Job Displacement, Disability, and Divorce

Kerwin Kofi Charles, *University of Michigan and National Bureau of Economic Research*

Melvin Stephens, Jr., *Carnegie Mellon University and National Bureau of Economic Research*

Earnings shocks should affect divorce probability by changing a couple's expected gains from marriage. We find that the divorce hazard rises after a spouse's job displacement but does not change after a spousal disability. This difference casts doubt on a purely pecuniary motivation for divorce following earnings shocks, since both types of shocks exhibit similar long-run economic consequences. Furthermore, the increase in divorce is found only for layoffs and not for plant closings, suggesting that information conveyed about a partner's noneconomic suitability as a mate due to a job loss may be more important than financial losses in precipitating divorce.

I. Introduction

In standard economic models, marriage is presumed to confer pecuniary gains to spouses.[1] Events that lower a spouse's earnings capacity may

We thank Rebecca Blank, Matthew Shapiro, Gary Solon, Lowell Taylor, Robert Willis, and seminar participants at the 2001 American Economic Association meetings for comments and suggestions. Contact the corresponding author, Kerwin Kofi Charles, at kcharles@umich.edu.

[1] Among the pecuniary gains identified by Weiss (1997) and other economists are (*a*) greater consumption of public goods—such as home heating or well-fed and well-clothed children—in marriage than either partner in a married couple could consume in the single state; (*b*) spouses' role as creditors where capital

[*Journal of Labor Economics*, 2004, vol. 22, no. 2]

0734-306X/2004/2202-0009$10.00

therefore be expected to affect the person's family in two distinct ways. First, because they lower a family's full income, spousal earnings shocks are likely to have a direct negative effect on the family's consumption of market and home-produced goods and of leisure. Second, because they potentially change the gains that a married couple receives from being married, shocks to the earnings of a spouse may affect the probability of the person's marriage ending in divorce or separation. A significant and growing literature analyzes the direct effect of earnings shocks on families' consumption, but very little research studies how earnings shocks affect marital stability.

Using data from the Panel Study of Income Dynamics (PSID), this article assesses how negative shocks to earnings coming from job displacement or physical disability affect the probability of marital dissolution. We study two explicit negative earnings shocks, whereas previous authors have relied on the difference between actual and predicted earnings as the measure of earnings shocks. We study marriages between individuals of all ages as well as first and other marriages, and so the results we document should be representative of population-wide effects. We also study negative shocks occurring to both husbands and wives.

We find evidence that job loss significantly raises the divorce hazard, whereas spousal disability has no effect. We present evidence that this difference arises neither because disability has a smaller effect on earnings than does job loss nor because a bout of disability is less informative about the future trajectory of bad health than losing a job is about future episodes of job loss. This result casts doubt on a purely pecuniary motivation for divorce following an earnings shock. We also find that the increase in divorce following a job loss is due entirely to layoffs and that there is no effect due to plant closings. We argue that this last result suggests that information conveyed about a partner's non–economic suitability as a mate due to a job loss may be more important than the financial losses in precipitating a divorce.

II. Overview

In the growing literature on the impact of earnings shocks on family well-being, researchers have typically focused on the consumption either of leisure or of market-produced goods as the outcome variable. This focus provides a picture of the welfare effects of shocks on married couples that is not only incomplete but that may also be misleading. Most papers

markets are imperfect, as occurs when one spouse helps finance another's advanced schooling; and (*c*) insurance spouses provide to their mates, as is evident in the promise to help each other when negative events occur. We note here that many of the gains from marriage are obviously not pecuniary, and most are probably outside the realm of standard economic analysis. We only follow convention in the economics literature in emphasizing pecuniary gains.

studying how the consumption and labor supply of married couples are affected by earnings shocks focus on families that remain together over the interval analyzed.[2] However, observed patterns of consumption of leisure and market-produced goods among families that meet this restriction may differ fundamentally from the average consumption changes among all families experiencing such shocks. Indeed, this is necessarily true unless the likelihood of marital dissolution conditional on an earnings shock being suffered and consumption responses to such shocks are systematically unrelated.

Brief reflection suggests that this condition is unlikely to be true. In the population of married couples to whom bad events occur, one would suppose that the couples most likely to divorce would be those for whom within-marriage utility falls by a particularly large amount as a result of a given bad event. That is, one would expect couples who remain together in the face of a bad outcome to be those for whom actual and anticipated consumption and labor supply adjustments are relatively small when compared to those experienced by people whose marriages break up. Thus, understanding how shocks affect marital stability is vitally important, even if the ultimate interest is on how shocks affect a family's consumption.

Of course, another justification for studying divorce, separation, and other forms of marital dissolution is that these are all directly indicative of the degree to which earnings shocks affect a family's well-being.[3] However, empirical research in economics on the causes of marital dissolution is relatively sparse, despite well-established theoretical results. In particular, only a pioneering paper by Becker, Landes, and Michael (1977) and

[2] Recent examples of some of this work include Cullen and Gruber (2000) and Stephens (2003), who analyze whether wives increase their labor supply in response to husbands' job loss—a test of the well-known added-worker hypothesis (A.W.E.). Stephens (2001) analyzes family consumption changes after husbands' job loss. Charles (1999) examines how husbands and wives adjust their labor supply when a spouse's health worsens.

[3] Since marital dissolution is something that people choose, this statement may appear initially odd. If people chose to dissolve a marriage, then, by revealed preference, how could their welfare fall as a result of what they freely chose? Of course, since any individual spouse, if his or her preferences are strong enough, can cause a marriage to end, it is possible for the other (reluctant) spouse to be made strictly worse off by the new arrangement. There is evidence (Seeborg 1996) that ex-wives often suffer financially in the aftermath of a divorce or separation. Even if both spouses agree that they will both personally fare better if their marriage were to end, it is not obvious that they fully internalize the interests of any children that they might have. This means that children's welfare may suffer after marital dissolution.

a more recent study by Weiss and Willis (1997) assess how unanticipated changes to income and earnings affect marital dissolution.[4]

The model by Becker et al. (1977) explaining the problem of marital instability is the foundation of all work by economists in this area. The model argues that, at the start of marriage, people form expectations about their and their spouses future earnings streams. Couples are also characterized at the start of their marriages by their "match quality"—something that measures the likely future stability of their union because of factors such as similar life experiences and goals and the intensity of their initial connection. Over time, married persons receive information about themselves and their partners that may cause them to reevaluate the wisdom of remaining married to the spouse. The main point is that the information likely to cause this type of reevaluation must be unanticipated, for things that the couple knew or expected to be true when they became married should have made them dubious about being married in the first place. These unanticipated bits of information about changes in income, earnings, and other prospects are what we call "shocks" in this article.

Empirical tests to gauge the importance of shocks on marital instability are frustrated by the fact that the quality of a married couple's initial match is not known to a researcher. The inevitable question then becomes: Is the fact that a married couple breaks up attributable to the earnings shocks that buffet them or to the fact that they were an ill-matched pair to begin with? And is the deviation between the couple's belief about what each will earn and what they actually earn in the future well approximated by the difference between the researcher's estimate of the couple's belief about their prospects and what the couple actually realizes?

Both of these problems complicate the empirical work done by Becker et al. (1977) on the causes of marital instability. Using a large cross-sectional data set, the authors examine the importance of income, children, and age at marriage on marital dissolution. Because the data are not longitudinal, they are not able to account for match quality in their regressions. The authors measure earnings shocks using (in their words) a crude measure equal to the difference between earnings as predicted by a simple cross-sectional regression model and actual earnings.

Weiss and Willis (1997), building on insights from Becker et al., model "surprises" as the difference between realized earnings and predicted earnings estimated from earnings regressions run on data from previous years. Their results show that a positive surprise to a husband's earnings lowers the chance of marital dissolution, while a positive earnings shock expe-

[4] Other recent research in economics on the subject of marital dissolution includes Lillard and Waite (1990, 1993). The theoretical foundations of work on marriage and divorce can be traced to various papers by Becker. See Becker (1973, 1974, 1991). Weiss (1997) is an excellent summary of research on these questions.

rienced by a wife raises the odds of divorce. Since they use panel data from the National Longitudinal Study of the High School Class of 1972, Weiss and Willis are able to control for possible biases introduced by latent match quality. However, Weiss and Willis, like Becker et al., use no explicit measure of shocks. Their regressions therefore relate divorce probability to a measure that may be a very imperfect measure of earnings changes that are unanticipated by the couple.

