 fewer hours than non-married women, net of husband's attitude and number of children. Yet, interestingly enough, net of a first birth, an early marriage increases the number of hours worked last year, although the results are only statistically significant for those who marry at age 18.

Table 9 : Partial Regression Coefficients (Standardized and Unstandardized) of the Number of Hours Worked Last Year on Respondent's Age at First Birth, With Controls for Social and Demographic Factors, Respondents Who Worked at All During the Year (Panel Study of Income Dynamics)

Independent Variables	Worked At All	
	b	beta
Age at First Birth		
≤15	-154.920	- .025
16-17	-211.452*	- .067*
18	-160.051	- .052
19-20	-246.463**	- .137**
21-23	-267.642***	- .149***
≥24	- 97.443	- .059
Childless	a	a
Age at First Marriage		
≤15	151.840	.034
16-17	155.447	.070
18	184.685*	.086*
19-20	140.152	.083
21-23	12.384	.008
≥24	- 89.373	- .046
No Marriage	a	a
Education		
<12	a	a
=12	24.289	.017
>12	16.149	.011
Number of Children	16.255	.041
Proportion of Years Worked Since 18	569.774***	.229***
Hourly Wage	- .376***	- .170***
Race (1 = White)	-230.867***	- .133***
Parental Socioeconomic Status	14.484*	.052*
Age in 1976	- .556	- .007
Southern Residence (1 = Yes)	12.689	.008
Metropolitan Residence (1 = Yes)	100.068**	.061**
Unmarried with Child Under 6 (1 = Yes)	189.993	.038
Married (1 = Yes)	-111.774*	- .073*
Child Under 6 (1 = Yes)	-332.731***	- .175***
Other Family Income	- .003	- .046
Husband's Attitude Toward Wife Working	194.820***	.116***
Physical Limitation (1 = Yes)	-228.408***	- .103***
Student in 1976 (1 = Yes)	-442.219**	- .065**
Generally Worked at Same Occupation (1 = Yes)	136.405***	.092***
Number of Interruptions of Work Experience		
None	a	a
One	- 21.453	- .013
Two or More	74.476	.035
Months with Present Employer	2.955***	.230***
AFDC Acceptance Rate	.060	.007
AFDC Benefit Level	.240	.036
Unemployment Rate	- 52.063***	- .110***
Market for Nonwhites vs. Whites (high = worse)	- 25.977	- .027
Market for Females vs. Males (high = worse)	- 20.099	- .024
Moved Since Last Year	- 4.110	- .001
Constant	1236.734	
F	18.231	
R^2	.307	
N	1645.	

* = p < .05
** = p < .01
*** = p < .001

a = omitted category
- = omitted from regression

Net of other factors, white women work 230 hours fewer per year than do black women. Yet women from higher parental socioeconomic backgrounds worked 14 hours more last year than those of lower socioeconomic backgrounds.

Neither the AFDC acceptance rate nor the benefit level affects the hours a woman works, given that she has made the decision to work. Labor market factors appear to have some influence on hours worked, among those who work although they were not found to affect the participation decision. Women living in metropolitan areas worked more hours; those living in areas of high unemployment worked fewer hours per year.

Black-White Differences (PSID)

Does the relationship between hours worked last year and the independent variables differ by race? To test whether the differences are significant we divided the sample by race and tested for interaction, using the analysis of variance test suggested by Johnston (1973). The differences are not statistically significant ($F = .35$). There is one difference of interest, however. Married black women work some 378 hours more than non-married black women, whereas married white women work some 312 hours fewer than non-married white (Table 10). Both results are statistically significant at the .001 level. This suggests the importance of race-marital status interaction, although overall the interactions are not statistically significant.

The Indirect Effect of Age at First Birth on Hours Worked (PSID)

Since neither educational attainment nor number of children affects hours worked last year in the PSID, there is no indirect effect of age at first birth through those two variables. There is a small indirect effect through experience, but it appears that most of the effect of an early birth is direct or passes through variables not identified. When experience is omitted from the model, the effect of an early birth is increased somewhat, although the largest effect is still concentrated at ages 19-23 (results not presented here).

Table 1): Partial Regression Coefficients (Standardized and Unstandardized) of the Number of Hours Worked Last Year on Respondent's Age at First Birth, With Controls for Social and Demographic Factors, Whites and Blacks (Panel Study of Income Dynamics)

Independent Variables	Whites		Blacks	
	b	beta	b	beta
Age at First Birth				
≤15	-142.798	- .020	-314.751	- .090
16-17	-224.881	- .065	-363.293*	- .185*
18	-250.679*	- .080*	-297.229	- .122
19-20	-310.165***	- .173***	-418.609**	- .250**
21-23	-330.096***	- .188***	-387.349**	- .183**
≥24	-225.650***	- .146***	-190.366	- .096
Childless	a	a	a	a
Age at First Marriage				
≤15	296.441	.064	-261.271	- .075
16-17	260.205*	.116*	190.353	.105
18	272.548*	.131*	270.514	.108
19-20	247.919*	.147*	96.792	.056
21-23	44.283	.026	- 63.360	- .057
≥24	40.225	.018	200.652	.176
No Marriage	a	a	a	a
Education				
<12	a	a	a	a
=12	- 54.326	- .037	133.006	.125
>12	- 8.389	- .006	108.965	.061
Number of Children	29.611	.071	9.804	.025
Proportion of Years Worked Since 18	663.687***	.264***	654.668***	.286***
Hourly Wage	- .375***	- .169***	- .465***	- .240***
Parental Socioeconomic Status	15.701	.054	- 28.627	- .133
Age in 1976	3.150	.035	- 2.184	- .035
Southern Residence (1 = Yes)	36.350	.023	-109.424	- .085
Metropolitan Residence (1 = Yes)	91.219*	.056*	160.818	.093
Unmarried with Child Under 6 (1 = Yes)	154.144	.028	125.078	.040
Married (1 = Yes)	-312.028***	- .185***	378.975***	.357***
Child Under 6 (1 = Yes)	-256.860***	- .137***	-262.252*	- .149*
Other Family Income	- .001	- .014	- .018*	- .210*
Husband's Attitude Toward Wife Working	151.845***	.092***	255.507**	.144**
Physical Limitation (1 = Yes)	-192.677**	- .066**	-164.586	- .141
Student in 1976 (1 = Yes)	-480.841**	- .075**	-795.647	- .058
Generally Worked at Same Occupation (1 = Yes)	90.002*	.059*	313.206***	.292***
Number of Interruptions of Work Experience				
None	a	a	a	a
One	20.832	.013	191.383	.093
Two or More	103.823	.050	75.130	.026
Months with Present Employer	2.675***	.208***	2.270**	.199**
AFDC Acceptance Rate	.236	.026	- .231	- .036
AFDC Benefit Level	.106	.015	.332	.070
Unemployment Rate	- 63.571***	- .118***	- 31.080	- .085
Market for Nonwhites vs. Whites (high = worse)	- 26.194	- .026	- 71.962	- .076
Market for Females vs. Males (high = worse)	11.875	.014	-131.204**	- .200**
Moved Since Last Year	- 10.918	- .002	- 97.484	- .018
Constant	968.976		1,585.969	
F_2	15.895		6.616	
R^2	.315		.432	
N	1,354.		370.	

* = p < .05
** = p < .01
*** = p < .001

a = omitted category
- = omitted from regression

A Comparison of the Decision to Work with that of Hours of Work (PSID)

The hours decision appears to be distinct from that of whether or not to work. The most important differences are the following:

1. Net of other factors, married women are more likely to work than are women who are not married. Among women who are working, however, those who are married work fewer hours than those of other marital statuses.

2. Among all women, having had a first birth before age 16 increases the chance of working in a given year. However, among those who are working, women who had an early first birth work fewer hours than those with a later first birth or those who are childless.

3. Higher education is associated with a higher probability of working in a given year. However, among those who are working there is no association between schooling completed and number of hours worked.

4. Race is not associated with a differential probability of working. However, among those who are working, black women work more hours than white women.

5. Labor market factors do not appear to affect the decision to work. Of those working, however, such factors do affect hours worked.

Occupational Status (SEI)[1]

The Simple Association between Age at First Birth and Occupation Status (NLS)

The status of the respondent's occupation is reported in Table 11 by the respondent's age at first birth and in Table 12 by the timing of the first birth relative to first marriage. There is a clear association between delay in the age of first birth and having a higher status occupation among both blacks and whites, though whites appear to have somewhat higher status occupations

1. These analyses were carried out only on the NLS, since a comparable measure of SEI was not available in the PSID.

Table 11: Occupational Status of Respondents at Ages 18, 21, and 24 Who Are Full Year Labor Force Participants, or Labor Force Participants at All, By Age at First Birth, Race, and Socioeconomic Background (National Longitudinal Survey)

Age of Respondent at First Birth	Mean Duncan Score: Labor Force Participation at all During Year		Full Year Sample		Labor Force Participation at all During Year		Full Year Sample		Labor Force Participation at all During Year		Full Year Sample	
	at age 18				at age 21				at age 24			
ALL RACES												
≤15	22	(31)	19	(14)	26	(20)	31	(15)	23	(25)	23	(13)
16–17	27	(106)	26	(20)	26	(66)	26	(35)	28	(73)	33	(35)
18					35	(90)	36	(42)	30	(69)	34	(27)
19–20					34	(184)	32	(52)	33	(138)	39	(65)
21–23									45	(158)	48	(51)
No children by 18,21,24	35	(1328)	36	(353)	44	(1029)	44	(577)	51	(555)	53	(432)
ALL WHITES												
≤15	19	(14)	~	(4)	26	(13)	41	(5)	28	(14)	30	(7)
16–17	25	(70)	31	(9)	27	(42)	30	(16)	29	(52)	38	(22)
18					37	(76)	42	(25)	31	(59)	36	(22)
19–20					35	(152)	34	(30)	37	(118)	42	(52)
21–23									46	(140)	51	(42)
No children by 18,21,24	35	(1214)	36	(292)	44	(952)	46	(480)	52	(515)	54	(404)
Low SES												
≤15	18	(6)	~	(1)	27	(7)	~	(2)	~	(3)	-	(0)
16–17	17	(17)	~	(2)	16	(15)	~	(4)	30	(22)	39	(13)
18					22	(14)	~	(2)	21	(15)	~	(3)
19–20					31	(28)	31	(6)	26	(30)	29	(16)
21–23									32	(23)	53	(6)
No children by 18,21,24	29	(136)	36	(38)	38	(115)	41	(72)	37	(60)	39	(45)
Medium/High SES												
≤15	22	(7)	~	(3)	~	(4)	~	(3)	29	(7)	~	(4)
16–17	27	(49)	34	(7)	32	(24)	33	(11)	27	(28)	36	(9)
18					40	(55)	46	(20)	35	(38)	42	(17)
19–20					38	(109)	38	(21)	42	(69)	51	(25)
21–23									50	(101)	51	(34)
No children by 18,21,24	36	(1014)	36	(236)	46	(782)	47	(378)	55	(417)	56	(339)
ALL BLACKS												
≤15	25	(16)	20	(10)	26	(7)	25	(10)	15	(11)	15	(6)
16–17	31	(36)	28	(11)	24	(23)	23	(19)	25	(21)	25	(12)
18					25	(14)	26	(17)	25	(10)	24	(5)
19–20					29	(32)	29	(22)	27	(20)	25	(13)
21–23									39	(18)	31	(9)
No children by 18,21,24	30	(114)	34	(61)	38	(77)	36	(97)	37	(41)	41	(28)
Low SES												
≤15	13	(7)	22	(6)	~	(3)	9	(5)	11	(5)	~	(3)
16–17	26	(15)	32	(5)	14	(10)	16	(10)	26	(13)	25	(8)
18					13	(6)	17	(10)	18	(4)	~	(2)
19–20					21	(16)	21	(14)	19	(9)	18	(5)
21–23									22	(6)	23	(5)
No children by 18,21,24	26	(51)	32	(27)	31	(35)	30	(39)	35	(19)	42	(14)
Medium/High SES												
≤15	35	(5)	~	(1)	~	(1)	~	(1)	~	(2)	~	(2)
16–17	34	(10)	~	(3)	32	(5)	~	(3)	~	(3)	~	(1)
18					35	(5)	43	(6)	~	(4)	~	(2)
19–20					37	(13)	43	(8)	43	(7)	40	(5)
21–23									51	(7)	~	(1)
No children by 18,21,24	35	(42)	38	(23)	47	(31)	43	(37)	44	(16)	47	(10)

: n < 5
~: n = 0

SES measured as the mean of four variables—occupation of head of household, mother's education, father's education, and presence of reading materials in the home of origin. Variables were standardized to have a mean of 10 and a standard deviation of 3.
N's in parentheses.

Table 12: Occupational Status of Respondents at Ages 18, 21, and 24 Who are Full Year Labor Force Participants, or Labor Force Participants at All, by Age at First Birth Relative to Age at First Marriage, Race, and Socioeconomic Background (National Longitudinal Survey)

Age at First Birth Relative to Age at First Marriage	Mean Duncan Occupational Prestige Score...											
	...at Age 18				...at Age 21				...at Age 24			
	Labor Force Participation at all During Year		Full Year Sample		Labor Force Participation at all During Year		Full Year Sample		Labor Force Participation at all During Year		Full Year Sample	
ALL RACES												
Premarital	29	(61)	28	(18)	31	(74)	27	(55)	29	(83)	29	(40)
Ambiguous	24	(46)	26	(9)	34	(127)	37	(44)	33	(164)	38	(60)
Post-marital	22	(27)	21	(6)	32	(157)	33	(43)	44	(362)	46	(197)
ALL WHITES												
Premarital	27	(24)	28	(5)	37	(38)	38	(16)	35	(44)	37	(18)
Ambiguous	23	(36)	23	(5)	35	(101)	37	(25)	33	(148)	39	(52)
Post-marital	22	(23)	~	(3)	32	(144)	35	(35)	45	(333)	47	(180)
Low SES												
Premarital		(3)	~	(1)	27	(9)	~	(1)	29	(12)	24	(5)
Ambiguous	19	(9)	~	(1)	28	(18)	~	(4)	26	(41)	37	(14)
Post-marital	15	(9)	~	(1)	23	(37)	24	(9)	30	(59)	34	(36)
Medium and High SES												
Premarital	30	(18)	~	(4)	40	(26)	40	(13)	39	(24)	46	(11)
Ambiguous	25	(24)	~	(4)	38	(72)	40	(18)	36	(89)	41	(33)
Post-marital	25	(13)	~	(2)	36	(93)	41	(24)	49	(241)	52	(124)
ALL BLACKS												
Premarital	30	(37)	28	(13)	24	(36)	23	(39)	23	(39)	22	(22)
Ambiguous	28	(10)	~	(4)	31	(25)	37	(19)	34	(16)	32	(7)
Post-marital		(4)	~	(3)	28	(13)	21	(8)	33	(29)	32	(17)
Low SES												
Premarital	23	(15)	32	(5)	16	(20)	16	(27)	21	(20)	19	(10)
Ambiguous	20	(5)	~	(3)	18	(8)	31	(6)	26	(7)	~	(4)
Post-marital	~	(2)	~	(3)	21	(6)	11	(5)	24	(12)	27	(10)
Medium and High SES												
Premarital	31	(11)	~	(4)	37	(7)	42	(7)	30	(10)	29	(5)
Ambiguous	~	(3)	--		35	(12)	44	(8)	43	(6)	~	(2)
Post-marital	~	(1)	--		36	(5)	~	(3)	46	(9)	~	(3)

overall. In most cases, the women without children have notably more prestigious occupations, and they tend to show considerable growth in the status of their occupations from age 18 to 24, especially among respondents of higher status backgrounds. Respondents employed full-year seem to have slightly higher status occupations overall, though the differences are not large. In Table 12 the impact of the timing of the first birth changes from age 18 to 24; the young women with premarital births initially have relatively high status occupations, but fall behind by age 24. In both these tables, respondents who are from lower socioeconomic backgrounds or black seem to have substantially lower occupational statuses.

