

The Decision to Marry and the Work and Earning Careers of Spouses

Lee A. Lillard

University of Michigan

and

Linda J. Waite

University of Chicago

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1. Introduction

Social Security benefits depend on one's own earnings history. But they also depend, especially for women, on one's marital history and on the earnings of one's spouse. Under Social Security program rules, older adults may receive Social Security benefits as retired workers, as spouses of retired workers, or as divorced spouses or widow(er)s of retired workers. In fact, many recipients are dually entitled, receiving benefits *both* as retired workers and as spouses or former spouses of retired workers. Although both men and women are eligible to receive benefits as the spouse or former spouse of a retired worker, in practice, 98% of spouse beneficiaries are women.

But in addition, the earnings histories of both men and women depend on their marital history. Married men tend to work more and to earn more (Korenman and Neumark, 1991), whereas married women often trade off between work and family in ways that lead to a decline in employment, hours of work and earnings. Many of these changes appear not at marriage but with the birth of the first child, when some women increase their time at home to provide care for the baby (Klerman and Leibowitz, 1999). Even when mothers work continuously, the demands of childrearing detract from their earning capacity. Comparing U.S. women with similar work histories, Waldfogel (1997) finds that one child still reduces a woman's earnings by almost 4% and two children or more reduces hourly earnings by almost 12%.

At the same time, better career prospects and career achievements foster marriage and marital stability for men. Higher-earning men are more likely to get married and marry at younger ages than men with lower earnings (Bergstrom and Schoeni, 1996). And high-earning men are less likely to divorce than those with lower earnings, with unemployment especially damaging to marital stability (Grossbard-Shechtman, 1993).

Marriage and motherhood seem to decrease the chances that women follow a career trajectory. Women with successful work careers less often marry or remain married than other women (Blair-Loy, 1999; Han and Moen, 1999). And the substantial majority of women with children, even those with college degrees, do not achieve career success. Among women who graduated from college in the late 1960s through the late 1970s, Goldin (1997) estimates that between 18% and 24% achieved both a career and a family.

2. Data and Methods

This paper examines together the marriage histories and the work histories of men and women as they enter and exit marriages over the twenty-five year period from 1968-92. We present results for pairs of components of the earnings history of men and women (participation and hours, wages or earnings) modeled simultaneously with marriage and divorce. We estimate these models separately for black and white men and women, using up to twenty-five years work history data from the Panel Study of Income Dynamics (PSID) combined with complete marriage and divorce histories for PSID respondents. We model marriage and divorce as the waiting time to the occurrences of each. Consider the hazard of entry into the j -th marriage (denoted m) and of the dissolution of that marriage (denoted d) for person i at time t

$$\ln h_{ji}^m(t) = a_1' X_m + a_2 \ln Earn_{it}^{unmar} \quad \text{and} \quad \ln h_{ji}^d(t) = a_3' X_m + a_4 \ln Earn_{jit}^{mar}$$

Both events may occur multiple times over the period of observation for any particular individual. The model for the timing of each occurrence of the event, while at risk, is a continuous-time failure-time process represented by a hazard equation. This equation describes the probability that an occurrence of the event will take place at time t , conditional on its not yet having occurred, and incorporates various forms of time or duration dependence, individual and time-varying covariates, and individual heterogeneity. The hazards equations are defined for each point in time in which the person is at risk of the event. Each individual who is not currently married is assumed to be at risk of marrying and married individuals are at risk of divorce, and at risk of marrying again, following divorce.

