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The Dynamic Effect of Disability on Marriage: Evidence from the Social Security Disability Insurance Program

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Abstract

This study examines the dynamic effect of disability on marriage. Data on disability and marriage come from the New Beneficiary Survey, designed to characterize new beneficiaries of the Social Security Disability Insurance Program. Using an event-study model, the study finds that disability onset decreased marriage among beneficiaries, but only at younger ages. The study further examines whether the effect of disability on marriage is due to formation, dissolution, or both, and whether the effect varies by educational attainment and subsequent mortality. The results highlight the importance of marriage selection in the oft-cited relationship between marriage and better health.

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I. Introduction

Marriage is associated with better social, economic, and health outcomes, but the mechanism for these associations remains debatable.[1] Some argue that the associations arise from marriage selection, whereby people with better outcomes are more likely to marry (Goldman 1993; Stevenson and Wolfers 2007). This would occur if the gains from marriage increase with socioeconomic status or health (Becker 1973). Others argue that the associations arise from marriage protection, whereby marriage has a causal impact on well-being (Waite and Gallagher 2000). For example, marriage may alter health behaviors, expand social networks, or increase efficiency of household production. The debate between selection and protection is directly relevant to public policy. For example, since 2001, the US government spent approximately $800 million on the Healthy Marriage Initiative, a public program designed to promote marriage and discourage divorce. The costs of such programs are justified, in part, by the gains from marriage protection.

To contribute to the debate, this study examines the dynamic effect of disability on marriage. According to Meyer and Mok (2013), approximately one-third of male heads-of-household will be at least temporarily disabled before reaching age 50. Additionally, recently disabled males are significantly less likely to be married than non-disabled males (Singleton 2012). The empirical question is whether marital status changes discretely at the time of disability onset, due to marriage formation, marriage dissolution, or both. Such effects would highlight the importance of marriage selection, rather than marriage protection, in the oft-cited relationship between marriage and better health.

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[1] For example, married couples have higher wages (Korenman and Neumark 1991; Schoeni 1995), lower rates of chronic conditions (Verbrugge 1979), and lower rates of mortality (Hu and Goldman 1990).

The dynamic effect of disability on marriage is estimated using an event-study model. The advantage of the model is its flexibility, allowing the effect of disability on marriage to change dynamically relative to the date of disability onset. Estimation of the model requires longitudinal or retrospective data on disability and marriage. The treatment group is composed of individuals who become disabled during the analysis period. The marriage dynamics of the treatment group are compared to those of a comparison group, controlling for observable differences between the two groups.

In this study, the treatment and comparison groups are derived from different surveys. For the treatment group, the study utilizes data from the New Beneficiary Survey (NBS). The NBS was designed to characterized new beneficiaries of the Social Security Administration. The treatment group is composed of new beneficiaries to the Social Security Disability Insurance (SSDI) program who became disabled in 1980. The survey was conducted shortly thereafter, in late 1982. The survey reports marital status at the time of the survey and the dates of marriage formation and dissolution for the most recent marriage.

For the comparison group, the study utilizes data from the Survey of Income and Program Participation (SIPP). The SIPP provides longitudinal data for a representative sample the non-institutionalized, US population. The data come specifically from topical module two of the 1986 SIPP, which reports retrospective information for marriage formation and dissolution for up to three marriages. Rather than distinguishing between the disabled and non-disabled, or between SSDI beneficiaries and non-beneficiaries, the comparison group represents the entire non-institutional population, regardless of health or beneficiary status.

The empirical analysis focuses on three marital outcomes: *married*, *marriage formation*, and *marriage dissolution*. *Marriage formation* and *marriage dissolution* are conditioned on

being single and married, respectively, so the means of these variables can be interpreted as hazard rates. The analysis period ranges from 1977 to 1982.

The results suggest that disability decreased marriage among males and females, but only at younger ages. In the year before disability onset, younger male beneficiaries were -8.12 percentage points less likely to be married compared to SIPP males. In just two years after disability onset, marriage among beneficiaries decreased by an additional 7.04 percentage points. The respective figures for younger females were -13.44 percentage points and 11.39 percentage points. Thus, in just two years, disability onset is associated with a near doubling of the difference in marriage between SSDI beneficiaries and the SIPP population.