In this article, we study two explicit outcomes that satisfy the conventional understanding of the term "shock" or "surprise" and that are in keeping with the spirit of the original formulation of "surprises" due to Becker et al. (1977). Our hope is that the effects that we identify are therefore truly due to unanticipated shocks to earnings.[5] Also, because we study two different, explicitly defined earnings shocks, our work is able to address the fact that different shocks that have broadly similar effects on the earnings of a spouse may have quite different effects on the probability of marital dissolution. This is so for two reasons.

The first reason is that two unanticipated shocks that affect current earnings similarly may yet provide different pieces of information to a partner about a spouse's future earnings capacity. The second reason is that the precise nature of the shock may matter in a couple's dissolution decision because of how others may react to a divorce or separation that is initiated by a particular type of shock. For example, friends and other loved ones may withhold their postseparation support if they feel that the separation is unwarranted, unjust, or petty. A person concerned about the treatment that they will receive from their loved ones after their marriage ends might feel that only certain reasons for divorce comfortably pass this social approval test. Of course, to learn whether different types of shocks affect the dissolution decision differently, explicit indicators for more than one type of shock must be used.

The analysis in this article focuses on shocks to earnings arising from the onset of either a physical disability or a job loss. For both of these negative shocks, we study the short- and long-term effects of the first shock a married couple experiences, as it is this event that brings the couple the new information that might be the source of their greater divorce probability. Obviously, couples may experience disabilities or job

[5] By unanticipated we mean that the household's ex ante probability of an earnings shock occurring is very low but not necessarily zero. Manski and Straub (2000) examine the distribution of subjective job loss probabilities for workers and find that the median probability is 5% while the seventy-fifth percentile is 20%. Stephens (2002) finds similar evidence using the Health and Retirement Study. In addition, he finds that, among subsequently displaced workers, the median subjective job loss probability is 20% and the seventy-fifth percentile is 50%. We interpret these findings as evidence that job displacements are largely unanticipated events.

losses after the first one they experience. Why, then, do we focus on the first shock? One answer is that, to the extent that this article is interested in the effect of negative earnings shocks, bouts of displacement or disability that follow the first event are, to a considerable degree, not "shocks" at all; couples can expect these future events once the event ever happens. Stevens (1997) finds that ever-displaced workers face an increased risk of future job loss relative to never-displaced persons, and the recurrent nature of health problems is well known and documented below.

Another, and perhaps less important reason, for emphasizing the first as opposed to subsequent shocks is that previous research shows that, for both displacement (Stevens 1997) and disabilities (Charles 2003), the first job loss is by far the most severe in terms of lost earnings and wages. As with earthquakes, first shocks seem to be often accompanied by smaller "aftershocks." We therefore focus on the initial important event.

This article uses panel data, as do Weiss and Willis. However, Weiss and Willis only study marital dissolution up to age 32. Their summary statistics reveal that there is a great deal of marital formation and dissolution by this age, but it is possible that patterns of marital dissolution for such young couples may differ systematically from the behavior exhibited by the population at large. It may therefore be unwise to generalize from results for this group. Our data cover marriages between people of all ages and with very different marital histories, and so our results should be representative of population-wide effects.

In the next section, we briefly lay out the theoretical foundation for the work that follows. The estimation technique is then briefly outlined. Next, we describe the data used in the analysis, present the results, and conclude.

III. Earnings Shocks and Marital Dissolution: Theory and Empirical Strategy

Consider a family, i, consisting of a husband, h, and a wife, w. Let the utility that the partners jointly receive from being married in any period t be $V_{it}(Y_{ht}, Y_{wt})$.[6] The income or labor earnings received by spouse j, $(j = h, w)$ in time period t is Y_{jt}. Assume that marital utility is strictly increasing in its arguments, so that $V_1 > 0$ and $V_2 > 0$ in every t. In every period, a spouse has an alternative utility that he or she can receive from not being married to the current spouse, denoted as $A_{jt}(Y_{jt})$. These alternatives may be very different for a husband and a wife in any given marriage, but notice that they depend only on the characteristics of that particular spouse. If a married person were not with their current spouse,

[6] The simplest form that the function V can take is a sum, but others obviously are possible. For example, marriage may be synergistic in the sense that the pair does jointly better than the mere sum of their parts.

they could either be single or with a new partner. If single, their welfare would be determined only by what they were able to earn. Further, in this simple model where people are distinguished solely by their earnings capacities, the "quality" of any new spouse one is able to attract depends solely on one's own earnings capacity. Finally, suppose that it costs C to dissolve a marriage, with the costs shared by husband and wife.

Under these assumptions, the expected gain from remaining married for a married couple, i, in year t may be expressed as the value function

$$G_i(t) = V_{it}(Y_{ht}, Y_{wt}) + E_t\{\max[G_i(t^+),\ A_{wt^+} + A_{ht^+} - C]|I_{it}\} + \nu_{it}. \quad (1)$$

In (1), the expression (t^+) refers to all time in the future from the perspective of period t. The first part of (1) reflects the within-family utility in the current period. The second part of (1) is the expectation as of t of what the couple expects to receive in the future: either the value of remaining together in the next period or what they would receive from having their marriage dissolve in the future. This is a conditional expectation because the couple will have, at time t, a body of information summarized by the information set, I_t, which should be pertinent to its dissolution decision. The term ν_{it} refers to idiosyncratic factors that affect a couple in any period: the quality of the couple's match as well as purely random events or considerations. That is,

$$\nu_{it} = \mu_i + \varepsilon_{it}, \quad (2)$$

where μ_i measures latent match quality and ε_{it} is a white noise random error.

Larger gains, as measured by (1), should increase the durability of a marriage. A variable that, ceteris paribus, decreases current within-marriage utility or the expected future within-marriage utility should thus raise the probability of separation. By similar logic, anything that only raises the costs of divorce lowers the probability of separation. It follows that a first earnings shock to spouse j in time period t, D_{jt}, has an ambiguous theoretical effect on the likelihood of divorce. On the one hand, this first shock decreases the utility that the family currently receives, and it might decrease the utility that the family expects to receive in the future as well, so that

$$\frac{\partial V_{it}}{\partial D_{jt}} < 0, \text{ and } \frac{\partial E[V_{it^+}|I_t]}{\partial D_{jt}} \leq 0. \quad (3)$$

However, the shock should also lower both the current and expected future alternatives of the person suffering the shock, for it lowers that

person's earnings and renders them less attractive to other possible mates. So

$$\frac{\partial A_{jt}}{\partial D_{jt}} < 0, \text{ and } \frac{\partial E[A_{jt^+}|I_t]}{\partial D_{jt}} \leq 0, \quad j = h, f. \tag{4}$$

The degree to which a shock lowers expected future within-marriage and alternative returns depends on the inferences drawn about how the affected person's future earnings prospects will be affected. Some types of earnings shocks, occurring to a couple for the first time, may lead a spouse who does not directly experience the shock to conclude that they have married a person who is likely to face many similar shocks in the future. Divorce should be a more likely outcome in such instances. Alternatively, other types of first shocks may be perceived as having only fleeting influences on a partner's earnings, with little or no informative value about how the person is likely to fare in the future. In these cases, the adverse effect of earnings shocks on separation probability should be smaller, particularly given that separation is a costly thing.

The precise nature of the spousal shock may also directly affect separation costs. For example, suppose that the person suffering the shock is a husband. Married couples promise explicitly to remain together "in sickness and in health," and so a wife who is trying to leave a spouse who has fallen ill may meet with significant societal disapproval (high C). Alternatively, to the extent that job loss is a type of public signal of a husband's lack of initiative or dedication, a wife might find that leaving him after this event is met with little societal disapproval (low C).

We may assume that a marriage dissolves in any period in which the gains from marriage, as given by (1), are less than zero. Assuming that the first two terms of (1) can be written as a linear function of observables, a couple's separation hazard—its probability of dissolving at any time, having survived up to that point in time—can be written as

$$S_{it}(T) = \beta_1 T_{it} + \beta_2 Z_{it} + \beta_3 \sum_{k=1}^{k=k^*} D_{ht}^k + \beta_4 \sum_{k=1}^{k=k^*} D_{wt} + \mu_i + \varepsilon_{it}. \tag{5}$$

With T_{it} as the time that the couple has been married as of year t, the coefficient β_1 measures the degree of duration dependence in marital dissolution. If $\beta_1 < 0$, then marriages become sturdier the longer they last; $\beta_1 > 0$ implies that couples are more likely to separate the longer they have already been together. The variable z_{it} represents all observable characteristics of the couple presumed to affect marital stability. These include variables that measure the nature of initial sorting, such as shared religious affiliation or similar education. The variables D_h and D_w measure the years since the spouses' first earnings shocks, from 1 year prior to the date to

observation ($k = 1$) to 6 years or more prior to the time period t ($k = k^*$).