The Association between Age at First Birth and Occupational Status, Controlling for Other Factors (NLS)

When controls are introduced for a number of other factors, occupational status is not found to be significantly related to the respondent's age at first birth (Table 13). Early childbearers do have lower status occupations but only the coefficient for full-year workers with a first birth while under age 16 approaches statistical significance. There is, as expected, a highly significant payoff for each year of additional educational among respondents who worked at all during the year as well as those who worked the full year. The socioeconomic status of the parental family also translates into a higher status occupation for the young woman, as does being white. Interestingly, the number of young children that a respondent has is not significantly related to her occupational status. Working less than full-time, full-year is associated with a lower occupational status, but only the differences associated with part-year work are significant. There appears to be no cohort effect on occupational status.

The Indirect Effect of Occupational Status on Age at First Birth (NLS)

In Table 14 we present the model of occupational status with and without

Table 13: Partial Regression Coeficients of Respondents' Occupational Status at Age 24 on Age at First Birth, with Controls for Social and Demographic Background, Among Respondents' Employed the Full Year and Among Respondents Employed at All During the Year (National Longitudinal Survey)

Independent Variables	Full-Year Workers b	Full-Year Workers Beta	Worked at All During Year b	Worked at All During Year Beta
Age at First Birth				
≤15	-13.303	-.084	-4.114	-.027
16-17	- 4.076	-.046	-2.054	-.024
18	-10.956	-.103	-1.515	-.017
19-20	- 9.566	-.140	1.151	.018
21-23	- 5.096	-.067	3.886	.064
≥24	a	a	a	a
Parental Socioeconomic Status	1.308 ***	.152 ***	1.604 ***	.176 ***
Education at Age 24	4.562 ***	.479 ***	4.476 ***	.475 ***
Age in 1968	- .315	-.017	- .024	-.001
Race	8.798 ***	.136 ***	5.166 **	.078 **
No Children Age 0-5	a	a	a	a
One Child Age 0-5	6.754	.127	-2.077	-.042
Two or More Children Age 0-5	6.516	.087	-2.042	-.034
Employed Part-time/Full Year	- 3.418	-.054	-3.519	-.044
Employed Part-time/Part Year	---	---	-5.595**	-.096 **
Employed Full-time/Part Year	---	---	-4.933**	-.090 **
Employed Full-time/Full Year	a	a	a	a
Constant	-24.78		-30.34	
R^2	.418		.451	
F	33.72		45.17	
N	575.		785.	

* p <.05
** p <.01
*** p <.001
a = omitted category
--- = variable not appropriate for the regression

Table 14: Partial Unstandardized Regression Coefficients of Respondents' Occupational Status, Hourly Wages, and Annual Earnings at Age 24 Among Respondents Employed the Full Year on Age at First Birth and Selected Controls, with and without Measures of Education and Family Size (National Longitudinal Survey)

Independent Variables	Occupational Status		Hourly Wages		Annual Earnings	
	Full Equation	Without Education & # of Children	Full Equation	Without Education & # of Children	Full Equation	Without Education & # of Children
Age at First Birth	-10.71	-20.54 ***	.67	-.55	2808.32	-1132.93
≤ 15	- 3.39	- 7.46 *	.39	-.46 *	1726.23	-1254.46 ***
18	- 9.19	-11.60 **	.35	-.47 *	1650.00	-1303.75 **
19-20	- 6.55	- 6.00 *	.38	-.19	1866.09	- 436.49
21-23	- 2.27	- 1.19	.26	-.17	1237.51	- 639.42 *
≥ 24	a	a	a	a	a	a
Education at Age 24	4.49 ***	-	.17 ***	-	351.65 ***	-
One Child by Age 24	3.98	-	-.31	-	-1628.64	-
Two + Children by Age 24	5.79	-	-.64	-	-2750.07	-
No Children by Age 24	a	-	a	-	a	-
Race	8.76 ***	5.79 *	.26	.16	400.76	240.55
Parental Socioeconomic Status	1.19 ***	2.99 ***	.00	.07 ***	15.34	155.52 **
Age in 1968	- .31	- .26 ***	-.09 *	-.08 *	- 217.40 ***	- 213.27 **
Metropolitan Residence	5.00 **	5.78 ***	.44 ***	.47 ***	583.10 ***	665.17 ***
South	- 1.68	-2.34	-.31 ***	-.32 ***	- 664.59 ***	- 661.78 ***
Part-time/Full-year	- 3.43	- .39	.02	.14	-2319.69 ***	-2091.65 ***
Constant	-25.99	15.69	2.10	3.66	5346.13	8512.13
N	575	575	575	575	575	575
F	30.32	21.16	14.17	11.68	25.29	21.92
R^2	.431	.293	.261	.186	.387	.300

* p <.05
** p <.01
*** p <.001
a = omitted category
- = omitted from regression

education and number of children. Without education and number of children an early first birth has a significant detrimental effect on the status of the respondent's occupation. Furthermore, the measure of family size is not statistically significant when included in the model, whereas educational attainment is a strong statistically significant predictor of a woman's occupational status. This substantiates our argument that age at first birth does affect the occupational status of women but the process is not direct. The critical factor reducing the occupational status of early childbearers is their reduced educational attainment.

Hourly Wages

The Simple Association between Age at First Birth and Hourly Wages

In Tables 15-16 we show the simple bivariate associations between wages and age at first birth for the NLS and PSID samples. The results are presented by race, parental socioeconomic status, and by whether the respondent worked the full year or at all during the year. Comparing the results for the NLS 24 year olds with the PSID women in 1976, we see that later childbearers do have higher hourly earnings than early childbearers. However, it is interesting to note that whereas in the NLS the childless 24 year olds have the highest wages, black or white, in the PSID sample of older women the childless white women have the highest wages, while childless blacks have wages lower than the black women who bore their first child at 15 or younger. In wages, childless black women are less like their sisters who delayed their births than are childless white women. Black women from low status backgrounds who bear a first child before their 16th birthday and white women who bear a child before their 18th birthday appear to be substantially disadvantaged with respect to hourly wage. However, there is little other evidence for a detrimental effect of race, background, and age at first birth on

Table 15: Hourly Wages of Respondents at Ages 18, 21, and 24 Who are Full Year Labor Force Participants, or Labor Force Participants at All, by Age at First Birth, Race and Socioeconomic Background (1972 Dollars) (National Longitudinal Survey)

Age of Respondent at First Birth	Hourly Earnings... Labor Force Participation at all During Year	Full Year Sample	Labor Force Participation at all During Year	Full Year Sample	Labor Force Participation at all During Year	Full Year Sample
	at age 18		at age 21		at age 24	
ALL RACES						
≤15	$1.93 (28)	$1.67 (12)	$1.78 (18)	$1.84 (12)	$1.76 (18)	$1.94 (10)
16–17	1.82 (90)	1.96 (18)	1.95 (58)	2.02 (32)	2.04 (62)	2.06 (34)
18			2.00 (78)	2.05 (41)	2.14 (53)	2.44 (22)
19–20			1.93 (155)	2.04 (41)	2.30 (110)	2.53 (58)
21–23					2.56 (130)	2.76 (45)
No children by 18,21,24	1.75 (1248)	1.82 (336)	2.33 (975)	2.38 (559)	2.91 (518)	3.04 (411)
ALL WHITES						
≤15	1.83 (14)	~ (3)	1.78 (11)	~ (4)	1.71 (8)	2.05 (4)
16–17	1.75 (58)	2.62 (8)	1.95 (38)	2.02 (14)	2.10 (43)	2.23 (22)
18			2.05 (67)	2.21 (24)	2.18 (45)	2.52 (18)
19–20			1.95 (127)	2.15 (24)	2.31 (92)	2.60 (45)
21–23					2.60 (114)	2.89 (37)
No children by 18,21,24	1.75 (1147)	1.83 (283)	2.35 (900)	2.43 (462)	2.94 (486)	3.05 (387)
Low SES						
≤15	1.57 (6)	~ (1)	1.65 (5)	~ (2)	~ (2)	~ (0)
16–17	1.61 (13)	~ (2)	1.60 (13)	~ (3)	1.94 (19)	2.15 (12)
18			1.92 (12)	~ (2)	1.86 (12)	(3)
19–20			1.82 (24)	1.95 (5)	2.31 (24)	2.65 (15)
21–23					1.98 (19)	2.68 (6)
No children by 18,21,24	1.69 (125)	1.81 (36)	2.10 (110)	2.19 (69)	2.46 (56)	2.63 (44)
Medium/High SES						
≤15	1.90 (7)	~ (2)	~ (3)	~ (2)	~ (2)	~ (1)
16–17	1.79 (42)	2.82 (6)	2.14 (23)	2.06 (10)	2.17 (23)	2.32 (11)
18			2.04 (50)	2.15 (19)	2.26 (30)	2.63 (15)
19–20			2.00 (89)	2.24 (16)	2.34 (51)	2.68 (20)
21–23					2.76 (82)	2.95 (28)
No children by 18,21,24	1.75 (965)	1.81 (232)	2.39 (737)	2.48 (365)	3.04 (392)	3.11 (320)
ALL BLACKS						
≤15	2.04 (13)	1.56 (9)	1.78 (7)	1.81 (8)	1.79 (10)	1.86 (6)
16–17	1.93 (32)	1.44 (10)	1.94 (20)	2.02 (18)	1.90 (19)	1.73 (12)
18			1.67 (11)	1.82 (17)	1.92 (8)	2.07 (4)
19–20			1.85 (28)	1.89 (17)	2.24 (19)	2.29 (12)
21–23					2.34 (16)	2.16 (8)
No children by 18,21,24	1.69 (101	1.76 (53)	2.06 (75)	2.11 (97)	2.54 (32)	2.85 (24)
Low SES						
≤15	1.85 (6)	1.58 (6)	~ (3)	~ (4)	1.76 (5)	~ (3)
16–17	1.76 (14)	1.59 (5)	1.80 (7)	1.97 (9)	1.86 (12)	1.70 (8)
18			1.66 (5)	1.74 (10)	(3)	~ (1)
19–20			1.82 (14)	1.65 (11)	1.87 (8)	1.82 (5)
21–23					2.08 (6)	~ (4)
No children by 18,21,24	1.69 (42)	1.62 (23)	1.87 (33)	1.83 (39)	2.48 (14)	2.93 (10)
Medium/High SES						
≤15	2.22 (5)	~ (1)	~ (1)	~ (1)	~ (2)	~ (2)
16–17	2.15 (9)	~ (2)	~ (4)	~ (3)	~ (3)	~ (1)
18			~ (4)	1.98 (6)	~ (4)	~ (1)
19–20			1.90 (12)	2.35 (6)	2.75 (7)	2.83 (5)
21–23					2.69 (6)	~ (1)
No children by 18,21,24	1.66 (39)	1.96 (20)	2.15 (31)	2.38 (37)	2.71 (13)	2.84 (10)

: n < 5
–: n = 0

SES measured as the mean of four variables—occupation of head of household, mother's [illegible], father's education, and presence of reading materials in the home of origin. [illegible] were standardized to have a mean of 10 and a standard deviation of 3.

N [illegible] parentheses.

Table 16: Hourly Wages of Respondents Who Worked the Full Year or Who Worked at All in 1976, by Age at First Birth, Race and Socioeconomic Background (1976 Dollars) (Panel Study of Income Dynamics)

Hourly Wages

Age of Respondent at First Birth	All Backgrounds		Low SES		Medium/High SES	
	Worked at All During Year	Worked the Full Year	Worked at All During Year	Worked the Full Year	Worked at All During Year	Worked the Full Year
ALL RACES						
<15	$3.50 (24)	$4.12 (14)	$2.54 (6)	~ (2)	$3.79 (18)	$4.40 (12)
16-17	3.36 (99)	3.11 (52)	2.75 (42)	2.40 (23)	3.84 (56)	3.68 (29)
18	3.78 (105)	3.97 (66)	3.30 (42)	3.20 (21)	4.11 (63)	4.33 (44)
19-20	3.64 (353)	3.74 (205)	3.47 (91)	3.45 (47)	3.70 (261)	3.83 (158)
21-23	4.01 (350)	3.73 (202)	3.26 (100)	3.34 (61)	4.32 (251)	3.90 (141)
>24	5.15 (458)	5.07 (303)	5.37 (90)	3.92 (47)	5.09 (368)	5.28 (256)
Childless	4.57 (450)	4.01 (313)	4.70 (46)	4.53 (33)	4.55 (404)	3.96 (280)
WHITES						
<15	3.58 (15)	4.27 (8)	~ (1)	-	3.67 (14)	4.27 (8)
16-17	3.25 (68)	3.01 (36)	2.28 (26)	2.22 (15)	3.86 (42)	3.58 (21)
18	3.77 (85)	3.95 (50)	3.26 (31)	3.16 (12)	4.06 (55)	4.19 (38)
19-20	3.56 (309)	3.68 (178)	3.55 (72)	3.64 (35)	3.57 (237)	3.69 (143)
21-23	4.07 (324)	3.78 (184)	3.25 (87)	3.39 (51)	4.37 (237)	3.93 (133)
>24	4.96 (332)	4.67 (187)	5.61 (79)	4.11 (40)	4.76 (252)	4.82 (147)
Childless	5.39 (317)	5.06 (189)	5.11 (31)	5.05 (21)	5.42 (287)	5.06 (168)
BLACKS						
<15	3.37 (9)	3.90 (6)	2.63 (5)	~ (2)	~ (4)	~ (3)
16-17	3.63 (31)	3.32 (16)	3.51 (16)	2.73 (8)	3.77 (15)	3.92 (8)
18	3.83 (19)	4.01 (15)	3.42 (11)	3.24 (9)	4.43 (8)	5.22 (6)
19-20	4.19 (44)	4.13 (26)	3.14 (19)	2.84 (11)	5.02 (25)	5.12 (15)
21-23	3.30 (26)	3.23 (17)	3.29 (13)	3.11 (10)	3.31 (14)	3.39 (8)
>24	5.63 (126)	5.71 (116)	3.61 (11)	2.89 (7)	5.81 (116)	5.90 (109)
Childless	2.61 (133)	2.45 (125)	3.90 (16)	3.63 (12)	2.43 (118)	2.32 (113)

~ : n < 5
- = 0

hourly wages. Whether the respondent worked the full-year or at all during the year does not appear to affect hourly wage.

There is no clear pattern of association between rate of pay and timing of the first birth in evidence in Tables 17 and 18 among any of the subgroups. As in the first tables, there is no evidence that white women or women of higher status backgrounds earn higher hourly wages. Nor do full-year workers earn more than those who worked at all during the year.

The Association between Age at First Birth and Hourly Wages, Net of Other Factors

Looking only at respondents who worked at all during the year, we see in Tables 19 and 20 that age at first birth does not have a direct impact on hourly wages in either data set. The most important variable affecting wages appears to be the respondent's education. Each year of additional education results in a net wage gain of 14-15 cents per hour for the NLS women. Completing high school raises wages by $1.01 and completing more schooling than high school raises wages $2.15 over the wages of a high school dropout for the PSID women.

Work experience appears to have a very important impact as well, an impact that we have measured on the PSID sample of women, but not on the NLS. In Table 20 we see that a one percentage point increase in the proportion of years worked since age 18 raises wages by $1.13 per hour, an increase of 10 months with the present employer increases wages by $.11 per hour, and having stayed with the same occupation raises wages by $.66 an hour. Interestingly, the number of interruptions of work experience reported has no effect on hourly wage, net of total experience and current experience.

