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Using materials from the National Longitudinal Surveys of Labor Market Experience of Young Women, this article analyzes postnatal labor force participation data for married husband-present women over a 15-year period in order to study factors associated with the length of time out of the labor force following the first birth. Survival analyses and proportional hazards models indicate that human capital variables (education, prebirth work experience, and income) and marital and birth-timing variables (age at first marriage and age at first birth) have significant estimated effects on the rate and timing of reentry into the paid labor force.

Human Capital, Marital and Birth Timing, and the Postnatal Labor Force Participation of Married Women*

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Since World War II the percentage of married women in the U.S. labor force has steadily increased, resulting in unprecedented numbers of women with dependent children entering the paid labor force. An important component of this trend has been the tendency of married women to return to the labor force relatively quickly after giving birth. Labor force participation rates for mothers with infants have nearly doubled since 1970, and by 1986 over half of all married women with infants were in the paid labor force (O'Connell and Bachu, 1987).

The question posed by the present research is straightforward: What factors affect the length of time spent out of the paid labor force following the first birth? Information concerning the factors affecting the labor force participation of married women with young children is important from a

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policy approach as well as from a theoretical perspective. Recent increases in the number of mothers in the paid work force have made it difficult for the suppliers of child care services to keep up with demand, as well as making employers uncertain as to the long-term work plans of their female employees. Empirical data concerning how various factors affect the timing and rate at which women reenter the labor force following birth would be valuable to both groups, allowing for a better understanding of current trends and more accurate forecasts of future labor force participation patterns.

In recent years there have been two contradictory demographic trends that will affect future rates of postnatal labor force participation. Women have been obtaining more education (Bruno, 1984), higher incomes, and more prebirth labor force experience (U.S. Bureau of the Census, 1987). These human capital factors have in general been positively related to female postnatal labor force participation. At the same time, women have been delaying marriage, delaying childbirth, and extending the length of the interval between marriage and first childbirth (Rogers and O'Connell, 1984). Such marital and birth timing factors have historically been negatively related to the labor force participation rates of married women in general.

How will these two trends combine to affect the postnatal labor force participation of married women? An answer to this question is crucial to understanding the labor force participation of married women with infants. If the trends counteract each other, it is reasonable to expect a continuation and perhaps stabilizing of the relatively high labor force participation rates for married women that have been observed over the past several decades. If these trends do not counteract each other, there are two possibilities. First, if the combined effect of the human capital factors is greater than that of the marital and birth timing factors, we can expect to see even higher levels of labor force participation for married women with young children in the future. If, on the other hand, the marital and birth timing factors have a greater effect, we would expect a decline in the labor force participation rates of these women.

The present study focuses on married husband-present women as they move through a sequence of crucial life cycle stages, from their first live birth until the start of the second pregnancy or until their first child reaches age five. The purpose of this research is to develop a multivariate proportional hazards model of the rate and timing of reentry into the paid labor force following the birth event. This analysis will be especially concerned with the estimated relative effects of human capital and marital and birth

timing factors. The presentation begins with a discussion of factors that previous theory and research suggest may affect the postnatal labor force participation of married women.

HUMAN CAPITAL AND LABOR SUPPLY FACTORS

Studies of female labor force participation have often adopted a household labor supply approach (see, for example, Bowen and Finegan, 1969; Cain, 1966). This model postulates four sets of factors believed to affect labor force participation: total resource constraint, market wage, home wage, and taste for market work.

Total resource constraint. The labor supply model suggests that in households in which income of other family members (principally the husband) is high, the wife will be less likely to be in the labor force, since such households are able to "buy" more leisure or other nonmarket time for the wife. This is sometimes termed the "total resource constraint." Mott and Shapiro (1977) found that women whose husbands had relatively high incomes had consistently lower labor force participation rates than did women in the lower income groups. Waite (1980) observed an apparent negative effect of husband's income on the wife's labor force participation from the time of birth of the couple's first child until the birth of their last child. McLaughlin (1982) found that women from relatively high-income households were more likely to be in the labor force during pregnancy but somewhat less likely to be in the labor force in the months immediately following birth, and Greenstein (1986) noted that women from high-income households were generally less likely to be in the labor force after the first child was born.

Market wage. The labor supply model also posits an "opportunity cost," or the cost (in terms of forgone income) of the wife's not entering the labor force. The model suggests that, *ceteris paribus*, the greater a wife's earning potential, the more likely she is to be in the labor force. This factor is referred to as the "market wage" by Cain (1966). Mott and Shapiro (1977) found that perinatal labor force participation was positively related to potential wage rate; Waite (1980) found that potential wage rate (operationalized as the wife's current or most recent hourly rate of pay) was positively related to labor force participation at all three stages of the family life cycle she studied. McLaughlin (1982) found that prebirth work experience was positively related to perinatal labor force participation.

Since education is expected to increase a woman's market wage, and thus increase her opportunity cost of staying out of the paid labor market, it would follow that better-educated women should return to the paid labor force more quickly and in greater numbers than should women with less education. Both McLaughlin (1982) and Greenstein (1986) found that better-educated women were more likely to be in the labor force following childbirth than were less-educated women. Lebowitz (1974), on the other hand, has argued that education may increase a wife's productivity in child care at roughly the same rate that it raises her market wage. Thus, while the market supply of child care may be an acceptable substitute for child care provided by less highly educated mothers, it is a less acceptable substitute for care provided by a highly educated mother. Hill and Stafford (1974) suggested that well-educated parents invest the majority of the wife's time to child care, particularly when the children are young. As the children grow older, the parents switch from time-intensive investments to capital-intensive investments (i.e., from care provided by the mother to child care purchased in the market). Both of these arguments imply that well-educated women would return to the paid labor force more slowly than would less-educated women.