The variable ε_{it} is assumed to be normally distributed, with $E(\varepsilon_{it}) = 0$, $\text{Var}(\varepsilon_{it}) = 1$, $E(\varepsilon_{it}\varepsilon_{i't}) = 0$, and $E(\varepsilon_{it}, \varepsilon_{it'}) = 0$. In principle, equation (5) can be estimated using multiple years pooled data and a simple probit model. The problem is the match quality term μ_i in the equation. Even if μ_i is not systematically related to any of the regressors of interest, in a nonlinear model of the form of (5), unlike a simple linear model, the parameter estimates may still be biased (see Maddala 1986). We mainly control for marriage-specific match quality with a rich set of variables that include whether the marriages under examination are the first, second, third, or later for each spouse in each marriage, the religious affiliation of the spouses, and differences in their levels of education. A very similar approach is taken by Weiss and Willis (1997), who model the match term as being a linear function of observables in each period and then directly control for these observables in their regressions.

IV. Data

A. Marriages

This article uses data from the standard releases of Panel Study of Income Dynamics (PSID), 1968–93, combined with detailed marital histories that were collected beginning in 1985. The PSID is a nationally representative sample of households in 1968 as well as an oversample of low-income households. For our article, we focus on households from the nationally representative sample.[7]

To construct the sample used in this article, we first identify all married couples in all PSID survey years. Retrospective information on variables such as the date of marriage and the characteristics of the spouses at the time of marriage is essential for our work, but this information on marital history is first asked in the PSID in 1985. Thus, we delete from the set of all married couples those for which this retrospective information is not available. It follows that couples that are present in the PSID prior to 1985 must last until 1985 to be included in our analysis sample. A natural concern is that our sample might contain a disproportionate number of families with idiosyncratically high levels of durability, given that the initial wave of data collection was in 1968. We believe that having accurate historical information about the marriages that we study overrides this concern. Moreover, if we find that earnings shocks raise the probability of marital dissolution even in families that are idiosyncratically

[7] Estimation using the nationally representative and poverty samples and using the PSID sample weights yields very similar results to those presented in this article.

stable, then our results would have to read as conservative lower bounds for the population at large.

We use information on marital history from the marital history file to determine the date of marriage and the number of previous marriages for each couple. Couples for whom no date of marriage is available—people cohabiting—were deleted.[8] If a couple is together in the PSID data in one year (say 1973) but give their date of marriage as a later year (say 1977), then we determine their date of marriage as being the year they report being married rather than the date we first observe them living together as a couple. Both spouses report their marital history separately in either 1985 or in their first year as a head or a wife if they subsequently enter the survey. In a few cases (less than 5%), the spouses disagree on their date of marriage. Using either the earlier or the later of the dates (or excluding these households) yields nearly identical results.

After the deletions described above, we are left with a sample consisting of all unique husband-wife pairs in the PSID who responded to the PSID marital history information in 1985 or later. Call this the marriage sample. After a few more deletions related to the two outcomes of interest—disability and job displacement—that are outlined below, we are left with this article's analysis sample. We follow marital dissolution of the couples in the analysis sample from 1985 until the end of the marriage or until the end of the survey.

B. Divorces

From annual questions on marital status, we determine if a couple in the married sample is together in a given year and, if not, whether they were together in the previous year. If the couple is together in some survey year t and not in survey year $t + 1$, we focus on the reason given for their not being together. Couples at risk to be labeled "divorced" are those for which both spouses are interviewed in year $t + 1$ but reside in separate households and those where only one spouse is left in the PSID and the reason for the other spouse no longer being in the PSID is given as "that spouse moved out." From the marital history, we then ask whether such couples were separated or divorced at the time when they are found to reside in different households. Since the data show that most couples divorce upon becoming separated, we call all separations "divorces" in the analysis.[9]

[8] The fraction of cohabiting couples in a given year averages less than 5%.

[9] We do not allow for remarriages in our analysis. However, only a small fraction of couples are observed getting back together after their initial separation. However, since our analysis is performed on all unique husband-wife pairs that meet the sample restrictions, our data include observations of the same husband (wife) with a different wife (husband).

C. First Job Displacements

Job displacements are determined from a question put to respondents with low levels of current job tenure about their previous employer: "What happened to that employer (job)?" Our interest is in those who report either that their plant closed/employer moved and those who were laid off/fired. Workers who are temporarily laid off at the time of the survey are treated by the PSID as if they are still employed and are not asked any questions about a previous employer/job. If such a worker is subsequently terminated, that information would be recorded as a displacement in the following year's survey.

The year of displacement is measured with some error. The earnings and employment questions are designed to elicit information for the previous calendar year. However, questions about job loss are not specific to calendar years. For the first 16 waves of the PSID, the survey asks what happened to the last job for those reporting job tenure that is less than 1 year. Subsequent surveys ask what happened to the previous job if the current job started since January 1 of the previous calendar year. Due to the timing of the interviews, job displacements may have occurred either during the previous calendar year or during the first few months of the current calendar year. For this study, a recorded displacement is assumed to have occurred during the previous calendar year to match the earnings and employment data recorded in the same survey.[10]

We seek to identify a couple's first job displacements. This is generally taken as the first displacement observed for a married couple. We drop couples who report a displacement in the first year of the PSID in 1968, because the displacement report in 1968 refers to any that occurred any time in the previous 10 years. For families that first appear in the 1968 survey, the first observed displacement is therefore actually either the husband's first displacement or his first one in at least 10 years. For families that are split-offs from the original sample (e.g., a daughter is married and sets up her own household), the recorded displacement may not be the first displacement, but it will be the first one since the household was formed.

D. First Disabilities

Disability status is recorded from a question that asks, "Do you have any physical or nervous condition that limits the type of work or amount

[10] Stephens (forthcoming) presents evidence from the unemployment experience of displaced workers in the PSID that suggests that this dating of displacements is the correct approach to use.

of work you can do?"[11] Whereas displacement information refers to a specific event that occurred within the past year, disability status refers to a subjective state that can be acute, chronic, or intermittent.

Because the disability information comes from self-reports, there has been concern that workers may feel compelled to justify lower amounts of labor force participation, especially retirement, by claiming that they are limited in their work capacity. While such bias exists, there is also an attenuation measurement error bias since the work limitation responses are a noisy measure of true work capacity. In fact, the disability literature finds that these opposing biases appear to cancel out one another and concludes that health limitation questions such as those found in the PSID are a good proxy of a worker's disability status (Stern 1989; Bound 1991; Bound et al. 1998).

Another issue with the disability measure is determining the date of onset. For this study, a disability is assumed to have occurred within the year prior to the survey date when the respondent first reports an affirmative answer to the disability question. One potential problem with this method is that, although people may be reporting a disability for the first time as limiting their work ability, these disabilities could have affected them for varying lengths of time before work activities were affected. Unfortunately, the date of disability onset is only available in a few of the early PSID years and is not used here.[12] "First" disabilities are taken as the first observed disability during a couple's marriage, provided that there is a period of no report of a disability in the preceding year. This means that couples who are disabled in the first year of the survey in 1968 are not counted, because there are no predisability observations for these couples. Hourly wage and annual earnings regressions estimating the long-run effect of disability using this measure yield results very comparable to Charles (2003). As with displacement, we focus on those disabilities that occur during the time that the couple has been together.

The analysis presents results for both husbands' and wives' first shock, consistent with the specification in equation (5), which says that controls for the shocks of both spouses should be simultaneously controlled for. The final analysis sample consists of observations for families in which neither the husband nor wife reported a disability in the first year they were observed in the PSID.

[11] The wording of this question has remained constant throughout the PSID, with the exception of 1969–71. In these years, disability is recorded from two questions, the first that asks if a condition limits the type of work and the second that asks if a condition limits the amount of work. A disability in these years is recorded as an affirmative response to either question.

[12] In the period 1969–75 and in 1978, the PSID asks the respondents how long they have been limited. Charles (2003) uses this information to construct a year of onset variable and to impute year of onset where this variable is not available.

E. Data Summary

There are a total of 2,290 families in the analysis sample. Table 1 presents summary statistics, with these families separated by whether the husband, over the interval studied, experienced no shock, had a disability, or had a displacement.[13] The table shows that about 43% of husbands experience no shock over the interval studied. The first several rows of the table reveal few differences between families where the husband experienced a shock and those where the husband did not. For example, in all families, the marriage in question is the first for both 80% of husbands and wives and husbands were about 3 years older than their partners at the time of marriage. Similarly, more than 90% of the husbands are white in the three sets of families.