The number of children has been found to affect work experience. Besides a presumed effect through experience, children appear to have a direct effect on wages as well, reducing the hourly wage by $.15 per hour for each additional child (PSID). However, having a young child (under 6) does

Table 17: Hourly Wages of Respondents at Ages 18, 21 and 24 Who Are Full Year Labor Force Participants, or Labor Force Participants at All, by Age at First Birth, Race and Socioeconomic Background. (1972 Dollars) (National Longitudinal Survey)

Age at First Birth Relative to Age at First Marriage	Hourly Earnings... ...at Age 18 Labor Force Participation at all During Year	...at Age 18 Full Year Sample	...at Age 21 Labor Force Participation at all During Year	...at Age 21 Full Year Sample	...at Age 24 Labor Force Participation at all During Year	...at Age 24 Full Year Sample
ALL RACES						
Premarital	1.96 (53)	1.66 (16)	1.97 (65)	1.96 (49)	2.23 (71)	2.36 (34)
Ambiguous	1.67 (38)	1.73 (7)	1.98 (109)	2.16 (39)	2.24 (119)	2.59 (50)
Post-marital	1.90 (24)	2.59 (6)	1.90 (133)	1.78 (38)	2.55 (318)	2.67 (187)
ALL WHITES						
Premarital	1.96 (22)	2.08 (5)	2.12 (35)	2.20 (15)	2.45 (34)	2.99 (13)
Ambiguous	1.54 (29)	~ (3)	2.00 (85)	2.18 (19)	2.27 (105)	2.66 (43)
Post-marital	1.90 (20)	~ (3)	1.90 (123)	2.06 (32)	2.56 (293)	2.69 (171)
Low SES						
Premarital	(3)	~ (1)	1.82 (7)	~ (1)	2.18 (10)	~ (4)
Ambiguous	1.57 (7)	~ (1)	1.51 (15)	~ (2)	2.19 (32)	2.87 (13)
Post-marital	1.40 (7)	~ (1)	1.88 (32)	2.04 (9)	2.05 (55)	2.27 (36)
Medium and High SES						
Premarital	1.88 (17)	~ (4)	2.20 (24)	2.19 (12)	2.67 (17)	3.26 (7)
Ambiguous	1.48 (20)	~ (2)	2.12 (63)	2.30 (14)	2.26 (66)	2.58 (27)
Post-marital	2.25 (11)	~ (2)	1.92 (79)	2.09 (21)	.73 (205)	2.87 (114)
ALL BLACKS						
Premarital	1.95 (31)	1.47 (11)	1.80 (30)	1.86 (34)	2.03 (37)	1.98 (21)
Ambiguous	2.10 (19)	~ (4)	1.88 (23)	2.14 (18)	2.09 (14)	2.17 (6)
Post-marital	~ (4)	~ (3)	1.90 (10)	1.55 (6)	2.40 (25)	2.42 (16)
Low SES						
Premarital	1.79 (12)	1.58 (5)	1.67 (11)	1.79 (24)	1.90 (18)	1.82 (9)
Ambiguous	1.76 (5)	~ (3)	1.86 (7)	1.85 (5)	1.89 (7)	~ (4)
Post-marital	~ (2)	~ (3)	1.81 (5)	~ (4)	2.32 (10)	2.38 (9)
Medium and High SES						
Premarital	2.02 (9)	~ (3)	2.02 (6)	2.20 (6)	2.53 (9)	2.43 (5)
Ambiguous	~ (3)		1.81 (11)	2.27 (8)	2.16 (6)	~ (2)
Post-marital	~ (1)		~ (3)	~ (2)	2.75 (8)	~ (3)

Table 18: Hourly Wages of Respondents Who Worked the Full Year or Who Worked At All in 1976, by Age at First Birth Relative to Age at First Marriage, Race and Socioeconomic Background (1976 Dollars) (Panel Study of Income Dynamics)

First Birth Relative to First Marriage	Hourly Wages					
	All Backgrounds		Low SES		Medium/High SES	
	Worked at all During Year	Worked the Full Year	Worked at all During Year	Worked the Full Year	Worked at all During Year	Worked the Full Year
ALL RACES						
Premarital	$3.40 (83)	$3.89 (40)	$3.12 (34)	$3.69 (17)	$3.59 (48)	$4.04 (24)
Same Year	3.82 (141)	3.40 (85)	3.45 (42)	2.82 (26)	3.97 (98)	3.64 (60)
Post-Marital	4.40 (1533)	4.21 (966)	3.99 (324)	3.59 (180)	4.51 (1209)	4.35 (786)
WHITES						
Premarital	3.40 (41)	4.06 (20)	3.74 (16)	4.78 (8)	3.17 (25)	3.63 (13)
Same Year	3.85 (110)	3.43 (62)	3.22 (26)	2.97 (13)	4.04 (84)	3.56 (48)
Post-Marital	4.47 (1236)	4.26 (700)	4.04 (277)	3.63 (148)	4.59 (959)	4.43 (552)
BLACKS						
Premarital	3.40 (42)	3.73 (20)	2.56 (18)	2.79 (9)	4.03 (24)	4.54 (11)
Same Year	3.71 (31)	3.31 (24)	3.82 (17)	2.66 (12)	3.58 (14)	4.03 (11)
Post-Marital	4.13 (297)	4.06 (266)	3.70 (47)	3.39 (32)	4.21 (250)	4.15 (234)

Table 19: Partial Regression Coefficients of Respondents' Hourly Wages at Age 24 on Age at First Birth, with Controls for Social and Demographic Background, Among Respondents Employed the Full Year and Among Respondents Employed at All During the Year (1972 Dollars) (National Longitudinal Survey)

Independent Variables	Full-Year Workers		Worked at All During Year	
	b	Beta	b	Beta
Age at First Birth				
<15	.118	.014	.154	.020
16-17	-.053	-.011	.048	.011
18	.120	.021	.021	.005
19-20	.051	.014	.039	.012
21-23	-.080	-.020	.000	.000
>24	a	a	a	a
Parental Socioeconomic Status	-.006	-.013	-.005	-.010
Education at Age 24	.150 ***	.294 ***	.138 ***	.290 ***
South	-.300 ***	-.133 ***	-.315 ***	-.138 ***
Metropolitan Residence	.424 ***	.172 ***	.324 ***	.137 ***
Occupational Status	.005	.084	.007 ***	.145 ***
Age in 1968	-.091 *	-.094 *	-.044	-.046
Race	.178	.051	.107	.032
Currently Married	.024	.011	-.023	-.010
Unmarried with Children Under 6	-.329	-.069	-.185	-.043
No Children Age 0-5	a	a	a	a
One Child Age 0-5	.090	.032	.063	.025
Two or More Children Age 0-5	-.315	-.079	-.186	-.062
Family Income minus Respondent's Income	.000	-.023	.000	-.024
Employed Part-time/Full Year	.030	.009	.023	.006
Employed Part-time/Part Year	---	---	-.490 ***	-.166 ***
Employed Full-time/Part Year	---	---	-.302 **	-.109 **
Employed Full-time/Full Year	a	a	a	a
Constant	2.47		1.56	
R^2	.271		.325	
F	11.46		18.41	
N	576.		785	

* p <.05
** p <.01
*** p <.001
a = omitted category
--- = variable not appropriate for the regression

Table 20: Partial Regression Coefficients (Standardized and Unstandardized) of Hourly Wage on Respondent's Age at First Birth, With Controls For Social and Demographic Factors, Respondents Who Worked the Full Year and Who Worked At All During the Year (Panel Study of Income Dynamics)

Independent Variables	Full-Year		Worked At All	
	b	beta	b	beta
Age at First Birth				
≤15	196.727***	.104***	111.906	.040
16-17	6.346	.006	10.702	.008
18	55.430	.062	34.410	.025
19-20	2.225	.004	- 20.245	- .025
21-23	- 22.042	- .040	- 30.974	- .038
≥24	42.965*	.090*	12.381	.017
Childless	a	a	a	a
Age at First Marriage				
≤15	- 27.321	- .019	26.386	.013
16-17	27.142	.041	70.646	.071
18	55.740	.088	73.707	.076
19-20	- 16.086	- .032	49.384	.064
21-23	60.008*	.127*	82.063*	.113*
≥24	- 16.600	- .030	44.619	.051
No Marriage	a	a	a	a
Education				
<12	a	a	a	a
=12	71.917***	.172***	101.342***	.157***
>12	186.370***	.396***	215.278***	.316***
Number of Children	- 15.007***	- .129***	- 15.795*	- .088*
Proportion of Years Worked Since 18	21.279	.027	113.974***	.101***
Worked:				
Part Time/Part Year	-	-	178.878***	.205***
Full Time/Part Year	-	-	51.793*	.065*
Part Time/Full Year	- 9.533	- .020	.676	.001
Full Time/Full Year	a	a	a	a
Race (1 = White)	1.186	.002	- 4.842	- .006
Parental Socioeconomic Status	7.961**	.095**	4.336	.034
Age in 1976	- .432	- .018	2.951*	.078*
Southern Residence (1 = Yes)	- 10.714	- .022	- 23.610	- .033
Metropolitan Residence (1 = Yes)	55.165***	.106***	33.971	.046
Unmarried with Child Under 6 (1 = Yes)	- 9.939	- .007	- 29.465	- .013
Married (1 = Yes)	- 20.731	- .048	- 30.187	- .043
Child Under 6 (1 = Yes)	- 19.268	- .029	- 8.734	- .010
Other Family Income	.002**	.098**	.001	.047
Husband's Attitude Toward Wife Working	15.768	.029	48.124*	.063*
Physical Limitation (1 = Yes)	-102.001***	- .162***	-110.850***	- .111***
Student in 1976 (1 = Yes)	-245.721	- .041	- 99.503	- .032
Generally Worked at Same Occupation (1 = Yes)	28.518*	.065*	65.901***	.100***
Number of Interruptions of Work Experience				
None	a	a	a	a
One	- 9.067	- .018	- 14.762	- .019
Two or More	8.834	.014	11.892	.012
Months with Present Employer	1.092***	.304***	1.096***	.188***
Unemployment Rate	12.524**	.092**	- 5.455	- .026
Market for Nonwhites vs. Whites (high = worse)	- 1.001	- .003	17.604	.040
Market for Females vs. Males (high = worse)	- 13.302*	- .054*	- 20.631*	- .055
Moved Since Last Year	- 9.351	- .005	- 22.818	- .011
Constant	84.676		- 83.326	
F_2	22.569		12.747	
R^2	.455		.236	
N	1,039.		1,645.	

* = p < .05
** = p < .01
*** = p < .001

a = omitted category
- = omitted from regression

not appear to reduce the hourly wage by a significant amount (PSID). Presumably, women do directly trade off wages for other aspects of their jobs, such as location and convenience of schedule. However, this appears to be more important to women with larger families, not necessarily to those with the youngest children. The number of young children has no significant effect on hourly wages for the NLS women. Although having a young child removes women from the labor force and reduces their level of experience, this consequence is not reflected in their hourly wage. Perhaps the sample of women who are working despite the presence of young child have characteristics that compensate for any loss of experience, or perhaps this group of women includes those with a strong commitment to the labor force who have not experienced any reduction in their labor force participation.

It is interesting that several of the variables found to affect occupational status are not related to wages, in particular, respondent's race and parental socioeconomic status. In addition, the prestige of the respondent's occupation itself is only marginally related to the wage level (NLS). Presumably, this indicates that traditionally more prestigious, white collar jobs often obtained by women--such as teacher, nurse, or secretary--do not pay much more per hour than less prestigious or blue collar jobs.

Race is not a statistically significant predictor of wage in either data set, although it has been shown to significantly predict both labor force experience and hours worked last year. Blacks work more years and work more hours in each year. Using analysis of covariance techniques (see Johnston, 1972), we tested the model of hourly wages separately on blacks and whites and found the differences were not statistically significant. However, there are several interesting differences between black and white women that should be pointed out. First, married black women receive higher hourly

wages than unmarried black women, while unmarried white women are the ones with higher wages (Table 21). Larger family size reduces the wages of white women while number of children has no effect at all on wages of black women. However, blacks and whites obtain comparable returns to labor force experience and educational attainment, the most important determinants of wage.

Several variables that measure the respondent's need for income were not found to predict to the woman's hourly wage, in either data set. For example, currently married women do not receive wages significantly lower than non-married women. Unmarried women with young children, whose economic needs are presumed to be greatest, do not obtain a higher hourly wage. In addition, the size of the family income without the contribution of the respondent's paycheck is not related to her hourly wage. (There is a small positive relationship for whites and none for blacks). These are somewhat crude measures of the need for income, and this may explain the absence of the anticipated association. Education and experience are more important than is need for income.

Having a physical limitation, having recently moved, and being enrolled in school all reduce the hourly wage in the PSID sample of women; however, only the first is statistically significant. Having a physical limitation reduces the hourly wage by $1.10. Husband's attitude toward his wife's employment is positively related to hourly wage (PSID). A positive attitude increases her wage by $.48 per hour. Of course, we don't know whether his attitude is the cause or effect of higher wages. It is interesting to note that this relationship is statistically significant only among whites.

Environmental factors do appear important in the determination of hourly wages. Living in the south reduces hourly wage (though it is statistically significant only in the NLS), while living in a metropolitan area increases the hourly wage. A poor market for women compared with men reduces women's hourly wages in the PSID by about $.20 per hour.

Table 21: Partial Regression Coefficients (Standardized and Unstandardized) of Hourly Wages on Respondent's Age at First Birth, With Controls for Social and Demographic Factors, Whites and Blacks (Panel Study of Income Dynamics)

Independent Variables	Whites		Blacks	
	b	beta	b	beta
Age at First Birth				
≤15	124.060	.038	- 95.710	- .053
16-17	- 3.691	- .002	-137.298	- .135
18	15.337	.011	- 76.008	- .060
19-20	- 67.290	- .083	- 12.648	- .015
21-23	- 68.322	- .086	-103.326	- .094
≥24	- 58.759	- .074	67.385	.115
Childless	a	a	a	a
Age at First Marriage				
≤15	77.168	.037	104.533	.058
16-17	108.144	.107	233.793**	.249**
18	148.566**	.158**	62.836	.048
19-20	126.501**	.167**	55.608	.062
21-23	141.863**	.181**	57.248	.099
≥24	140.859**	.137**	44.202	.075
No Marriage	a	a	a	a
Education				
<12	a	a	a	a
=12	77.041**	.116**	89.983	.184
>12	193.239***	.285***	182.546**	.197**
Number of Children	- 23.425**	- .124**	12.237	.084
Proportion of Years Worked Since 18	126.332***	.111***	131.363	.111
Worked:				
Part Time/Part Year	184.334***	.219***	200.941**	.158**
Full Time/Part Year	40.476	.051	137.438**	.162**
Part Time/Full Year	15.324	.016	86.752	.144
Full Time/Full Year	a	a	a	a
Parental Socioeconomic Status	5.190	.040	14.803	.133
Age in 1976	5.977***	.148***	- 5.667	- .175
Southern Residence (1 = Yes)	- 34.214	- .047	65.207	.098
Metropolitan Residence (1 = Yes)	27.788	.038	84.910	.095
Unmarried with Child Under 6 (1 = Yes)	- 76.302	- .031	9.689	.006
Married (1 = Yes)	- 85.906**	- .113**	82.978	.151
Child Under 6 (1 = Yes)	26.783	.031	- 8.086	- .009
Other Family Income	.002*	.064*	- .004	- .102
Husband's Attitude Toward Wife Working	46.215*	.062*	13.908	.015
Physical Limitation (1 = Yes)	- 78.025*	- .059*	- 84.192	- .140
Student in 1976 (1 = Yes)	-109.647	- .038	- 28.154	- .004
Generally Worked at Same Occupation (1 = Yes)	53.225**	.077**	53.313	.096
Number of Interruptions of Work Experience				
None	a	a	a	a
One	- 11.250	- .015	- 16.736	- .016
Two or More	21.169	.023	- 71.619	- .048
Months with Present Employer	.931***	.160***	1.687***	.286***
Unemployment Rate	- 7.562	- .031	18.772	.099
Market for Nonwhites vs. Whites (high = worse)	14.074	.032	35.941	.074
Market for Females vs. Males (high = worse)	- 20.562*	- .054*	- 21.428	- .063
Moved Since Last Year	- 26.457	- .013	-144.520	- .051
Constant	- 139.355		- 201.499	
F_2	10.586		5.654	
R^2	.234		.394	
N	1,354.		370.	

