Job Turnover, Wage Rates, and Marital Stability: How Are They Related?

Avner Ahituv
University of Haifa and Urban Institute

Robert Lerman
American University and Urban Institute

January 19, 2004

Abstract

This study examines the interplay between job stability, wage rates, and marital instability. We use a Dynamic Selection Control model in which young men make sequential choices about work and family and estimate the model using an approach that takes account of self-selection, simultaneity and heterogeneity. The results quantify the effects of job stability on earnings and marital status together with the simultaneous effects of marital status on earnings and job stability. The study reveals strong and robust evidence that job instability lowers wages and that both reduce the likelihood of getting married and remaining married. At the same time, marriage raises wages and job stability. To capture the sequential effects linking job stability, marital status, and earnings, we simulate the impact of shocks that raise preferences for marriage and that increase education. One finding is that gains from marriage and job stability cumulate over time and thus, that marriage premiums are larger than estimates based on contemporaneous relationships suggest.

JEL Specification: *J12, J31, J63*
Keywords: *Marriage and Marital Dissolution, Job Turnover, Wage differentials*

The authors thank the National Institute for Child Health and Human Development for financial support for this research. We thank seminar participants in the European Summer Symposium in Labor Economics (ESSLE), European Association of Labor Economics (EALE), and the University of Haifa for useful comments.

I. Introduction

The duration of marriages decreased sharply in the past century. Marriage takes place at older ages and lasts fewer years. Equally important, the sources of marital dissolution shifted dramatically from less widowhood to more divorce. Today, marital instability is common. By age 28, 17 percent of men are separated or divorced;[1] by age 35, 20 percent of women have experienced a second divorce; and about 20 percent of marriages are dissolved during the first 5 years. One of the consequences of this instability is a high and rising rate of single parenthood. Between 1960 and 1996, the share of children not living with two parents more than tripled from 10 to over 30 percent. As of 1999, only about 60 percent of children lived with both biological and/or adoptive parents (Lerman 2001). The evidence is strong that growing up in one-parent families and unstable families is closely associated with long-term economic and social difficulties (Waite and Gallagher 2000; McLanahan and Sandefur 1994)

The high levels of marital instability in the U.S. have been taking place in the context of high levels of job instability. Leaving one employer and taking a job with another employer involves millions of workers every month. It takes young workers a long time to enter a stable career and a long-term relationship with an employer. Between the ages of 18 and 30, high school graduates with no college have already worked with an average of eight employers. Even during their late 20s, nearly half of male high school graduates experienced at least one spell of unemployment between ages 25-29 (U.S. Bureau of Labor Statistics 2000). Moreover, job instability is increasing among young men (Berhardt et al. 1998).

[1] These tabulations come from the author's of the 1979 National Longitudinal Survey of Youth. In subsequent sections, we do not distinguish between separation and divorce, and use the terms divorce or dissolution.

Researchers have long pointed to the potential connections between job market problems, marriage, and divorce. Wilson (1987) and others tried to link the weakening of job market options for young men, especially young black men, to the decline in marriage rates. The impact of unemployment on divorce has been studied for decades. Yet, important gaps remain, both from a substantive and methodological standpoint. Existing studies have typically focused on impacts running in a single direction—from a job market outcome to a marital status or vice versa. They often follow individuals through a specific transition, say into marriage or out of marriage. In general, researchers have not extended the analysis to cover linkages between the long-term pathways in the job market and in marriage. As a result, existing approaches do not capture the time path of joint job-marriage decisions.

This study examines the connections between employment instability, and marital instability in a sequential, simultaneous framework. We analyze the entire sequence of annual job and marriage outcomes among young men by asking: 1) Do job stability, high wages, and the career advancement of young men promote marriage and marital stability? 2) What are the consequences of marriage and marital stability for achieving high levels of job stability and occupational success? 3) How do labor market shocks affect the career and marital pathways of young men? We develop a model in which young men make sequential choices about work and family and estimate the model using a dynamic maximum likelihood (ML) approach that takes account of self-selection, simultaneity and heterogeneity. The data come from the 1979 National Longitudinal Survey of Youth (NLSY79). We find job change and job stability are associated with lower wages and that both reduce the likelihood of getting married and remaining married. While taking account of labor market impacts on job stability and wages, we find robust evidence running from marriage to higher job stability and higher earnings.

The multivariate results suggest a pattern of dynamic feedbacks leading to cumulative impacts that exceed the contemporaneous impacts usually estimated in the literature. Simulations based on these findings illustrate how shocks that raise marriage or education or that reduce divorce set off virtuous cycles in which increased marriage interacts with increased job stability and earnings.

The study improves our understanding of job and marital pathways and the linkages between them. It also demonstrates how new econometric tools can estimate sequential job and marriage outcomes. This paper is part of a broader research project to analyze the pathways of young adults, particularly the connections between job stability, occupational success, and marital/family stability. In future work, we will analyze parenting, training and schooling and examine early life cycle events and their consequences for young women.

The next section reviews some of the relevant literature. Section III describes the data set and the definition that we use for the various indicators for marital and job stability. Section IV lay out and explains in details the optimization model and the empirical strategy that we use. The multivariate results are presented in Section V. The simulations in Section VI show examples of the implications of the statistical findings for the size of the feedback effects, and Section VII concludes.

II. Background and Literature

Largely separate literatures have emerged on job stability and its determinants, marital stability and its determinants (Becker, Landes and Michael, 1977), and the interactions between labor market and marital status outcomes. Few have looked at the bi-directional causal links between job stability and marital stability and how these linkages affect pathways of individuals in their work and family relationships. This section provides a brief review of the extensive literatures on these topics, but focuses in some depth on two recent publications—one dealing with job stability and the other dealing with early career effects on marriage.

The facts about job stability reveal patterns of high turnover of workers as well as long-term, worker-employer relationships. Millions of hires and separations take place every month in the United States. Young workers experience especially high levels of job instability even through their 20s.[2] On the other hand, many workers are in long-term jobs; over one-third of employed 35-44 year-olds were in jobs lasting 10 years or more (Farber 1995). Reconciling these facts involves recognizing that turnover statistics count some workers several times, but the duration data count a worker only once.[3]

Some observers have voiced the concern that long duration employment with a single employer is dying out in the U.S. job market.[4] While the evidence of a decline in long-term employment is mixed, job tenure has declined modestly among some groups of male and young workers (Neumark 2000; Berhardt et al. 1998; Light and McGarry 1998). The upward trend in job instability might have contributed to the observed increase in marital instability. However, it is not clear that job changes have negative consequences for workers and thus for their attractiveness as spouses.

Economists frequently distinguish between unproductive turnover or churning and mobility that optimizes the worker-job match (Jovanovic, 1979; Mincer and Polachek, 1974). High turnover may represent an employer strategy to minimize labor costs by paying low wages and hiring or firing workers in response to short-term changes in demand. However, like most human capital investments, high rates of job mobility can be productive if job changes, including those involving unemployment, ultimately increase the efficiency of the employer-worker match. Topel and Ward

[2] Bernhardt et al. (1998) reports that 30 percent of 23-31 year-old workers in 1988 had separated from their employers one year later.
[3] Workers moving in and out of employment might not be counted at all in the duration data (if they are not employed at the time of the survey) but might nevertheless account for some of the job turnover. See Neumark (2000) for a discussion of recent literature on trends in job stability and job duration.
[4] See references to Time magazine articles about declining job stability in Farber (1995).

(1992) conclude that “rather than being *wasteful and inefficient,* high turnover among young workers may be critical to the development of stable work careers”.

Job search theory suggests that average turnover rates will decline as adolescents mature because most "learning" takes place in the initial matches, and because both the benefits and costs of subsequent job changes diminish. Both Topel and Ward (1992) and Klerman and Karoly (1994) find empirical evidence for the high concentration of job changes among youth. In analyzing job mobility for young white men (during the 1960s), Topel and Ward estimated that a typical worker will hold seven jobs during his first 10 years in the labor market, but this period will represent over two-thirds of his total career jobs. Similarly, Klerman and Karoly find that by age 22 or 23, rates of turnover slow and by that point over half of all high school graduates will have held a job that lasts more than three years. These generalizations do not apply to all youth. The Topel-Ward analysis excludes non-whites and Klerman and Karoly recognize that high school dropouts experience long periods of job instability.

The competing idea—that turnover is wasteful for society and often for the individual— is held by other researchers. They see frequent job changes and unemployment spells as evidence of a labor market in which young people have trouble finding long-term jobs in the primary labor market, career jobs that might allow them to support a family (Osterman, 1980). The informal U.S. system for integrating young people into careers may lead to unnecessarily high search costs and to a prolonged period in which young people are concentrated into youth jobs characterized by high turnover, low wages, and little or no training (Hamilton, 1990). High rates of instability may, in turn, lower the marriage rates of young people.

In a recent analysis, Neumark (2002) estimates the impact of early job stability on wages of young adult workers. Although Neumark provides an array of results, the key finding is that early job stability increases earnings, mostly by helping individuals maintain a steady job.

The literature on trends and patterns of marital and family stability has developed on a different track from the job stability literature. Bramlett and Mosher (2001) use life table methods to examine the duration of marriages and remarriages with data from the 1995 National Survey of Family Growth (NSFG). Although our focus is on men, information on marriages and divorces is more commonly reported for women. Bramlett and Mosher estimate that 20 percent of women's first marriages become disrupted (involve a separation or divorce) by five years after the marriage, 33 percent by ten years after the marriage, and 50 percent by twenty years after the marriage. The probability of a disruption rises from 2.8 percent in the first year, to 5.1 percent in the third year, and gradually declines to about 2.4-3.5 percent per year. Most but not all disruptions end in divorces. Two years after separation, 25 percent of separating couples have not yet divorced. Remarriages are common; over half the women in first divorces remarry within five years after their first divorce. While second marriages of women break up at slightly higher rates than do their first marriages, 80 percent of these second marriages remain intact for at least 4 years. Comparisons with life table analysis of 1973 data reveal substantial increases in the rates of marital dissolution. Among white women, the cumulative share of first marriages disrupted within ten years was 18 percent based on the 1973 data and 32 percent based on the 1995 data. The ten-year probability of second marital disruption was 28 percent in 1983 and 39 percent in 1995.

Although age-specific marriage rates and the duration of marriages have declined, the share of women who ever marry remain near 90 percent (U.S. Census Bureau, 2001). Alongside the relative constant share of women ever marrying are important differences in trends for subgroups

(Heaton, 1991). Among white women, the proportion ever marrying is projected to rise for those who have graduated college but decline for those who do not graduate college. Black women have experienced a sharp drop in marriage, with the proportion ever marrying falling from 85 percent for the 1945-49 cohort to 64 percent for the 1960-64 cohort.