Home wage. For the typical married-couple household, however, there are also costs involved if the wife does enter the labor force. Cain refers to this cost as "home wage," which is determined by the wife's home skills and the household's demand for those skills. The most obvious factor for married couples with young children, of course, would be costs involved in child care. Age of the youngest child in the household typically has a strong negative apparent effect on the wife's labor force participation. This apparent effect probably reflects the problems of obtaining satisfactory child care services for infants and young children, as well as social norms regarding ages of children at which women feel it is appropriate to enter the labor force and place the care of their children in someone else's hands. Availability of child care has been shown to be an important factor in labor force participation by Powers and Salvo (1982) and by Greenstein and Greenstein (1986). Stolzenberg and Waite (1984) concluded that both availability and cost of child care were related to mothers' labor force participation.

There are many other possible costs associated with the wife's labor force participation as well, including transportation, clothing, and various household support structures. Studies in this area have typically found that

the labor force participation of wives was negatively related to home wage as indicated by age of the youngest child in the household.

Taste for market work. In the labor supply model, the wife's attitudes toward the employment of married women outside the home is seen as having a positive effect on her labor force participation. There have been several studies that have systematically estimated the effects of such tastes for market work on entry into the labor force. Dowdall (1974) studied a sample of married women between the ages of 15 and 64 with at least one child; her indicator of taste was a six-item scale measuring attitudes toward married women in the work force. Her findings indicate that this attitudinal variable had a greater effect on the wife's labor force participation than did education, age of youngest child, or husband's income (all of which had statistically significant estimated effects). Although it was not the primary focus of their research, Waite and Stolzenberg (1976) also found a significant estimated effect of attitude toward married women in the work force on female labor force participation. In a study of married women with infants, Avioli (1985) found that attitudes toward future employment (along with prior work experience) best discriminated employed wives from housewives, and Greenstein (1986) found that attitude toward married women in the work force had the strongest apparent effect on perinatal labor force participation of any of the factors in his model.

Previous labor force experience. Prebirth work experience can be conceptualized in several different ways. Most simply, it can be seen as an indicator of market wage, since labor force experience is positively related to expected income level. Consequently, we would expect a positive effect of prebirth work experience on postnatal labor force participation. As Greenstein (1986) has argued, however, we must take into account the social-psychological aspects of marital decision making with regard to the employment of wives. Such issues are presented especially well by Waite (1980) in her discussion of how the process used by married couples to make labor force participation decisions varies over the stages of the family life cycle.

From a social-psychological standpoint, prebirth work experience can be separated into two factors: labor force experience prior to marriage, and labor force experience after marriage. It is reasonable to assume that while these two components may have similar effects on market wage (although it could be argued that marital labor force experience might have somewhat more effect because of its recency) they may not have the

same effect in terms of the decision-making structure of the marital dyad. It may be that premarital work experience has little or no effect on the decision-making process because it occurs outside the marital decision-making context. Marital labor force experience, on the other hand, may have a direct effect on the normative aspects of the marital decision-making structure. Wives and husbands may not feel that the wife's premarital work experience is directly relevant to making decisions about the wife's postnatal labor force participation, but that the wife's labor force participation following their marriage but preceding her pregnancy may be quite relevant since it establishes a normative pattern. If, as Waite (1980) suggests, normative expectations dictate the employment or other productive activity of married women prior to first birth, it is possible that prebirth work experience may not enter into such decision making concerning labor force participation after children arrive.

To further complicate the issue, it is almost certain that some couples plan for the wife to have extensive prebirth labor force experience in order to build up savings so that she might stay out of the paid labor force indefinitely following the birth of their first child. For such couples, prebirth labor force experience and income might actually be negatively related to the probability of postnatal employment. Another possible confounding relationship is presented by Waite (1980, p. 278), who argues that "current income or earning potential early in the life cycle may have little impact on (labor force decisions) because it does not represent permanent income adequately."

MARITAL AND BIRTH-TIMING FACTORS

Another class of factors that has been identified as having apparent effects on postnatal labor force participation are marital and birth-timing factors. Several writers (for example, Sweet, 1973) have argued that age at first marriage, age at first birth, and length of first birth interval (that is, the time interval between first marriage and first five births) should have effects on labor force participation. The direction of these effects, however, is not clear from previous theory or research. Sweet argued that such timing factors should be positively related to labor force participation rates because women who married later and who had longer first birth intervals would have had more opportunity to develop (a) a consumption pattern predicated on income from the wife's market work, (b) more favorable attitudes toward market work, and (c) a higher level of market wage through work experience.

An alternative model would suggest that women who marry relatively late, those who bear their first child relatively late, and those who have relatively long first birth intervals should be less likely to be in the paid labor force following birth. Such women will be likely to have had more labor force experience and therefore have greater resources with which to remain out of the labor force following birth (at least temporarily) and have expectations of relatively high incomes when they do return to the labor force, which would make it practical for them to remain out of the labor force for a longer period following their first birth. The empirical evidence on these points is mixed.