The model considers sets of labor market behaviors jointly with marriage and marriage dissolution. These include the propensity to participate in the labor force and, conditional on participation in the labor market, either log annual earnings, log annual hours of work or log average annual wages (annual earnings/annual hours). Each outcome is a function of marital status, marriage duration and number of children born to the marriage (in addition to a number of additional covariates).

$$\ln Earn_{it} = b_1' X_m + (b_2 + h_{im}) Mar_{it} + b_3 Mar_{dur}_{it} + b_4 Kids_{it} + e_i + u_{it}$$

We exploit the detailed information on the timing of events in the PSID to use the temporal ordering of events for identification. We can estimate the degree of variation in person-specific components of the separate processes, and the correlation among those components, by

exploiting the fact that many individuals in the PSID experienced multiple episodes of a particular process (more than one marriage, multiple periods of labor force participation, multiple observations of earnings). The distribution of the number of marriages and unmarried spells are presented in Table 1.

3. Results

The following results are from sets of estimates including marriage, dissolution, labor market participation while married and unmarried, and one of the following three additional outcomes (annual earnings, annual hours of work or annual average hourly wage). Results are presented separately for four sex-by-race subgroups -- men and women and white (non-black) and black.

Table 2 shows the effect of labor market outcome while unmarried on the hazard of marriage. For both white and black men greater “permanent” earnings, hours of work or wage rate are associated with a greater likelihood of marriage or re-marriage sooner. To a lesser extent this is also true for black women. However, white women with greater earnings, hours of work or wage rate are less likely to marry.

A large body of theory points to men’s performance in the breadwinner role as an extremely important—even essential—cause of marital success and our results bear this out. For both white and black men, higher earnings while married decrease the hazard of divorce substantially. But, also as most theories suggest, for women, higher earnings increase chances of divorce, either because women in troubled marriage refocus their energy on their own earnings or because women’s earnings success itself increases chances that the marriage ends.

Once married, Table 3 shows that both black and white men are less likely to experience marital disruption the higher their permanent earnings, hours of work or wage rate. Again white women have the opposite relationship, so that white women with higher earnings or hours of work are more likely to leave the marriage and leave it sooner. The effect of a higher wage rate is positive but imprecisely estimated. This may indicate that the attachment to the labor market represented by full time work is the risk factor, or that those who anticipate high risk of divorce maintain their attachment to the labor force (Johnson and Skinner, 1986). For black women the relationship is small and not significant.

Next consider the effect of marriage, marriage duration and children born to the marriage on labor market outcomes, controlling for a variety of other covariates. The first column of

estimates shows the effects of these three variables associated with marriage on labor force participation. The next three columns show the effects on log earnings, on log annual hours of work and on log average hourly wage respectively, each estimated jointly with the participation, marriage and divorce equations. The degree of heterogeneity in behavior risks and correlation among them are presented in subsequent tables and must be considered part of the overall picture.

Table 4 shows the effect of marriage, marriage duration and children born to the marriage on these labor market outcomes. Upon entry into marriage, on average men increase their labor attachment including the propensity for participation, and their earnings and hours of work. As the marriage continues, white men increase their earnings and hours of work modestly but significantly, even gaining more wage growth. However, the number of children reduces hours of work and earnings. Black men experience the same increase in labor force attachment, but do not have the gains with marriage duration, and even reduce participation over the course of the marriage. The presence of kids in the marriage does increase their participation rate, but does not affect their earnings, hours or wage.

Table 4 also illustrates the mirror relationship for women with respect to marriage. Both black and white women substantially reduce their participation in the labor market, and reduce their earnings and hours of work upon entry into marriage. The positive effect on men combined with the negative effect for women suggest, on average, specialization in marriage in which, typically, men specialize in labor market activities and women specialize in non-labor market activities. Note, however, from the first row of each panel of Table 5, that conditional on the average response to marriage, couples for which the husband changes his behavior more than average toward the labor market upon marriage, his spouse is positively inclined to do the same. That is, upon marriage, as deviations from average behavior, the husband's and wife's labor market behaviors are positively correlated in participation, earnings, hours of work, and wages.

Back in Table 4 we see that white women experience an increase in their wage and black women experience a decline in their wage upon entry into marriage. These effects may operate through the propensity to work full time versus part time, which pay different hourly wage rates.