An extensive literature deals with the interaction between labor market outcomes and marital status.[5] Most of theses studies examine causation from one direction and estimate a simple single equation model. They ask how employment, unemployment, or wage levels affect marital or cohabitation status or how a marital/family status influences employment, unemployment, or wages. The research often involves duration analysis. In a recent example of this literature, Oppenheimer (2003) examines the impacts of work experience, earnings, educational attainment, and other variables on two transitions of young men: 1) from non-cohabiting status to cohabitation or marriage; and 2) from never-married, cohabitation to marriage or separation. The results indicated significant but varied roles for earnings, work experience, and education. Among non-cohabitors, very low earnings significantly reduced entries into marriage and high earnings and college diplomas significantly increased marriage rates. In a recent study of the 1961 birth cohort of whites in Detroit, Xie, Raymo, Goyette, and Thornton (2003) examined whether an individual's earnings potential exerted different effects on entries into cohabitation versus entries into marriage. They used an array of earnings variables, from current earnings, to earnings over the subsequent five years, past earnings, and lifetime earnings. The authors found that higher earnings among men significantly raised the entry into marriage but not the entry into cohabitation. Of all the earnings variables, past earnings showed the highest impact.

[5] See, for example, Manning and Smock (1995), Call and Teachman (1996), Presser (2000), Smock and Manning (1997), Teachman, Call, and Carver (1994), and Weiss and Willis (1997).

Despite several solid studies of individual impacts, the literature is limited in dealing with long-term job and marital pathways. In particular, the studies generally do not recognize the likely simultaneity between job and marital stability and the possibility that declines in marital and job stability are connected. Despite evidence that marriage affects earnings and labor market activity of men, studies of entries into marriage rarely develop a simultaneous framework that incorporates both directions of causation. One might expect individual differences help explain stability in marriage and jobs. After all, worker-employer and husband-wife relationships have some elements in common. Both involve working together in production. In each case, the two parties expect loyalty and responsibility from the other party. When one party fails to live up to these expectations, the relationship often breaks down.

A second problem with existing studies is that few follow individuals beyond a single transition. This can limit our understanding since job-marital outcomes at a point in time likely depend on the accumulation of past job and marital interactions. Rarely if ever do the studies capture the simultaneity between current and past job and marital outcomes. Finally, little research connects the role of early and continuing occupational success with satisfactory family formation and stability.

One exception to these research patterns is a very recent paper by Gould (2003). This paper takes direct account of the simultaneity between marriage and job market activity by following young men from ages 16 through 39. Gould develops a model in which men maximize utility over marriage and career decisions, where career choice in any period is not working or in school, being in school, working in a blue-collar job, or working in a white-collar job. The marriage outcomes include single; first, second, or third marriage with one of two types of wives (based on the goodness of the match); and first, second, or third divorce. Gould uses a complex dynamic programming

model to simulate the career and marriage histories with artificial agents. He finds significant effects between earnings and marriage variables operating in both directions.

In this study, we extend the literature by examining the job and marital pathways of young men from the teenage years through the mid-30s. We focus on young men because of time and budget constraints, but recognize the value of pursuing a similar approach to examine pathways of young women. Our approach builds on theories and empirical results linking the success of men in the job market as both a cause and effect of marriage and marital stability. It is natural to extend the theory to recognize possible path dependencies. Consider a positive economic shock that suddenly increases the number of good jobs in certain communities. Suppose that the higher quality jobs increase the number and/or stability of marriages. These changes may herald a sequence of positive, reinforcing outcomes; for example, the added marriages might plausibly raise wages and subsequently increase marital stability. On the other hand, the sequence may not be mutually reinforcing. The added marriages induced by more good jobs may be marginal and more subject to instability than marriages in communities that did not experience the initial gains in employment. If so, the pathways may involve fewer reinforcing positive linkages between jobs and marriages.

What makes our pathway analysis feasible is our use of the Dynamic Selection Control model (Hotz *et al*., 2002) for estimating behavioral relationships involving simultaneous equations while controlling for potential selection bias. In this paper, we estimate sequential equations for: 1) marital outcomes (single, married, divorced, remarried); 2) work/schooling and/or job stability; and 3) wages or occupational status. In future work, we include simulations to show potential impacts of employment shocks, improved occupational options, and other shifts on early careers and marital outcomes.

Certainly, the pathways young people take are critical not only to their own futures, but also to the health, income security, and upbringing of their children. The results from our study have a potential importance to researchers and policymakers who wish to understand the linkages between work and family patterns. Such results can be used to forecast the likely long-term impacts of selected policy initiatives.

III. The Data and Descriptive Results

3.1. Data and Definitions

The primary data source, the NLSY79, provides extensive data on marital status, parenthood, and living arrangements, including the timing of marriages and births, cohabitation and selected characteristics of a partner, and detailed codes showing the respondent's relationship to all other household members. The NLSY79 is a national probability sample of 12,686 individuals ages 14 to 21 as of January 1, 1979 who were re-interviewed annually until 1994 and semi-annually through 2000. This study uses only the data through 1994 to insure that annual information is available for the joint analyses of work instability and marital stability. The NLSY79 is attractive because detailed data on respondents' family background, schooling, job histories, military experiences, marital and cohabitation status are available. Oversampling of African-Americans and Hispanics makes possible comparisons across race and ethnic groups, which are valuable to our type of analysis.

Given evidence of low or zero returns to work-while-in-school (Hotz *et al.* 2002), and given the fact that less than one percent of 17 year-old are married, we start to follow the labor market careers and marital history of the respondents from age 17 to 19. Although information about jobs held prior to 1978 is available, this information is not always complete. To minimize this problem, we restrict the analyses to individuals who were aged 13 to 18 as of 1978. For these cohorts, we

observe precisely all jobs and family histories up to age 32 (for the younger cohorts, we observe through 1994, at which time the youngest respondents would have completed their 29th birthday).

Our analyses include three dependent variables that represent job stability, marital/family changes and earnings. Below we discuss several issues arise regarding the definitions of the specific indicators used in our model.

Changes in marital status are precisely recorded by the NLSY. The survey records the exact date of changes in formal living arrangements (marriage, birth) and changes in informal arrangements, such as cohabitation. This allows us to employ several definitions of family formation. After reviewing the alternatives, we opt to use the formal definition for singles and marriages and a definition for divorces that includes separations, mainly because most cohabitation leads to separation without children, while most marriage separations lead to formal divorces.

The empirical model employs a distinctive multi-stage definition of continuation or change in marital status, as follows:

1) Singles who never married,
2) Those who married for the first time during this calendar year,
3) Those married in the current and also in the prior year (including second marriages),
4) Those who divorced or separated during this year,
5) Those who were divorced or separated in the current and also in the prior year, and
6) Those who remarried during this calendar year

Using this classification, we estimate the effects of the observable variables and the unobservable factors on the transition rates from being single to first marriage, from marriage to divorce/separation, and from divorce/separation to remarriage. In equations predicting labor

market outcomes, these six variables appear as right hand side endogenous variables, thus yielding estimates of the labor market returns to each marital status.

One may define employment instability in terms of changes in changes in labor force/schooling status or of changes from one job to another. A change in labor force status may involve a transition from school to full-time employment, from employment to unemployment, or from nonparticipation to employment. Job turnover in our analysis involves changing employers. Using the first indicator is more appropriate for ages 17-23 and for socioeconomic groups with low attachment to the labor force, while the second is more appropriate for analyzing stability patterns men who are continuously employed during their adult years. Our indicator for job stability is closer to the second definition, but includes some aspects of the first definition. The dependent variable (Job2) is zero if a man continues to work (or study) at the same job, and one if he changes jobs, labor force status or schooling. We recognize this definition combines movement between employers with changes in labor force status. However, only a modest number of the cases of job change involve such labor force changes; most represent changes in employers among young men employed in both periods.

The definition of earnings is the natural log of the hourly rate of pay in the main job during the last annual year. This indicator is appropriate, given our interest in capturing the effect of marital status and past work experiences on a worker's potential earnings. Annual or weekly earnings would combine hourly pay with the amount of hours the respondent work.

3.2. Descriptive Results

The goals of this section are to familiarize the reader with our data and to motivate the formal analysis by presenting a series of interesting facts about age patterns and correlations among marital status, earnings and work histories.

Table 1 shows that *the marriage differential* is pronounced. No matter how we break the sample, married men have higher wages than single men. Interestingly, men in their first marriage have higher wages than those in their second marriage and divorced men have higher wages than do single men. The *differentials* increase with age, are similar across race and ethnic groups and among men with different education backgrounds. The differentials involving annual wage growth are uneven, but follow the same pattern.

In evaluating the marriage differential, it is crucial to distinguish between the selection of more able or more motivated men into married life and the effect marriage may have on men's performance in the labor force. Our ability to follow men through periods of divorce and remarriage will allow us to distinguish between these effects. We will see that the results suggest a genuine marriage effect not primarily due to selection.

There are many ways to define marital status and thus marital transitions. The two main questions are how to treat cohabitation and separations. Should we treat cohabitation as married or single? Should we treat separated couples as married or divorced or add a third category? After reviewing the data, we chose to treat cohabitated men as single and separated men as divorced because most cohabitation ended in separation without children and most separations ended in formal divorce.

Table 2 replicates Table 7 from Topel and Ward (1992) and shows the differences in the wage rates and wage growths of men that keep the same job and men that have changed their job during the last year. For each comparison, workers that keep the *same job* have higher wages than those workers that *changed their job*. At the same time, the annual wage growth is often higher among workers who changed jobs. The wage gap by job change increases with age, is higher among whites,

but interestingly decreases with education. This combination of findings differs somewhat from the results of Topel and Ward (1992).

Among the possible explanations are: (1) that the movers had relative (to their statistical group) low wages in the former job and this is why they choose to quit (bad absolute match); (2) that job changes improve wages only for men who were unsuccessful with their former employer (bad relative match); (3) that employers offer above productivity wage to attract movers (and cut their wage growth later); and (4) that the new firm has less information about the poor productivity of these movers. In the first two cases, movers increase efficiency, while the other two explanations indicate market failure that causes firm to lose money.

Interestingly, wage growth is faster at age 23 (11 percent) than at age 19 (5.5 percent) or age 27 (3.5 percent). The wage growth of Hispanics who change jobs at age 28 is faster than whites by 1.3 percent, although their absolute wage is lower than those of whites by about 10 percent. Again, this contradictory fact begs for explanation. As known, wage and wage growth increase with education. Interestingly, wage growth for men with BA increases dramatically when they change jobs (8.3 percent compare to almost zero for HS and less than HS). This suggests that men with different education background work in segregated markets.

The results presented in Table 3 show how labor market performance varies by marital status at age 28. In general, we find strong suggestive evidence for our hypotheses on the interrelationship between job market performance and stable family status. Married men perform better than others in all the five categories. Moreover, this fact is true also for all the subgroups. Separated or divorced men perform about the same as single men in terms of wages and weeks worked, despite having more work experience than single men. Remarried men do better than the single, separated, and divorced groups, but less well than married men. These men allow for some

controls for selection since they have spent time in the other family statuses before they remarried. To sum up, the table suggests a relationship between labor market performance and marriage. In subsequent sections, we pursue the analysis with an appropriate regression model that controls for observable differences and takes account of causality and self-selection issues.