Age at first birth. Moore and Hofferth (1979) found that women who first gave birth in their teens were more likely to be in the paid labor force than were women who delayed their first birth; using materials from the National Survey of Family Growth, Bumpass and Sweet (1980) found a strong negative relationship between age at first birth and postnatal labor force participation. Hofferth and Moore (1979) noted that when a number of relevant variables were adjusted, age at first birth was positively related to work experience and earnings, suggesting that "women who work either before marriage or between marriage and the arrival of a first child do build up substantial human capital" (Hofferth and Moore, 1979, p. 809) compared with women with no prebirth work experience.

On the other hand, the U.S. Census Bureau reported that age at first birth was *positively* related to postnatal labor force participation for data collected in June 1986. They noted that 51.2% of women aged 18-24 at their first birth were in the paid labor force within a year of the birth event; the comparable figure for women aged 30-44 at first birth was 65.2%. The discrepancy in these findings may lie in the fact that the Current Population Survey analyses did not control for confounding factors such as education, income, and previous labor force experience.

Age at first marriage. In a study of white women born 1925-29, Elder and Rockwell found that age at marriage was negatively related to length of time out of the paid labor force. However, Greenstein (1986) did not observe an apparent effect of age at first marriage on labor force participation in the months surrounding the first birth.

First birth interval. Groat et al. (1976) found that women with longer first birth intervals were more likely to be in the paid labor force, and O'Connell and Bachny (1987) found that women who deferred first birth

were more likely to be in the labor force within 12 months of the birth event.

All of these studies demonstrate that the relationship between marital and birth timing factors and postnatal labor force participation is highly complex. Such timing factors almost certainly combine with prebirth labor force experience, human capital factors, and household resources to affect the length of time the woman remains out of the paid labor force.

OTHER FACTORS

Region of residence. A number of studies have shown that postnatal labor force participation rates may vary by region of U.S. residence. Data from the National Survey of Family Growth (Bumpass and Sweet, 1980) indicate that women in the South and West are more likely to return to work than are women in North Central or Northeast regions.

Urbanness of residence. Bumpass and Sweet (1980) noted that women living in metropolitan areas have significantly higher rates of postnatal labor force participation than women residing in nonmetropolitan areas.

Race. Historically, black women have had substantially higher rates of labor force participation than white women. This relationship may be changing, however. Data from the June 1976 Current Population Survey indicate that black women were about half again as likely as were white women (43.2% of black women and 28.6% of white women) to be in the labor force within 12 months of their first live birth. The June 1986 Current Population Survey, however, shows a much smaller (unadjusted) differential: 49.7% of white women and 51.1% of black women were in the labor force within 12 months of the birth event.

METHOD

Sample. The data used in this study are drawn from the National Longitudinal Surveys of Labor Market Experience of Young Women, a panel study of 5,159 women between the ages of 14 and 24 when first interviewed in 1968. These women were interviewed 13 times (eight personal interviews and five telephone interviews) from 1968 to 1985. The initial sampling procedure involved a national multistage probability

sample. The data were collected by the U.S. Bureau of the Census and the Center for Human Resource Research of Ohio State University.

The specific population under study in the present research is the set of all married husband-present women who experienced a first live birth between 1968 and 1983. Data for a particular respondent were included if she was first married after the 1968 interview, had at least some labor force experience after her marriage but prior to her first live birth, was living with her spouse throughout the study, and had no marital disruptions during the study. I constructed work and marital histories for each respondent starting with the first interview of the series (1968) until the beginning of her second pregnancy that resulted in a live birth or until the first child reached age five, whichever came first.

Of the 5,159 women in the full sample, 3,441 had not married by the time of the first interview; of these women, 1,343 had a first marital birth by the 1983 interview. A total of 736 met all of the inclusion qualifications and provided complete data on all variables, and were included in our analyses. There was an overall attrition rate of 31.3% for all respondents over the full 15-year period in the full sample.

Superficially, our data set is similar to that studied by McLaughlin (1982) and by Mott and Shapiro (1977; Shapiro and Mott, 1979) but there are significant differences. First, the earlier studies had access only to the 1968-1973 waves of the NLS data; we make use of the 12 waves collected from 1968 through 1983. Second, I limited the data set to women who were married and living with their husbands throughout the study¹; and third, I eliminated data for women who had multiple births and data beginning with the second pregnancy² that resulted in a live birth or after the first child reached age five.

Measurement. The dependent variable in these analyses is the length of time the wife spend out of the paid labor force following the birth of her first child. I employ the conventional measure of labor force participation (which categorizes an individual as being in the labor force if during the survey week she was either currently at work, with a job but not at work, or unemployed and looking for work) to define labor force status. The amount of time spend out of the paid labor force was determined by calculating the length of time since the birth event until the first interview in which the wife reported that she was in the labor force.³

Prenatal and marital prebirth work experience were measured by computing the average number of weeks per year the woman was in the paid labor force (without regard to number of hours worked per week or

type of employment (ough) during each of these two periods. Thus the average number of weeks per year in the paid labor force could range from 0 to 52, although all of the women in the study had at least some marital prebirth work experience.

Occupation was coded using the Alphabetical Index of Occupations and Industries from the 1960 Census of Population. Duncan's SES scale was employed as an indicator of occupational prestige.