The event-study model is then used to determine whether the decrease in marriage is due to marriage formation, marriage dissolution, or both. This is accomplished by estimating the event-study model with *marriage formation* and *marriage dissolution* as outcome variables. The results suggest that the decrease in marriage among younger male beneficiaries is due to both formation and dissolution, while the decrease in marriage among younger female beneficiaries is due only to formation.

The event-study model is also used to examine whether the dynamic effect of disability on marriage differs by educational attainment and subsequent mortality. Educational attainment is measure of socioeconomic status, and subsequent mortality is a measure of health severity. Among younger beneficiaries, disability onset had a similar effect on marriage regardless of educational attainment or subsequent mortality, but the mechanism for the decrease – formation versus dissolution – differs across groups.

To control for observable differences between the treatment and comparison groups, the event-study model includes controls for age, race, and educational attainment. When modeling

marriage dissolution, the model also includes controls for marriage tenure, as a measure of marriage quality. In the final section of results, the model includes dynamic controls for types of health conditions, which are shown to vary by sex and age. The substantive results are robust to these controls.

The results contribute to an existing literature on the dynamic effects of disability on marriage. Charles and Stephens (2002) focus on males using the Panel Survey of Income Dynamics. They find no effect of disability on divorce. Singleton (2012) focuses on both males and females using the Survey of Income and Program Participation. He finds a positive effect of disability on divorce, but only among younger, more educated males. Finally, Karraker and Latham (2015) focus on older males and females using the Health and Retirement Survey. They find a positive effect of disability on divorce, but only among older females. In contrast to these studies, this study finds a negative effect of disability on marriage among both males and females, but only at younger ages. Additionally, this study finds a negative effect disability on marriage formation, while previous studies focus predominately on marriage dissolution.

An important difference between this study and related studies is the data. In related studies, the data come exclusively from representative surveys of the general population, and disability status is self-reported either longitudinally or retrospectively. A disadvantage of survey data is that they contain relatively few spells of severe disability. Another disadvantage is that disability is self-reported, raising concerns for endogeneity with respect to marital outcomes.[2] The NBS, in contrast, is composed entirely of disability spells that limit, if not prevent, the ability to work. Moreover, the veracity of the disability claim is corroborated by the

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[2] Bound (1991) discusses the endogeneity of self-reported health in models of retirement behavior.

Social Security Administration, which uses a sequential evaluation process to evaluate

disabilities and award DI benefits. An SSDI beneficiary must also have a sufficient work history

to qualify for benefits.[3]

The differences in data could increase or decrease the effect of disability on marriage in

the NBS relative to survey data.[4] On one hand, the effect of disability on marriage could be

greater in the NBS, since it is limited to individuals with more severe disabilities and greater

labor force attachment. On the other hand, the effect could be smaller in the NBS, since receipt

of SSDI benefits is presumably less endogenous than self-reported disability onset with

respective to marital outcomes.

The results from this study have direct implications for public policy. Several public

policies are designed to promote marriage, including marriage bonuses in the US income tax

code, and the Healthy Marriage Initiative, which provides education and support services.

However, it remains unclear whether such policies increase either the quantity or quality of

marriage (Hawkins, Amato, Kinghorn 2013). An alternative approach to promote marriage,

supported by this study, is to reduce the incidence of disability onset, or to lessen the

socioeconomic consequences of disability onset. Such policies include expanding access to

public health insurance or providing workplace accommodations for people with disabilities.

II. Background

A. Theory of Marriage Formation and Dissolution

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[3] In general, applicants must have worked at least five of the previous ten years to qualify for
SSDI benefits.
[4] Despite the differences between survey data and the NBS, there is significant overlap between
the most severely disabled in survey data and new receipt of SSDI benefits (Meyer and Mok,
2013; Singleton 2014).

A conceptual framework for health and marriage can be derived from economic theory. A theory of marriage, developed by Becker (1973), emphasizes the role of production within the household. According to the model, households combine time and market goods to produce a single household commodity. The commodity is transferable between individuals within the same household, but utility is derived at the individual level based on own consumption. A person will enter a marriage only if it increases own consumption. Thus, two persons will form a marriage only if production while married exceeds production while single. In the marriage market, which is assumed to exist, individuals select partners to maximize own consumption, subject to market equilibrium constraints.