From Table 4, as the marriage proceeds to longer duration both black and white women gradually re-enter their labor force attachment, but the size of the effect is strongly dominated by

their initial withdrawal. The number of children has no effect on white women's labor force status but do induce black women to work fewer hours and earn less.

Previous studies have almost universally studied earnings conditional on participation in the labor market as a separate process from participation in the labor market. (See for example the SSA's MINT [Modeling Income in the Near Term] Report 1999.) The results in Table 6 and in Table 5 speak to the issue of whether this is appropriate when forecasting future earnings.

The heterogeneity component in the first column is the individual-level component for labor force participation. This component is statistically significant and sizable for both men and women, being smallest for white women. Those most likely to work at one point are likely to work at other points. The next three components, in the first row of Table 6, are the individual-level components for earnings, hours and wages, given participation. This shows a stronger relationship for women (both white and black) than for men, with white men showing the smallest heterogeneity component in earnings across periods. The second row of estimates in each panel of Table 6 reports the correlation between the individual (permanent) component in the propensity to participate in the labor market with the individual (permanent) components of log earnings, log hours and log wage rate respectively. These correlations are all large and positive for each of the race-gender groups and each of the outcomes. Those persons who are more likely to participate in the labor market are also more likely to earn more, work more hours and earn a higher wage per hour. In addition, the second row in each panel of Table 5 shows that the correlations are similarly strong for the change in labor force behavior of a husband-wife pair upon entering marriage for both whites and blacks. That is, net of the average changes discussed earlier, those husband-wife pairs who both increase (decrease) their participation upon entry into marriage also both strongly increase (decrease) their earnings, hours of work and wage rate.

4. Discussion

The robustness of the relationships both across measures of labor market success and across gender and race is striking. Taken together, the very strong relationships between the labor force participation and earnings of men and women, of their dependence on the particular marriage in which they occur, and the effect of earnings on marital choices, point to the interdependence of the marriage and earnings histories of both men and women as they reach retirement.

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Table 1.
Distribution of the Number of Marriages and Unmarried Spells with Labor Market Data

	Males				Females			
	Unmarried		Married		Unmarried		Married	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
0	3927	66.1	788	13.3	3701	55.1	1357	20.2
1	1775	29.9	4799	80.8	2710	40.4	5030	75.0
2	221	3.7	321	5.4	284	4.2	303	4.5
3	15	0.3	29	0.5	15	0.2	19	0.3
4	1	0.0	2	0.0	1	0.0	2	0.0

Table 2.
Effect of Earnings, Hours and Wage
On the Hazard of Marriage

	Log earnings	Log Hours	Log Wage
	Males		
White	0.2577 *** (0.0304)	0.4845 *** (0.0700)	0.2621 *** (0.0389)
Black	0.3160 *** (0.0401)	0.6079 *** (0.0807)	0.3850 *** (0.0675)
	Females		
	Log earnings	Log Hours	Log Wage
White	-0.0873 *** (0.0165)	-0.1171 *** (0.0273)	-0.1515 *** (0.0329)
Black	0.0500 ** (0.0238)	0.0725 * (0.0371)	0.1112 ** (0.0567)

Table 3.
Effect of Earnings, Hours and Wage
On the Hazard of Marriage Dissolution

	Log earnings	Log Hours	Log Wage
	Males		
White	-0.1736 *** (0.0541)	-0.3310 *** (0.1218)	-0.2225 *** (0.0743)
Black	-0.2193 *** (0.0708)	-0.2445 * (0.1406)	-0.4464 *** (0.1230)
	Females		
	Log earnings	Log Hours	Log Wage
White	0.1456 *** (0.0308)	0.2597 *** (0.0489)	0.1024 (0.0657)
Black	0.0182 (0.0376)	0.0182 (0.0570)	0.0566 (0.0885)