Attitude toward married women in the work force was assessed using a nine-item summated Likert-type scale.⁴ These items were (1) "Modern conveniences make it possible for a wife to work without neglecting her family," (2) "A woman's place is in the home, not in the office or shop" (reversed), (3) "A job provides a wife with interesting outside contacts," (4) "A working wife feels more useful than one who doesn't hold a job," (5) "A wife who carries out her full family responsibilities doesn't have time for outside employment" (reversed), (6) "The employment of wives leads to more juvenile delinquency" (reversed), (7) "Working wives help to raise the standard of living," (8) "Working wives lose interest in their homes and families" (reversed), and (9) "Employment of both parents is necessary to keep up with the high cost of living." The internal reliability of this scale was .762 as measured by Cronbach's α coefficient.

Husband's most recent income and wife's most recent income were converted into 1967 dollars using the Consumer Price Index coefficients (U.S. Bureau of the Census, 1987). Race, urbanness of residence, and region of residence were coded as dummy variables (0 = black, 1 = white; 0 = not in SMSA, 1 = in SMSA; 0 = not residing in South, 1 = residing in South; data on region of residence was limited to this dichotomy).

ANALYSIS AND RESULTS

As Teachman (1982, 1983) has pointed out, analyses of event histories—in particular, studies of the timing of events—have often employed inappropriate statistical techniques. Using the current research as an example, a typical analysis of factors possibly affecting reentry into the paid labor force might treat the length of time out of the paid labor force following the birth event as a dependent variable in a multiple regression analysis. Such an analysis, of course, would be limited only to those women who actually did reenter the labor force, since no estimate of time out of the labor force would be possible for those women who were still out of the labor force at the end of the observation period. Consequently,

this type of analysis would be biased toward observations with relatively short durations. One typical solution to this problem has been to use some minimum duration as a cutoff point, but this creates problems of differing estimated effects across cohorts as well as the arbitrary selection of the length of the minimum duration.

Another solution has been to divide the observation period into a number of discrete time intervals, then focus on the probability of the event occurring within each successive interval. This approach also creates problems of analysis and interpretation: the length of the observation interval is arbitrary, and it may well be that the effects of the independent variables are not constant across intervals of different lengths.

Survival analysis and proportional hazards models offer an elegant solution to these problems. Truncated observations (in this study, women who left the study prior to the last observation period) or censored observations (those women who had not reentered the labor force at the last observation period), as well as observations on which complete data have been gathered, can be used to calculate a survival score for that observation. Such scores begin at zero and are incremented for each observation whose survival time is known to be lower, and decremented for each observation whose survival time is known to be greater. A censored observation is assumed to have a greater survival time than a noncensored observation, since it is known to have survived at least as long as its observed survival time.

In order to be able to observe possible nonmonotonic effects of the variables on length of time spent out of the paid labor force, I categorized each of the variables in the model into a series of dummy variables, with one category for each variable being omitted and treated as part of the baseline group. The variables and their categories are in Table 1.

Survival analyses. As a first step, I calculated the survival scores for each of the independent variables in the model, then used the Lee-Desu (1972) *D* statistics to test the null hypothesis that the subgroup samples were drawn from the same survival distribution. A statistically significant *D* suggests that the independent variable in question is related to the length of time the woman stayed out of the labor force following her first birth. Table 1 summarizes these findings, along with the median time (in months) out of the paid labor force following the birth event for the women in each subgroup.

TABLE 1
Median Number of Months Out of Paid Labor Force

Variable	Categories	Median months out of paid labor—force
Average annual premarital work experience	<26 weeks	18.41
	26-50 weeks	19.24
Average annual postmarital work experience*	<26 weeks	26.23
	26-50 weeks	19.84
Current or most recent occupation	Over 50 weeks	15.59
	Prof. technical	17.53
Prestige of current or most recent occupation	Clerical	18.98
	Operatives	19.20
Race*	Service workers	20.20
	All other	22.58
Age at first marriage	17-45	19.88
	45-61	17.42
Interval between marriage and first birth	62-90	19.57
	Less than 18 months	18.24
Wife's attitude toward employment of married women	18-24 months	18.39
	More than 48 months	19.38
Wife's education at time of interview	Favorable	17.08
	Neutral	20.09
Wife's most recent annual income* (in 1967 dollars)	Unfavorable	23.26
	0-11 years	21.60
Husband's most recent annual income* (in 1967 dollars)	12-15 years	21.45
	16 or more years	17.47
Urbanness of residence	Under \$2,000	28.94
	\$2,000-\$4,000	17.41
Region of residence	Over \$4,000	16.91
	Under \$1,000	18.57
Region of residence	\$1,000-\$7,000	16.97
	Hot. in SMSA	23.28
Region of residence	Hot. in SMSA	18.64
	Hot. in South	18.69
Region of residence	Hot. in South	18.76
	Hot. in South	18.95

*Survival times significantly different by Lee-Desautel.

As can be seen, five of the independent variables in the model are related to the length of time the woman stayed out of the paid labor force following her first birth. White women, women with relatively low levels of prebirth marital work experience, women with relatively unfavorable attitudes toward the employment of married women, women with rela-

tively low incomes, and women whose husbands had relatively high incomes had significantly longer absences from the labor force.