The various types of families do differ with respect to their levels of education. Families in which there is no shock suffered by the husband tend to be better educated by more than a year for both husbands and wives. In the case of job loss, this might be explained by the fact that the jobs of the better-educated display greater job security. Further, it is well established in empirical health economics that there is a strong positive relationship between good health and better education (see Kenkel 1991).

Perhaps more noticeable than differences across the families in education are the differences in the observed incidence of divorce. Couples for whom no earnings shock is experienced by the husband seem much more likely, on average, to experience a marital dissolution in the years after 1984, relative to couples where the husband either lost his job or had a disability. What is the explanation for this? The answer has to do with the way in which match quality, divorce incidence, and the onset of shocks interact. If shocks appear randomly over a couple's life together, the chances that we observe a couple experiencing a shock obviously rises the longer the marriage lasts. But suppose that some marriages are initially bad matches; the partners know soon after marriage that they do not get along. These bad matches will fail quickly. Because these marriages fail quickly, they are likely to fall into the category of marriages for which no earnings shock is observed during the marriage.[14] The average number of years that the couple is observed in the PSID and the average marital duration of the couple over the years that the couple is observed in the data are consistent with this argument.

[13] Because some husbands and wives experienced both a displacement and a disability, summing the number of couples across the columns in tables 1 and 2 will exceed 2,290.

[14] Families with no earnings shocks—the control group—in the regressions are systematically "badly matched." This means that if we find evidence that families with earnings shocks are more likely to divorce relative to this group, then our results are conservative lower bounds on the adverse effect of disability and job loss on marital stability.

Table 1
Means of Selected Variables for Married Couples, by Husbands' Experience of Earnings Shocks

Variable	Husband neither Disabled nor Displaced during Marriage	Husband Disabled during Marriage	Husband Displaced during Marriage
Husband white?	.93	.95	.93
	(.25)	(.22)	(.26)
Husband's years of schooling	13.67	12.29	12.59
	(2.16)	(2.76)	(2.11)
Wife's years of schooling	13.41	12.53	12.58
	(1.98)	(2.06)	(1.89)
Husband's age at marriage	26.22	26.92	24.88
	(7.63)	(9.84)	(6.76)
Wife's age at marriage	24.03	23.91	22.58
	(7.01)	(8.71)	(6.26)
Husband's first marriage?	.80	.78	.81
	(.40)	(.41)	(.39)
Wife's first marriage?	.81	.81	.82
	(.39)	(.40)	(.38)
Husband's second marriage?	.18	.18	.15
	(.38)	(.39)	(.39)
Wife's second marriage?	.16	.17	.15
	(.37)	(.37)	(.36)
Husband's third or later marriage	.02	.04	.04
	(.15)	(.18)	(.20)
Wife's third or later marriage	.03	.03	.03
	(.16)	(.14)	(.16)
Divorced observed for couple?	.17	.08	.14
	(.38)	(.28)	(.35)
Years couple observed in PSID	12.16	19.46	16.08
	(8.13)	(6.98)	(7.64)
Years couple have been married over years observed in PSID	14.13	25.08	17.44
	(11.15)	(15.38)	(11.96)
Husband displaced from job during marriage	.00	.41	1.00
	(.00)	(.49)	(.00)
Husband disabled during marriage	.00	1.00	.33
	(.00)	(.00)	(.47)
Number of couples	1,108	651	796

NOTE.— Standard deviations are in parentheses. See the text for further explanations.

Table 2
Means of Selected Variables for Married Couples, by Wives' Experience of Earnings Shocks

Variable	Wife neither Disabled nor Displaced during Marriage	Wife Disabled during Marriage	Wife Displaced during Marriage
Husband white?	26.29	26.18	25.40
	(8.10)	(8.83)	(7.04)
Husband's years of schooling	.79	.80	.80
	(.41)	(.39)	(.40)
Wife's years of schooling	.19	.16	.15
	(.39)	(.37)	(.37)
Husband's age at marriage	.02	.04	.05
	(.15)	(.19)	(.21)
Wife's age at marriage	23.90	23.66	22.92
	(7.29)	(8.18)	(6.20)
Husband's first marriage?	.82	.80	.79
	(.38)	(.40)	(.40)
Wife's first marriage?	.16	.17	.16
	(.36)	(.37)	(.37)
Husband's second marriage?	.02	.03	.04
	(.15)	(.17)	(.20)
Wife's second marriage?	13.33	12.67	12.74
	(2.27)	(2.55)	(2.30)
Husband's third or later marriage	13.26	12.62	12.58
	(2.02)	(1.99)	(1.80)
Wife's third or later marriage	.94	.93	.93
	(.24)	(.25)	(.25)
Divorced observed for couple?	.16	.09	.16
	(.37)	(.29)	(.36)
Years couple observed in PSID	13.17	18.05	15.49
	(8.44)	(7.45)	(7.58)
Years couple have been married over years observed in PSID	16.04	22.10	16.26
	(12.40)	(15.30)	(11.23)
Husband displaced from job during marriage	.00	.28	1.00
	(.00)	(.45)	(.00)
Husband disabled during marriage	.00	1.00	.31
	(.00)	(.00)	(.46)
Number of couples	1,262	637	572

NOTE.— Standard deviations are in parentheses. See the text for further explanations.

Table 1 shows that the couples where the husband had no shock were in marriages that were observed for only 12 years, as compared to 19 and 16 years for families with the two types of shocks. Further, during the years that the couple was in the PSID, they had been married for an average of only 14 years, versus 26 and 18 years for families with the two types of shocks. Because they broke up so quickly, these marriages were simply not together long enough for a bad event like an earnings shock to happen to them.

Table 2 shows the means, with the analysis sample separated by whether

the wife suffered a given type of shock. A comparison of means in table 2 with the results in table 1 shows that the same basic patterns are evident across the two tables.

Table 3 assesses the extent of sorting among the married couples in terms of observable characteristics. The table shows patterns for race, education, and religion—variables that are probably important determinants of the degree to which a couple is well matched. The first column shows the remarkable degree to which the couples in our analysis are of the same race. There is significantly less sorting along the dimension of religion, as the second column shows. Nonetheless, the fact that more than 60% of all couples share the same religious affiliation, at least nominally, suggests that substantial sorting occurs with respect to religion as well.

The similarity in schooling between husbands and wives is explored in the remaining columns. Tables 1 and 2 show evidence of educational sorting. Table 3 simply breaks education down into more cells to assess that sorting more carefully. We separate completed schooling into three categories: high school or less (HS); some college, but no college degree (C); and at least a 4-year college degree (C+). The husband's education is always listed first. Overall, 64% of husbands and wives have the same level of completed schooling. This level of sorting is about the same as is observed for religion. Unlike religion, however, these patterns mask large differences among the various types of families. Most noteworthy is the relative rarity of couples in which both the husband and wife have at most a high school education among the set of people who are not observed to experience shocks. The 32% incidence of the HS/HS educational match among couples where the husband experiences no shock is much smaller than is true for the other couples, where the incidence is 54% and 52%, respectively. And, the C+/C+ outcome also is clearly most common among couples who experienced no shock.

Overall, there is a smaller level of educational similarity among families in which the husband experienced a shock. If possessing similar schooling implies that partners have much in common, then it is possible that greater educational dissimilarity might cause marriages to be less stable, with the result that these marriages break up more quickly and are not together long enough for a spouse to experience a shock. Section V presents the results of the estimation procedures summarized in Section IV.