In other interesting data from the table, we find that blacks changed jobs fewer times than Hispanics, potentially implying more job stability, but actually showing continued time outside of the labor market. This result is in addition to the fact (Appendix Table A) that blacks tend not to quit jobs, but face high layoff rates. Separated or divorced men with BA tend to have more jobs than the average and only 39 percent of this sub-group held the same job.

Table 4 presents the age profile of the number of jobs by marital status and status changes. Starting from age 22, when most men are still single, men that have unstable married lives (two and more changes) also tend to switch jobs more often. By age 25, a new phenomenon becomes visible, with married men accumulating fewer job changes than single men. The stability margins widen over time and by age 28, married men have (on average) almost one job less than singles, and 1.7 jobs less than divorced men. Men in their second marriages have similar patterns to those of divorced men, but men with more than three marital changes show even more job changes.

At age 22, just over one in five men are married, a relatively high number compared to their European counterparts. However, by age 32, fully 44 percent are not married. The high share of men not in a married state is the result of two factors. Almost one-third of the men are still single and others are moving in and out of marriage. The number of men with unstable marital life is especially worrisome. By age 24, 8 percent of the men already divorced at list once, and by age 30, 3 percent already divorced twice.

The facts from the descriptive tables suggest on positive relation between jobs and marital status changes. Moreover, the results show a negative relation between marital status changes and earnings. We now turn to a formal model that structures how we examine the main forces behind these relationships.

IV. The Formal Model

This section describes our empirical strategy to evaluate the effect of marriage status on labor market performance and the effect of job instability on marriage stability. The discussion explains the modifications imposed on applications of the model to available data. The model is based on utility maximization, modified for dynamic discrete-choices and discrete-time. We let each period represent one year, such that t=0 when the individual is 17. During each year, the individual chooses his marital status and whether to continue at the same job. As we discuss below, the econometric specification of the model draws on the *Dynamic Selection Control* method used in other applications by Cameron and Heckman (1998), Hotz *et al*. (2002), and Ahituv and Tienda (2004).

Starting with marital decisions, we assume that a person marries when his expected utility from marriage exceeds the expected utility from remaining single (Becker, 1974). A couple separates when the expected utility in a married state falls below expected utility in an unmarried state for at least one member of the couple. Formally, at the beginning of each period, the person chooses between two options: to continue in his present marital status or to change that status (e.g., marry if single, separate if married, and so on). Each individual chooses the alternative that maximizes his expected present value of utility, based on the information that he possesses. Accordingly, at age *t*, he chooses to change his family structure if

$$F_{itk}(change) > F_{itk}(continue), \tag{1}$$

where F_{itk} denotes the expected lifetime value of individual *i* who chooses one of the two alternatives at age *t*, given that he is presently at marital status *k*. The reward from choosing a marital state has two implicit components: (a) present utility and (b) the option value from choosing this state on the future streams of utilities. Hence, the choices of the individuals are governed by dynamic decision rules. In addition, the factors that determine creation of a union generally differ from those that determine dissolution. To capture this element, our estimation approach allows different sets of parameters for each type of marital status change.

In addition to marital decisions, at age *t* individual *i* chooses whether to continue working for the same employer or to change his jobs. Following Topel and Ward (1992), an individual changes his job if

$$V_{it}(w^{o}, z, 0) > V_{it}(w, z, t), \qquad (2)$$

where V_{it} denotes the expected lifetime value of individual *i* at age *t*, w^0 is an external wage offer, w is his present wage, z is total experience and t denotes tenure in present job. Note that the employment decision at age *t* depends on external wage offers as well as previous employment decisions and in particular on his tenure and much quality with his present employer. Similarly, the outcome of his decision at age *t* will determine his future labor force prospects.

For simplicity, we consider linear specifications of the F_{itj}`s and the V_{it}*'s* that depend on: (1) indicators of group membership and birth cohort, family background variables, AFQT, and local market conditions (*X*); (2) a vector of age-related variables measuring, at the beginning of each period, the accumulated amounts of schooling, children, work experience, and tenure in present job (*Z*); (3) the total history of marital status changes (*F*); and (4) a state-specific unobservable variable (e, m and n). Appendix Table B displays how the variables in the X`s and the Z's vary across equations, insuring identification. That is:

$$F_{itk} = X_{it}^{F} b_k^{X} + Z_{it-1}^{F} b_k^{Z} + F_{it-1}^{F} b_k^{F} + e_{itk}, \quad (3)$$

and

$$V_{it} = X_{it}^{V} g^{x} + Z_{it-1}^{V} g^{Z} + F_{it-1}^{V} g^{F} + m_{it}, \quad (4)$$

where b's and γ's are vectors of parameters to be estimated for each equation, and where the coefficients, in both equations, of "to remain at the same state" are constrained to be zero. However, the coefficients across marital statuses k=2,4,6 are not constrained to be the same.

Because we are interested in estimating the returns (in the form of wage growth) of earlier work experience, unstable job spells and marital instability, we also specify econometric representations of the wage processes associated with the two alternative work states (continue to work at the same job, or change job). Furthermore, because the choice in Equation 2 is based on unobserved (for us) wage offers, we expect that sample selection is important issues regarding the first two factors.[6] As with the value function above, the econometric representation of log-wages is linear. That is, the two discrete-choice equations are estimated jointly with a log-wage equation,

$$W_{itj} = X_{it}^{W} d_j^{x} + Z_{it-1}^{W} d_j^{z} + F_{it-1}^{W} d_j^{F} + n_{itj}, \quad (5)$$

for each j =*1,2*, and where W_{itj} is the log of annual income (or hourly wage) adjusted for inflation. As explained below, the parameters of the model are identified with the assistance of exclusion restrictions on the X and Z matrices in equations (3) to (5).

Both wage growth within jobs and between jobs should be upward biased. This is because workers choose the option with higher values. Thus, a key feature of estimating the model correctly is to control for this type of self-selections.

[6] The author diagnostic shows that marital statuses do not have effect on the parameter of the wage equation, and thus, the wage equation is estimated jointly across the six marital states.

Each of the state-specific unobservable variables has several components. Some are exogenous to the individual, some are related to the person characteristics, and others are related to the surroundings in which he lives. Important to the focus of our model is that we can identify two sources of unobserved heterogeneity. First, the outcome of marital status that we observe is also a decision of the spouse and the outcome of job turnover is also a decision of the employer. Hence, in some cases, the outcome that we observe is not due only to the sole decision of the respondent. The NLSY does not provide adequate information on spouses and employers, and thus, we (the researchers) are unable to observe the decisions of the partners. Nevertheless, we recognize that we must control for these types of *match quality* and unobserved (for us) decisions by partners. Second, unobserved characteristics of the individual, such as social norms, motivation, and behavioral problems, also effect his decisions. These give rise to nonzero correlations between $\varepsilon_{it,}$ μ_{it} and ν_{itj}.

Given the above endogeneity and unobserved heterogeneity, estimating the parameters in equations (3) to (5) by using the data on the observed choices is subject to bias, and in particular to selection bias. To deal with such problems, we must account for the correlation structure of stochastic elements in the estimation of equations (3) to (5) and control for the correlation between these elements and our experience variables (Z_{it}*'s* and F_{it} `*s)* at each age. Following the approach of Heckman and Singer (1984), and Hotz *et al.* (2002), we estimate the model by a conditional maximum likelihood (ML) strategy in which the likelihood function is conditional on the estimated distribution of the unobserved individual factor.

We assume that the stochastic elements can be written as the following functions of a (common) person-specific stochastic component and idiosyncratic errors:

$$\varepsilon_{itk} = \alpha_k^F x_i + \omega_{itk}^F \quad (6)$$

$$\mu_{itk} = \alpha^V x_i + \omega_{it}^V \quad (7)$$

and

$$u_{itk} = a^{W} x_i + w_{it}^{W} \qquad (8)$$

In this set of equations ξ_i denotes a person-specific disturbance (or factor), α_j 's are specific factor loadings for marriage, work and wage, and ω_{isj} 's denote idiosyncratic disturbance terms assumed uncorrelated with ξ_i. Given the stochastic structure in (6)-(8), it follows that the ε_{isj}'s and μ_{isj}'s will be correlated across time and across states, i.e.,

$$\begin{aligned}
&\text{Cov}(e_{itj}, e_{it'm}) = a_j^F a_m^F \text{Var}(x_i), \quad \text{for } t \neq t', \ j \neq m \\
&\text{Cov}(e_{itj}, \mu_{it'j}) = a_j^F a_j^V \text{Var}(x_i), \quad \text{for } t \neq t', \text{ and for all } j \qquad (9) \\
&\text{Cov}(\mu_{itj}, \mu_{it'm}) = a_j^V a_m^V \text{Var}(x_i), \quad \text{for } t \neq t', \ j \neq m .
\end{aligned}$$

The above expressions indicate that the signs of the covariances between the ε_{isj}'s and μ_{isj}'s are determined by the products of the corresponding factor loadings, a property we use to classify the factors representing unobserved heterogeneity. Given the stochastic structure in (6)-(8), the correlations between the ε_{isj}'s and ν_{itj}'s, and between ν_{isj}'s and μ_{itj}'s will have similar properties. Hence, the distribution of ξ_i (the unobserved heterogeneity) is identified from the correlation of marital status, job choices and wages within and across time periods (and education stages) using maximum likelihood (ML) methods. Assuming that the idiosyncratic disturbance terms (ω_{isj}) are normally distributed with E(ω)=0, the finite distribution of ξ is estimated non-parametrically (Heckman and Singer, 1984). Specifically, we use a four-point discrete distribution for ξ, and estimate the intermediate point as well as the probability mass at each point (the two extreme points are normalized to 0 and 1).

One of the advantages of this method over the previous IV literature is that it is explicitly (rather then implicitly) account for the endogeneity of past choices. As Ichimura and Taber (2002) and Hotz *et al.* (2002) recently show, the nonparametric procedure to account for ξ_i, combine with the dynamic selection structure of the model (Figure 1) implies that $E(w_{it}^W \mid X_{it}^W, Z_{it-1}^W, F_{it-1}^W, x_i) = 0$. This is because the choices that lead to the present accumulation of labor market experiences and marital statuses at age t are taken care of as far as the initial condition assumption that

$$E(x_i \mid X_{i,16}^W, Z_{i16}^W, F_{i,16}^W,) = 0,$$

does holds. This is a plausible assumption in our case because at age 16, less than one percent of youth have been married, and 89 percent are still in school. The panel data that we built allow us to model all subsequent work and family choices and thereby allow ω_i to be uncorrelated with the experience variables at each subsequent age in the estimation of the model. Finally, note that ω^F and ω^V will have similar properties to those of ω^W.