Table 4.
Effect of Marriage on Participation, Earnings, Hours and Wage

	Participation	Log earnings White Males	Log Hours	Log Wage
Married	0.3392 *** (0.1059)	0.0785 *** (0.0284)	0.0534 *** (0.0166)	0.0018 (0.0186)
Duration	0.0006 (0.0030)	0.0020 ** (0.0009)	0.0009 ** (0.0004)	0.0011 ** (0.0005)
Number Kids	-0.0336 (0.0898)	-0.0457 *** (0.0166)	-0.0364 *** (0.0077)	-0.0045 (0.0098)
Black Males				
Married	0.4984 *** (0.1412)	0.1260 *** (0.0466)	0.1335 *** (0.0297)	0.0294 (0.0361)
Duration	-0.0139 *** (0.0041)	0.0012 (0.0016)	-0.0010 (0.0011)	0.0014 (0.0011)
Number Kids	0.1080 *** (0.0244)	-0.0044 (0.0189)	-0.0146 (0.0126)	0.0073 (0.0121)
White Females				
Married	-0.7865 *** (0.0732)	-0.3584 *** (0.0328)	-0.3873 *** (0.0300)	0.0379 * (0.0201)
Duration	0.0044 ** (0.0020)	0.0058 *** (0.0009)	0.0067 *** (0.0008)	-0.0016 *** (0.0006)
Number Kids	-0.0076 (0.0182)	-0.0113 (0.0076)	-0.0088 (0.0069)	-0.0093 * (0.0056)
Black Females				
Married	-0.2224 *** (0.0651)	-0.1356 *** (0.0429)	-0.0774 ** (0.0337)	-0.0689 *** (0.0264)
Duration	0.0075 *** (0.0019)	0.0045 *** (0.0012)	0.0014 (0.0011)	0.0019 ** (0.0008)
Number Kids	0.0131 (0.0097)	-0.0333 *** (0.0067)	-0.0220 *** (0.0060)	0.0051 (0.0047)

Table 5.
Partner Correlated Behavior in Participation, Earnings, Hours and Wage

	Participation	Log earnings	Log Hours White	Log Wage
Marriage Partner	0.8554 *** (0.0413)	0.3387 *** (0.0058)	0.1368 *** (0.0042)	0.2580 *** (0.0055)
Correl w/Partic		0.4025 *** (0.0500)	0.9745 *** (0.0474)	0.3023 *** (0.0437)
Black				
Marriage Partner	0.9186 *** (0.0422)	0.4177 *** (0.0113)	0.2275 *** (0.0084)	0.2218 *** (0.0084)
Correl w/Partic		0.4676 *** (0.0731)	0.5630 *** (0.0677)	0.1145 * (0.0672)

Table 6.
Heterogeneity in Participation, Earnings, Hours and Wage

	Participation	Log earnings	Log Hours White Males	Log Wage
Heterogeneity	1.4548 *** (0.0390)	0.5653 *** (0.0063)	0.2670 *** (0.0027)	0.4061 *** (0.0060)
Correl w/Partic		0.6353 *** (0.0155)	0.6227 *** (0.0140)	0.3558 *** (0.0151)
Black Males				
Heterogeneity	1.5180 *** (0.0428)	0.7088 *** (0.0150)	0.3913 *** (0.0090)	0.4288 *** (0.0088)
Correl w/Partic		0.6486 *** (0.0157)	0.7407 *** (0.0137)	0.4937 *** (0.0192)
White Females				
Heterogeneity	1.0615 *** (0.0183)	0.9034 *** (0.0140)	0.5982 *** (0.0098)	0.4579 *** (0.0062)
Correl w/Partic		0.8380 *** (0.0083)	0.7365 *** (0.0103)	0.6107 *** (0.0133)
Black Females				
Heterogeneity	1.4163 *** (0.0283)	0.9551 *** (0.0214)	0.6302 *** (0.0140)	0.4300 *** (0.0089)
Correl w/Partic		0.7886 *** (0.0093)	0.7767 *** (0.0091)	0.6598 *** (0.0090)