V. Results

Table 4 presents results for the effect of husbands' and wives' disability and job loss on the subsequent likelihood of divorce for the couple. The dependent variable is a binary variable indicating whether the marriage ends in divorce by the next year. Probit equations were run on pooled

Table 3
Similarity between Husbands and Wives in Race, Religion, and Education, by Nature of Husband's Earning Shock

			Husband's Education/Wife's Education								
			Same Education Level			Different Education Levels					
	Same Race	Same Religion	HS/HS	SC/SC	C+/C+	HS/SC	HS/C+	SC/HS	SC/C+	C+/HS	C+/SC
All	.97	.64	.42	.07	.15	.07	.03	.09	.04	.06	.07
	(.16)	(.48)	(.49)	(.26)	(.36)	(.26)	(.16)	(.29)	(.19)	(.24)	(.25)
Head never disabled or displaced during marriage	.97	.63	.32	.09	.21	.07	.03	.09	.05	.07	.08
	(.18)	(.48)	(.47)	(.28)	(.41)	(.25)	(.16)	(.28)	(.21)	(.26)	(.28)
Head disabled during marriage	.99	.70	.54	.05	.01	.06	.03	.09	.02	.06	.05
	(.10)	(.46)	(.49)	(.22)	(.31)	(.23)	(.17)	(.29)	(.15)	(.23)	(.22)
Head displaced during marriage	.98	.62	.52	.07	.08	.09	.02	.11	.03	.04	.04
	(.15)	(.48)	(.50)	(.25)	(.28)	(.29)	(.15)	(.31)	(.16)	(.19)	(.21)

NOTE.—Reported here are the proportion of married couples who share observed characteristics. Standard errors are reported in parentheses. The education categories that correspond to the labels in the table are: HS = high school or less; SC = college but no 4-year degree; and C+ = at least a 4-year college degree.

Table 4
Probit Estimates of Effect of Earnings Shock on Probability of Marriage Ending in Divorce by Next Year

	Displacements		Disability		Displacement and Disability	
Variable	Estimate	SE	Estimate	SE	Estimate	SE
Displacement:						
Husband displaced from job:						
1–3 years ago	.181	.082			.181	.082
4–5 years ago	−.053	.120			−.053	.120
More than 5 years ago	−.156	.073			−.158	.073
Wife displaced from job:						
1–3 years ago	.131	.088			.130	.088
4–5 years ago	.001	.114			.002	.115
More than 5 years ago	.165	.084			.167	.084
Disability:						
Husband disabled:						
1–3 years ago			.083	.101	.085	.102
4–5 years ago			−.112	.170	−.111	.169
More than 5 years ago			.041	.093	.050	.094
Wife disabled:						
1–3 years ago			−.003	.084	−.007	.085
4–5 years ago			−.001	.118	.011	.119
More than 5 years ago			−.081	.123	−.084	.125
Controls for spouses' marital histories	Yes		Yes		Yes	
Controls observable match characteristics	Yes		Yes		Yes	
Controls for family structure	Yes		Yes		Yes	
Year effects	Yes		Yes		Yes	
Log likelihood	−1,411		−1,418.46		−1,410.56	
Pseudo R^2	.10		.10		.10	
No. of observations	14,083		14,083		14,083	

NOTE.— Standard errors are corrected for clustering within couples. Estimated values for the various control variables can be found in the appendix (table A1).

observations for all couples, and the specification is as given by equation (5).[15] The standard errors reported in the table allow for arbitrary correlation between the disturbance terms within a couple. All of the regressions presented in table 4 use a rich set of variables to control for marital history, family structure, and observable match quality—the degree to which spouses have the same education, religion, and race. The full results are presented in the appendix in table A1, but here we briefly discuss how these variables affect marriage stability before turning attention permanently to the effect of earnings shocks.

In all of the regressions, the marital history variables are found to be significant determinants of divorce hazard. The individuals who are older at the date of marriage are less likely to become divorced. This is consistent

[15] We estimated several random effects probit models to help account for unmeasured heterogeneity. The results are very similar to those that we present, and they are available upon request.

with the argument in the theoretical literature on marital search that the more time is spent searching for a spouse, the better the quality of the match when a spouse is found. The theoretical prediction of how having been previously married should affect divorce probability is ambiguous. On the one hand, that a person has had one or more failed marriages could mean that they are not a stable partner. On the other, the experience of having been married before should have provided useful knowledge on how to get along in a marriage, which would make any subsequent marriage more secure. We find that second and third marriages are less stable than first, suggesting that the former effect dominates in our sample. Finally, we find strong evidence of duration dependence in marital stability: the longer people have been married, the smaller their divorce hazard. This result makes good theoretical sense. The longer people have been married, the more time they have had to familiarize themselves with their partners' flaws and the more time they have had to evolve strategies for dealing with them.

With respect to the controls for observable match, we find that sharing the same religion has a particularly strong effect on marital stability. Being of the same race does not affect the divorce hazard in a statistically significant way when the race of the husband is controlled for. We control for the different possible types of husband/wife education outcomes, with the HS/HS category as the excluded variable. The results suggest that the effect of education on marriage stability is less a matter of the similarity in schooling between husbands and wives as whether the couple is highly educated or not and whether it is the husband or wife with the higher level of schooling. When the husband has only a high school education, whatever his wife's education, the probability that their marriage ends in divorce is about the same. When the husband is a college graduate, then regardless of his wife's education, the likelihood that the marriage ends in divorce is significantly reduced relative to that for the HS/HS type of family. In support of the match idea, it is true that the reduction in the hazard relative to HS/HS is smallest when the education is most dissimilar among these marriages where the husband is a college graduate—the CO+/HS category.

The last set of control variables measure family structure. We find that family structure is an important determinant of divorce probability in all of the regressions. In particular, children help to stabilize marriages. People are more likely to divorce the older their youngest child, and they are less likely to have their marriages dissolve the more children they have. It should be noted that it is difficult to be certain about the direction of causality here, as it may be their confidence in the stability of their marriages that makes people have more children in the first place.

We turn now to a discussion of the results for the first earnings shocks—our main interest. We present the results of three sets of regressions—

one set with the first displacements only, another with the effects of first disabilities only, and a third with both first disabilities and first displacement controlled for. The first set of regressions shows that the first job loss suffered by a husband raises the hazard of divorce in the first 3 years immediately after the shock. Between 4 and 5 years after a husband's first displacement, there is no statistically significant effect on marital dissolution. Curiously, the results show that the first displacements experienced by a husband more than 5 years before are estimated to make a family less likely to dissolve. The first job loss suffered by a wife raises a family's divorce probability marginally in the first 3 post-onset years and by a statistically significant amount in the interval more than 5 years after onset.

The results in the second regression, which controls for whether the husband and wife suffered a disabling illness, are dramatically different. For neither husbands' nor wives' first disabilities is there a statistically significant effect on the divorce hazard either immediately after or many years after the event. The third regression in the table includes controls for both job loss and disability. The same pattern is found as when these shocks are controlled for singly. Disability to either a husband or wife produces no statistically significant effect on marital dissolution. On the other hand, job loss by either spouse raises the likelihood on marital dissolution in the period immediately after the shock. For wives' job displacements, this increase in marital breakup probability extends even to the period more than 5 years after it occurs.[16] The results in the third column continue to show a surprisingly negative effect of husbands' job loss more than 5 years before on marital breakup, but given all of the other estimated effects of displacement, the overall conclusion from these results is that job loss raises the probability of marital breakup.[17] The regressions in this table weakly support the idea first described by Becker et al. (1977) that earnings shocks should matter in the decision to remain married. The support is weak because we find that marital dissolution is more likely in the event of one shock (job loss), but we find no evidence that another equally serious shock (disability) affects dissolution. Nonetheless, we do find a significant effect using explicit indicators for the source of the shock.

While generally consistent with the theory of marital dissolution, the results raise two important questions. The first is: Why is it that, when we find that shocks affect marital dissolution in the manner suggested by theory, the effect is larger in the period immediately after the shock? Our

[16] We estimated regressions in which the time since the occurrence of the shock is measured in single years rather than the three summary measures shown. Not surprisingly, the results from these regressions show the same basic patterns as with the summary measure. They are available upon request.

[17] Later, we offer a speculation about the peculiar negative coefficient on the husbands' job loss more than 5 years after the fact.

guess is that any new information that an earnings shock brings to a couple is most likely to affect those couples whose assessed gains are not large to begin with. Once they know that their future gains from being married are likely to be smaller in the future as a result of the shock, they do not benefit by lingering in the marriage until well-being actually falls. Note that the results show that the effect of wives' job loss is felt a bit further out in time after the shocks occur.

The second question raised by the results is more difficult to answer: Why do we find that a job loss affects divorce probability but that disability does not, even though both events are negative shocks that might be presumed to adversely affect earnings? One possible answer may be that, contrary to our presumption, disability and job loss affect earnings very differently. Maybe disability does not affect earnings and work capacity very severely. Or maybe a disability suffered in one period is not as indicative about future episodes of disability as is a job loss about subsequent job loss. If either of these is true, spouses should be less willing to divorce when disability occurs than when there is a job loss. Table 5 explores whether these explanations can account for the results.