V. Results

This section presents the empirical results based on a basic model and on our formal model and econometric method. The basic set of equations (Model 1) involves OLS estimates of job change and earnings and probit estimates of the probabilities of entering marriage, divorce, or remarriage. Model 1 takes account of the correlation of error terms through maximum likelihood techniques, but without controlling for unobserved heterogeneity and simultaneity. Model 2 is the complete model and does control for unobserved heterogeneity and simultaneity.

The paper's focus is on the effect of job changing on wage rates and on the relationships running in both directions between marital status and labor market performance. The Model 2

estimates are intended to reveal the causal role of labor market success in determining marital outcomes and the causal impact of marriage, divorce, and remarriage on labor market outcomes. Table 5A displays the determinants of job change and earnings, while the effects of factors determining marital transitions appear in Table 5B.

5.1. Determinants of Change in Jobs or Job Status

Beginning with our central focus, the effects of marital status, we find clear and significant impacts. Job stability increases with a new marriage and a continuing marriage, but not with a remarriage. Newly divorced men tend to change jobs about as frequently as singles but the longer their spell of divorce, the more often they tend to change jobs. Somewhat surprisingly, controlling for unobserved heterogeneity has little effect on the values of these marital status coefficients. Apparently, selection bias is not an important issue in this case. Hence, there is robust evidence that marital instability is associated with increased job instability.

The effects of the control variables are interesting. Blacks are more likely to change jobs or job status than whites, but no significant differences emerged between Hispanics and whites. Higher AFQT scores, higher years of schooling, and higher parental income lower job change, apparently indicating that more advantaged young men are more likely to stay on the same job. Work experience and age each show a U-shape pattern. However, the bottom of the age function is at age 22, while the work experience function does not reach a minimum until about 550 weeks (or 10.6 full years) of experience. Thus, in much of the range of this sample, changing jobs (or job status) increases with age and decreases with experience. Military experience also lowers the probability of job change. Prior income reduces job change, while workers with many past job changes are more likely to change jobs in the coming year. Apparently, job history is important in determining the job mobility in the future. Thus, a successful match between a worker and

employer can have cumulative effects, raising job tenure and ultimately earnings. In contrast, time out of the labor force or changing many jobs has cumulative effects in the direction of low tenure.

Among the other interesting findings, favorable employment conditions apparently encourage job change. Higher employment growth in the county of the respondents and lower unemployment rates increase job change, indicating that when the aggregate demand for workers goes up, young workers take the opportunity to move to new jobs. Also urban residents change jobs more often, while those in counties with high average income are less likely to change jobs. Finally, added children seem to encourage men to change jobs. Having three or more children increases the probability of job change over other groups. Perhaps those having at least three children by their late 20s are less oriented toward the labor market.

5.2. Effects on Wage Rates

The impacts of marital status on wage (Table 5A) reveal robust evidence on the gains from marriage. The returns to marriage are positive and significant in both Models 1 and 2, increasing with the duration of the marriage. However, unlike the job change results, divorced and separated men differ significantly from single men in the same direction as married men. Both earn higher wages than singles, though less than half as much as married men. Another difference with the job change results is among remarried men. Although these men show no higher job stability than do single men, they earn sharply higher wages.

The preferred Model 2 specification demonstrates that the significant gains associated with marriage are not primarily due to simultaneity and heterogeneity. The gains to marriage and remarriage remain large and statistically significant, though the heterogeneity corrections slightly lower the projected impacts. Continuing in marriage and having been married for eight years raises wage rates by nearly 14 percent over an otherwise comparable single man. This marital status

differential is equivalent to a difference of 2.6 years of schooling. While men who become separated or divorced or remain in that state also show wage gains over single men, their increment to wages falls well short of the wage gains associated with marriage.

The equation includes several variables that account for work and job histories. The wage gains to actual weeks of work experience vary widely. In all specifications, the returns to actual work experience are non-linear, with a positive coefficient on years of work experience and a negative coefficient on the square of years of work experience. According to the simultaneous specification in Table 6A, returns to work experience start out at 5.8 percent per year but they fall to zero after 16 years. The returns to age have a similar pattern. But the age and age-squared term together imply no wage return to age (holding work experience constant) between the ages of 20 to 30. Military experience conveys a positive return, but only in the Model 2 equations. The comparison between Models 1 and 2 on this variable suggest a negative selection into the military; once one controls for this selection effect, each added year of military experience raises wages by just over 1/3 of one percent pear.

The effects of job stability are robust and indicate wage gains from increases in job tenure at the same firm, fewer jobs, and job stability from one year to the next. On the basis of the results in Model 2, the decline in wage rates is about 2 percent from an additional four jobs, about 1.4 percent from changing jobs this year, and about .9% from losing a year of tenure with the current employer. Controls for unobserved heterogeneity matter reduce the wage returns to job stability only modestly.

The results on the wage impact of job change are the reverse of the tabulation results reported in Table 2. Apparently, the wage growth observed in Table 2 for job movers is not due to the new jobs, but to characteristics of these workers and/or to their work experience. The implications are different from those drawn by Topel and Ward (1992) that young men should

search for better matches by changing jobs often. Our findings suggest that in equilibrium young men lose by additional changes in jobs.

The effects of the personal characteristics are similar to those found elsewhere, but sometimes vary with the specification. The wage coefficients are a negative 5.6 percent among blacks and a negative 2.3 percent among Hispanics in Model 2. Taking account of unobserved heterogeneity makes the picture for minorities somewhat worse than without the corrected indicators. The pattern is reversed for foreign-born workers. Their wage coefficient is negative in the Model 1 analysis, but becomes positive and significant with Model 2 and its correction for unobserved heterogeneity. High AFQT, high parental income, more schooling, urban residence, number of children, and healthy employment conditions raise wage outcomes in all specifications. In the preferred specification, the return to education is about 5 percent, a level similar to those found in other regressions that use AFQT as control (Neumark, 2002). The estimated returns to schooling actually increase slightly when we control for unobserved heterogeneity. Having a GED lowers, holding school years constant, lowers wage rates by 6 percent. This effect emerges only when we take account of heterogeneity.

Favorable labor market conditions raise wage rates significantly. A 1-percentage point increase in employment growth raises wage rates by 12 percent. Living in a high-income county and a county with a low unemployment rate also exert significantly positive effects on wage rates.

5.3. Marital Status Equations

Our methodology resembles duration analysis in estimating the transition rates from one marital status to another or to remaining in the initial status. However, it differs in that we follow men through each marital state and not simply from one status to another (e.g., single to married or from married to divorce). Hence, we estimate the effects of the observable variables and the

unobservable factors on the exit-rate from singles to marry, from married to divorce, and from divorced to re-marry. In addition, we use the five marital status variables (relative to never-married) as endogenous determinants of labor market outcomes.

All the job market variables exert at least one significant impact on the distribution of marital status. Even holding constant for any negative earnings effects, job instability generally leads to negative marital outcomes. Changing jobs reduces the likelihood that single men will marry in the following year, raises the likelihood of divorce, and lowers the likelihood of remarriage. The total number of jobs has no significant effect on marriages, nor on remarriages but does raise the likelihood of divorce. Overall, these results suggest that modest effects of job change on marriage, but large effects on divorce or separation.

High wages raise sharply the likelihood of men becoming and remaining married. The wage impacts are large and significant for entering marriage and for becoming divorced or separated. The effects on remarriage have a positive sign but the high standard errors suggest no statistically significant effect. Holding wages constant, work experience exerts a positive and significant effect on entering marriage but not on remaining married or remarrying.

Interestingly, the independent effects of education vary. Higher education has no effect on entry into marriage, but does lower rates of marital dissolution and raise rates of remarriage. One possible explanation for no education effect on entering marriage is that the increased desirability of an educated man is already reflected in higher wages; another is that remaining in school delays marriage, offsetting the likelihood that uneducated men are less attractive to women. Urban residents stay single longer, as do residents of counties with relative high income. Surprisingly, neither variable exerts a significant effect on divorce or remarriage.

Differences in personal characteristics have a variety of effects. Blacks show a much lower connection to marriage than other groups, even after taking account of labor market outcomes, the county job market, age, work experience, and family background. In sharp contrast, the only effect of Hispanic background is to increase the likelihood of remarriage. The heterogeneity-adjusted results show no significant effect of AFQT scores (holding education and wages constant). Growing up in a female-headed family reduces entries into marriage but has no significant impact on divorce or remarriage.

The religion variables show some surprising effects. Although, as expected, the frequency of religious attendance reduces entry into divorce or separation, it exerts no significant effect on marriage. Catholic status significantly reduced entry into marriage and into remarriage and exerted no significant effect on divorces.

5.4. Analysis of Unobserved Common Factors

This section discusses the importance and the robustness of the unobserved heterogeneity in Model 2. This model contains 10 free parameters more than Model 1 (5 coefficients of factor-loading, 2 support-points and 3 mass probabilities). Table 5C presents the log of the likelihood functions of Models 1 and 2 and the locations of the four-support points and the estimated mass probabilities of Model 2. The *likelihood-ratio* test shows that Model 2 significantly improves the fit relative to Model 1, as the likelihood function increases by 5,397. It is not surprising, therefore, that the estimates of the support-points and mass probabilities are significant. Interestingly, the distributions of location of the support-points and mass probabilities are symmetric, which simplifies the convergence of the model.

The Model 2 estimates are especially important for the wage and job turnover equations and less important for the marriage, divorce, and remarriage equations. This is also the order of the

significant level of the *factor loading* in each equation. About half of the coefficients is in the wage equation changed significantly in moving from Model 1 to Model 2. As noted above, the return to military experience becomes positive once we control for selection. Although controlling for unobserved heterogeneity reduces the premium to new marriages, years married, and remarriage, the effects are still highly significant and most of the marriage premium is genuine.

Regarding the interpretation of unobservable characteristics, the coefficients on the *factor loadings* in Tables 5A and 5B are positive in the job turnover, wage and divorce equations and negative in the marriage equation. This suggests the unobserved components reflect men with the ability to command high wages, but perhaps impatient and thus fall into bad job matches and bad matches linked to marriage.

VI. How Policy Interventions Affect Marriage and Job Pathways

The findings from Model 2 allow one to simulate the impacts of shocks on marriage, job stability, and wages. The fact that marital status is both a cause and an effect of labor market outcomes suggests that feedbacks can play an important role in the pathways young people follow. The results show the possibility of virtuous circles—job stability leads to high wages, which leads to higher rates of marriage, which lead to more job stability and higher wages—and vicious circles with marital instability begetting job instability begetting more marital instability. The simulations complement the regressions results by allowing clearer interpretation of the nonlinear observed effects on marital status, and by quantifying the long-run effects of the dynamic interactions between marital, wage rates, and job stability.