* = p < .05
** = p < .01
*** = p < .001

a = omitted category
- = omitted from regression

In the NLS there is a negative association between birth cohort, measured by age in 1968, and hourly wage. However, there is a relatively limited range of birth cohorts measured in the NLS sample used. In the PSID we find a positive effect of age on hourly wage, although the effect is very small. This probably represents the first part of the earnings curve found by other researchers (see Stolzenberg, 1977, for example), as the oldest of these women are only 50. Since age and birth cohort are confounded in the PSID analysis, we do not know the reason for this association.

We hypothesized that working less than full time might result in having to accept lower hourly wages. However, it is also possible that a person who is paid lower wages must work more hours than a person who makes high wages, that hours are adjusted depending on the wage level. In the NLS sample, among those who worked at all during the year we found a negative relationship between part-time employment and wages, which led us to conclude that these young women were trading off wages for the convenience of working less than full-time, full-year. However, in the PSID, we found that, net of other factors, part-time part-year workers, in fact, make $1.78 per hour more than full-time full-year workers. Based on this sample we would conclude that, in fact, our model is misspecified: those who make more per hour are able to afford the luxury of working fewer hours. Since in this analysis the "hours worked" variable (part-time/part-year, part-time/full-year, full-time/part-year, full-time/full-year) is calculated in a way[1] that substantially reduces the dependence of hourly earnings on hours worked (see also page 38), it is less likely that the inverse relationship is due solely to measurement error. An alternative explanation for the difference in the association of hours and wages between the NLS and PSID data sets is needed. It may be

1. Full-time = 35 hours a week or more; part-time = less than 35 hours a week; full-year = 40 weeks a year or more; part-year = less than 40 weeks a year.

that young women do accept lower hourly earnings in order to work less than full-time, whereas older women, more established in their jobs, may be secure enough to cut their hours as they make more money. Since this issue is not central to this analysis we will not attempt any further resolution here.

Full-Year Vs. Worked at All: Differences in Hourly Wages

We have so far discussed only the results for those women who worked at all during the year, black and white. There are no differences of importance in the NLS between those who worked at all and those who worked the full-year; however, in the PSID there are a few differences of interest. First of all, those women who bore their first child while under 15 and who worked the full-year last year have hourly wages higher than those who are still childless by $1.96 (Table 20). Those who bore their first child at age 24 or later have wages $.43 higher than the childless women. Since these are the only two significant categories, we will not make any more of it except to suggest that it confirms our argument that the negative impact of an early birth is indirect. Early childbearing that does not lower completed schooling or raise the number of children may not be harmful. In this sample, the proportion of years worked does not significantly affect wages, although months with same employer and experience with the same occupation do. Interestingly, a high status background raises hourly wages. Other family income has a slight positive effect on wage. Finally, a high unemployment rate increases wages; perhaps women living in a high unemployment area hang onto their jobs longer, because the chances of finding another are lower.

The Indirect Effect of Age at First Birth on Hourly Wages

In both the NLS (Table 14) and PSID (results not presented), only when educational attainment is omitted from the model does age at first birth have a small but statistically significant effect on hourly wage of young

women. By omitting number of children (NLS, PSID) and work experience (PSID) we do not increase the effect of age at first birth. Therefore, we can conclude that there is an indirect effect of age at first birth on hourly wage, an effect that is due entirely to the effect of age at first birth on educational attainment.

Annual Earnings

The Simple Association between Age at First Birth and Annual Earnings

Again, we will compare NLS respondents at age 24 with PSID respondents in 1976. Comparing the mean earnings of respondents who worked at all and those who worked the full year, there is about a $1000 difference favoring the latter. Interestingly enough, annual earnings of blacks exceed those of whites by about $1000. Since their average hourly wage is slightly lower, this provides more evidence that black women work more hours than white women.

Turning to tables 22 and 23 we see that later childbearers do tend to have higher annual earnings than early childbearers in both samples. As with hourly wages, in the PSID childless white women have the highest earnings, childless black women the lowest (Table 23). The highest payoff to later childbearing appears among blacks. The average annual income of black women who bear a child at 24 or later exceeds that of childless white women by $2000.

Turning to tables 24 and 25, there appears to be a slight tendency for the earnings of post-marital childbearers to exceed those of premarital childbearers or those who bore a child in the same year they married. However, the tendency is not very strong and not consistent across women of different socioeconomic backgrounds.

The Association between Age at First Birth and Annual Earnings Controlling for Other Factors

Among those who worked at all during the year, age at first birth has no effect on annual earnings in either data set (Tables 26 and 27). As expected,

Table 22: Annual Earnings Among Respondents at Ages 18, 21, and 24 Who are Full Year Labor Force Participants or Labor Force Participants at All, by Age of First Birth, Race and Socioeconomic Background (1972 Dollars) (National Longitudinal Survey)

Age of Respoodent at First Birth	Annual Earnings... ...at Age 18 Labor Force Participant At All		Full Year Sample		...at Age 21 Labor Force Participant At All		Full Year Sample		...at Age 24 Labor Force Participant At All		Full Year Sample	
ALL RACES												
≤15	$1886	(30)	$2246	(14)	$1466	(20)	$2248	(15)	$1722	(24)	$2629	(13)
16–17	908	(104)	2011	(20)	1907	(65)	3034	(35)	2166	(74)	3381	(36)
18					2222	(88)	3496	(42)	2058	(67)	3451	(27)
19–20					1655	(182)	2853	(52)	2522	(138)	4303	(65)
21–23									2662	(158)	4822	(51)
No children by 18,21,24	1142	(1324)	1829	(346)	3095	(1016)	4093	(572)	5063	(545)	5766	(421)
ALL WHITES												
≤15	1311	(14)	~	(4)	1268	(13)	1964	(5)	1299	(14)	2242	(7)
16–17	820	(70)	2526	(9)	1848	(41)	3039	(16)	2162	(53)	3686	(24)
18					2317	(75)	3817	(25)	2047	(57)	3513	(22)
19–20					1643	(149)	3040	(30)	2441	(118)	4387	(52)
21–23									2631	(140)	4750	(42)
No children by 18,21,24	1160	(1210)	1863	(286)	3129	(940)	4204	(476)	5178	(505)	5839	(394)
Low SES												
≤15	983	(6)	~	(1)	958	(7)	~	(2)		(3)	--	
16–17	630	(17)	~	(2)	1390	(15)	~	(4)	2360	(22)	3382	(13)
18					1773	(14)		(2)	1698	(14)	~	(3)
19–20					1292	(28)	2474.	(6)	3273	(30)	5480	(16)
21–23									2308	(23)	4620	(6)
No children by 18,21,24	1209	(135)	2225	(38)	3211	(115)	4022	(72)	3973	(59)	4926	(45)
Medium/High SES												
≤15	2851	(7)	~	(3)	~	(4)	~	(3)	1219	(7)	~	(4)
16–17	910	(48)	2256	(7)	2293	(22)	3126.	(11)	2051	(29)	4054	(11)
18					2236	(55)	3779	(20)	2139	(37)	3794	(17)
19–20					1675	(106)	3170	(21)	2174	(69)	4156	(25)
21–23									2735	(101)	4779	(34)
No children by 18,21,24	1144	(1010)	1795	(230)	3117	(770)	4224	(374)	5447	(407)	6024	(325)
ALL BLACKS												
≤15	1955	(16)	2018	(10)	1825	(7)	2390	(10)	2304	(10)	3089	(6)
16–17	1088	(34)	1589	(11)	2011	(23)	3030	(19)	2174	(21)	2795	(12)
18					1678	(13)	3025	(17)	2117	(10)	3160	(5)
19–20					1712	(32)	2597	(22)	3010	(20)	3961	(13)
21–23									2912	(18)	4012	(9)
No children by 18,21,24	957	(114)	1665	(60)	2676	(76)	3543	(96)	3634	(40)	4713	(27)
Low SES												
≤15	1717	(7)	2218	(6)		(3)	1939	(5)	2010	(5)		(3)
16–17	1124	(14)	1227	(5)	1895	(10)	2934	(10)	2236	(13)	2776	(8)
18					1897	(6)	2960	(10)		(4)		(2)
19–20					1591	(16)	1892	(14)	2468	(9)	3069	(5)
21–23									2755	(6)	3174	(5)
No children by 18,21,24	883	(50)	1366	(26)	2165	(35)	2976	(39)	3325	(19)	4246	(15)
Medium/High SES												
≤15	~	(4)	~	(1)	2933.	(1)	~	(1)	~	(2)	~	(2)
16–17	774	(10)	~	(3)	1025	(5)	~	(3)	~	(3)	~	(1)
18					1500	(5)	3138	(6)	~	(4)	~	(2)
19–20					1955	(13)	3831	(8)	3739	(7)	5002	(5)
21–23									2109	(7)	~	(1)
No children by 18,21,24	1057	(42)	2016	(23)	2918	(30)	3986	(36)	3709	(16)	5082	(10)

~: n < 5
-: n = 0

SES measured as the mean of four variables—occupation of head of household, mother's education, father's education, and presence of reading materials in the home of origin. Variables were standardized to have a mean of 10 and a standard deviation of 3. N's in parentheses.

Table 23 : Annual Earnings of Respondents Who Worked the Full Year or Who Worked at All in 1976, by Age of First Birth, Race and Socioeconomic Background (1976 Dollars) (Panel Study of Income Dynamics)

Annual Earnings

Age of Respondent at First Birth	All Backgrounds		Low SES		Medium/High SES	
	Worked at All During Year	Worked the Full Year	Worked at All During Year	Worked the Full Year	Worked at All During Year	Worked the Full Year
ALL RACES						
≤ 15	$4397 (24)	$5752 (14)	$3068 (6)	$ ~ (2)	$4808 (18)	$5880 (12)
16-17	4295 (99)	5208 (52)	3537 (42)	4508 (23)	4869 (56)	5772 (29)
18	5667 (105)	7194 (66)	4879 (42)	6368 (21)	6198 (63)	7590 (44)
19-20	4733 (353)	6432 (205)	4930 (91)	6721 (47)	4664 (261)	6347 (158)
21-23	4836 (350)	6402 (202)	4158 (100)	5827 (61)	5107 (251)	6650 (141)
≥ 24	7153 (458)	9072 (202)	5425 (90)	7123 (47)	7575 (368)	9431 (256)
Childless	7123 (450)	7441 (303)	7876 (46)	8743 (33)	7037 (404)	7287 (280)
WHITES						
≤ 15	3978 (15)	4898 (8)	~ (1)	- (0)	4182 (14)	4898 (8)
16-17	4192 (68)	4636 (36)	3295 (26)	4054 (15)	4759 (42)	5056 (21)
18	5421 (85)	7016 (50)	4494 (31)	6470 (12)	5943 (55)	7185 (38)
19-20	4673 (309)	6480 (178)	5000 (72)	7129 (35)	4574 (237)	6230 (143)
21-23	4844 (324)	6495 (184)	4059 (87)	5910 (51)	5132 (237)	6719 (133)
≥ 24	5828 (332)	7707 (187)	5540 (79)	7399 (40)	5918 (252)	7791 (147)
Childless	8355 (317)	9699 (189)	8307 (31)	9692 (21)	8360 (287)	9700 (168)
BLACKS						
≤ 15	5079 (9)	6984 (6)	3500 (5)	~ (2)	~ (4)	~ (3)
16-17	4523 (31)	6522 (16)	3928 (16)	5369 (8)	5184 (15)	7711 (8)
18	6747 (19)	7771 (15)	5911 (11)	6239 (9)	7940 (8)	10173 (6)
19-20	5150 (44)	6111 (26)	4669 (19)	5467 (11)	5529 (25)	6609 (15)
21-23	4738 (26)	5429 (17)	4829 (13)	5388 (10)	4654 (14)	5480 (8)
≥ 24	10633 (126)	11267 (116)	4575 (11)	5607 (7)	11192 (116)	11644 (109)
Childless	4189 (133)	4031 (125)	7036 (16)	7076 (12)	3809 (118)	3708 (113)

~ : n < 5

Table 24: Annual Earnings Among Respondents at Ages 18, 21 and 24 Who are Full Year Labor Force Participants or Labor Force Participants at All, by Age at First Birth Relative to Age at First Marriage, Race, and Socioeconomic Background (National Longitudinal Survey)

Age at First Birth Relative to Age at First Marriage	Annual Earnings... ...at Age 18 Labor Force Participant At All		...at Age 18 Full Year Sample		...at Age 21 Labor Force Participant At All		...at Age 21 Full Year Sample		...at Age 24 Labor Force Participant At All		...at Age 24 Full Year Sample	
ALL RACES												
Premarital	$1447	(60)	$2434	(18)	$2173	(73)	$2811	(55)	$2424	(83)	$3630	(40)
Ambiguous	823	(43)	1543	(9)	1879	(123)	3225	(44)	2037	(162)	3952	(60)
Post-marital	925	(28)	2138	(6)	1633	(156)	3114	(43)	3619	(361)	4928	(197)
ALL WHITES												
Premarital	1436	(26)	3497	(5)	2572	(38)	3180	(16)	2324	(44)	3768	(18)
Ambiguous	723	(33)	1490	(5)	1837	(98)	3258	(25)	2013	(147)	4056	(52)
Post-marital	915	(23)	~	(3)	1641	(142)	3221	(35)	3671	(332)	5014	(180)
Low SES												
Premarital	~	(3)	~	(1)	1852	(9)	~	(1)	2970	(12)	4758	(5)
Ambiguous	498	(9)	~	(1)	1119	(18)	~	(4)	1916	(40)	4005	(14)
Post-marital	751	(9)	~	(1)	1409	(37)	2638	(9)	3440	(59)	4787	(36)
Medium and High SES												
Premarital	1604	(20)	~	(4)	2504	(26)	3104	(13)	2019	(24)	3318	(11)
Ambiguous	808	(22)	~	(4)	1956	(70)	3430	(18)	2098	(89)	4242	(33)
Post-marital	1055	(13)	~	(2)	1708	(92)	3461	(24)	3807	(240)	5236	(124)
ALL BLACKS												
Premarital	1455	(34)	2025	(13)	1740	(35)	2659	(39)	2536	(39)	3514	(22)
Ambiguous	1155	(10)	~	(4)	2040	(25)	3181	(19)	2263	(16)	3211	(7)
Post-marital	~	(4)	~	(3)	1543	(13)	2647	(8)	3010	(28)	4020	(17)
Low SES												
Premarital	1493	(14)	2326	(5)	1647	(20)	2452	(27)	2267	(20)	3266	(10)
Ambiguous	819	(5)	~	(3)	2127	(8)	2485	(6)	2293	(7)		(4)
Post-marital	~	(2)	~	(3)	1290	(6)	2420	(5)	2881	(12)	3333	(10)
Medium and High SES												
Premarital	808	(10)	~	(4)	2110	(6)	3947	(7)	3203	(10)	4477	(5)
Ambiguous	~	(3)	--		1341	(12)	3170	(8)	2018	(6)	~	(2)
Post-marital	~	(1)	--		2078	(5)	~	(3)	2519	(9)	~	(3)

Table 25: Annual Earnings of Respondents Who Worked the Full Year or Who Worked at All in 1976, by Age at First Birth Relative to Age at First Marriage, Race, and Socioeconomic Background (1976 Dollars) (Panel Study of Income Dynamics)

Annual Earnings

First Birth Relative to First Marriage	All Backgrounds		Low SES		Medium/High SES	
	Worked at All During Year	Worked the Full Year	Worked at All During Year	Worked the Full Year	Worked at All During Year	Worked the Full Year
ALL RACES						
Premarital	$4464 (83)	$6763 (40)	$4892 (34)	$7120 (17)	$4157 (48)	$6505 (24)
Same Year	4692 (141)	5577 (85)	4597 (42)	4886 (26)	4732 (98)	5875 (60)
Post-Marital	6088 (1533)	7476 (966)	5001 (324)	6691 (180)	6378 (1209)	7655 (786)
WHITES						
Premarital	4186 (41)	6232 (20)	5960 (16)	9143 (8)	3002 (25)	4500 (13)
Same Year	4536 (110)	5437 (62)	4541 (26)	5012 (13)	4535 (84)	5553 (48)
Post-Marital	5834 (1236)	7497 (700)	4886 (277)	6730 (148)	6107 (959)	7702 (552)
BLACKS						
Premarital	4738 (42)	7306 (20)	3922 (18)	5764 (9)	5357 (24)	8916 (11)
Same Year	5240 (31)	5942 (24)	4685 (17)	4753 (12)	5882 (14)	7289 (11)
Post-Marital	7144 (297)	7419 (266)	5680 (47)	6510 (32)	7419 (250)	7543 (234)

Table 26: Partial Regression Coefficients of Respondents' Annual Earnings at Age 24 on Age at First Birth, with Controls for Social and Demographic Background, Among Respondents Employed the Full Year and Among Respondents Employed at All During the Year (1972 Dollars) (National Longitudinal Survey)

Independent Variables	Full-Year Workers		Worked at All During Year	
	b	Beta	b	Beta
Age at First Birth				
≤16	404.84	.025	- 68.16	-.004
16-17	- 377.76	-.039	- 633.08	-.061
18	- 125.67	-.011	- 527.83	-.047
19-20	111.69	.017	- 577.64	-.072
21-23	- 561.02	-.068	- 842.38	-.113
≥24	a	a	a	a
Parental Socioeconomic Status	5.60	.006	- 3.02	-.003
Education at Age 24	298.84 ***	.293 ***	254.47 ***	.219 ***
South	- 621.86 ***	-.132 ***	- 574.02 ***	-.103 ***
Metropolitan Residence	542.79 **	.110 **	281.76 *	.049 *
Occupational Status	11.39 *	.103 *	12.79 **	.104 **
Age in 1968	- 214.22 **	-.108 **	- 164.32 **	-.072 **
Race	239.09	.041	196.32	.024
Currently Married	108.38	.026	115.75	.021
Unmarried with Children Under 6	487.45	.052	391.11	.037
No Children Age 0-5	a	a	a	a
One Child Age 0-5	20.44	.003	206.99	.034
Two or More Children Age 0-5	-1088.85	-.135	- 343.98	-.047
Employed Part-time/Full Year	-2259.88 ***	-.334 ***	-2245.13 ***	-.230 ***
Employed Part-time/Part Year	---	---	-3602.88 ***	-.499 ***
Employed Full-time/Part Year	---	---	-2686.62 ***	-.398 ***
Employed Full-time/Full Year	a	a	a	a
Constant	5609.19		5337.35	
R^2		.393		.591
F		21.24		58.17
N		575.		785.