In equilibrium, individuals not only maximize own consumption, but the market maximizes production over all marriages. This equilibrium condition has two implications for the sorting of individuals into marriage. First, marriage should be more common among individuals who possess qualities that increase household production, for whom the value of marriage is greatest. As Becker (1973) states, this may explain why more attractive and intelligent persons are more likely to marry. Second, couples should sort positively into marriage based on attributes that are complementary in household production. This may explain the positive sorting of couples with respect to intelligence, educational attainment, race, and health.

A theory of marriage dissolution, developed by Becker, Landes, and Michael (1977), is derived from Becker's original the theory of marriage. The theory has two implications for divorce. First, if search costs are high, individuals are willing to form lower quality marriages, which are more susceptible to divorce. Second, because marriage is dynamic, the decision to marry is based on expectations of marital quality. However, expected marital quality may

deviate from realized marital quality, and these deviations – for better or for worse – may precipitate divorce.

B. Role of Health and Marriage

The theories of marriage formation and dissolution have direct implications for the role of health. According to the theory of marriage formation (Becker 1973), individuals are motivated to marry for the production of household commodities. Thus, the effect of health on marriage is determined by its effect on household productivity. If health increases productivity, then the prevalence of marriage should be greater among the healthy. Additionally, if health between spouses is complementary in household production, then couples should sort positively in regards to health. Health shocks may disrupt the propensity to form marriages, as individuals must recalibrate their search in the marriage market or may no longer find marriage optimal.

According to the theory of marriage dissolution (Becker, Landes, and Michael 1977), divorce occurs when marital quality deviates sufficiently from prior expectations. The effect of a health shock on expected marital quality depends on two factors (Singleton 2012). The first is the incidence of health shocks, which reflects the extent to which shocks are anticipated. Unanticipated shocks should have a larger effect on expected marital quality than anticipated shocks. The second factor is the direct effect of health shocks on marital quality. Naturally, more severe shocks should have a greater effect on expected marital quality than less severe shocks. Whether a health shock precipitates divorce ultimately depends on whether expected marital quality falls below the expected value of outside alternatives, which is more likely to occur among lower-quality marriages.

There are two additional considerations regarding the role of health in marriage. First, the role of health may differ by whose health is affected. According to Becker (1973), couples

should sort negatively with respect to market wage, which allows the higher wage spouse to specialize in market work and the lower wage spouse to specialize in household production. Thus, the effect of health on marriage depends on whether health affects household productivity, market productivity, or both, and on whether the affected spouse specializes in market work or household production. For these reasons, "work-preventing" disabilities, as reported in survey data, may have a greater impact on divorce among primary earners.

Second, while health may be an important input in household production, it may also be an output. For example, household production may include healthier meals, which in turn improves health. Stated above, the healthy are not only more likely to marry, but are more likely to marry others who are healthy, assuming health is complementary in household production. If so, then healthy couples are the most efficient at producing better health, which increases subsequent marital quality. Thus, marriages with high initial quality and long tenure may be the most robust, due in part to household production over the course of the marriage (Lillard and Waite 1995). This also implies that marriages with high initial quality and short marriage tenure may be the most fragile, since marriage is predicated on future household production, which may not be realized following an adverse health shock.

C. Empirical Evidence on Health and Marriage

Numerous studies find a positive association between marriage and health, including lower rates of long-term disability, health conditions, and mortality.[5] This association reflects two possible mechanisms. The first is marriage selection, whereby healthy individuals are more

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[5] For example, Verbrugge (1979) finds that rates of chronic conditions and long-term disability are lowest among the married and greatest among the widowed, divorced, and separated. And Hu and Goldman (1990) find that rates of mortality are lower among the married than the non-married.

likely to marry than the less healthy. According to the theories of marriage, selection may occur

for several reasons: search costs may be lower for the healthy, leading to more, higher quality

marriages; the net value of marriage may be greater for the healthy, who are more efficient at

household production; and health shocks may precipitate divorce, particularly if the shocks are

severe and unanticipated. Selection may also arise if couples sort by characteristics associated

with health, such as intelligence, attractiveness, and labor market productivity (Goldman 1993).

The second mechanism is marriage protection, whereby marriage has a causal impact on health.

This may be due to greater efficiency in household production, better management of health

behaviors, and increased social integration.