Proportional hazards analysis. These survival analyses, however, are bivariate tests and do not take into account the simultaneous effects of the other variables in the model. To get a more complete picture of the factors affecting length of time out of the paid labor force, we employed a proportional hazards approach. Proportional hazards models are concerned with two related functions, the survivorship function $S(t)$ and the hazards function $\lambda(t)$. In the present research, the survivorship function gives the probability that a given woman has not reentered the paid labor force by time t . The hazard function gives the probability that the woman will reenter the paid labor force at time t (conditional, of course, on that woman not having reentered the labor force prior to time t).

To get an idea of the survivorship function, we can plot the proportion of women who had not reentered the labor force (at three-month intervals). The survival curves for all of the women in the study are presented in Figure 1. Overall, 40.1% of the women in the study had returned to the labor force within 12 months of the birth event. At the end of the 60-month period, 21.5% of the women had not reentered the labor force. For all women in the study, the median length of time out of the paid labor force following the first birth was 18.8 months.

Another indication of the survivorship functions can be obtained by an inspection of the survival functions for women with varying levels of marital prebirth work experience. Figure 2 shows how distinctly different these three functions are; in fact, the median survival time (that is, time spent out of the labor force following the first birth) for the high work experience group is 15.6 months, while the comparable figure for the low prebirth work experience group is 26.2 months.

The proportional hazards analysis is complicated by the fact any one of the three marital and birth timing variables (age at marriage, age at first birth, and interval between marriage and first birth) is a linear combination of the other two; thus, only two of these three variables may be included in any one model. Consequently, we estimated the coefficients for three separate proportional hazards models. Model I excludes interval between marriage and first birth; Model II excludes age at first marriage; and Model III excludes age at first birth. Otherwise, the three models contain the same variables, and yield similar results.

These three proportional hazards models using combinations of the 14 independent variables mentioned here were used to estimate the net effect

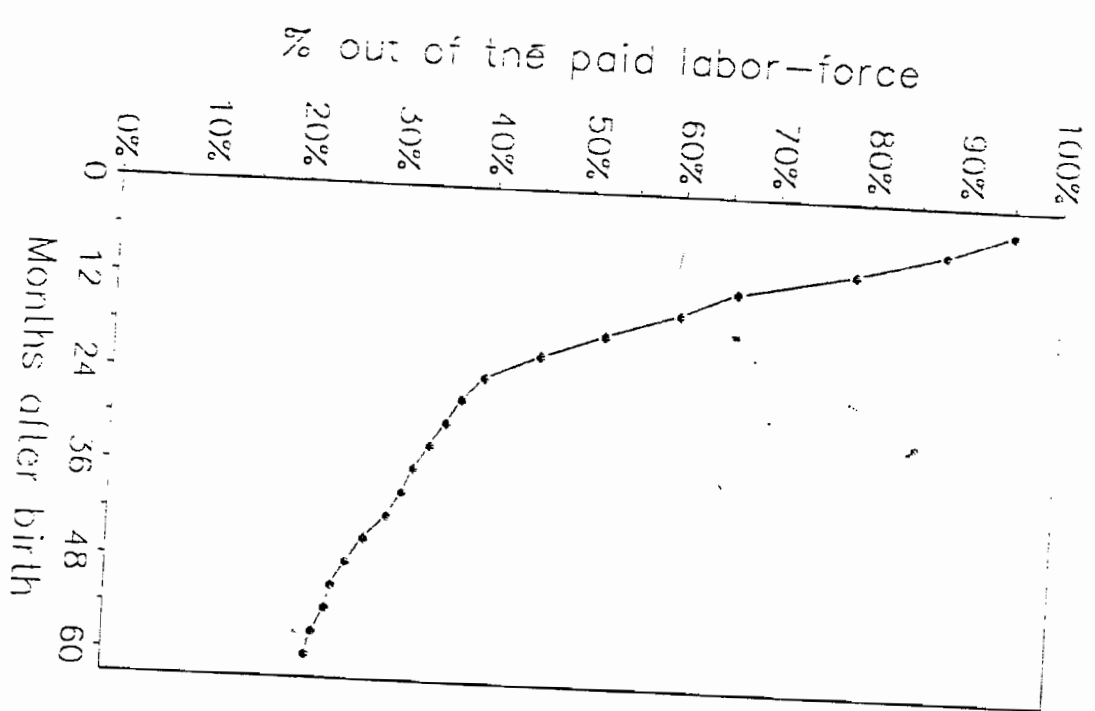


Figure 1: Percentage of Women Out of the Labor Force Following the First Birth (all respondents)