Table 5 summarizes annual earnings and the incidence of shocks before and after the date of the first observed shock for husbands and wives, and for the two different types of shocks. Notice that the sample is unbalanced, as spouses join and attrite from the sample at different times, relative to their date of onset. Recall that people are required to be in the PSID for at least one period prior to their first observed disability to be included in the sample. The third column of numbers in the table show annual earnings in the years before and after the shock at date t^*. The fourth column represents the absolute change in average annual earnings in each year after the shock, relative to the average annual earnings over the 3 years directly preceding the shock. The fifth column shows the percentage change in annual earnings from the preshock mean. The sixth column presents the percentage of spouses who, after experiencing the shock in year t^*, experience a second shock in the various years indicated onset. The last column shows the proportion of spouses who, having suffered a shock in year t^* experience a second shock by the year indicated. This last column is a cumulative indicator of shock experience over time. The table is split into two panels, showing the results separately for husbands and for wives.

Table 5 shows that the husband's job loss imposes a serious economic loss on families. In the year of job displacement, husbands' annual earnings fall by 17%, and they fall by 22% in the year immediately following job loss. Gradually, the size of these earnings losses is abated. By the 5 years after job loss, they are only 7% of preshock earnings. With respect to subsequent episodes of job loss after the initial shock, husbands face a risk of being displaced again in a future year, which reaches 20% only in

Table 5
Earnings, Displacement, and Disability Status for Spouses Experiencing Shocks at Date *t in Years before and after Occurrence of Shock**

N	Time	Earnings	Absolute Earnings Change	% Earnings Change	Probability That Another Shock Occurs at Date *t*	Probability That Another Shock Occurs by Date *t*
Husband's job loss:						
393	$t^* - 4$	33,814.4				
455	$t^* - 3$	33,980.8				
553	$t^* - 2$	32,886.2				
678	$t^* - 1$	30,486.5				
819	t^*	27,164.2	−5,627.8	−17.2		
783	$t^* + 1$	25,463.7	−7,328.3	−22.3	.21	.21
725	$t^* + 2$	27,781.2	−5,010.8	−15.3	.13	.29
666	$t^* + 3$	28,546.4	−4,245.6	−12.9	.10	.34
617	$t^* + 4$	29,459.6	−3,332.4	−10.2	.09	.39
581	$t^* + 5$	30,484.6	−2,307.4	−7.0	.10	.44
Husband's disability:						
475	$t^* - 4$	33,057.0				
527	$t^* - 3$	32,164.1				
583	$t^* - 2$	31,293.1				
662	$t^* - 1$	30,467.2				
662	t^*	28,391.7	−3,353.6	−10.6		
622	$t^* + 1$	27,598.4	−4,147.0	−13.1	.39	.39

571	$t^* + 2$	27,756.0	−3,989.3	−12.6	.40	.53
527	$t^* + 3$	27,807.4	−3,938.0	−12.4	.39	.58
472	$t^* + 4$	26,770.2	−4,975.1	−15.7	.35	.62
433	$t^* + 5$	24,122.2	−7,623.1	−24.0	.34	.66
Wife's job loss:						
381	$t^* - 4$	9,722.9				
415	$t^* - 3$	10,358.0				
457	$t^* - 2$	10,542.2				
508	$t^* - 1$	10,743.8				
581	t^*	10,245.6	−96.104	−.9		
547	$t^* + 1$	9,026.9	−1,314.859	−12.7	.23	.23
497	$t^* + 2$	10,293.3	−48.366	−.5	.08	.27
439	$t^* + 3$	10,131.2	−210.486	−2.0	.07	.32
411	$t^* + 4$	10,456.5	114.824	1.1	.07	.35
368	$t^* + 5$	10,508.3	166.590	1.6	.07	.39
Wife's disability:						
527	$t^* - 4$	8,904.1				
557	$t^* - 3$	8,792.6				
598	$t^* - 2$	9,539.1				
641	$t^* - 1$	9,806.2				
641	t^*	9,159.1	−101.4	−1.1		
596	$t^* + 1$	8,439.6	−820.9	−8.9	.35	.35
549	$t^* + 2$	8,992.6	−267.9	−2.9	.32	.46
490	$t^* + 3$	8,614.7	−645.8	−7.0	.31	.53
436	$t^* + 4$	8,657.7	−602.8	−6.5	.31	.59
370	$t^* + 5$	8,582.1	−678.4	−7.3	.32	.64

NOTE.—Earnings data in this table refer to earnings in the year preceding the survey. N = number of observations; t^* = the year of the shock. Absolute Earnings Change = Average Earnings from $(t^* - 4)$ to $(t^* - 1)$ − Earnings; % Earnings Change = (Average Earnings from $(t^* - 4)$ to $(t^* - 1)$) − (Earnings at t)/Average earnings from $(t^* - 4)$ to $(t^* - 1)$. See the text for further explanations.

the year immediately after onset.[18] Afterward, this annual risk never rises to as high as 15%. These risk levels translate into 39% and 44% of men having experienced a second bout of job loss by 4 and 5 years after a first job loss, respectively.

The second set of numbers in the table reveals that the earnings losses from disability are certainly not dramatically smaller than those following a disability; if anything, there is evidence of a larger long-term disability-related earnings loss. While men experiencing a disability only earn 90% of predisability earnings in the year of onset and 87% of predisability levels 2 years after onset, the earnings losses 4 years after disability are 16% and 24%, respectively. With respect to the subsequent trajectory of their disabled status, disabled men have an annual risk of a new disability (or a reoccurrence of an old one) that is never smaller than 34% in the 5 years after onset and that shows no evidence of decreasing over time. By 3 years after onset, fully 58% of men have had a second disability report and two-thirds have had a second disability report by 5 years after onset.

The second panel of the table presents the results for wives' shocks. Despite a large difference in the level of preshock earnings for wives and husbands, this second panel tells essentially the same story as that evident for husbands. For wives, the short-run earnings losses from the two types of shocks are about the same, and the longer run earnings losses from disability are much larger.[19] Wives who experience a job loss face a future job-loss risk that averages about 7% per year. And, as late as 5 years after the loss of a job, about 39% of wives had had another such episode. The trajectory of disabilities after the initial episode of illness is much more serious. Wives face an annual risk of another disability in the years after onset that averages 32% in the years after onset, and that shows no downward trend. Cumulatively, by 5 years after onset, 65% of the wives have had another disability—almost double the reoccurrence rate for another job loss and very similar to the comparable rate for men.

Appendix table A2 shows that almost identical results are apparent if the focus is on hours of work rather than annual earnings. This table clearly shows that, for both husbands and wives, it is highly unlikely that the different divorce effects we have estimated for disability as opposed

[18] This high incidence of a new job loss in the year immediately after an initial job displacement is likely the result of the fact that workers may attach themselves to jobs for which they are poorly matched right after they have lost one. The risk of this sort of poor match fades over time.

[19] This table presents simple means, with no controls for changes in employment behavior over time. This means that a trend increase in labor force participation among married women could explain the slight upward trend in hours after the occurrence of shocks.

to job losses are due to a smaller negative earnings effect of disability or to a smaller likelihood of recurrence.

Another possible explanation for the different effect of the two types of shocks may have to do with the different points in the life cycle when disabilities and job displacements occur. The summary statistics shown in tables 1 and 2 indicate that disabilities affect married couples when they have been together for a relatively long time, on average. Job losses, on the other hand, occur throughout a couple's married life. Could it be that no divorce effects are found for disabilities because they occur to spouses whom, because of the longer time they have been together and their relatively older ages at onset, are at a point in the life cycle when divorces simply do not occur?

Table 6 explores this question. The table presents the results of regressions identical to those presented in table 4, except that shocks are distinguished by when in a couple's marital history they occur. We separate shocks by whether they occur in the first 6 years of a marriage or later.[20] As before, we then create dummy variables that measure the estimated effects of shocks 1–3, 4–5, and 5 or more years since the shock. But now, there are two such sets of dummies for each shock—one set for shocks that occur in the first 6 years of a couple's marriage and another for shocks that occur when the couple have been together for more than 6 years. The table presents the coefficients and standard errors of the various dummy variables; the estimated effects of the various controls are virtually identical to the effects already discussed in table 4.

Notice that, overall, the divorce effects are less precisely estimated than in the regression presented in table 4. This is not surprising, as the regression in table 6 splits the sample of all shocks into much smaller cells than did the earlier regression. The key point in the table is that the results indicate that no estimated disability effect is significantly different from zero. Yet, four distinct effects are statistically significant for job displacement. As a check on these results, we also estimated regressions in which a variable denoting the type of shocks was interacted with a marital duration variable. The estimated effects from these models say the same thing as the numbers in table 6: there is no effect of disability on divorce, irrespective of when in a marriage the divorce occurs. Thus, the fact that there is no estimated effect for disability on divorce does not appear to be due to the fact that disability occurs relatively later in a couple's married life.