Before presenting the findings, it is important to recognize that marriage rates, job stability, and wage rates increase rapidly with age as people move throughout their 20s and early 30s. Thus,

the impact of the shocks must be weighed against the original pathways. For that reason, we present the complete pathways of simulation 1, from age 17 to 32 for the five variables of interest in Appendix C. The *base* pathways are very similar to the original data. For the reader's convenience, we also present the *base* values in Table 6.

The first simulation in Table 6 is of a positive shock to the utility of the married state among never-married 25 year-olds. We suppose the interventions proposed by the Bush Administration to promote healthy marriages succeed in making marriage more appealing to 25 year-olds. The effect of the program lasts only one year; after age 25, the utility functions return to their earlier parameters. Still, as a result of the single year change in the utility function of those at the margin of marrying, more 25 year-olds enter a first marriage. We then simulate how this change in marriage affects job stability, earnings, and subsequent marital in subsequent years through age 31.

The direct effect of this intervention raises the share of 25 year-olds in first marriages by 7.2 percentage points. As predicted by Model 2 wage equation, the wage gain to the each men who got married because of the program is about 7 percent, leading to wage rate rises of 0.51 percent, and job turnover decreases of 0.21 percentage points, for all 25 year-olds. The subsequent impact of this higher wage rates is to decrease the likelihood of divorce. However, this feedback effect takes place alongside a general increase in the likelihood of marriage and divorce as people age, and thus, the difference in the distribution across marital states by age 31 is modest. Hence, the intervention assumed to affect marriage preferences in a single year would mainly lower the age of first marriage.

Nevertheless, the gains to earnings are impressive and persistent. The group affected by the marriage initiative ends up with wage rates nearly 6 percent higher than they would have experienced without the program (about 85% of the initial gain). Only about two-thirds of this gain is due to the associated effects on wage rates from the higher rates of marriage at ages 29-31, and one-third

comes from the dynamic effects of marriage on wage rates and the feedback effects over time as well as the returns to the increased marital duration of the affected men.

The second experiment involves reducing the utility of divorce at age 25. As with the marriage simulation, the change in utility does not extend beyond 25, though changes in marital status may persist. Initially, at age 25, the divorced proportion declines by 2.2 percentage points, fully offset by a 2.2 point increase in the proportion married. By ages 27-28, the change in marital status (relative to the actual distribution) has declined in half. The main initial impact of a reduction in divorce is increased job stability. Unlike the marriage simulation, the divorce simulation exerts a larger effect on job stability than on wages. Subsequent wage gains occur as a result of the added job stability. However, from age 27 the effects start to decrease. The average increase in earnings divided by those affected by the initial shocks to divorce stands at 6.44 percent as of ages 27 and 28, similarly to the effect of the first experiment. About 80 percent of this gain can be attributed to the lower divorce levels at 27-28. The remaining 20 percent is associated with the dynamic feedbacks linking lower divorce to higher job stability and earnings. Hence, reducing divorce has a weaker feedback effect than increasing marriage.

The third experiment considers the effects of one year of additional schooling for all young men from ages 17 through 32. This change allows us to look at how a change in an exogenous variable creates interesting dynamic effects among of the endogenous variables. Model 2's estimate of the direct impact of one more year of schooling is a 5.2 increase in wage rates and a very small reduction in job change. Initially, the added education modestly lowers entry into marriage, but also reduces divorces. Over time, the education-induced added wages begin to increase marriage rates, which should, in turn, raise wage rates further. The simulations show an education and wage-induced rise in married proportion of 29-31 year-olds of about 2-percentage points and a 1-

percentage point decline in the share divorced. These marital status changes, in turn, generate a 0.22 percent higher average wage rate at ages 29-31. A further feedback effect involving the interaction of marital stability, job stability, and wage rates ads another 0.25 percent to wage rates. Thus, at the end of the period, wage rates are 5.67 percent higher than without the added school year or 0.47 percent more than the 5.20 percent gains that would take place without any feedback effects. Standard estimation procedures ignore this modest, but not trivial, additional return to education.

VII. Conclusions and Next Steps

Job stability, wage rates, and marital stability are connected in complicated ways. *A priori*, leaving a job may take place for reasons positively or negatively related to marriage. An individual may leave a job because of the desire to move to another location and accommodate a new partner or spouse. On the other hand, moving jobs may put a strain on relationships, including marriage, and may lead to divorce or separation. Job stability might also be connected to marital status through its impact on wages. Here, too, there are many possibilities. Job stability may improve wage prospects or might limit opportunities that arise from switching positions. Finally, martial status may encourage job stability, just as it encourages stability in family relationships and in other behaviors (Waite and Gallagher, 2000). Thus, causation may run from job success to marital success or from marital success to job success.

This paper grapples with causation in an effort to understand the dynamic patterns of job change, earnings, and marital transitions. Using data covering a cohort of young men as they age from 18 through 32, the analysis yields some robust findings about causation and dynamics. Overall, the results show clear connections between marital stability, job stability, and wage rates. First, changing jobs and having a large number of jobs end up lowering wage rates and reducing

marriage rates. The finding that job instability lowers wages runs contrary to the conclusions of Topel and Ward (1992). Although differences in samples and time periods might explain differences in results, a more compelling explanation is the fact that our model is more complete, incorporates marital stability simultaneously, and uses adjustments for heterogeneity.

A second key finding is that marriage enhances job stability and raises wage rates. The results show that the observed marriage effects are not the result of reverse causation; they are significant even after taking account of the fact that job stability and higher wage rates increase the likelihood of marriage. The presence of a marriage premium in the context of adjustments for heterogeneity and simultaneity is a strong signal that projects that promote healthy marriages might indirectly improve job market outcomes as well. The results suggest a "virtuous cycle" set off either by an increased propensity to marry or by increased stability of jobs. For example, a higher propensity to marry would improve job prospects and job stability, which, in turn, would increase the duration of marriages.

The simulations reveal the quantitative dimensions of feedback effects of shocks in the form of marriage promotion and added schooling. A one-year rise in the utility from marriage at age 25 speeds the entry into marriage, which in turn, raises earnings over the next several years. The effects on marriages dissipate as people age and marry in any event. However, the induced gain in wage rates remains significant largely because of the feedback effect of early marriage on job stability and wage rates. Added education raises wage rates immediately and increases marriage rates of men by their early 30s, but the marriage-induced feedback effects on wage rates are modest. Similarly, the shock causing less divorce at age 25 exerts a short-term and intermediate term impact, but the effects dissipate over time.

One reason for pursuing questions about job change and marital instability is that both may generate externalities. Workers changing jobs to gain a higher wage take no account of the possibility that their behavior will reduce employer willingness to invest in the human capital of all other workers. Parents may be unable to calculate the fact that remaining single or getting a divorce may reduce earnings and lead to a reduction in child welfare (Becker, 1974).

A second rationale is to understand the potential role of marriage policies in reducing poverty and inequality, especially among families with children. A combined job and marriage initiative might help the country reach these goals by reinforcing the changes along one dimension (say, work) and ultimately lead to a stable family life and, in turn, a higher income.

References

Avner Ahituv and Marta Tienda. 2004 "Employment Activity, Motherhood and School Continuation Decisions of Young White, Black and Hispanic Women." *Journal of Labor Economics*, Forthcoming.

Becker, Gary S. 1974. "A Theory of Marriage," In *Economics of the Family,* edited by T.W. Schultz, Chicago University Press, Chicago.

Becker Gary, Elisabeth Landes, and Robert Michael . 1977 "An Economic Analysis of Marital Instability," *Journal of Political Economy*, p. 1141.

Bernhardt, Annette, Martina Morris, Marc Handcock, and Marc Scott. 1998. *Trends in Job Instability and Wages for Young Adult Men,* Institute on Education and the Economy no. IEEE Working Paper 8. New York, New York: Teachers College, Columbia University.

Bramlett, Matthew, and William Mosher. 2001. *First Marriage Dissolution, Divorce, and Remarriage: United States. Advance Data from Vital and Health Statistics*, National Center for Health Statistics no. 323. Hyattsville, Maryland.

Cameron, Steven and James Heckman. 1998. "Life Cycle Schooling and Dynamic Selection Bias: Models and Evidence for Five Cohorts of American Males." *Journal of Political Economy*. 106, 262-333.

Call, Vaughn, and Jay Teachman. 1996. "Life-Course Timing and Sequencing of Marriage and Military Service and Their Effects on Marital Stability." *Journal of Marriage and the Family*, 58 (February): 219-26.

Farber, Henry. 1995. *Are Lifetime Jobs Disappearing? Job Duration in the United States, 1973-1993,* National Bureau of Economic Research no. Working Paper 5014. Cambridge, Massachusetts.

Gould D. Eric. 2003. "Marriage and Career: The Dynamic Decisions of Young Men," The Hebrew University of Jerusalem. Unpublished manuscript.

Hamilton, Stephen. 1990. *Apprenticeship for Adulthood: Preparing Youth for the Future.* New York, New York: The Free Press.

Heaton, Tim. 1991. "Time-Related Determinants of Marital Dissolution." *Journal of Marriage and the Family*, May: 285-95.

Heckman, James J., and B. Singer. 1984. "A Method for Minimizing the Impact of Distributional Assumptions in Econometric Models of Duration Analysis." *Econometrica* 52:217-320.

Hotz, V. Joseph, Lixin Xu, Marta Tienda and Avner Ahituv. 2002 “Are There Returns to the Wages of Young Men from Working While in School?” *Review of Economics and Statistics*, 84(1), May: 221-236.

Ichimura, Hidehiko and Christopher Taber. 2002. “Semiparametric Reduced-Form Estimation of Tuition Subsidies.” *American Economic Review.* 286-92. May. I add on page 19 (identifications)

Jovanovic, Boyan. 1979. "Job Matching and the Theory of Turnover." *Journal of Political Economy*, 87(5): 972-990.

Klerman, Jacob Alex, and Lynn A. Karoly. 1994. "Young Men and the Transition to Stable Employment." *Monthly Labor Review*, 117, no. 8, August: 31-48.

Lerman Robert. 2001. “Marriage As A Protective Force Against Economic Hardship.” The Urban Institute.

Light, Audrey and Kathleen McGarry, 1998. “Job Change Patterns and the Wages of Young Men.” *Review of Economics and Statistics.* Vol. 80 (2). p 276-86. May.

Manning, Wendy D., and Pamela Smock. 1995. "Why Marry? Race and the Transition to Marriage Among Cohabitors." *Demography,* 32, no. 4, November: 509-20.

McLanahan, Sara, and Gary D. Sandefur. 1994. *Growing up with a single parent: What hurts, what helps.* Cambridge: Harvard University Press.

Mincer, Jacob and Solomon Polachek. 1974. "Family Investments in Human Capital: Earnings of Women."*Journal of Political Economy* (March/April): S76-S108.

Neumark, David. 2000. *Changes in Job Stability and Job Security: A Collective Effort to Untangle, Reconcile, and Interpret the Evidence*, National Bureau of Economic Research. Working Paper 7472. Cambridge, Massachusetts.