In the empirical literature, studies attempt to provide direct evidence for either marriage

selection or marriage protection. To identify protection, two recent studies examine how marital

transitions affect mortality using longitudinal data from the Panel Survey of Income Dynamics:

Zick and Smith (1991) and Lillard and Waite (1995). Although both studies find an association

between marriage and mortality, these associations may be confounded with marriage selection.

A more direct approach, by Umberson (1992), is to examine how marital transitions affect health

behaviors. She finds that marriage formation has no effect on health behaviors, but marriage

dissolution increases negative health behaviors, particularly among men.

To identify selection, several studies estimate the effect of health on marital transitions.

For example, Smith and Smith (2010) examine how psychological problems as a child affect

marriage as an adult. They find that psychological problems decreased the likelihood of

marriage by 11 percentage points. Other studies examine how contemporaneous health shocks –

namely, disability onset – affect marriage using longitudinal or retrospective data. Charles and

Stephens (2002), using the Panel Survey of Income Dynamics, find that disability onset among

males had no effect divorce. In contrast, Singleton (2012), using the Survey of Income and Program Participation, finds that disability onset increased divorce, particularly among younger, more educated males. Finally, Karraker and Latham (2015), using the Health and Retirement Survey, find that disability onset among females increased divorce, and disability onset among either spouse increased widowhood. In contrast to Charles and Stephens (2002) and Singleton (2012), Karraker and Latham (2015) focus only on older couples.

III. Methodology

The empirical objective is to measure the dynamic effect of disability on marriage. The study uses an event-study model similar to Charles and Stephens (2002), Meyer and Mok (2013), and Singleton (2012). The advantage of the event-study model is its flexibility, allowing marital outcomes to change non-parametrically relative to the date of disability onset. Estimation of the model requires longitudinal or retrospective data on marriage and disability onset. The data are divided into two groups: a treatment group, composed of individuals who become disabled during the analysis period, and an appropriate comparison group. The empirical question is whether marital status changes discretely at the time of disability onset.

In regression form, the event-study model is defined as follows:

$$Y_{it} = \alpha + \beta D_i + \sum_{\tau \neq -1} \gamma^\tau D_{it}^\tau + \theta X_{it} + \varepsilon_{it}.$$

The outcome variable Y_{it} is a measure of marital status, where the subscript i indexes individuals and the subscript t indexes calendar years. The variable D_i is a disability group indicator, equaling one if individual i belongs to the disabled group and zero otherwise. The variables D_{it}^τ are disability-by-period indicators. Periods are measured in calendar years, with period 0 as the year of disability onset. For example, D_{it}^0 is a disability group indicator in period 0, equaling one

if individual i becomes disabled in calendar year t and zero otherwise. The left-out period for the disability-by-period indicators is -1, the calendar year before disability onset. The coefficient β measures the difference in Y_{it} between the disabled and comparison groups in period -1, and the coefficient γ^τ measures the differential change in Y_{it} between the treatment and comparison group from period -1 to period τ.

When modeling the likelihood of marriage, the outcome variable Y_{it} is an indicator of marriage, equaling one if individual i in calendar year t is married and zero otherwise. In this case, coefficient β measures the difference in the likelihood of marriage between the treatment and comparison group in period -1, and the γ^τ measures the differential change in the likelihood of marriage from period -1 to period τ. If disability onset decreases the likelihood of marriage – by decreasing formation, increasing dissolution, or both – then the coefficients γ^τ should be negative in periods 0 onwards. The immediate effect of disability onset on marriage is measured by the coefficient γ^0.

The model also includes a vector of control variables X_{it}. The vector accounts for observable differences between the treatment and comparison groups that directly affect the likelihood of marriage. According to related studies, disability onset is more common among the aged, non-white, and less educated (Singleton 2012). Thus, the vector X_{it} includes age, aged squared, an indicator for race (white, with non-white as the left-out group), and indicators for educational attainment (less than a high school diploma and any education beyond high school, with high school diploma only as the left-out group). Because the age profile of marriage may differ by race and educational attainment, the model also includes interactions of age and age squared with the indicators of race and educational attainment.

Because the outcome variable is dichotomous, the residual term ε_{it} is necessarily heteroscedastic. Thus, the standard errors of the model are calculated using the Huber-White sandwich estimator.