What other explanations account for our results of the small role of disability on divorce? We briefly discuss two possible explanations before

[20] We chose 6 years since this was the median marriage duration at the time of the shock. The results are unchanged if we chose 7 years or 8 years as the break points.

Table 6
Probit Estimates of Effect of Earnings Shock on Probability of Marriage Ending in Divorce by Next Year, Shocks Disaggregated by Whether Shock in First 6 Years of Marriage or Later

	Estimate	Robust Standard Error
Husband's shock in first 6 years of marriage:		
Displacement:		
Husband displaced from job:		
1–3 years ago	.224	.098
4–5 years ago	−.071	.143
More than 5 years ago	−.266	.087
Disability:		
Husband disabled:		
1–3 years ago	.185	.150
4–5 years ago	.116	.231
More than 5 years ago	.131	.130
Wife's shock in first 6 years of marriage:		
Displacement:		
Wife displaced from job:		
1–3 years ago	.021	.116
4–5 years ago	.032	.145
More than 5 years ago	.073	.123
Disability:		
Wife disabled:		
1–3 years ago	.029	.121
4–5 years ago	−.077	.212
More than 5 years ago	.154	.192
Husband's shock after first 6 years of marriage:		
Displacement:		
Husband displaced from job:		
1–3 years ago	.055	.151
4–5 years ago	−.070	.212
More than 5 years ago	.096	.112
Disability:		
Husband disabled:		
1–3 years ago	−.003	.143
4–5 years ago	−.289	.271
More than 5 years ago	−.101	.122
Wife's shock after first 6 years of marriage:		
Wife displaced from job:		
1–3 years ago	.263	.127
4–5 years ago	−.030	.188
More than 5 years ago	.277	.107
Disability:		
Wife disabled:		
1–3 years ago	−.046	.118
4–5 years ago	.042	.141
More than 5 years ago	−.216	.168
Log likelihood	−1,401.00	
Pseudo R^2	.11	
No. of observations	14,083	

NOTE.—Standard errors are corrected for clustering within couples. Controls for this regression are identical to those for models presented in table 4.

offering one for which we believe it is possible to shed some light with the data at hand. One explanation for the different estimated effects of disability and job displacement may have to do with the costs of marital dissolution. Here, we speak not of financial costs associated with divorce but, rather, about particular societal costs that a spouse may face if he or she leaves a partner suffering from a given shock. In particular, there may be a stigma attached to divorces that occur because of a spouse becoming disabled and no stigma associated with divorces that occur because of job loss. The possible differential role of stigma is an intriguing possibility that we cannot directly test.[21]

Another explanation that is beyond the scope of this article to test is the idea that disability and job loss may affect the affected spouses' outside alternatives very differently. Recall from the discussion in the theoretical overview that, even if the only effect of a shock suffered by a family were pecuniary, it was theoretically ambiguous how a shock would affect marital stability. Theory shows that the divorce probability rises in the aftermath of an earnings shock only if the reduction in the couple's options outside of marriage was smaller than the reduction of utility within the marriage. If not, and if there is transferable utility, there would be a change of the distribution of rents within the marriage that could make divorce less likely (Weiss 1997). This suggests that the different effects we document for disability and displacement may be due to the different relative effects of these two types of earnings shocks on within and outside marriage utility. Again, while this possibility is consistent with the standard framework, testing it is beyond the scope of this article.

One final explanation for the different results estimated for the two types of shocks is that the shocks may provide different information, not about a spouse's current and future earnings prospects but about future realizations of important nonfinancial variables that affect marital well-being. For example, if a wife can conclude that a husband lost his job because of his repeated irresponsibility or bad temper, she should conclude both that he is likely to face employment troubles in the future and that he may not be a good person with whom to raise children. Both of these are good reasons for her to wish to get out of a marriage, and both can be said to have been "caused" by the earnings shock. Disability may simply be viewed as "bad luck" and be an event devoid of much additional information content. Alternatively, a job loss may reveal important things about a partner's personality, discipline, and temperament that spouses

[21] Something we do not consider in this article is the possibility that the onset of disabling illness is not a "shock" at all, whereas job loss might be. Maybe spouses can predict the full trajectory of their partner's health, but not of job loss. If so, they would have fully incorporated future bouts of poor health into their decision making at the time of marriage and should not divorce when disability occurs in the future.

must also consider when deciding whether to remain with a partner. We might think of these traits, collectively, as "noneconomic marital fitness"—traits that make a partner desirable, irrespective of purely economic considerations. An event that reveals that someone may in fact lack this fitness may be a greater determinant of divorce than one that lowers earnings by a larger amount, if no such negative inference about fitness could be attached to that second event. However, this article finds effects for husbands' and wives' shocks that are of approximately the same size, despite the fact that earnings losses for wives' shocks are so much smaller. This suggests that disability and job loss shocks communicate different things about nonpecuniary variables.

Is there other evidence in support of the idea that job loss may communicate information about poor "fitness"? To answer this question, we use the fact that the PSID has information on the reason for job loss; people lose a job either because they are laid off or because their plant closed. Our hypothesis is simple. Since a plant closing affects everyone who worked at a plant, it is quite unreasonable to ascribe negative inferences about laziness, tardiness, discipline, or motivation to any individual who has lost his job this way. By contrast, a layoff is personal; presumably the employer learned something that made it necessary to end its relationship with this individual. If there is a correlation between things an employer might learn that would motivate him to terminate his relationship with an individual and that person's fitness as a marriage partner, then a husband or wife trying to learn about the noneconomic marital fitness of their mate should be more affected by a layoff than they should be from a plant closing.[22]

Table 7 explores this issue. The table presents results from a divorce probit regression identical to that presented in the last column of table 4, except that we now control for the reason that the job loss occurs. The estimated coefficients and standard errors for the control variables are not presented in the table, as they are very similar to those presented earlier. For neither husbands nor wives does job loss that occurs because of a plant closing ever have a statistically significant effect on divorce probability. However, for both husbands and wives, losing a job because of a layoff raises the probability of divorce.

The results suggest that nearly all of the greater divorce risk we have identified for couples in which a partner lost his or her job comes from the greater divorce risk of people suffering layoffs. The results are strongly consistent with the idea that it is information that partners receive about aspects of a spouse's noneconomic fitness as a result of the shock they

[22] The idea that the information conveyed about an individual by his being laid off versus having his plant close has been used by economists in other contexts. See Gibbons and Katz (1991) for an example.

Table 7
Probit Estimates of Effect of Spouse's Job Loss on Probability of Marriage Ending in Divorce by Next Year, by Reason for Job Loss

	Estimate	Robust Standard Error
Reason for husband's job loss:		
Plant closed:		
1–3 years ago	−.149	.165
4–5 years ago	−.086	.201
More than 5 years ago	.002	.101
Layoff:		
1–3 years ago	.309	.095
4–5 years ago	−.034	.146
More than 5 years ago	−.253	.089
Reason for wife's job loss:		
Plant closed:		
1–3 years ago	.020	.150
4–5 years ago	.128	.166
More than 5 years ago	.101	.135
Layoff:		
1–3 years ago	.194	.107
4–5 years ago	−.100	.154
More than 5 years ago	.207	.099
Disability:		
Husband disabled:		
1–3 years ago	.073	.104
4–5 years ago	−.130	.170
More than 5 years ago	.061	.095
Wife disabled:		
1–3 years ago	−.014	.086
4–5 years ago	.006	.119
More than 5 years ago	−.095	.126
Controls for spouses' marital histories:	Yes	
Controls observable match characteristics	Yes	
Controls for family structure	Yes	
Year effects	Yes	
Log likelihood	−1,403.6	
Pseudo R^2	.11	
No. of observations	14,083	

NOTE.— Standard errors are corrected for clustering within couples. The controls for the six regressions presented in this table are identical to those in the various regressions presented in table 4.

suffer that drives the relationship between job loss and divorce. Purely pecuniary considerations simply do not appear to matter greatly in the divorce decision. The estimated effect of a plant closing could be thought of as the role that purely economic considerations that follow a job loss affect the probability of divorce, and it is never significant either for husbands or wives. Nor is there any effect of disability—an outcome whose negative effect on a family's potential earnings we have earlier documented.