Neumark David, 2002 “Youth Labor Markets in the United States: Shopping Around or Staying Put,” *The Review of Economics and Statistics*, 84(3): August, 462-482.

Oppenheimer, Valerie. 2003. “Cohabiting and Marriage During Young Men’s Career Development Process.” Demography. February. 127-149.

Osterman, Paul. 1980. *Getting Started: The Youth Labor Market.* Cambridge, Massachusetts: MIT Press.

Presser, Harriet. 2000. "Nonstandard Work Schedules and Marital Instability." *Journal of Marriage and the Family*, 62 (February): 93-110.

Smock, Pamela J. and Wendy D. Manning. 1997. “Cohabitation Partners’ Economic Circumstances and Marriage.” *Demography,* Vol 34, 3:331-341.

Teachman, J.D., V.R.A. Call, and K.P. Carver. 1994. Marital Status and the Duration of Joblessness Among White Men. Journal of Marriage and the Family, Vol. 56 (May):. 415-428.

Topel, Robert H. and Michael P. Ward. 1992. "Job Mobility and the Careers of Young Men." *Quarterly Journal of Economics*, 196:339-479.

U.S. Bureau of Labor Statistics. 2000. *Number of Jobs Held, Labor Market Activity, and Earnings Growth Over Two Decades: Results from a Longitudinal Survey.* Washington, DC.

U.S. Census Bureau. 2001. "Living Arrangements of Children." Household Economic Studies. Washington, DC.

Waite, Linda J. and Maggie Gallagher. 2000. *The case for marriage.* New York: Doubleday.

Weiss, Yoram and Robert J. Willis. 1997. "Match Quality, New Information, and Marital Dissolution." *Journal of Labor Economics*, Vol 15, 1:S293-S329.

Wilson, William J. 1987. *The Truly Disadvantaged*. Chicago: University of Chicago Press.

Xie, Yu, James M. Raymo, Kimberly Goyette, and Arland Thornton. 2003. "Economic Potential and Entry Into Marriage and Cohabitation." *Demography.* 351-368.

Table 1: Hourly Rate of Pay and Wage Growth by Marital Statuses

Panel A: full sample at certain ages

	Hourly Rate of Pay				Annual Wage Growth			
Age	Single	Married	Divorced	Re-Married	Single	Married	Divorced	Re-Married
19	4.6	5.3	NA	NA	5.8%	10.8%	NA	NA
23	6.2	7.1	6.3	NA	10.1%	12.3%	NA	NA
27	7.6	8.9	6.9	8.5	2.7%	4.1%	-1.0%	9.4%
31	7.6	9.7	7.2	8.8	2.6%	2.8%	1.0%	7.1%
Number of Obs.	6,184	3,149	758	343	6,184	3,149	758	343

Panel B: by race and ethnic groups, age 28-30

	Hourly Rate of Pay				Annual Wage Growth			
Age	Single	Married	Divorced	Re-Married	Single	Married	Divorced	Re-Married
Hispanic	7.6	8.7	7.2	7.6	0.6%	2.3%	0.7%	1.0%
Black	6.5	7.9	6.4	7.4	-0.4%	-1.2%	-0.7%	4.4%
White	8.7	9.8	8.9	8.3	3.2%	2.1%	2.8%	2.1%
Number of Obs.	3,219	3,781	1,084	574	3,219	3,781	1,084	574

Panel C: by education groups, age 28-30

	Hourly Rate of Pay				Annual Wage Growth			
Age	Single	Married	Divorced	Re-Married	Single	Married	Divorced	Re-Married
Less than HS	5.6	6.8	6.8	6.8	-3.4%	-3.0%	-1.9%	0.4%
HS	6.8	8.3	7.3	7.6	1.1%	2.0%	0.8%	1.4%
Some College	8.4	9.6	9.9	9.6	3.1%	0.6%	8.5%	5.4%
BA and more	10.4	12.0	10.3	9.8	4.1%	4.2%	-1.1%	6.1%
Number of Obs.	3,219	3,781	1,084	574	3,219	3,781	1,084	574

Table 2: Hourly Rate of Pay and Wage Growth by Job Transaction Status

Panel A: full sample at certain ages

	Hourly Rate of Pay		Annual Wage Growth	
Age	Same Job	New Job	Same Job	New Job
19	4.8	4.6	4.2%	7.3%
23	6.7	6.2	7.7%	14.2%
27	8.6	7.1	2.8%	4.1%
31	9.2	6.9	2.7%	3.2%
Number of Obs.	5,860	4,574	5,860	4,574

Panel B: by race and ethnic groups, age 28

	Hourly Rate of Pay		Annual Wage Growth	
Age	Same Job	New Job	Same Job	New Job
Hispanic	8.2	7.6	-2.0%	8.7%
Black	7.3	6.5	0.8%	-7.1%
White	9.3	8.2	3.3%	7.5%
Number of Obs.	2,083	951	2,083	951

Panel C: by education groups, age 28

	Hourly Rate of Pay		Annual Wage Growth	
Age	Same Job	New Job	Same Job	New Job
Less than HS	6.8	5.9	-4.8%	2.1%
HS	7.9	6.7	1.7%	0.7%
Some College	9.0	8.6	3.1%	3.3%
BA and more	11.0	10.9	4.4%	8.3%
Number of Obs.	2,083	951	2,083	951

Table 3: Indicators of Labor Market Performance by Family Status at Age 28

Panel A: Percent keeping the same job over last calendar year

Family Status	All	Blacks	Whites	HS	BA and more
Single	56%	48%	65%	56%	61%
Married	71%	65%	73%	71%	74%
Separated or Divorced	50%	39%	55%	52%	39%
Re-Married	60%	55%	62%	62%	73%

Panel B: Cumulative number of jobs

Family Status	All	Blacks	Whites	HS	BA and more
Single	8.8	8.1	9.4	8.5	8.9
Married	8.0	7.7	8.0	7.4	8.1
Separated or Divorced	9.6	8.8	10.1	9.5	9.1
Re-Married	9.8	7.9	10.1	9.6	13.0

Panel C: Weeks work last calendar year

Family Status	All	Blacks	Whites	HS	BA and more
Single	39.5	35.0	44.3	38.2	45.4
Married	45.1	42.0	46.0	44.1	48.1
Separated or Divorced	39.1	35.9	42.9	39.7	47.5
Re-Married	43.1	37.2	44.1	43.4	42.0

Panel D: Cumulative weeks of work experience

Family Status	All	Blacks	Whites	HS	BA and more
Single	358	314	405	355	384
Married	426	375	442	429	421
Separated or Divorced	381	346	410	389	415
Re-Married	425	341	443	436	375

Panel E: Hourly rate of pay

Family Status	All	Blacks	Whites	HS	BA and more
Single	7.7	6.8	8.5	6.9	10.5
Married	9.0	7.5	9.5	8.1	11.5
Separated or Divorced	7.3	6.6	8.1	7.6	9.3
Re-Married	8.2	7.3	8.4	7.7	NA
Number of Obs.	3,428	1,050	1,707	1,610	568

Table 4: Number of Jobs by Age and by Marital Statuses

Age	Single, Never Married	First Marriage	First Separation (2 Changes)	Second Marriage (3 Changes)	Four or More Marital Changes
22	5.2	5.3	6.3	7.1	8.3
	(75%)	(21%)	(3%)	(1%)	(0%)
23	5.9	5.9	6.8	6.8	11.8
	(67%)	(27%)	(5%)	(1%)	(0%)
24	6.6	6.4	7.4	8.2	11.1
	(61%)	(31%)	(6%)	(2%)	(0%)
25	7.2	6.9	8.1	8.1	11.3
	(54%)	(36%)	(7%)	(2%)	(1%)
26	7.8	7.3	8.6	8.7	10.6
	(49%)	(39%)	(8%)	(3%)	(1%)
27	8.4	7.7	9.1	9.4	11.1
	(45%)	(40%)	(10%)	(4%)	(1%)
28	8.9	8.0	9.7	9.4	11.3
	(41%)	(41%)	(11%)	(5%)	(2%)
29	9.3	8.4	10.0	10.0	11.5
	(38%)	(43%)	(11%)	(6%)	(2%)
30	9.7	8.5	10.3	10.3	11.4
	(35%)	(43%)	(11%)	(7%)	(3%)
31	9.8	8.6	10.5	9.7	11.9
	(32%)	(45%)	(12%)	(7%)	(3%)
32	9.9	8.7	10.2	9.2	11.4
	(30%)	(46%)	(12%)	(8%)	(3%)

Notes: The share of people in each marital status for each age is in parentheses

Table 5A: Determinants of Job Stability and Wage Rates, Simultaneous Models

	Job Change		Ln Hourly Wages	
	Model 1	Model 2	Model 1	Model 2
Factor Loading		0.0779***		1.3790***
		(0.0113)		(0.0073)
Constant	2.3476***	2.3117***	0.4526***	-0.3678***
	(0.0698)	(0.0699)	(0.0784)	(0.0648)
Age	-0.0462***	-0.0458***	0.0265***	0.0228***
	(0.0058)	(0.0058)	(0.0066)	(0.0053)
Age Squared	0.0011***	0.0011***	-0.0008***	-0.0007***
	(0.0001)	(0.0001)	(0.0001)	(0.0001)
Black	0.0233***	0.0223***	-0.0363***	-0.0576***
	(0.0044)	(0.0044)	(0.0029)	(0.0055)
Hispanic	-0.0017	-0.0031	0.0164***	-0.0210**
	(0.0047)	(0.0047)	(0.0032)	(0.0065)
Foreign Born			-0.0071*	0.0179**
			(0.0044)	(0.0087)
AFQT	-0.0066***	-0.0064***	0.0171***	0.0115***
	(0.0010)	(0.0010)	(0.0006)	(0.0012)
Family Income, 1979	-0.2284**	-0.1844*	1.8813***	2.0563***
	(0.1107)	(0.1117)	(0.0637)	(0.1268)
Missing Family Income	-0.0024	-0.0003	0.0679***	0.0845***
	(0.0044)	(0.0045)	(0.0028)	(0.0058)
Mother's Education	0.0011*	0.0010*	-0.0001	-0.0035***
	(0.0006)	(0.0006)	(0.0004)	(0.0008)
Work Experience	-0.1377***	-0.1369***	0.0648***	0.0585***
	(0.0022)	(0.0022)	(0.0016)	(0.0018)
Experience squared	0.0056***	0.0056***	-0.0020***	-0.0018***
	(0.0001)	(0.0002)	(0.0001)	(0.0001)
Military experience	-0.0390***	-0.0383***	-0.0116***	0.0034***
	(0.0007)	(0.0007)	(0.0007)	(0.0008)
Job Tenure			0.0088***	0.0085***
			(0.0008)	(0.0008)
Number of Jobs	0.0342***	0.0342***	-0.0061***	-0.0044***
	(0.0004)	(0.0004)	(0.0004)	(0.0005)
Job change prior year			-0.0154**	-0.0144**
			(0.0060)	(0.0048)
Ln earnings prior year	-0.0487***	-0.0639***		
	(0.0046)	(0.0050)		