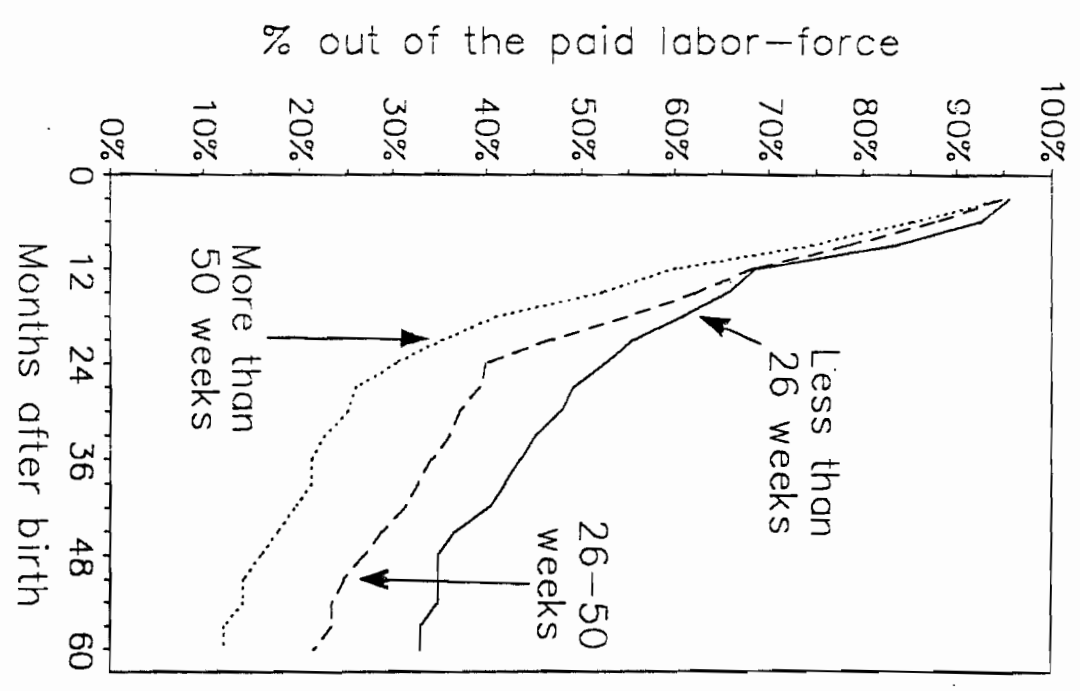


Figure 2: Percentage of Women Out of the Labor Force Following the First Birth by Level of Postnatal Pre-birth Work Experience

of each of the variables in the model on the baseline rate and timing of reentry into the paid labor force following the birth event.

The results of these three models are presented in Table 2. Proportional hazards models are usually estimated using multiplicative terms rather than the additive terms typically employed in multiple regression models. Thus a coefficient of 1.0 indicates no effect of that variable on the rate or timing of reentry into the labor force; values greater than 1.0 indicate that the variable increases the probability of reentering the labor force at each point in time. A coefficient less than 1.0 indicates that the variable decreases the probability of reentering the labor force. The likelihood ratios for the models presented in Table 2 indicate that each of the models is a significant improvement over a model in which all of the variables are assumed to have no effect.⁴

Since the results for the three models are nearly identical, they can be summarized quite simply. Nine of the 14 variables have statistically significant estimated effects on the rate and timing of reentry into the paid labor force. Women with relatively high levels of marital prebirth labor force experience, women in relatively prestigious occupations, black women, women who marry at an early age, women who give birth at an early age, women with favorable attitudes toward working wives, well-educated women, women with relatively high incomes, and women whose husbands had relatively low incomes were more likely to reenter the paid labor force at each point in time.

COMPARISONS OF HUMAN CAPITAL AND TIMING VARIABLES

To estimate the relative effects of the human capital variables (prebirth work experience, income, and education) and the marital and birth timing factors (age at marriage, age at first birth, and interval between marriage and first birth) we computed relative risk factors by multiplying the appropriate hazards coefficients from Table 2. Since the birth interval factor does not have a significant estimated effect on the rate and timing of reentry into the labor force in either Models II or III, we will only report the results from Model I. The relative risk factor (relative likelihood of entering or reentering the paid labor force at any point in time) for the women who delayed marriage and first birth the longest would be $(.91)(.81)$, or .737. In other words, for these women the risk of reentering the paid labor force is about three-fourths that of the baseline group.

For women with the highest levels of the human capital variables (marital prebirth work experience, income, and education) the risk factor

TABLE 2
Proportional Hazards Coefficients for
Length of Time Spent Out of the Paid Labor Force

Variable	Model I	Model II	Model III
Premarital work experience			
26-50 weeks	.87	.84	.85
Over 50 weeks	.89	.84	.89
Postmarital work experience			
26-50 weeks	1.25	1.20	1.23
Over 50 weeks	1.78*	1.72*	1.76*
Current or most recent occupation			
Professional	1.43	1.57	1.42
Technical	1.18	1.09	1.38
Operatives	1.37	1.31	1.38
Sales	1.19	1.31	1.19
Prestige of current or most recent occupation			
1-6	1.01	1.00	1.01
7-9	.66*	.64*	.66*
10-12	1.01	1.00	1.01
13-15	.66*	.64*	.66*
16-19	1.01	1.00	1.01
20-22	.66*	.64*	.66*
23-25	1.01	1.00	1.01
26-28	.66*	.64*	.66*
29-31	1.01	1.00	1.01
32-34	.66*	.64*	.66*
35-37	1.01	1.00	1.01
38-40	.66*	.64*	.66*
41-43	1.01	1.00	1.01
44-46	.66*	.64*	.66*
47-49	1.01	1.00	1.01
50-52	.66*	.64*	.66*
53-55	1.01	1.00	1.01
56-58	.66*	.64*	.66*
59-61	1.01	1.00	1.01
62-64	.66*	.64*	.66*
65-67	1.01	1.00	1.01
68-70	.66*	.64*	.66*
71-73	1.01	1.00	1.01
74-76	.66*	.64*	.66*
77-79	1.01	1.00	1.01
80-82	.66*	.64*	.66*
83-85	1.01	1.00	1.01
86-88	.66*	.64*	.66*
89-91	1.01	1.00	1.01
92-94	.66*	.64*	.66*
95-97	1.01	1.00	1.01
98-100	.66*	.64*	.66*
Age at first marriage			
Under 18 years	2.44*	2.44*	2.53*
18-20 years	1.22	1.27	1.24
21-23 years	.87	.87	.82
24-26 years	.91	.91	.82
Over 26 years	1.01	1.01	1.01
Age at first birth			
23-26 years	.92	.76*	.88
Over 26 years	.81	.61*	.91
Interval to first birth			
18-48 months	1.16	1.16	.88
More than 48 months	1.16	1.16	.91
wife's attitude			
Neutral	1.13	1.08	1.14
Favorable	1.51*	1.48*	1.51*
wife's education			
12 years	1.13	.97	1.17
13-15 years	1.53	1.55	1.54
16 or more years	1.83*	1.50	1.82*
wife's last income			
\$2-4,000	1.38*	1.36*	1.40*
Over \$4,000	1.35*	1.35*	1.35*
husband's income			
\$4-7,000	1.00	1.00	1.00
Over \$7,000	1.07*	1.07*	1.06*
Urbanness of residence			
In SMSA	.99	.93	1.00
In non-SMSA	1.00	1.00	1.00
Reception of residence			
In South	.95	1.00	.95
In non-South	1.00	1.00	1.00
Model χ^2	931.20	833.66	931.16
log-likelihood	-2520.69	-2521.88	-2520.84