* p <.05
** p <.01
*** p <.001
a = omitted category
--- = variable not appropriate for the regression

Table 27 : Partial Regression Coefficients (Standardized and Unstandardized) of Annual Earnings on Respondent's Age at First Birth, With Controls for Social and Demographic Factors, Respondents Who Worked the Full Year and Who Worked at All During the Year (Panel Study of Income Dynamics)

Independent Variables	Full Year		Worked At All	
	b	beta	b	beta
Age at First Birth				
<15	- 190.096	- .007	214.565	.006
16-17	- 369.991	- .028	- 522.659	- .027
18	107.990	.009	98.939	.005
19-20	69.953	.007	- 558.555	- .050
21-23	- 151.125	- .016	- 612.512*	- .055*
>24	208.983	.019	- 114.544	- .011
Childless	a	a	a	a
Age at First Marriage				
<15	- 511.322	- .014	- 23.386	- .001
16-17	- 116.734	- .006	13.188	.001
18	250.609	.014	146.410	.011
19-20	- 422.844	- .039	- 311.057	- .030
21-23	- 151.125	- .016	- 38.070	- .004
>24	- 183.308	- .020	- 525.616	- .044
No Marriage	a	a	a	a
Education				
<12	a	a	a	a
=12	- 61.092	- .007	491.926**	.056**
>12	132.482	.014	1,563.170***	.168***
Number of Children	- 59.204	- .026	- 57.426	- .024
Proportion of Years Worked Since 18	195.650	.012	620.216*	.040*
Worked:				
Part Time/Part Year	-	-	-5,635.662***	- .475***
Full Time/Part Year	-	-	-3,100.142***	- .288***
Part Time/Full Year	-4,087.970***	- .446***	-4,000.722***	- .351***
Full Time/Full Year	a	a	a	a
Hourly Wage	13.091***	.662***	4.675***	.343***
Race (1 = White)	- 24.815	- .003	- 400.591*	- .038*
Parental Socioeconomic Status	84.982**	.051**	150.354***	.087***
Age in 1976	27.181**	.056**	- 4.032	- .008
Southern Residence (1 = Yes)	53.521	.006	124.550	.013
Metropolitan Residence (1 = Yes)	525.819***	.051***	762.928***	.075***
Unmarried With Child Under 6 (1 = Yes)	- 73.093	- .002	- 132.659	- .004
Married (1 = Yes)	125.036	.014	- 42.057	- .004
Child Under 6 (1 = Yes)	- 154.	- .012	- 722.531***	- .062***
Other Family Income	- .005	- .011	.007	.017
Husband's Attitude Toward Wife Working	478.180**	.044**	339.532*	.033*
Physical Limitation (1 = Yes)	- 145.712	- .012	- 92.125	- .007
Student in 1976 (1 = Yes)	-2,514.161	- .021	-1,623.821**	- .038**
Generally Worked at Same Occupation (1 = Yes)	52.243	.006	358.719**	.040**
Number of Interruptions of Work Experience				
None	a	a	a	a
One	- 308.494*	- .031*	- 235.914	- .023
Two or More	- 22.382	- .002	138.332	.010
Months With Present Employer	2.216	.031	15.710***	.198***
AFDC Acceptance Rate	- 1.339*	- .028*	- 1.028	- .019
AFDC Benefit Level	3.454***	.090***	2.228**	.054**
Unemployment Rate	- 69.359	- .026	- 37.407	- .013
Market for Nonwhites vs. Whites (high = worse)	4.272	.001	- 86.891	- .014
Market for Females vs. Males (high = worse)	- 77.516	- .016	- 106.153	- .021
Moved Since Last Year	- 478.708	- .014	675.418	.023
Constant	- 201.842		2,655.248	
F_2	130.593		91.898	
R^2	.840		.707	
N	1,039.		1,645	

* = p < .05
** = p < .01
*** = p < .001

a = omitted category
- = omitted from regression

hourly wage and hours worked are the most important predictors of annual earnings. Working less than full-time/full-year greatly reduces annual earnings: working part-time/part-year, for example, reduces annual earnings by $5636 (PSID) and $3602 (NLS). Net of hours worked, each additional dollar of hourly wage increases annual earnings by $467 (PSID).

Net of hours and wages, the most important factors are education and experience. Each additional year of school increases earnings by $254 (NLS). Completing high school raises annual earnings by $491, while completing more than high school raises annual earnings by $1563 (PSID). An additional percentage point of years worked since 18 creases annual earnings by $620, an additional 10 months with the same employer raises annual earnings by $157, and working generally at the same occupation increases annual earnings by some $358. As found for wages, the number of interruptions of work experience has no additional effect. Total number of children has no effect annual earnings, net of its effects on other variables, such as experience (PSID). However, differing somewhat from the wage model, having a child under 6 does lower annual earnings: by $722 in the PSID. The effect is in the predicted direction for mothers of 2 or more children, but it is not significant in the NLS. Mothers of young children do not have lower wages; however, they reduce their hours of work (see discussion of hours worked).

Race and parental socioeconomic status are not statistically significant in the NLS sample; however, they are significant predictors of annual earnings in the PSID. Coming from a higher socioeconomic background increases annual earnings by $150 (PSID). However, occupational status, which is directly affected by parental status (NLS), was not available in the PSID. Controlling for higher occupational status, which is associated with higher earnings in the NLS, the effect of parental status disappears. Being white reduces

annual earnings by $400 (PSID). Since the race effect is statistically significant, we once again tested to see whether the models of annual earnings differ between blacks and whites. Using the analysis of covariance test we found that the differences are not statistically significant (Johnston, 1972).

However, again there are some interesting differences between the white and black samples that we would like to point out. First, married white women have lower annual earnings than unmarried white women, whereas the difference is in the opposite direction but is not significant for black women (Table 28). A move increases the earnings of black women by $913 whereas it decreases the earnings of white women by $2180. This suggests that white women move to improve their husbands' employment opportunities, black women move to enhance their own. Black women gain $964 in annual income from a one percentage point increase in experience since 18, whereas there is no payoff to white women. However, black women gain nothing from a high school diploma, although they gain substantially ($1676) from obtaining schooling past high school. White women gain with either a high school diploma or more than higher education.

Need for income has no effect on annual earnings, net of other factors. Neither being married nor having substantial income from other sources reduces the respondent's annual earnings, although, as mentioned above, there is a slight effect of being married among white women. Unmarried women with young children do not earn more per year.

Neither having a physical limitation nor having recently moved directly affects annual earnings for those working at all last year. However, being a student does reduce annual earnings by $1624 in the PSID. A husband's attitude toward his wife's employment is statistically significantly related

Table 28 : Partial Regression Coefficients (Standardized and Unstandardized) of Annual Earnings on Respondent's Age at First Birth, With Controls for Social and Demographic Factors, Whites and Blacks (Panel Study of Income Dynamics)

Independent Variables	Whites		Blacks	
	b	beta	b	beta
Age at First Birth				
≤15	44.861	.001	53.137	.020
16-17	- 399.418	- .019	-1,099.675	- .072
18	- 137.120	- .007	162.168	.009
19-20	- 684.970	- .064	-1,134.390*	- .088*
21-23	- 710.727*	- .075*	-1,025.001	- .063
≥24	- 604.640*	- .057*	936.506	.107
Childless	a	a	a	a
Age at First Marriage				
≤15	102.594	.004	722.843	.027
16-17	191.503	.014	1,294.968*	.092*
18	356.847	.028	843.618	.044
19-20	- 156.321	- .015	968.177	.072
21-23	- 168.227	- .016	496.019	.058
≥24	- 349.073	- .026	1,122.352	.127
No Marriage	a	a	a	a
Education				
≤12	a	a	a	a
=13	351.088	.040	927.144**	.113**
>12	1,675.983***	.185***	2,251.862***	.173***
Number of Children	- 12.784	- .005	- 23.995	- .011
Proportion of Years Worked Since 18	964.155**	.064**	318.226	.018
Worked:				
Part Time/Part Year	-5,555.496***	- .495***	-4,761.155***	- .252***
Full Time/Part Year	-3,184.368***	- .304***	-2,018.703***	- .160***
Part Time/Full Year	-3,953.252***	- .316***	-3,186.894***	- .354***
Full Time/Full Year	a	a	a	a
Hourly Wage	4.663***	.350***	4.161***	.279***
Parental Socioeconomic Status	107.949**	.062**	166.474*	.100*
Age in 1976	- 2.764	- .005	- 42.643	- .088
Southern Residence (1 = Yes)	133.982	.014	191.879	.019
Metropolitan Residence (1 = Yes)	893.155***	.091***	- 42.972	- .003
Unmarried With Child Under 6 (1 = Yes)	- 700.892	- .021	1,003.467	.041
Married (1 = Yes)	- 519.875*	- .031*	138.959	.017
Child Under 6 (1 = Yes)	- 509.701*	- .045*	-1,048.629*	- .077*
Other Family Income	.014	.034	- .006	- .009
Husband's Attitude Toward Wife Working	148.262	.015	468.524	.034
Physical Limitation (1 = Yes)	- 254.515	- .014	33.641	.004
Student in 1976 (1 = Yes)	-1,654.659**	- .043**	777.142	.007
Generally Worked at Same Occupation (1 = Yes)	203.815	.022	1,305.413***	.157***
Number of Interruptions of Work Experience				
None	a	a	a	a
One	- 42.390	- .004	88.524	.006
Two or More	318.945	.026	- 442.145	- .020
Months with Present Employer	15.406***	.199***	13.246***	.150***
AFDC Acceptance Rate	- .921	- .017	.190	.004
AFDC Benefit Level	1.449	.034	3.273*	.089*
Unemployment Rate	- 134.116*	- .041*	169.037	.060
Market for Nonwhites vs. Whites (high = worse)	- 168.994	- .028	78.898	.011
Market for Females vs. Males (high = worse)	25.756	.005	- 562.163**	- .111**
Moved Since Last Year	913.270*	.033*	-2,180.468*	- .052*
Constant	3,334.448		1,489.302	
F_2	71.634		48.972	
R^2	.691		.860	
N	1,354.		370.	

* = p < .05
** = p < .01
*** = p < .001

a = omitted category
- = omitted from regression

to her annual earnings, increasing as it does both her hours of work and her hourly wage.

Environmental conditions affect annual earnings. Living in a metropolitan area increases earnings (PSID, NLS); living in the south decreases earnings (NLS). A high level of AFDC benefits is associated with higher annual earnings, an unanticipated result. By level of benefits we are probably also tapping the general level of living in the respondent's state of residence, which would be positively associated with annual earnings. Older birth cohorts appear to have lower earnings (NLS). However, again, the range of variation is small. There is no association of age with earnings in the PSID for those who worked at all during the year.

Full-year Vs. Worked at All: Differences in Annual Earnings

So far we have discussed only those women who worked at all last year. Again, in the NLS and the PSID the results for those who worked at all and those who worked the full-year are very similar. However, there are a few differences that should be pointed out. First of all, the proportion of years worked since 18 has no effect on the earnings of full-year workers, as was found with the analysis of wages of full-year workers, although current job experience does have an effect (PSID). In the full-year sample, older women have higher annual earnings, although the effect is not very strong (PSID). Children under six have no effect on the earnings of full-year workers (PSID). Having had one interruption of work experience reduces the annual earnings of full-year workers by $308 (PSID). Finally, the higher the AFDC acceptance rate the lower the annual earnings. This supports the hypothesis that AFDC serves as a disincentive to earn because of its high tax rate on earnings. An alternative explanation is that poor regions of the country may have many women with low earnings, who would be eligible for AFDC.

The Indirect Effect of Age at First Birth on Annual Earnings

In the NLS the most important indirect effect of a first birth passes through educational attainment (Table 14). In Table 14 we see that only with the omission of educational attainment is the effect of a first birth significant at several ages. Number of children has no significant effect. In the PSID the age at which a woman bears her first child appears to have indirect effects through a number of different variables: education, number of children, work experience, hours worked last year, and hourly wages (results not presented here). The effect of age at first birth is statistically significant with none of these variables in the model, and its effect is reduced somewhat by the addition of each of them. The narrow range of family size in the NLS may be the reason for its lack of predictive power, and we have no good measure of experience for the NLS young women.

IMPACT OF A FIRST BIRTH ON ENTRY INTO AND EXIT FROM THE LABOR FORCE

As mentioned in an earlier section, the static model of labor force participation cannot adequately represent the relatively fluid movement of women into and out of the labor force from year to year. For example 95 percent of all women interviewed in the PSID worked at some time since they were 18, and 67 percent worked in the last year; however, in 1976 only 56 percent were actually working at the time of interview. Completed education and past work experience are important predictors of labor force participation in any year. In previous discussions we have also emphasized the importance of situational factors, such as marital status, school enrollment, a physical limitation, size of other family income, and the presence of young children, in models of labor force participation.

Total labor force experience exerts strong effects on women's wages and earnings, as well as on the probability of working. To the extent that early work experience is curtailed by a birth, total work experience may be reduced, and the woman may never catch up to her age peers in wages and earnings. However, these effects may not be captured with the type of model previously employed. We expect a birth to reduce the probability of a non-working woman starting work or returning to work, at least for several years after that birth. A birth is expected to increase the probability that a working woman will drop out of the labor force. However, on the other hand, an early birth may force a young woman to enter the work force to support herself and her child.

These hypotheses were tested on the National Longitudinal Sample of Young Women, and on a sample of women under 24 from the Panel Study of Income Dynamics. Since the precise effect of a first birth may depend on the woman's

marital status and age, the NLS sample was divided by the marital status of the woman, the PSID sample by her age. A woman who worked no weeks during the year before one year's survey and then worked some weeks during the following year, but before the survey was again conducted, was considered to be a new entrant. The woman who worked some weeks in the year preceeding the first and worked no weeks in the year following was considered to have left the labor force. The woman did not have to actually be working at the time of they survey in either year to be counted as working in that year.