Table 5A (Continued): Determinants of Job Stability and Wage Rates, Simultaneous Models

	Job Change		Ln Hourly Wages	
	Model 1	Model 2	Model 1	Model 2
Years Married	-0.0003	-0.0004	0.0104***	0.0046***
	(0.0012)	(0.0012)	(0.0013)	(0.0010)
New Marriage	-0.0612***	-0.0604***	0.0743***	0.0657***
	(0.0107)	(0.0106)	(0.0141)	(0.0100)
Continuing Marriage	-0.0734***	-0.0712***	0.0952***	0.0989***
	(0.0075)	(0.0076)	(0.0088)	(0.0069)
New Divorce or Separation	0.0154	0.0158	0.0636**	0.0450**
	(0.0172)	(0.0171)	(0.0209)	(0.0151)
Continuing Divorce/Separation	0.0182**	0.0181**	0.0481***	0.0319***
	(0.0081)	(0.0080)	(0.0081)	(0.0083)
New Remarriage	-0.0087	-0.0095	0.1300**	0.0892**
	(0.0257)	(0.0259)	(0.0397)	(0.0303)
One or two children	0.0119**	0.0111**	0.0123***	0.0146***
	(0.0042)	(0.0042)	(0.0034)	(0.0038)
Three or more children	0.0306***	0.0297***	-0.0643***	-0.0037***
	(0.0069)	(0.0069)	(0.0058)	(0.0009)
Highest Grade Completed	-0.0042***	-0.0037***	0.0388***	0.0521***
	(0.0009)	(0.0009)	(0.0007)	(0.0010)
In School			-0.1475***	-0.1275***
			(0.0048)	(0.0046)
GED Level			0.0003	-0.0604***
			(0.0037)	(0.0059)
Residence in Urban Area	0.0139**	0.0137**	0.0496***	0.0341***
	(0.0043)	(0.0043)	(0.0032)	(0.0045)
County Average Earnings	-0.0009**	-0.0007*	0.0190***	0.0179***
	(0.0004)	(0.0004)	(0.0003)	(0.0004)
County employment growth	0.0925***	0.0897**	0.2142***	0.1244***
	(0.0270)	(0.0270)	(0.0287)	(0.0245)
County Unemployment Rate	-.0015**	-.0016**	-.0024***	-.0026***
	(.0005)	(.0005)	(.0004)	(.0005)

Notes: Detailed description of the variables are in Table Apeendix B.

Table 5B: Determinants of Marital Status Transitions, Simultaneous Models

	Entry into marriage		Entry into divorce/separation		Entry into remarriage	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Factor Loading		-0.1410*		0.2569*		0.2358
		(0.0842)		(0.1316)		(0.2463)
Constant	-9.0014***	-8.9233***	-0.7013	-0.9692	-2.9708	-3.2354
	(0.5567)	(0.5617)	(1.2559)	(1.2670)	(2.8234)	(2.8398)
Age	0.6203**	0.6196***	0.0255	0.0379	0.1475	0.1604
	(0.0473)	(0.0475)	(0.0999)	(0.1005)	(0.2147)	(0.2148)
Age Squared	-0.0125**	-0.0125***	-0.0012	-0.0014	-0.0039	-0.0041
	(0.0010)	(0.0010)	(0.0019)	(0.0019)	(0.0040)	(0.0040)
Black	-0.3436**	-0.3411***	0.2922***	0.2866***	-0.2099**	-0.2114**
	(0.0337)	(0.0338)	(0.0508)	(0.0511)	(0.0971)	(0.0971)
Hispanic	0.0284	0.0312	0.0029	-0.0020	0.2196**	0.2174**
	(0.0359)	(0.0360)	(0.0570)	(0.0569)	(0.0976)	(0.0981)
AFQT	-0.0099*	-0.0097	-0.0172*	-0.0165	-0.0052	-0.0046
	(0.0067)	(0.0067)	(0.0114)	(0.0114)	(0.0213)	(0.0213)
Family Income, 1979	-1.0259	-1.1024	-1.1323	-0.9836	-1.0189	-0.7959
	(0.8356)	(0.8402)	(1.4566)	(1.4561)	(3.0429)	(3.0343)
Missing Family Income	0.0722**	0.0675**	0.0484	0.0538	0.0468	0.0524
	(0.0326)	(0.0328)	(0.0497)	(0.0499)	(0.0937)	(0.0937)
Mother's Education	-0.0115**	-0.0112**	0.0064	0.0057	0.0150	0.0135
	(0.0046)	(0.0046)	(0.0074)	(0.0074)	(0.0128)	(0.0130)
Siblings	0.0033	0.0032	-0.0282***	-0.0280***	0.0004	-0.0002
	(0.0047)	(0.0047)	(0.0072)	(0.0072)	(0.0136)	(0.0137)
Female Headed Household	-0.0622**	-0.0625**	0.0127	0.0134	-0.0184	-0.0174
	(0.0302)	(0.0303)	(0.0486)	(0.0488)	(0.0873)	(0.0876)
Work Experience	0.0429**	0.0420**	-0.0030	-0.0033	0.0131	0.0127
	(0.0163)	(0.0163)	(0.0238)	(0.0238)	(0.0433)	(0.0429)
Experience squared	-0.0005	-0.0005	-0.0007	-0.0007	0.0006	0.0007
	(0.0013)	(0.0013)	(0.0016)	(0.0016)	(0.0029)	(0.0029)
Number of jobs	0.0028	0.0030	0.0207***	0.0205***	0.0017	0.0020
	(0.0034)	(0.0034)	(0.0046)	(0.0046)	(0.0068)	(0.0068)
Job change prior year	-0.0596**	-0.0587**	0.1200**	0.1140**	-0.1209*	-0.1280*
	(0.0252)	(0.0253)	(0.0438)	(0.0439)	(0.0715)	(0.0719)
Ln earnings prior year	0.1831***	0.2092***	-0.1114**	-0.1742**	0.0859	0.0338
	(0.0299)	(0.0321)	(0.0528)	(0.0587)	(0.0867)	(0.0971)

Table 5B: Continue

	Entry into marriage		Entry into divorce/separation		Entry into remarriage	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Highest Grade Completed	-0.0023 (0.0067)	-0.0041 (0.0067)	-0.0522*** (0.0110)	-0.0480*** (0.0111)	0.0465** (0.0221)	0.0501** (0.0223)
Baptist Religion	0.0188 (0.0305)	0.0198 (0.0306)	0.0531 (0.0434)	0.0516 (0.0436)	0.1358* (0.0818)	0.1367* (0.0816)
Catholic Religion	-0.0790** (0.0299)	-0.0783** (0.0300)	0.0231 (0.0495)	0.0195 (0.0493)	-0.2359** (0.0878)	-0.2336* (0.0883)
Frequency of Church Attendance, 1979	0.0100* (0.0067)	0.0095 (0.0067)	-0.0280** (0.0103)	-0.0269** (0.0103)	-0.0027 (0.0190)	-0.0014 (0.0190)
Residence in Urban Area	-0.1376*** (0.0309)	-0.1376*** (0.0310)	0.0634 (0.0465)	0.0617 (0.0467)	0.0465 (0.0855)	0.0428 (0.0852)
County Average Earnings	-0.0114*** (0.0029)	-0.0117*** (0.0029)	0.0029 (0.0046)	0.0038 (0.0046)	-0.0078 (0.0078)	-0.0068 (0.0078)
County Divorce Rate	0.0327*** (0.0069)	0.0324*** (0.0069)	0.0166* (0.0108)	0.0165* (0.0109)	-0.0005 (0.0189)	-0.0006 (0.0189)

Table 5C: Estimates of Common Unobserved Factors

Support Point	1	0.000	Prob Mass for Pt 1	0.0258*** (0.0031)
Support Point	2	0.4337*** (0.0035)	Prob Mass for Pt 2	0.4308*** (0.0110)
Support Point	3	0.6774*** (0.0033)	Prob Mass for Pt 3	0.4683*** (0.0109)
Support Point	4	1.000	Prob Mass for Pt 4	0.0751

	Model 1	**Model 2**
Log of the Likelihood Function	-74,198.8	-68,801.6
Number of Cases	3,507	3,507
Number of estimates parameters	139	149

Notes: Detailed description of the variables are in Table Apeendix B.

Table 6: Simulated Effects of Marriage Promotion and Added Education on Marital Status and Wage Rates

Simulation 1: Raise the Utility of Marriage at Age 25

	Never-Married		Married		Divorced		Job Change		Ln Wage	
Age	Base	Difference	Base	Difference	Base	Difference	Base	Difference	Base	Difference
25	56.1%	-7.2%	37.0%	**7.2%**	6.9%	0.0%	39.5%	-0.21%	1.798	0.51%
26	50.4%	-6.4%	41.3%	**5.9%**	8.3%	0.5%	36.9%	-0.18%	1.840	0.70%
27	46.3%	-5.6%	44.0%	**4.8%**	9.7%	0.9%	35.7%	-0.05%	1.874	0.62%
28	42.6%	-4.7%	46.7%	**3.4%**	10.7%	1.3%	35.2%	-0.25%	1.904	0.49%
29	40.6%	-4.3%	47.9%	**2.8%**	11.5%	1.4%	34.3%	0.00%	1.928	0.44%
30	38.1%	-4.0%	49.0%	**2.8%**	12.9%	1.1%	32.0%	0.00%	1.946	0.43%
31	35.9%	-3.6%	50.0%	**2.3%**	14.1%	1.3%	31.9%	0.04%	1.973	0.40%
29-31	38.2%	-3.9%	48.9%	2.6%	12.8%	1.3%	32.7%	-0.13%	1.949	0.42%

Wage gains to the men affected by the simulation:

Averaged Among Added 25 Year-Old Married Men	7.04%
Gain at 29-31 Averaged Over Men Induced to Marry at Age 25	5.84%
Pure Marital Status Effect on Men Induced to Marry at Age 25	4.01%
Feedback Effect of Marital Status, Job Stability, and Wages	1.83%

Simulation 2: Lower the Utility of Divorce at Age 25

	Never-Married		Married		Divorced		Job Change		Ln Wage	
Age	Base	Difference	Base	Difference	Base	Difference	Base	Difference	Base	Difference
25	56.1%	0.0%	37.0%	2.2%	6.9%	**-2.2%**	39.5%	-0.18%	1.798	0.16%
26	50.4%	0.0%	41.3%	1.5%	8.3%	**-1.5%**	36.9%	-0.28%	1.840	0.16%
27	46.3%	0.0%	44.0%	1.3%	9.7%	**-1.3%**	35.7%	-0.15%	1.874	0.17%
28	42.6%	0.0%	46.7%	0.8%	10.7%	**-0.8%**	35.2%	-0.11%	1.904	0.12%
27-28	44.4%	0.0%	45.3%	1.1%	10.2%	-1.1%	35.5%	-0.13%	1.889	0.14%