*Coefficients that are significantly different from unity.

is $(1.78)(1.55)(1.83)$, or 5.05; that is, the relative risk of reentering the paid labor force is nearly five times as great as that of the baseline group.

To find out whether these two estimated effects are likely to counter-balance, we merely multiply the entire set of five coefficients, with the resulting risk factor of 3.72. Women who delay marriage and childbirth

but have relatively high levels of prebirth work experience, education, and income are nearly four times as likely to reenter the paid labor force at any point in time as are women in the baseline group. If the two estimated effects (human capital versus marital and birth timing) canceled each other, we would expect to find a risk factor of approximately 1.00.

DISCUSSION

The results reported in Table 2 indicate that both human capital variables (prior work experience, education, and income) and marital and birth timing variables (age at first marriage and age at first birth) have sizable estimated effects on the rate and timing of reentry into the paid labor force following the first birth, net of all other variables in the model. Women with relatively high incomes, relatively high levels of prebirth work experience, and relatively high levels of education reenter the paid labor force following their first birth more quickly and in greater numbers than do women with relatively low incomes, relatively low levels of prebirth work experience, and relatively low levels of education.

On the other hand, women who delay marriage and delay first marital birth tend to reenter the labor force less quickly than do women who marry and bear their first child at relatively young ages. There are several possible factors which may combine to produce this observation. Women who marry early and bear their first child at a relatively young age are more likely to be employed in low-paying jobs with restricted maternity leave benefits, thus necessitating a relatively early return to the labor force; women who delay marriage and first birth are more likely to have postsecondary education, higher-paying jobs, and better benefit structures to facilitate their absence from and return to work following the birth event. Another factor may be that because they tend to work in lower-paying jobs, women who marry and bear their first child at a relatively young age must, for financial reasons, return to work more quickly. It may be that because they tend to work in high-skill occupations, women who delay marriage and first birth are more confident of their ability to find employment after leaving the labor force for an extended period of time, and therefore delay their return. Finally, some women who delay marriage and first birth may have done so in an effort to accumulate the financial wherewithal to allow an extended absence from the paid labor force following the birth event.

The relative risk factors computed from the proportional hazards coefficients suggest that the net effect of the human capital variables is stronger than that of the marital and birth timing factors. Since current trends indicate that women are deferring marriage and childbirth while increasing work experience, income, and education, it appears likely that women with very young children will continue to reenter the paid labor force following childbirth relatively quickly in the foreseeable future. The labor force participation of married women with infants increased from 30.4% in 1976 to 50.9% in 1986 (O'Connell and Bachu, 1987), and the data reported here suggest that this trend is likely to continue.

One interesting observation from these analyses is that premarital labor force experience has no significant estimated effect on the length of time out of the labor force following the first birth. In view of the fact that plausible explanations for both negative and positive effects of prebirth work experience can be formulated, this lack of a relationship bears consideration. On the one hand, it might be argued that some kind of premarital labor force participation is normatively expected of contemporary American women. Thus such labor force participation might not be considered in terms of the married couple's decision about the timing of the wife's return to the paid labor force after giving birth. Premarital labor force participation would be unrelated to the timing of reentry for such couples.

It is also possible that women who do not work prior to marriage create a normative structure within their marriage that reduces the impact of such labor force participation on the timing of the wife's return to the labor force. For these women no precedent has been set by the wife's working before marriage, and a mutually agreeable normative structure may have been established that decreases the likelihood that the wife will be interested in entering the labor force.

For a second group of women, premarital labor force participation may have been viewed simply as a means of amassing resources in order to prolong their absence from the labor force after the first birth. For such women, premarital labor force participation would be positively related to length of time spent out of the paid labor force following birth. In fact, it is interesting to note that although the estimated effect is not statistically significant, the general direction of the estimated effect of premarital work experience on length of time out of the labor force is positive; that is, women who averaged 50 or more weeks per year in the paid labor force returned to work more slowly than did women with less premarital work experience.