IV. Data

A. Treatment Group: New Beneficiary Survey

Data for the treatment group come from the New Beneficiary Survey (NBS). The NBS was commissioned by the US Social Security Administration (SSA) to characterize new SSA beneficiaries. To derive the sample, individuals were randomly selected from the Master Beneficiary Record (MBR), which contains an administrative record of all retired and disabled worker beneficiaries. To characterize new beneficiaries, the sampling frame was restricted to individuals who received their first benefit payment from mid-1980 to mid-1981, and the survey was conducted shortly thereafter, from October to December of 1982. The NBS comprises both survey data and SSA administrative data, merged at the individual level.

Using the NBS, the treatment group is defined as disabled worker beneficiaries newly entitled to Social Security Disability Insurance (SSDI) benefits. By design, disabled worker beneficiaries received their first DI payment from July 1980 to June 1981. To reduce sampling error by sex, males and females were sampled from separate strata. The date of disability onset is reported in the MBR. The date of onset is self-reported by the beneficiary at the time of benefit application. The timing of marriage is reported in the survey. The data report the year of marriage, separation, divorce, and widowhood. The analysis focuses only on the most recent marriage, as data on previous marriages are not generally available.

Initially, the NBS initially contains 5,198 DI beneficiaries: 3,594 male beneficiaries and 1,605 female beneficiaries. Three restrictions are imposed to derive the treatment group. First, the sample is restricted to ages 20 to 59, eliminating 34.7 percent of the sample (34.45 percent of are aged 60 and above). Second, the sample is restricted to beneficiaries whose disability onset occurs in 1980, eliminating 4.8 percent of the remaining sample. Third, the sample is restricted to beneficiaries who have complete information on marriage formation and dissolution, eliminating 2.0 percent of the remaining sample. After these restrictions, the treatment group contains 3,155 beneficiaries: 2,162 male beneficiaries and 993 female beneficiaries.

B. Comparison Group: Survey of Income and Program Participation

Data for the comparison group come from the Survey of Income and Program Participation (SIPP). The SIPP provides longitudinal data for a representative sample of the non-institutionalized, US population. The data come specifically from topical module two of the 1986 SIPP, which was designed to collect retrospective data on marriage formation and dissolution. For up to three marriages, the data report the year of marriage, separation, divorce, and widowhood.

To derive the comparison group, two restrictions are imposed on the sample. First, the sample is restricted to ages 24 to 63 in 1986. These ages are comparable to those of the treatment group, which was restricted to ages 20 to 59 in 1982. Second, the sample is restricted to individuals who had fewer than four marriages, as data on the fourth marriage and beyond are not available. This restriction eliminates just 0.52 percent of the remaining sample. After these two restrictions, the comparison group contains 11,431 respondents: 5,432 male respondents and 5,999 female respondents.

C. Outcome Variables

Using retrospective data on marriage, the empirical analysis focuses on three binary outcomes: married, marriage formation, and marriage dissolution. The first variable, *married*, indicates marital status at the end of a calendar year. The variable equals one if married and zero otherwise. The second variable, *marriage formation*, indicates whether a marriage forms during the calendar year, conditional on not being married at the end of the preceding calendar year. The variable equals one if marriage forms during the calendar year and zero otherwise. The third variable, *marriage dissolution*, indicates whether a marriage ends during the calendar year, conditional on being married at any time during the calendar year. The variable reflects separation or divorce, but not widowhood. Because *marriage formation* and *marriage dissolution* are conditioned on being single and married, respectively, the means of these variables can be interpreted as hazard rates. All three variables are constructed annually from 1977 to 1982.

V. Summary Statistics

A. Demographic Characteristics

Table 1 reports demographic characteristics by sex and survey. The characteristics are measured at the time of the survey, which was 1982 for the NBS and 1986 for the SIPP. In comparison to the SIPP, new SSDI beneficiaries are more likely to be older, non-white, and less educated. After adjusting for the year of the survey, SSDI beneficiaries are approximately 15 years older than individuals in the SIPP. New beneficiaries are also less likely to be married. The difference in marriage is larger among females, due to greater rates of separation, divorce, and widowhood among female beneficiaries. The event-study model will determine whether the

differences in marriage between the treatment are systematically related to disability onset, controlling for observable differences between the two groups.

Demographic characteristics also differ between female and male beneficiaries within the NBS. In regards to education, female beneficiaries are more likely to have at least a high school diploma. This may reflect the work requirements necessary for SSDI eligibility, whereby only the most educated females have the work history to qualify. In regards to marital status, female beneficiaries are less likely to be married than male beneficiaries. Again, the difference in marriage is due to greater rates of separation, divorce, and widowhood among female beneficiaries.