Work Entry

Unmarried women were more likely to begin working than married women. Of the NLS women who were not working in the first year, one quarter of the married women and almost half (45 percent) of the unmarried women were working in the following year (Table 29). Analysis of the PSID also shows married women 15 to 17 and 21 to 23 to be less likely than unmarried women to enter the labor force (Table 30), but no marital status difference in entrance probability among women age 18 to 20. Post-high-school-graduation is a period during which the largest proportion of women begin working (40 percent).

As expected, in the NLS sample both married and unmarried women who gave birth to a first child during the year were less likely to start working than those who did not have a child in that year. The effect is stronger, however, for married women. 12 percent of married mothers and 30 percent of unmarried mothers were new entrants. However, an even more striking difference between married and unmarried women is the continued effect of a first birth, for several years afterwards, on the probability of married mothers entering labor force. After an initial depressing effect, for unmarried mothers the probability of entering the labor force sharply increases in the following year, exceeding the mean for the group. This probably indicates that unmarried

Table 29

EFFECT OF FIRST BIRTH ON WORK ENTRY AND EXIT
(National Longitudinal Survey)

Independent Variables	Dependent Variables: Work Entry, Married: % in Category	Work Entry, Married: Predicted Probability for Category	Work Entry, Unmarried: % in Category	Work Entry, Unmarried: Predicted Probability for Category	Work Exit, Married: % in Category	Work Exit, Married: Predicted Probability for Category	Work Exit, Unmarried: % in Category	Work Exit, Unmarried: Predicted Probability for Category
		$\bar{Y}$ = .25		$\bar{Y}$ = .45		$\bar{Y}$ = .20		$\bar{Y}$ = .22
I. FIRST BIRTH								
(1) More Than One Year Ago	66%	.22	18%	.45	32%	.15	9%	.13
(2) Within Previous Year	10	.22	2	.61	11	.40	2	.29
(3) Within Current Year	5.5	.12	1.9	.30	14.7	.25	1.6	.30
(4) No First Birth Yet	18.5	.40	18	.45	42	.15	88	.23
II. SELECTED OTHER CHARACTERISTICS								
A.(1) Enrolled Full-Time in School	15	0*	70	.50	8	.20	49	.25
(2) Not Enrolled Full-Time in School	85	.31	30	.34	92	.20	51	.18
B.(1) Never Married			83	.45			88	.18
(2) Ever Married			17	.45			12	.48
III. OTHER MAJOR LIFE CHANGES IN CURRENT YEAR								
A.(1) Birth Second or Later	22		6	.24	8%	.35	1.3	41
(2) No Second or Later Birth	78		94	.46	92	.19	98.7	.22
B.(1) Marriage	17	.32			22	.20		
(2) Marital Split			7	.45			4	0*
(3) Remain Unmarried			93	.45			96	.23
(4) Remain Married	83	.24			78	.20		
C.(1) Leaving School	6	.28	15	.63	6	.13	11	.05
(2) Reenter School	1	.22	3	.47	1	.20	3	.20
(3) Remain in School	8	.22	51	.42	2	.20	36	.24
(4) Remain Out of School	85	.22	31	.42	91	.20	50	.24
R^2		.17		.26		.26		.16
F		40.2		51.6		57.7		23.3
N		2970		4105		5749		7956

* Predicted value less than zero.

Table 30: The Probability of Entering or Leaving the Labor Force in Any Given Year By the Timing of a First Birth and Age of the Respondent, Adjusted for Selected Social and Demographic Factors (Panel Study of Income Dynamics)

Independent Variables	Work Entry						Work Exit					
	Age 15-17		Age 18-20		Age 21-23		Age 15-17		Age 18-20		Age 21-23	
	Percent In Category	Predicted Probability	Percent In Category	Predicted Probability	Percent In Category	Predicted Probability	Percent In Category	Predicted Probability	Percent In Category	Predicted Probability	Percent In Category	Predicted Probability
		Mean = .27		Mean = .41		Mean = .34		Mean = .27		Mean = .20		Mean = .14
First Birth:												
None Yet	.82	.29	.48	.34	.22	.59	.83	.29	.61	.14	.46	.04
In Current Year	.06	.22	.08	.60*	.03	.56	.07	.13	.09	.13	.08	.07
One Year Ago	.12	.23	.08	.41	.04	.22*	.10	.18	.12	.49***	.10	.25***
Two Years Ago			.17	.51	.13	.30*			.06	.22	.07	.21**
Over Two Years Ago			.19	.41	.58	.27*			.12	.28*	.29	.19**
Marital Status:												
Married at Start of Year	.08	.17	.47	.42	.79	.32	.06	.39	.42	.22	.72	.14
Not Married	.92	.28	.53	.41	.21	.40	.94	.26	.58	.19	.28	.13
School Status:												
In School at Start of Year	.91	.27	.47	.36	.21	.36	.90	.27	.[illegible]	.25**	.14	.20**
Not in School	.09	.29	.53	.45	.79	.33	.10	.29	.68	.17	.86	.13
Race:												
White	.85	.30***	.84	.41	.86	.34	.94	.24***	.93	.19	.90	.15*
Nonwhite	.15	.09	.16	.43	.14	.34	.06	.73	.07	.28	.10	.08
Age:												
15 (18,21)	[illegible]	.18*	.32	.50*	.34	.33	.11	.54***	.23	.25*	.32	.14
16 (19,22)	.35	.29	.28	.39	.34	.40*	.33	.33*	.33	.20	.34	.14
17 (20,23)	.3[illegible]	.32	.40	.35	.32	.30	.56	.18	.44	.18	.34	.13

* = p < .05
** = p < .01
*** = p < .001

mothers cannot afford to stay out of the labor force. For married women, therefore, a first birth does appear to depress initial work entry for several years following the birth, and probably lowers total work experience. A first birth appears to have no overall effect on the entry of unmarried mothers into the labor force. It depresses work entry during the year of the birth; however, entries in the following year are above average, returning to an average rate in the second year following the birth.

Using the PSID we found no effect of a first birth on the entry of 15 to 17 year olds into the labor force. There is an effect for 18 to 20 year-olds, but it is in the direction opposite from that expected. Young women with a first birth in the year are actually more likely to be new labor force entrants than those with no such birth. Since, during the years they are 18 to 20, women are entering the labor force and having births in large numbers, it would not be surprising that a young woman would begin the year working, but become pregnant later in the year, and drop out toward the end of the year. Given our definition of entry, such a woman would be counted as a new entrant even if she worked only at the beginning of the year. She would not appear as a drop-out until the following year. If this were the case, we should also find a greatly increased number of work exits in the year following the first birth, but in no other year. This is what, in fact, we find (Table 30). Among the 21 to 23 year olds, we find the expected depressing effect of a first birth on work entry. However, it is a delayed effect, lowering the entry of those whose first birth was one or more year ago. Again, it appears as though

in the year of the birth. The hours worked by new labor force entrants who also had a first birth in that year should be less than those worked by new entrants who did not have a first birth in that year. This hypothesis was tested on the NLS young women. The sample was again divided by the marital status of the woman.

Married and unmarried entrants into the labor force work approximately the same number of hours annually: 504 and 443 hours respectively (Table 31). A first birth in the same year as entry into the labor force has the expected negative impact on hours. On average, married women who experience a first birth work 191 hours in the year; unmarried women work 109 hours. A second or later birth has a similar effect on the hours of new entrants, married or unmarried. The reduction in hours disappears for unmarried women after the first year, but a small reduction in hours worked persists in the years immediately afterwards for married women.

Hourly Wages

A first or later birth appear to have no direct impact on the hourly wages of the young women in that year (Table 31).

Work Exit

About one fifth of the women, married or unmarried, who worked in a particular year were not working in the following year, according to the data from the NLS (Table 29). Similar proportions were obtained for the young women sample from the PSID (Table 30). Exit rates were slightly higher for the youngest (15 to 17 year old) women (.27), slightly lower for the 18 to 20 year old women (.20), and lowest for the 21 to 23 year olds (.14). 26 percent of the married women and 4 percent of the unmarried women in the NLS reported a first birth in the current or the previous year. One quarter of the married women who had a first birth dropped out of the labor force in the same

Table 31

EFFECT OF FIRST BIRTH ON ANNUAL HOURS WORKED AND HOURLY WAGE
FOR WOMEN WHO DID NOT WORK IN THE PREVIOUS YEAR
(National Longitudinal Survey)

Independent Variables	ANNUAL HOURS				HOURLY WAGE			
	Married		Unmarried		Married		Unmarried	
	% in Category	Predicted Hours	% in Category	Predicted Hours	% in Category	Predicted Wage	% in Category	Predicted Wage
		$\bar{Y}$ = 504		$\bar{Y}$ = 443		$\bar{Y}$ = 2.10		$\bar{Y}$ = 1.72
I. First Birth								
(1) More Than One Year Ago	56%	470 hrs.	6	448 hrs	56%	$2.11	6	$1.72
(2) Within Previous Year	12	470	3	448	12	2.11	3	1.72
(3) Within Current Year	5.3	191	1.5	109	5.3	1.93	1.5	1.72
(4) No First Birth Yet	27	652	89	448	27	2.11	89	1.72
II. SELECTED OTHER CHARACTERISTICS								
A.(1) Completed Schooling ≤8	7	306	9	315	7	1.57	9	1.28
(2) Completed Schooling 9-11	30	372	65	399	30	1.76	65	1.64
(3) Completed Schooling 12	43	563	14	591	43	2.09	14	1.80
(4) Completed Schooling >12	20	642	12	607	20	2.84	12	2.39
III. OTHER MAJOR CURRENT YEAR EVENTS								
A.(1) Second or Later Birth	9	377	1	247	9	2.10	1	1.72
(2) No Second or Later Birth	81	517	99	445	81	2.10	99	1.72
B.(1) Marriage	21	504	--	--	21	2.10	--	--
(2) Marital Split	--	--	3	443	--	--	3	1.72
(3) Remain Unmarried	--	--	97	443	--	--	97	1.72
(4) Remain Married	79	504	--	--	79	2.10	--	--
C.(1) Left School	15	523	24	692	15	2.12	24	1.81
(2) Reentered School	1	523	2	326	1	1.76	2	1.81
(3) Remain in School	3	0*	57	226	3	1.65	57	1.66
(4) Remain Out of School	81	523	17	831	81	2.12	17	1.81
	R^2	.16		.33		.24		.30

year, 30 percent of the unmarried women who had a first birth (NLS). A similar proportion of unmarried women (30 percent) but a larger proportion of married women (40 percent), left the labor force in the year following as left in the year of the birth. For definitional reasons, the effect of a birth is delayed. The overall proportion of married and unmarried women who left within the first two years is about the same (three-fifths). Besides the first birth, it appears as though any birth increases the probability of a woman dropping out of the labor force. The effect of a first birth, however, does not appear to continue after the first two years.

Results from the young women sample of the PSID are similar to those from the NLS. They also illustrate the definitional delay found throughout these analyses. Although an early first birth is not associated with an increased probability of 15 to 17 year olds dropping out of the labor force, it is associated with increased drop-out of 18 to 23 year olds. The effect is, as pointed out earlier, especially strong for the 18 to 20 year olds who had a first birth one year ago. Almost half can be expected to drop out, with the effect smaller, but continuing during the following seven years. The effect is strong for the 21 to 23 year olds, who are less likely overall to drop out of the labor force. Almost one quarter of the 21 to 23 year olds who have a first birth can be expected to drop out in the following year, again, with an effect continuing for several years.

Summary

Having a first birth directly affects the probability that a woman will start working, and, for those who start, the hours she works and the probability that she will quit. A first birth is particularly effective in preventing a woman from beginning work, and that pressure continues in reduced degree for several years after the birth. An unmarried woman who bears a first child

is also less likely to go to work in that year. However, the effect is not as strong. Moreover, for unmarried women the reduced probability of going to work in the year of the birth is more than offset by an increased probability of going to work in the following year. Thus for married women, a first birth seems to cause long-lasting delays in work entry; for unmarried women a first birth seems only to cause some women to delay going to work for another year. For new entrants to work, hours worked are strongly reduced by a first birth in that year. For married women, the downward pressure continues, though much reduced, after the first year. A birth appears to have no effect on wages. The probability of leaving work is increased by a first birth in a similar manner for married and unmarried women. Unlike the effect of a first birth on work entry, however, the effect on dropping out seems relatively temporary. If a woman does not drop out within a year or so, she is not likely to drop out of the labor force. The most important effect of a first birth, therefore, appears to be that it reduces the probability of a woman going to work, a relatively long-lasting effect for married women, less so for unmarried women. Once a woman is working, a birth has a strong, but relatively short-lived, impact on the probability that she will quit.

SUMMARY AND CONCLUSIONS

The Direct Effect of an Early Birth

Does an early birth have any direct impact on the later labor force participation and earnings of women? In early tabulations of the data, some evidence of a depressing effect of a first birth on the occupational statuses, wages, and earning of young women was found. However, after controlling for other factors, we conclude that an early first birth does not directly affect whether or not a woman is working years later or how much work experience she has accumulated. Nor does it directly affect the occupational statuses, hours of work, hourly wages, or annual earnings of working women (see Summary, Table 32). In fact, early childbearers who work the full year may earn more per hour than their later bearing peers, everything else being equal. Education, experience, and family size are the most important factors affecting occupational status, hours of work, wages, and earnings. Since other research has shown that a first birth does reduce schooling and increase the family sizes of women, some indirect effects of an early birth were anticipated.

The Indirect Effects of an Early Birth

One indirect effect of an early birth results from the large family sizes of early childbearers. Women who have a large number of children accumulate less work experience over their lifetimes than those with smaller families. This occurs because a birth lessens the chance that a non-working woman will start working and increases the likelihood that a working woman will quit. Moreover, those women with large families who do work earn less per hour, even controlling for education and hours. Since early childbearers tend to bear more children, early childbearing indirectly affects work experience through its effect on family size.

Participation and Earnings of Women in the NLS and PSID Data Sets

Dependent Variable (sample)	NLS (ag. 24)	PSID (in 1976)
Whether Working (All Respondents)		Age at First Birth -13+ Age at First Birth 19-20 + Education + Proportion of Years Worked + Children Under 6 - Married + Other Family Income - Physical Limitation - Husband's Attitude Toward Wife Working is Favorable + Student in 1976 -
Proportion of Years Worked Since 18 (All Respondents)		Age at First Birth - 21-23 - Age at First Marriage - *Number of children - Race - Age in 1976 -
Hourly Wages (Respondents Who Worked at All)	a *Education + a a Part time/Part year - Full time/Part year - ns Occupational Status + South - Metropolitan + a a a a a	Age at First Marriage 21-23 + *Education + Number of Children - Proportion of Years Worked since 18 + Part time/Part year + Full time/Part year + Age (in 1976) + a ns ns Husband's Attitude Toward Wife Working is Favorable + Physical Limitation - Generally Worked at Same Occupation in Past + Months with Present Employer + Job Market for Females versus Males -
Annual Earnings (Respondents Who Worked at All)	ns *Education + a Part time/Part year - Full time/Part year - Part time/Full year - Age (in 1968) - Occupational Status + Southern Residence - Metropolitan Residence + ns a ns ns a a a a a	Age at First Birth 21-23 - *Education + *Proportion of Years Worked since 18 + *Part time/Part year - *Full time/Part year - *Part time/full year - ns a ns Metropolitan Residence + Child under 6 - *Hourly Wages + Race - Parental Socioeconomic Status + Husband's Attitude Toward Wife Working is Favorable + Student - Generally Worked at Same Occupation + Months with Present Employer + AFDC Benefit Level +
Hours Worked Last Year (Respondents Who Worked at All)		Age at First Birth 19-23 - Age at First Marriage 18 + *Proportion of Years Worked since 18 + Hourly Wage - Race - Parental socioeconomic Status + Metropolitan Residence + Married - Child Under 6 - Husband's Attitude Toward Wife Working is Favorable + Physical Limitation - Student in 1976 - Generally Worked at Same Occupation in Past + Months with Present Employer + Local Unemployment Rate -
Occupational Status (Respondents Who Worked at All)	Parental Socioeconomic Status + *Education + Race + Part time/Part Year - Full time/Part year -	

a variable not in model
ns variable in model but not statistically significant
* path through which Age at First Birth indirectly affects the dependent variable
+/- direction of association

A second indirect effect of an early birth arises from the lower educational attainment of early childbearers. Although the number of years of schooling completed does not appear to affect the amount of work experience a woman accumulates, it does affect the occupational status and earnings of workers. Women with less schooling obtain jobs of lower socioeconomic status, make lower hourly wages, and earn less annually. Therefore, an early birth can be said to indirectly reduce the occupational status, hourly wages, and annual earnings of working women, through its effects on schooling.