Wage gains to the men affected by the simulation:

Gain at 26-28 Averaged Over Men Induced Not to Divorce at Age 25	6.44%
Pure Marital Status Effect at 26-28 on Men Induced to Marry at Age 25	5.30%
Feedback Effect of Marital Status, Job Stability, and Wages	1.14%

Simulation 3: Raise Years of Schooling by One Year For All Ages

	Never-Married		Married		Divorced		Job Change		Ln Wage	
Age	Base	Difference	Base	Difference	Base	Difference	Base	Difference	Base	Difference
18	96.6%	0.0%	3.3%	0.0%	0.1%	0.0%	76.2%	-0.65%	1.329	5.20%
20	88.9%	-0.2%	10.0%	0.3%	1.2%	-0.1%	60.7%	-1.11%	1.504	5.27%
22	77.2%	-0.3%	19.9%	0.6%	2.9%	-0.3%	50.3%	-0.90%	1.627	5.35%
24	63.0%	-0.3%	31.5%	0.7%	5.5%	-0.4%	42.4%	-0.22%	1.747	5.43%
26	50.4%	-0.3%	41.3%	1.5%	8.3%	-1.2%	36.9%	-1.51%	1.840	5.43%
28	42.6%	-0.7%	46.7%	2.2%	10.7%	-1.5%	35.2%	-0.56%	1.904	5.61%
29	40.6%	-1.0%	47.9%	2.1%	11.5%	-1.1%	34.3%	-0.95%	1.928	5.66%
30	38.1%	-1.0%	49.0%	1.9%	12.9%	-0.9%	32.0%	-0.83%	1.946	5.65%
31	35.9%	-1.1%	50.0%	2.1%	14.1%	-1.1%	31.9%	-0.44%	1.973	5.70%
29-31	38.2%	-1.0%	48.9%	2.1%	12.8%	-1.0%	32.7%	-0.13%	1.949	5.67%

Wage Gains of the Simulation:

Total Effect of Added Year of Schooling, Ages 29-31	5.67%
Pure Effect of Added Year of Schooling, Ages 29-31	5.20%
Pure Marital Status Effect at Ages 29-31	0.22%
Feedback Effects Linked to Marital Status, Job Stability, and Wages	0.25%

Appendix Table A: Reasons Indicates Jobs' Separation by Represented Groups

Panel A: By Age, Race and Ethnic Groups

Reasons for Jobs' Separation	All	Age 20-23	Age 28-31	Hispanic	Black	White
Layoff	17.3	21.4	13.4	19.9	16.8	16.8
Fired	12.9	13.1	14.9	12.5	15.3	11.3
Program End	4.5	6.1	1.7	3.0	6.9	3.3
Quit because of Family	0.7	0.5	1.0	0.7	0.9	0.6
Quit because of Other	33.7	37.5	31.2	31.9	35.3	33.3
Missing or no reason	30.9	21.4	37.8	32.1	24.8	34.9
Number of Obs.	25,858	8,346	5,122	4,893	9,120	11,845

Panel B: By Education and family Status Groups

Reasons for Jobs' Separation	Less than HS	HS	BA and more	Single	Married	Divorced
Layoff	19.8	18.1	7.0	18.1	15.4	16.0
Fired	13.5	12.0	15.1	13.0	11.9	16.4
Program End	4.8	4.0	4.3	5.2	3.1	2.2
Quit because of Family	0.8	0.6	0.3	0.6	1.1	1.1
Quit because of Other	29.0	34.1	36.7	34.4	31.1	35.4
Missing or no reason	32.1	31.1	36.7	28.8	37.4	28.9
Number of Obs.	8,080	11,152	1,929	18,683	4,946	1,697

Notes: The table is based on the question: "which of the reasons on this card best describes why you happened to leave this job"? (1) lay off; (2) discharged or fired; (3) end of temporary/seasonal job or program ended; (4) quit for pregnancy/family reasons; and (5) quit for other reasons.

Appendix Table B: Variables Descriptions

Variable Name	Description	Appears in Equations	Means
DEPENDENT AND ENDOGENOUS VARIABLES			
Marital Status	Marital status of R: single, new marriage, cont. marriage, new divorce, cont. divorce, new remarriage	3	NA
Change job from Last Year	Dummy variable indicating whether R change job during the last year	4	0.471
Ln of Hourly Wage Rate	Ln of Hourly Wage Rate	5	1.710
SELECTED INDEPENDENT VARIABLES			
Ascribed Traits and Scholastic Aptitude (X)			
Age	Age at the beginning of the year	3,4,5	24.254
Black	Dummy variable indicating African American	3,4,5	0.304
Hispanic	Dummy variable indicating Hispanic	3,4,5	0.193
Foreign	Dummy variable indicating Foreign born	5	0.070
AFQT	Armed Forces Qualify Test score (Age and scale adjusted to 1,10 interval)	3,4,5	3.045
Family Background (X)			
Family Income	Total annual family income in 1979 ($1,000,000)	3,4,5	0.019
Mother's Education	Highest grade completed (in years) by R's mother	3,4,5	10.965
Number of Siblings	Number of living siblings in 1979	3	3.809
Female-Headed Household	Dummy, R lived in a female-headed household at age 14	3	0.185
Work Experience and Education Indicators (Z)			
Work Experience	Weeks (divided by 52) worked from age 17 to this year	3,4,5	4.913
Military Experience	Total Years of Military Experience	4, 5	0.662
Job Tenure	Total weeks (divided by 52) of tenure with present employer	5	2.120
Number of Jobs	Total number of jobs ever reported	3,4,5	6.353
Job change prior year	Dummy, indicating whether R change job during prior year	3,5	0.506
Ln earnings prior year	Lag of the wage rate from prior year	3,4	1.668
Highest grade completed	Highest grade comp. through the beginning of this year	3,4,5	12.275
In School	Attending school at the Interview date	5	0.244
GED	Received GED	5	0.084

Variable Name	Description	Appears in Equations	Means
Marital and Family Statuses (F)			
Years Married	Years since started current Marriage	4,5	1.345
New Marriage	Those who married for the first time during this calendar year	4,5	0.047
Continuing Marriage	Those who continue to be married in the current year (including second marriages)	4,5	0.251
New Divorce or Separation	Those who divorced or separated during this year	4,5	0.018
Continuing Divorce or Separation	Those who continue to be divorced or separated during the current year	4,5	0.049
New Remarriage	Those who remarried during this calendar year	4,5	0.008
One or Two Child	has one or two children at the beginning of this year	4,5	0.287
Three or more children	has three or more children at the beginning of this year	4,5	0.059
Social Affiliation (X)			
Baptists Religion	Self response as practice Baptists religion	3	0.288
Catholic Religion	Self response as practice Catholic religion	3	0.343
Frequency of Church Att.	Frequency of religious attending in 1979 (6 points scale, with 6 as highest)	3	3.220
Local Market Conditions (X)			
Resident in Urban area	R. is presently resident in Urban area	3,4,5	0.816
County Average Earnings	Average earnings per job in R's county of residence ($1,000)	3,4,5	15.396
County Empl. Growth	Percent employment growth in R's county of residence	4,5	0.026
County Unempl. Rate	Unemployment Rate in R's county of residence	4,5	7.574
County Divorce Rate	Divorces rates per 1,000 in R's County of residence	3	4.957

Appendix Table C: Effects of Changes in the Value of Marriage at Age 25 on Job Stability and Wage Rates

	Never-Married			Married			Divorced			Job Change			Ln Wage		
Age	base	Sim.	Diff.	base	Sim.	Diff.	base	Sim.	Diff.	base	Sim.	Diff.	base	Sim.	Diff.
17	98.5%	98.5%	0.0%	1.5%	1.5%	0.0%	0.0%	0.0%	0.0%	79.3%	79.3%	0.00%	1.319	1.319	0.00%
18	96.6%	96.6%	0.0%	3.3%	3.3%	0.0%	0.1%	0.1%	0.0%	76.2%	76.2%	0.00%	1.329	1.329	0.00%
19	93.5%	93.5%	0.0%	6.0%	6.0%	0.0%	0.5%	0.5%	0.0%	65.4%	65.4%	0.00%	1.419	1.419	0.00%
20	88.9%	88.9%	0.0%	10.0%	10.0%	0.0%	1.2%	1.2%	0.0%	60.7%	60.7%	0.00%	1.504	1.504	0.00%
21	82.8%	82.8%	0.0%	15.3%	15.3%	0.0%	1.9%	1.9%	0.0%	54.9%	54.9%	0.00%	1.567	1.567	0.00%
22	77.2%	77.2%	0.0%	19.9%	19.9%	0.0%	2.9%	2.9%	0.0%	50.3%	50.3%	0.00%	1.627	1.627	0.00%
23	70.1%	70.1%	0.0%	26.0%	26.0%	0.0%	3.9%	3.9%	0.0%	46.2%	46.2%	0.00%	1.691	1.691	0.00%
24	63.0%	63.0%	0.0%	31.5%	31.5%	0.0%	5.5%	5.5%	0.0%	42.4%	42.4%	0.00%	1.747	1.747	0.00%
25	56.1%	48.9%	-7.2%	**37.0%**	**44.2%**	**7.2%**	6.9%	6.9%	0.0%	39.5%	39.3%	-0.21%	1.798	1.803	0.51%
26	50.4%	44.0%	-6.4%	41.3%	47.2%	5.9%	8.3%	8.8%	0.5%	36.9%	36.7%	-0.18%	1.840	1.847	0.70%
27	46.3%	40.7%	-5.6%	44.0%	48.7%	4.8%	9.7%	10.6%	0.9%	35.7%	35.6%	-0.05%	1.874	1.880	0.62%
28	42.6%	37.9%	-4.7%	46.7%	50.1%	3.4%	10.7%	12.0%	1.3%	35.2%	35.0%	-0.25%	1.904	1.909	0.49%
29	40.6%	36.4%	-4.3%	47.9%	50.7%	2.8%	11.5%	12.9%	1.4%	34.3%	34.3%	0.00%	1.928	1.933	0.44%
30	38.1%	34.1%	-4.0%	49.0%	51.8%	2.8%	12.9%	14.1%	1.1%	32.0%	32.0%	0.00%	1.946	1.950	0.43%
31	35.9%	32.3%	-3.6%	50.0%	52.3%	2.3%	14.1%	15.4%	1.3%	31.9%	32.0%	0.04%	1.973	1.977	0.40%
32	34.1%	31.3%	-2.8%	51.9%	53.6%	1.7%	14.0%	15.0%	1.0%	31.8%	31.7%	-0.13%	1.972	1.975	0.32%
Average	63.4%	61.0%	-2.4%	30.1%	32.0%	1.9%	6.5%	7.0%	0.5%	47.1%	47.0%	-0.05%	1.715	1.717	0.24%