We have spoken of a job layoff's effect on marital dissolution as being causal: the fact that the person is fired makes the likelihood of divorce

higher. However, it might simply be the case that people who are likely to be laid off are also likely to get divorced, with no directly causal relationship between the two things. Consider someone who is easily bored. He or she would probably be easily bored at work, resulting in missed assignments, daydreaming, and other activities that would make him or her more likely to be fired. Such a person would be easily bored in a marriage as well and would be anxious to get divorced at the slightest provocation. Correlation between these two things would be caused by the fact that the spouse is easily bored and would not indicate a causal effect of a layoff. We believe that the temporal patterns we find in increased probability of divorce severely circumscribes the extent to which this effect could be true in our data. Presumably, people whose divorce probability is higher because of the effect of a factor such as boredom that also affects layoff probability should exhibit a greater likelihood of divorce in every period, not only those that immediately follow the shock.

One interesting result from tables 6 and 7 concerns the estimated effect of husbands' job loss from more than 5 years before. Recall that, in the earlier regressions, this effect was estimated as lowering the likelihood of marital breakup. Tables 6 and 7 show that this oddly signed effect is entirely due to the job losses arising from layoffs and, specifically, from layoffs in the first 6 years of a marriage. One interpretation consistent with the argument presented in this section may be that, after a husband experiences a layoff, a wife who chooses to remain with him already has learned the worst about his fitness as a partner. If, for some reason, the marriage is able to survive the increased dissolution that attends a layoff immediately after its occurrence, it may be that the marriage is later strengthened as a result. Why this effect does not apply to wives' layoffs or to husbands' first layoffs that occur after the couple has been together for more than 6 years remains a puzzle.

VI. Conclusion

In this article, we have examined the effect of two different earnings shocks—disability and job loss—on the probability of marital dissolution. We find that disability experienced by either a husband or a wife does not affect the divorce hazard in any statistically significant fashion. However, we find that a job loss, whether experienced by a husband or a wife, raises the risk of divorce by a large and statistically significant degree. These results are weakly supportive of the idea that the new information conveyed to partners in the event of earnings shocks affects marital durability. However, there is evidence that it is not information about the couple's economic well-being after a shock that makes divorce more likely. Rather, it appears that the important new information used in the divorce

decision may have to do with what the job loss suggests about the partner's fitness as a mate.

There are two reasons we reach this conclusion. First, despite the fact that disability affects earnings more severely and for a longer interval than is true of a job loss, we find that disability has no effect on divorce probability. Also, an episode of disability is nearly certain to be followed by another one within 5 years. This is not true for a job loss. If purely economic considerations were all that mattered in divorce, we would expect to find that disability had more of an effect on the probability of divorce than a job loss. Also, the fact that we find very similar results for husbands' and wives' shocks, despite the fact that the latter impose smaller earnings losses on families, suggests that it is something other than the information that a couple gets about pecuniary factors that is the source of the differences we document.

Second, we speculate that, if economic considerations are all that matter, then the reason that a person lost their job should not matter in whether a divorce occurs or not. We split job losses into those that occurred because of plant closing and those that were due to a layoff. Our hypothesis is that a spouse may more reasonably draw a negative inference about a partner's discipline and temperament (factors that affect both the person's ability to keep a job and their fitness as a mate in purely noneconomic terms) from the fact that he was personally fired than from the fact that his plant ceased operating. Divorce should therefore be more likely in the case of the layoff. We find strong support for this in the data.

Appendix

Table A1
Estimated Effects of Control Variables of Models in Table 4

Variable	Estimate	Robust SE	Estimate	Robust SE	Estimate	Robust SE
Marital history:						
Husband's age at marriage	−.014	.007	−.014	.007	−.014	.007
Husband's second marriage?	.220	.083	.219	.082	.220	.082
Husband's third+ marriage	.200	.157	.206	.153	.200	.156
Wife's age at marriage	−.038	.009	−.037	.008	−.038	.009
Wife's second marriage?	.252	.083	.250	.083	.253	.083
Wife's third+ marriage	.561	.163	.569	.162	.562	.164
Duration of marriage	−.038	.009	−.042	.009	−.038	.010
Observable match characteristics:						
Husband's/wife's education:						
HS/SC	−.071	.089	−.063	.087	−.071	.089
HS/C+	−.058	.148	−.069	.149	−.061	.149
SC/HS	−.132	.088	−.117	.086	−.131	.088
SC/SC	−.064	.092	−.053	.090	−.063	.092
SC/CO+	−.285	.161	−.291	.161	−.283	.161
CO+/HS	−.252	.129	−.229	.129	−.246	.129
CO+/SC	−.343	.126	−.327	.127	−.343	.126
CO+/CO+	−.319	.097	−.318	.096	−.319	.096
Husband/wife same religion?	−.223	.051	−.225	.050	−.222	.051
Husband/wife same race?	.024	.146	.025	.144	.022	.146
White?	−.358	.088	−.360	.087	−.357	.088

Table A1 (*Continued*)

Variable	Estimate	Robust SE	Estimate	Robust SE	Estimate	Robust SE
Family structure:						
Age of youngest child	.021	.009	.022	.009	.021	.009
Number of children	−.065	.037	−.073	.037	−.065	.037
Number of young children	.042	.056	.056	.056	.044	.056
Constant	−.020	.246	−.001	.242	−.027	.246
Year effects	Yes		Yes		Yes	
Log likelihood	−1,411		−1,418		−1,411	
Pseudo R^2	.10		.10		.10	
No. of observations	14,083		14,083		14,083	

NOTE.— Standard errors are corrected for clustering within couples. See the text for further explanations.

Table A2
Hours, Displacement, and Disability Status for Spouses Experiencing Shocks at Date t^* in Years before and after Occurrence of Shock

	Time	Hours Worked	Absolute Hours Change	% Hours Change
Husband's job lost (*N*):				
393	$t^* - 4$	2,218.1		
455	$t^* - 3$	2,240.8		
553	$t^* - 2$	2,192.1		
678	$t^* - 1$	2,127.5		
819	t^*	1,901.9	−292.7	−13.3
783	$t^* + 1$	1,911.6	−283.0	−12.9
725	$t^* + 2$	2,010.3	−184.3	−8.4
666	$t^* + 3$	2,054.2	−140.4	−6.4
617	$t^* + 4$	2,060.5	−134.1	−6.1
581	$t^* + 5$	2,089.4	−105.2	−4.8
Husband's disability (*N*):				
475	$t^* - 4$	2,092.9		
527	$t^* - 3$	2,076.9		
583	$t^* - 2$	1,989.7		
662	$t^* - 1$	1,936.2		
662	t^*	1,787.9	−236.0	−11.7
622	$t^* + 1$	1,743.4	−280.5	−13.9
571	$t^* + 2$	1,754.3	−269.7	−13.3
527	$t^* + 3$	1,715.5	−308.5	−15.2
472	$t^* + 4$	1,653.2	−370.7	−18.3
433	$t^* + 5$	1,613.1	−410.9	−20.3
Wife's job loss (*N*):				
381	$t^* - 4$	1,056.5		
415	$t^* - 3$	1,132.2		
457	$t^* - 2$	1,144.9		
508	$t^* - 1$	1,231.6		
581	t^*	1,199.6	58.307	5.1
547	$t^* + 1$	1,036.3	−105.013	−9.2
497	$t^* + 2$	1,163.8	22.458	2.0
439	$t^* + 3$	1,164.4	23.088	2.0
411	$t^* + 4$	1,156.3	15.027	1.3
368	$t^* + 5$	1,147.4	6.057	0.5
Wife's disability (*N*):				
527	$t^* - 4$	915.8		
557	$t^* - 3$	903.0		
598	$t^* - 2$	994.7		
641	$t^* - 1$	1,010.1		
641	t^*	963.0	7.1	.7
596	$t^* + 1$	865.5	−90.4	−9.5
549	$t^* + 2$	885.8	−70.1	−7.3
490	$t^* + 3$	883.9	−72.0	−7.5

Table A2 (*Continued*)

	Time	Hours Worked	Absolute Hours Change	% Hours Change
436	$t^* + 4$	813.1	−142.8	−14.9
370	$t^* + 5$	810.5	−145.4	−15.2

NOTE.—Hours of work refer to the hours that the person spent employed in the year preceding the survey. N = number of observations; t^* = the year of the shock. Absolute Hours Change = Average Hours from (t^*-4) to (t^*-1) − Hours. % Hours Change = (Average Hours from (t^*-4) to (t^*-1) − (Hours at t)/Average Hours from (t^*-4) to (t^*-1). See the text for further explanations.

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