Determinants of the Probability of Working (PSID)

Education and prior work experience are the most important factors predicting to whether or not a woman will work in any given year. Important other factors are situational. For example, a recent birth reduces labor force participation, both by decreasing entry rates of non-workers and by increasing drop-out rates of workers. The presence of a young child has a stronger effect on the probability that a married woman will enter the labor force than it does on that of an unmarried woman. Having little other family income to depend on, having a physical limitation, and being enrolled in school also lessen the chance that a woman will work outside the home. Having a husband who approves of his wife working increases the likelihood that a woman will work. Two especially interesting results are the following: net of everything else, 1) married women are more likely than unmarried women to work, and 2) black women are no more likely than white women to be working. Finally, we found neither the level of welfare benefits nor their accessibility to affect a woman's decision to work.

Determinants of Work Experience (PSID)

Being white, having many children, and having been married at some time reduce the total labor force experience of a woman. In addition, older women

have accumulated less work experience proportional to their ages than have younger women, evidence of the trend toward increased labor force participation of younger generations of women.

Determinants of Occupational Status (NLS)

Parental socioeconomic status, years of schooling completed, and race are the most important factors associated with the occupational statuses of 24-year-old women who worked last year. As expected, being employed less than full-time or less than the full year was associated with lower occupational prestige for these young women.

Determinants of Hours Worked Last Year (PSID)

For women who worked at all during the year, experience in the labor force is the most important factor in predicting the hours they work: the more work experience, the more hours, whether experience refers to experience in general, to experience at the same occupation, or to experience with the same employer. Situational factors are important in determining the hours a woman works. Being married and having a young child reduce the number of hours worked last year, as do enrollment in school and having a physical limitation. A wife whose husband favors her working is likely to work more hours. City residents work more hours than do non-city residents and women living in areas of high unemployment work fewer hours than those in areas of low unemployment. Neither a high level of AFDC benefits nor its easy access was found to affect the number of hours working women spent at their jobs during the year.

As expected, white women work fewer hours than black women. We suspected that the relationship between hours and other factors would differ by race. However, when separate models of hours were estimated for blacks and for whites, the only interaction of significance was that of race with marital

status. Married white women work fewer hours than do unmarried white women; married black women work more hours than unmarried black women.

Determinants of Hourly Wages (NLS and PSID)

The number of years of schooling completed is the most important predictor of the hourly wages of working women, in both the National Longitudinal Survey and the Panel Study of Income Dynamics. In the PSID, in addition, the number of children and the amount of work experience are associated with the hourly wages of those who worked at all during the year. Older women were found to make more per hour than younger women in that sample. Neither being married nor having a young child affected hourly wages in either sample. Situational factors such as being physically limited and being enrolled in school were found to reduce wages in the PSID. An interesting finding is that women whose husbands favor their working earn more per hour; however, approval may be a result rather than a cause or facilitator of higher wages.

Living in the south reduces wages, while living in a metropolitan area raises wages in both samples, though the results are only significant in the NLS. As one would expect, a poor market for females compared with males lowers the hourly wages of working women.

In the NLS, women who work less than full-time during the full year make less per hour. In the PSID the results are in the opposite direction. Part-time and part-year workers make more per hour. The samples differ, of course. The NLS women are young; young part-time workers may make less per hour than older part-time workers. However, two alternative explanations are possible: 1) women who make more money per hour are able to limit their hours, as found in the analyses of hours worked, or 2) the part-year group in the PSID consists disproportionately of women in occupations such as

teaching.[1] Teachers work less than the full year and may even report that they work less than full-time during the school year.

There is no difference between the hourly wages of black and white women, net of other factors. Again, we examined the relationships among all independent variables and wages separately by race. The main difference between blacks and whites again appears to be in the effect of marital status. Married white women make lower wages than unmarried white women; married black women make higher wages than unmarried black women, though the latter difference is not significant. In addition, the number of children a black woman raises does not have the negative effect on wages that it has for white women.

Determinants of Annual Earnings (NLS and PSID)

Hourly wages and hours worked are, of course, the most important predictors of earnings. Women who work less than full-time the full-year earn between $3000 and $6000 less than the full-time/full year workers, according to the data from the PSID. Differences are similar in the NLS. After controlling for wages and whether a woman works part or full-time, the number of years of schooling completed and work experience are important predictors of earnings. Parental socioeconomic status is associated with higher annual earnings; women from higher status backgrounds were found to work more hours annually.

Temporary factors of importance to earnings include the presence of young children; women with young children work fewer hours. Respondents enrolled in school earn less per year; they work less and make less per hour. Respondents whose husbands approve their working earn more per year; they work more hours and make more per hour. Again, however, whether approval of working is

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1. Occupational information in the PSID is not coded in enough detail to confirm or reject the second explanation.

a cause or an effect of hours and earnings is not known. In both samples, southern residents earn less than non-southern residents, and metropolitan residents earn more than their non-urban counterparts. There are no important differences in the factors affecting the earnings of full year workers and women who worked at all during the year.

Black women earn more annually than do white women net of other factors; black women work more hours. No difference in wages was found net of other factors. Again, separate models were tested for blacks and whites as before, the only interaction with race that was found was that of marital status. White married women make less than do unmarried white women; the opposite is the case for black women, although the difference is not statistically significant.

Conclusions

A woman who has a first birth while young, but who 1) does not marry, 2) completes her education, and 3) does not go on to have a large family, differs little from her later bearing peers in labor force participation, work experience, occupational status, hourly wages or annual earnings later in life. However, such young women must necessarily by unique. In other work we have documented the close association between an early first birth and high subsequent fertility, between early childbearing and school drop-out, and between early childbearing and marriage. Thus it appears that an early birth does have detrimental effects on women's later labor force status, but only indirectly as a consequence of the birth's impact on fertility, education, and labor force experience.

APPENDIX TABLE 1

Definitions of Selected Variables Used in the Analyses of Labor Force Participation and Earnings

Variable	Definition
AFDC Acceptance Rate, 1975	Ratio of applications accepted to the total (accepted and denied) in the state of residence in 1975
AFDC Benefit Level, 1975	Maximum monthly AFDC benefit for a family of 4 in the state of residence in 1975
Annual Earnings	Respondent's earnings from wages or salary last year
Generally Worked at Same Occupation	Have you had a number of different kinds of jobs or have you mostly worked in the same occupation you started in, or what? (1 = mostly the same occupation, even if held different jobs, 0 = held different types of occupations)
Hourly Wage	Annual earnings divided by hours worked last year
Husband's Attitude Toward Wife Working	1 = Husband favors wife working, 0 = No husband, husband neutral or opposed
Other Family Income	Total household income (from business, interest, dividends, unemployment compensation, wages and salary, other) minus respondent's annual earnings
Market for Females vs. Males	How the market for unskilled females compares with that for unskilled male labor in the local labor market, August 1976. Scaled from 1 to 4: 1 = better, 2 = about the same, 3 = worse, 4 = much worse
Market for Non-whites vs. Whites	How the market for non-white compares with that for white unskilled labor in the local labor market, August 1976. Scaled from 1 to 4; 1 = better, 2 = about the same, 3 = worse, 4 = much worse
Parental Socioeconomic Status	An index composed of three variables — occupation of head of household when respondent was 14, mother's education, and father's education--standardized to have a mean of 10 and a standard deviation of 3
Part-time/Part-year	Employed less than 35 hours a week less than 40 weeks last year
Part-time/Full-year	Employed less than 35 hours a week 40 or more weeks last year
Full-time/Part-year	Employed 35 hours or more a week less than 40 weeks last year
Full-time/Full-year	Employed 35 hours or more a week 40 or more weeks last year
Typical Male Wage	The typical wage that an unskilled male worker might receive, August 1976. Scaled from 1 to 5: 1 = under $1.50, 2 = $1.50 to $1.99, 3 = $2.00 to $2.49, 4 = $2.50 to $2.99, 5 = $3.00 or more
Unemployment Rate	Unemployment rate in respondent's county, August 1976. Scaled as follows: 1 = under 2%, 2 = 2 to 3.9%, 3 = 4 to 5.9%, 4 = 6 to 8.9%, 5 = 9 to 10%, 6 = 10.1 to 12%, 7 = greater than 12%

APPENDIX TABLE 2

WORK ENTRY PROBABILITY, MARRIED WOMEN, 1968-72
(National Longitudinal Survey)

Eligible: Women who did not work in year prior to t, and were married, spouse present in t+
Dependent Variable = 1 if worked in year prior to t+1; mean = .25

Independent Variables	Mean of Independent Variable	B	Beta
I. FIRST BIRTH			
(1) First Birth in Past Year	10%	-.18**	-.18**
II. OTHER CHARACTERISTICS			
(1) Number of Siblings	3.13	.0074*	.040*
(2) Birth Cohorts 1952-54	16%	.0077	.0066
1948-51	29%	.053**	.056**
1944-47	55%	a	a
(3) White	93%	.054	.032
(4) Enrolled Full Time	15%	-.39***	-.32***
(5) Husband's Attitude Toward Wife Working	3.7	-.069***	-.210***
(6) Demand for Female Labor	31.08	.0025	.028
(7) AFDC Benefit Level	$242.57	-.00060***	-.091***
(8) Number of Children Under 18	1.41	-.021*	-.055*
(9) Years Out of Work	1.33 years	-.024***	-.072***
III. CURRENT MAJOR LIFE CHANGES			
(1) First Birth	5.5%	-.28***	-.15***
(2) Marriage	17%	.080*	.069*
(3) Geographic Move	14%	-.063*	-.051*
(4) School Drop Out	6%	.56***	.30***
Constant Term			

N = 2969

*p <.05
**p <.01
***p <.001
a = dummy variable, omitted category

APPENDIX TABLE 3

WORK ENTRY PROBABILITY, UNMARRIED WOMEN, 1968-72
(National Longitudinal Survey)

Eligible: Women who did not work in year prior to t and who were not married in t+1
Dependent Variable: = 1 if worked in year prior to t+1; mean = .45

Independent Variables	Mean of Independent Variable	B	Beta
I. FIRST BIRTH			
(1) Years Prior to t-1 When First Birth Appears	54%	-.088	-.025
II. OTHER CHARACTERISTICS			
(1) Age 16-17	40%	-.23***	-.23***
18	8.4%	.17***	.97***
(2) Year 1968	31%	-.13***	-.12***
1969	32%	-.03	-.03
1970	20%	-.11***	-.087***
1971	17%	a	a
(3) Grades Completed ≤8	14%	-.29***	-.20***
9-11	57%	-.16***	-.16***
12	20%	-.11***	-.088***
(4) Change in Unemployment Rate	45%	-.019**	-.052**
(5) Other Income	$266.35	-.00**	-.15**
(6) SMSA Central City Resident	27%	-.064**	-.057**
Suburb Resident	36%	-.032	-.031
(7) South	25%	-.13***	-.11***
(8) Unemployment Rate	4.6%	-.035***	-.16***
(9) AFDC Benefit Level	$243.36	-.005*	-.061*
(10) Years Out of Labor Force	1.26 years	-.043***	-.094***
III. CURRENT MAJOR LIFE CHANGES			
(1) First Birth	1.9%	-.042	-.012
(2) Birth, First or Later	7.7%	-.22***	-.12***
(3) Marriage Split	7.1%	-.090	-.046
Constant Term		1.017	

R^2 = .22 F = 47.86 N = 4105

*p <.05
**p <.01
***p <.001
a = dummy variable, omitted category

APPENDIX TABLE 4

WORK EXIT PROBABILITY, MARRIED WOMEN 1968-72
(National Longitudinal Survey)

Eligible: Women who worked in year prior to t and were married, spouse present, in t+1
Dependent Variable = 1 if did not work in year prior to t+1, Mean = .20.

Independent Variables	Mean of Independent Variable	B	Beta
I. FIRST BIRTH			
(1) Prior First Birth	43%	.023	.028
(2) Prior First Birth One Year Ago	16%	.23***	.18***
II. SELECTED CHARACTERISTICS			
(1) Number of Siblings	2.98	-.005*	-.027*
(2) Husband's Attitude Toward Wife Working	2.70	.04***	.14***
(3) Age 21-23	41%	.14***	.17***
24-28	28%	.16***	.18***
(4) Change in Unemployment Rate	66%	.017***	.073***
(5) Birth Cohort 1952-54	9%	.11**	.08**
1948-51	46%	.068***	.084***
1944-47	45%	a	a
(6) Annual Hours	1118	-.0001***	-.22***
(7) Wage at T	$1.95	-.047***	-.16***
(8) SMSA Central City Resident	28%	.04**	.05**
SMSA Suburb Resident	36%	.072***	.086***
Non SMSA Resident	36%	a	a
(9) Unemployment Rate	4.70	.007*	.038*
(10) Year 1968	22%	.04*	.04*
1969	25%	.07***	.07***
1970	25%	-.03	-.03
1971	28%	a	a
(11) Number of Children Under 18	64%	-.009	-.021
III. MAJOR CURRENT YEAR EVENTS			
(1) First Birth	15%	-.06*	-.05*
(2) Birth, First or Later	22%	.16***	.16***
(3) Drop Out of School	6%	-.08***	-.05***
Constant Term		.013	

R^2 = .26 F = 76.81 N = 4600

*p ≤.05
**p ≤.01
***p ≤.001
a = dummy variable, omitted category

APPENDIX TABLE 5

WORK FORCE EXIT PROBABILITY, UNMARRIED WOMEN
(National Longitudinal Survey)

Eligible: Women who worked in year prior to t, and who were not married, spouse present in t+1

Dependent Variable = 1 if did not work in year prior to t+1, Mean = .22

Independent Variables	Mean of Independent Variable	B	Beta
I. FIRST BIRTH			
(1) Prior First Birth	11%	-.10***	-.07***
(2) Prior First Birth One Year Ago	1.6%	.16***	.05***
II. SELECTED CHARACTERISTICS			
(1) Parental Socioeconomic Status	10	-.004	-.02
(2) Age: 16-17	24%	-.23***	-.23***
18	16%	-.29***	-.25***
19-20	23%	-.25***	-.25***
21-23	19%	-.22***	-.21***
24-28	9%	-.26***	-.18***
(3) Birth Cohort 1952-1954	44%	-.10**	-.12**
1948-1951	38%	-.04	-.05
(4) Year 1968	28%	-.11***	-.11***
1969	24%	-.13***	-.14***
1970	27%	-.03	-.03
1971	21%	a	a
(5) Grades Completed 9-11	37%	.08***	.09***
(6) Change in Unemployment Rate	.61%	.009*	.03*
(7) Enrolled Full Time	49%	.07***	.08***
(8) Annual Hours	872	-.00005***	-.09***
(9) Wage at T	$1.59	-.03***	-.10***
(10) SMSA Central City Resident	28%	-.02	-.02
Suburb Resident	33%	-.04***	-.05***
(11) Unemployment Rate	4.39%	-.01***	-.07***
(12) Years in Labor Force	.89	-.03***	-.08***
(13) Never Married	88%	-.30***	-.24***
III. CURRENT YEAR EVENTS			
(1) First Birth, Timing:			
(1.1) Premarital	1%	-.13*	-.03*
(1.2) Uncertain	.2%	-.12	-.01
(1.3) Postmarital	.4%	-.11	-.02
(2) Birth, Second or Later	2.9%	.19***	.08***
(3) Divorce	3.9%	-.31***	-.15***
(4) Reenter School	2.7%	-.04	-.01
(5) Drop Out of School	11%	-.19***	-.14***
Constant Term		1.05	

R^2 = .16 F = 46.09 N = 7300

*p <.05
**p <.01
***p <.001
a = dummy variable, omitted category

Appendix Table 6: Work Entry Probability: Regression Coefficients for Women 15-17, 18-20 and 21-23 Years Old (Panel Study of Income Dynamics)

	Age 15-17		Age 18-20		Age 21-23	
Independent Variables	b	Sample Mean $\bar{Y}$ = .27	b	Sample Mean $\bar{Y}$ = .41	b	Sample Mean $\bar{Y}$ = .34
First Birth Timing:						
No First Birth Yet	a	.82	a	.48	a	.22
First Birth in Current Year	- .065	.06	.26 *	.08	- .03	.03
First Birth One Year Ago	- .059	.12	.07	.08	- .37 *	.04
First Birth Two Years Ago			.17	.17	- .29 *	.13
First Birth Over Two Years Ago			.07	.19	- .32 *	.58
Marital Status:						
Married at Start of Year	- .11	.08	.01	.47	- .08	.79
Not Married	a	.92	a	.53	a	.21
School Status:						
In School at Start of Year	- .025	.91	- .09	.47	.03	.21
Not in School	a	.09	a	.53	a	.79
White	.21 ***	.85	- .02	.84	.00	.86
AFDC Benefit Level	-1.4×10^{-4}	$258.	1.0×10^{-3} ***	$150.	-4.8×10^{-4}	$69.
Unemployment Rate	- .004	2.81	- .008	3.00	.01	3.08
Age						
15/18/21	- .14 *	.29	.15 **	.32	.03	.34
16/19/22	- .03	.35	.04	.28	.10 *	.34
17/20/23	a	.36	a	.40	a	.32
Constant	.23		.19		.59	
F_2	2.3 **		5.3 ***		3.5 ***	
R^2	.047		.095		.064	
N	427.		566.		567.	