Finally, for some women prebirth labor force participation might be negatively related to time spent out of the labor force, because additional labor force experience increases the amount of human capital and, correspondingly, the opportunity costs to the couple of the wife's remaining out of the labor force following first birth.

Another interesting observation that can be drawn from Table 2 is that the estimated effects of several of the variables on probability of reentering the paid labor force are decidedly nonlinear. For example, notice that the estimated effect of marital prebirth work experience is significant only for those women who averaged 50 or more weeks per year in the labor force. Similar findings are apparent for occupational prestige, wife's attitude toward working wives, wife's last income, and husband's income. These findings suggest that there may be a threshold effect operating and that the effects of variables such as marital prebirth work experience or occupational prestige are fairly constant except for women in the highest categories of these variables.

In addition to the human capital and marital and birth timing factors studied here, a number of structural factors also seem to be fueling this trend toward the employment of married women with infants. First, there have been large increases in the supply of market day care in the past decade; estimates are that the capacity of licensed day care centers in the United States more than doubled from 1976 to 1986 (Hofferth and Phillips, 1987), and it is reasonable to assume similar increases in the supply of nonlicensed day care. Since it is known that lack of day care is an impediment of the labor force participation of many women (Greenstein and Greenstein, 1986), increases in the supply of market day care should permit increases in the labor force participation of women with young children. Second, societal attitudes concerning the employment of married women in general and of women with children in particular seem to have become progressively more favorable (Metzville, 1988), probably reflecting a changing normative structure regarding the employment of women with young children. Third, increases in real wages have induced women to enter or reenter the labor force (see, for example, Smith and Ward, 1985). Demographic changes, especially declines in fertility levels and increases in educational attainment for women, have also contributed to these increases in the labor force participation of married women with children (Tichter and Costanzo, 1987).

Traditionally, models to predict labor force participation have neglected individual-level and social-psychological variables. In order to develop more accurate forecasts of the labor force participation of married

women with children, we will need to investigate models that include both the individual-level factors studied here as well as structural and demographic variables.⁵ Such models will allow for a more detailed understanding of the relative impact of all of these factors on the labor force decision-making process.

What do these analyses suggest from a policy perspective? It seems reasonable to conclude that the labor force participation rates of women with young children will not decrease or even stabilize in the foreseeable future. In fact, with both individual factors (increasing levels of education, income, and work experience) and structural factors (availability of market day care, changing societal norms regarding the employment of mothers, increases in real wages, and changes in the demographic structure) taken into consideration, it is likely that the labor force participation rates of women with young children will continue to increase, at least through the next decade.

Employers, therefore, need to recognize that an increasingly large share of their work force will consist of women with young children. Hofferth and Phillips (1987), for example, project that in 1995 nearly two out of three children under age six will have mothers in the labor force, compared to less than half in 1985. Such a work force will certainly increase pressure on employers to offer alternative policies designed to attract young female employees and to retain those employees after they give birth. Flexible work schedules such as flexitime (in which employees choose their own work schedules) or block scheduling (in which employees compress a 40-hour work week into fewer than five days) can make it easier for working parents to deal with conflicts between work and family responsibilities. Flexible fringe benefits plans such as "flexible spending accounts" (Blooin and Trahan, 1986) can allow workers to allocate tax-free earnings toward child care expenses. Another possibility is employer-sponsored child care facilities, either in terms of employer-paid subsidies for child care or actual on-site facilities. Currently, very few employers (at most, 1% or 2%) are eligible for employer-sponsored child care (U.S. Bureau of Labor Statistics, 1986).

NOTES

1. Married women living with their husbands accounted for over 90% of working women with infants in 1985 (Hagghe, 1986). Eliminating data for women who had marital disruptions during the study eliminates the confounding effect that divorce and separation might have on labor force decision making.

2. Exclusion of women beginning with the second pregnancy has the effect of slightly overrepresenting women with long second birth intervals in the data set. For these data, however, the correlation between length of birth interval and key variables in our analysis is minimal. For example, the correlation between length of birth interval and attitude toward married women in the work force is $-.08$, while the correlation between length of birth interval and labor force participation is $.01$. Therefore, excluding women beginning with the second pregnancy does not seem seriously to bias the data set. For comparison, note that McLaughlin (1982) detected all observations after the birth of the second child.
3. Since the exact date on which the woman returned to the labor force is not known, the estimate overstates the length of time out of the labor force; it is used as a proxy. This between categories are not affected.
4. The time items measuring attitude toward married women in the work force were asked three times during the study (at the 1968, 1972, and 1983 interviews). Additional analysis (not reported here) suggests the relationships under study are not particularly sensitive to sequencing of these questions, however, so responses from the attitude items closest in time to the interview are included.
5. As a prelude to such an analysis, we estimated the coefficients for Models I, II, and III including an indicator of first birth cohort. This estimated effect was not statistically significant, although later cohorts had somewhat higher rates of return to the paid labor force following first birth, and shorter durations out of the labor force.
6. Projections by the Bureau of Labor Statistics and the Census Bureau (Fullerton, 1987) suggest that women's participation in the civilian labor force will begin to drop in the mid- to late-1990s, as the postbaby-boom cohort reaches labor force age. The BLS projections also anticipate a slowing in the rate of increase of women's labor force participation rates.

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