* = p < .05
** = p < .01
*** = p < .001

a = omitted category

Appendix Table 7: Work Exit Probability: Regression Coefficients for Women 15-17, 18-20 and 21-23 Years Old (Panel Study of Income Dynamics)

Independent Variables	Age 15-17 b	Age 15-17 Sample Mean $\bar{Y}$ = .27	Age 18-20 b	Age 18-20 Sample Mean $\bar{Y}$ = .20	Age 21-23 b	Age 21-23 Sample Mean $\bar{Y}$ = .14
First Birth Timing:						
No First Birth Yet	a	.83	a	.61	a	.46
First Birth in Current Year	- .16	.07	- .01	.09	.03	.08
First Birth One Year Ago	- .11	.10	.35 ***	.12	.21 ***	.10
First Birth Two Years Ago			.08	.06	.17 **	.07
First Birth Over Two Years Ago			.14 *	.12	.15 ***	.29
Marital Status:						
Married at Start of Year	.13	.06	.03	.42	.01	.72
Not Married	a	.94	a	.58	a	.28
School Status:						
In School At Start of Year	- .02	.90	.08 **	.32	.07 **	.14
Not In School	a	.10	a	.68	a	.86
White	- .49 ***	.94	- .09	.93	.07 *	.90
AFDC Benefit Level	-5.0×10^{-4}	$288.	1.1×10^{-5}	$196.	3.9×10^{-5}	$151.
Unemployment Rate	- .022	3.02	.002	3.03	- .006	3.14
Age:						
15/18/21	.36 ***	.11	.07 *	.23	.01	.32
16/19/22	.15 *	.33	.02	.33	.01	.34
17/20/23	a	.56	a	.44	a	.34
Constant	.88		.15		- .02	
F_2	4.5 ***		9.4 ***		6.5 ***	
R^2	.181		.102		.054	
N	191.		920.		1,256.	

* = p < .05
** = p < .01
*** = p < .001

a = omitted category
- = omitted from regression

APPENDIX TABLE 8

ANNUAL HOURS WORK OF NEW WORK FORCE ENTRANTS, MARRIED WOMEN 1968-72
(National Longitudinal Survey)

Eligible: Women who did not work in year prior to t, but did work in year prior to t+1 and who are married at t+1

Dependent Variables: = Annual hours worked in year prior to t+1: calculated by multiplying reported weeks worked by reported average hours per week; mean = 504

Independent Variables	Mean of Independent Variable	B	Beta
I. FIRST BIRTH			
(1) Prior Birth More Than One Year Ago	12%	-183	-.12
(2) Prior Birth Within Previous Year	2.12	120	.000
II. OTHER CHARACTERISTICS			
(1) Number of Siblings	3.3	-15	-.052
(2) White	91%	-287***	-.12***
(3) Year 1968	19%	39	.022
1969	24%	-63	-.039
1970	24%	-143*	-.089*
1971	33%	a	a
(4) Husband's Attitude Toward Wife's Working	3.1	-73***	-.15***
(5) SMSA Suburb Resident	32%	-105*	-.071*
(6) Grades Completed ≤ 8	7%	-336**	-.125**
9-11	30%	-270***	-.180***
=12	43%	-79	-.056
>12	20%	a	a
(7) Number of Children Under 18	1.2	-49	-.077
III. CURRENT MAJOR LIFE CHANGES			
(1) First Birth	5.3%	-321*	-.10*
(2) Birth, First or Later	14%	-140	-.071
(3) Marriage	21%	15	.0086
(4) School Drop Out	15%	10	.005
(5) School Reentry	1.1%	242	.036
(6) Remain in School	2.7%	-629***	-.15***
Constant Term		1484	

R^2 = .16 F = 6.02 N = 789

*p <.05
**p <.01
***p <.001
a = dummy variable, omitted category

APPENDIX TABLE 9

ANNUAL HOURS OF NEW ENTRANTS TO WORK, UNMARRIED WOMEN 1968-72
(National Longitudinal Survey)

Eligible: Women who did not work in year prior to t, did work in year priot to t+1, and who were not married, spouse present, in t+1

Dependent Variable: Annual hours worked in year prior to t+1; mean = 443

Independent Variables	Mean of Independent Variable	B	Beta
I. FIRST BIRTH			
(1) Prior First Birth	9%	-54	-.03
(2) Prior First Birth One Year Ago	2.7%	-33	-.01
II. SELECTED CHARACTERISTICS			
(1). Parental Socioeconomic Status	11.00	-28***	-.11***
(2) Birth Cohort 1952-54	70%	-251***	-.20***
1948-51	25%	-207**	-.15**
1944-47	5%	a	a
(3) White	86%	119**	.07**
(4) Year 1968	32%	49	.04
1969	34%	-115*	-.09*
1970	17%	-140**	-.09**
1971	17%	a	a
(5) Grades Completed ≤8	9%	-292***	-.14***
9-11	65%	-208***	-.17***
12	14%	-16	-.01
(6) SMSA Central City Resident	27%	13	.01
SMSA Suburb Resident	32%	a	a
Non SMSA Resident	31%	a	a
(7) Unemployment Rate	4.35%	-11	-.04
(8) Number of Children Under 18	13%	-185***	-.16***
(9) Years Out of Labor Force	1.26	11	.02
(10) Never Married	93%	-158	-.07
III. MAJOR CURRENT YEAR EVENT			
(1) First Birth	1.5%	-141	-.03
(2) Birth, First or Later	2.7%	-198	-.06
(3) Divorce	2.7%	113	.03
(4) Reenter School	2.2%	-505***	-.13***
(5) Drop Out of School	2.4%	-139**	-.10**
(6) Remain in School	57%	-605***	-.52***
Constant Term		1681	

R^2 = .33 F = 31.82 N = 1500

*p ≤.05
**p ≤.01
***p ≤.001
a = dummy variable, omitted category

APPENDIX TABLE 10

HOURLY WAGES OF NEW-ENTRANTS TO WORK, MARRIED WOMEN 1968-72
(National Longitudinal Survey)

Eligible: Women who did not work in year prior to t, did work in year prior to t+1 and who were married, spouse present, in t+1
Dependent Variable: Hourly wage in year prior to t+1; mean = $2.10

Independent Variables	Mean of Independent Variable	B	Beta
I. FIRST BIRTH			
(1) Prior First Birth	68%	-.11	-.05
(2) Prior First Birth One Year Ago	12%	.06	.02
II. SELECTED CHARACTERISTICS			
(1) Number of Siblings	3.34	-.02	-.06
(2) White	91%	-.08	-.02
(3) Year 1968	19%	-.07	-.03
1969	24%	.08	.03
1970	24%	.02	.01
1971	33%	a	a
(4) Husband's Attitude Towards Wife Working		-.03	-.04
(5) SMSA Suburb Resident	32%	.24**	.12**
(6) Grades Completed ≤8	7%	-1.27***	-.34***
9-11	30%	-1.08***	-.51***
12	43%	-.75***	-.38***
(7) Number of Children Under 18	1.16	.04	.05
III. MAJOR CURRENT YEAR EVENTS			
(1) First Birth	5.3%	-.50*	-.12*
(2) Birth, First or Later	14%	.23	.08
(3) Marriage	21%	.05	.02
(4) Reenter School	1.1%	-.36	-.04
(5) Drop Out of School	15%	.18	.06
(6) Remain in School	2.7%	-.47	-.08
Constant Term		2.98	

R^2 = .24 F = 9.53 N = 600

*p ≤.05
**p ≤.01
***p ≤.001
a = dummy variable, omitted category

APPENDIX TABLE 11

HOURLY WAGES OF NEW ENTRANTS TO WORK, UNMARRRIED WOMEN (1968-72)
(National Longitudinal Survey)

Eligible: Women who did not work in year prior to t, did work in year prior to t+1, and who were not married, spouse present in t+1
Dependent Variable: Hourly wage in year prior to t+1; mean = $1.72

Independent Variables	Mean of Independent Variable	B	Beta
I. FIRST BIRTH			
(1) Prior First Birth	9%	.09	.03
(2) Prior First Birth One Year Ago	2.7%	-.11	-.02
II. SELECTED CHARACTERISTICS			
(1) Parental Socioeconomic Status	11.00	-.002	-.006
(2) Birth Cohort 1952-54	70%	-.22*	-.12*
1948-51	25%	.05	.03
1944-47	5%	a	a
(3) White	86%	-.05	-.02
(4) Year 1968	32%	-.16*	-.09*
1969	34%	-.03	-.02
1970	17%	.02	.01
1971	17%	a	a
(5) Grades Completed ≤8	9%	-1.11***	-.37***
9-11	65%	-.75***	-.43***
12	14%	-.59***	-.25***
(6) SMSA Central City Resident	27%	.35***	.18***
SMSA Suburb Resident	32%	.22***	.13***
Non SMSA Resident	31%	a	a
(7) South	28%	-.11*	-.06*
(8) Unemployment Rate	4.35%	.02*	.05*
(9) Number of Children Under 18	13%	-.05	-.03
III. MAJOR CURRENT YEAR EVENTS			
(1) First Birth	1.5%	-.15	-.02
(2) Birth, First of Later	2.7%	.03	.01
(3) Divorce	1.5%	-.01	-.003
(4) Reenter School	2.2%	.07	.01
(5) Drop Out of School	24%	.10	.05
(6) Remain in School	57%	-.15*	-.09*
Constant Term		2.48	

R^2 = 30 F = 27.02 N = 1500

*p ≤.05
**p ≤.01
***p ≤.001
a = dummy variable, omitted category

METHODOLOGICAL APPENDIX

Estimating Flow Models: Transition Probabilities

The transition probability approach relies on multivariate models which partition the variance in binary dependent variables. In every case the dependent variable is assigned a one if the woman reports moving to a new status at year t+1, compared to her status at year t. A zero is assigned if the woman remains in the same status at year t+1 as she was in at year t. For example, the schooling exit dependent variable is one if a woman moves out of full-time school enrollment by t+1, given that she was fully enrolled at t. The exit variable is set equal to zero if she remains fully enrolled at t+1. Similarly, if a married woman divorces, the dependent variable is set to one. If she remains with her husband at t+1, the dependent variable is set to zero.

The definition of eligible observations is critical. For example, a woman is eligible for inclusion in the schooling exit sample if she reports being enrolled full-time in school at the start of any year. A woman is eligible for the school re-entry sample if she reports being <u>not</u> enrolled full-time in school at the start of any year. The observational unit is a person-year, which always includes status information both at the start and the end of the year for a particular woman. Given information on status at two points in time, it is possible to define status change variables, such as the dependent variable (e.g., school exit or reentry), but also any number of independent variables.

Both level and change variables are included as predictors. However, for binary status variables (e.g., enrolled full-time in school vs. not enrolled full-time in school) care must be exercised to avoid redundancy. To represent level alone, two dummy variables are defined but only one of them

is included in the equation:

A. Two level measures: (use only one)

(1) Enrolled full-time in school in year t

(2) Not enrolled full-time in school in year t

If change variables are preferred, four dummy variables are defined and three are used:

B. Four change measures: (use only three)

(1) Exit from school between year t and year t+1

(2) Remain in school

(3) Reenter school

(4) Remain out of school

Note, however, that to use three change variables implicitly specifies level, so that both level and change are completely described (e.g., if one either exits from school or remains in school, then one necessarily was in school at t). Including one level together with three change measures is therefore redundant and would cause matrix inversion problems. Care was taken to avoid doing so.

The transition probabilities strategy has taken advantage of the panel data to pool observations. For example, there are five waves of the NLS panel, each woman has four defined person-years: 1968 to 1969, 1969 to 1970, 1970 to 1971, and 1971 to 1972. It is possible for all four of these person-years to be included as observations in a single equation. For example, if a woman is single in 1968, 1969, 1970, and 1971, all four of her person-years would be eligible for inclusion in the first marriage equation.

In ordinary least squares estimation, autocorrelated disturbances do not bias parameter estimates, but they do bias estimates of the standard errors of parameter estimates. Typically the standard errors are biased downwards. One

gets the impression that one's parameter estimates are more efficiently estimated than is truly the case. The heart of the problem is that if a single woman contributes up to four person-year observations, there is something less than four full degrees of freedom in those four observations. Autocorrelation thus typically leads to improper inclusion of variables in an equation based on upwardly biased t-statistics.

Note, however, that parameter estimates with pooling are still unbiased. Moreover, the degree of pooling in these equations is relatively small, since typically fewer than four person-year observations from a single woman are pooled.[1] Where pooling is negligible or absent, our results appear comparable to results with the most pooling. Pooling is most frequent in analyses of the first marriage, marital split, high school drop-out and public assistance entry. In these cases care has been used to be conservative in the use of significance tests.

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1. In the education equations, reentry is estimated with no pooling, and the high school and college graduate exit equations should have virtually no pooling. Where transition rates are high (e.g., over 20 percent), pooling is minimized, as in the re-marriage, first birth (married women), college drop-out, work entry, work exit and public assistance exit equations. The hours and wage equations also minimize pooling.

Dichotomous Dependent Variables

The ideal model form for a binary dependent variable is the logit or a related model. The linear model creates heteroscedartic disturbances and the more basic problem of a misspecified model, especially at the extremes. A maximum-likelihood logit model solves these problems, but it creates other problems:

(1) cost: especially (a) with large data files such as the ones we are using, and (b) with a large number of independent variables and (c) with the likelihood of one or two reestimates of the equation, the very substantial estimation costs must be weighed against the benefits of improved information.

(2) complexity: results of ordinary least squares are easier to understand and communicate by an order of magnitude than maximum likelihood logit estimates. Until the use of maximum likelihood logit grows more familiar, this must be weighted as a cost, especially in policy research.

Goodman has argued convincingly (1976) that ordinary least squares provide virtually identical information as maximum likelihood logit, especially

(1) where n is large and

(2) where the mean of the dependent variable is not too close to the bounds. In all cases, we use an n that is large by Goodman's standards and in most cases the means of our dependent variables are far enough from the bounds by his standards (i.e., between .20 and .80). Caution is warranted for the few equations in which the mean was close to zero (e.g., school re-entry, public assistance entry, and first birth to unmarried women).

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