B. Dynamics of Marriage

Before estimating the event-study model, the dynamics of marriage are first examined graphically. The percent married is illustrated separately for males and females in **Figures 1 and 2**, respectively. Each figure consists of three panels: panel A utilizes the full sample, ages 20 to 59; panel B is limited to younger ages, 20 to 44; and Panel C is limited to older ages, 45 to 59. Within each panel, the percent married is plotted separately by survey and period year. By construction, period year zero corresponds to calendar year 1980, the year of disability onset among new SSDI beneficiaries.

As shown in panels A, disability onset appears to have altered trends in marriage among new SSDI beneficiaries. Among male beneficiaries, marriage increased before disability onset, but plateaued at approximately 70.5 percent after disability onset. In contrast, marriage increased throughout the analysis period among SIPP males. Marriage trended similarly for both groups before period zero, though SIPP males were less likely to be married than male beneficiaries.

A break in trend is also evident among female beneficiaries. As shown, marriage decreased before disability onset, but decreased more after disability onset. In contrast, marriage increased throughout the analysis period among SIPP females.

According to **Table 1**, SSDI beneficiaries are substantially older than individuals in the SIPP, which could affect both the levels and trends of marriage. To control for age, marriage is plotted separately at younger and older ages, illustrated in panels B and C, respectively. Controlling for sex and age yields two notable patterns. First, both survey groups exhibit similar trends in marriage before period zero. This is evident for both males and females at younger and older ages. This suggests that the trend in marriage observed in the SIPP is a reasonable counterfactual for the trend among SSDI beneficiaries in the absence of disability onset. Second, disability onset affected the trend in marriage among younger beneficiaries, but not older beneficiaries. Among younger male beneficiaries, marriage increased before disability onset, then plateaued at approximately 49 percent after disability onset. Among younger female beneficiaries, marriage increased before disability onset, then decreased after disability onset, peaking at approximately 48 percent.

The dynamics of disability and marriage observed in **Figures 1 and 2** are estimated using the event-study model. The model is estimated separately by sex, which accounts for the differential trends in marriage between males and females. Additionally, the model will include two sets of disability-by-period indicators: one corresponding to younger beneficiaries, ages 20 to 44, and the other corresponding to older beneficiaries, ages 45 to 59. This allows for differential effects of disability by age. To control for fixed effects by calendar year, the model includes indicator variables for each period year, with -1 as the left-out year. In all estimations, the analysis period ranges from -3 to 2, as in **Figures 1 and 2**.

VI. Results

A. Married

First, the event-study model is estimated with *married* as the outcome variable. The results are presented in panel A of **Tables 2 and 3**, corresponding to males and females, respectively. Each panel consists of two columns. Column one corresponds to younger beneficiaries; column two corresponds to older beneficiaries. The first estimate in each column is of β, the coefficient associated with the main disability indicator D_i. This estimate measures the difference in marriage between the NBS and the SIPP in period -1, the left-out period. The remaining estimates measure the differential change in marriage before and after disability onset. All estimates are factored by 100 and thus interpreted as percentage points.

The results confirm that disability onset is associated with a decrease in marriage, particularly among younger beneficiaries. The results for younger male beneficiaries are presented in column one, panel A of **Table 2**. In period -1, younger male beneficiaries were 8.12 percentage less likely to be married than SIPP males. This difference is relatively stable before disability onset, as indicated by the small and statistically insignificant estimates of D_{it}^{τ} in periods -3 and -2. However, the difference increases substantially after disability onset, as indicated by the large, negative estimates for D_{it}^{τ} in periods 0 and beyond. By period 2, the difference in marriage increased by 7.04 percentage points, which is statistically significant at the one percent level. Thus, in less than three years after disability onset, the difference in marriage nearly doubled, from 8.12 percentage points in period -1 to 15.16 percentage points in period 2.

The results for younger female beneficiaries are presented in column one, panel A of **Table 3**. In period -1, younger female beneficiaries were 13.44 percentage points less likely to

be married relative to SIPP females. The difference is relatively stable before disability onset, but increases substantially after disability onset. By period 2, the difference in marriage increased by 11.39 percentage points, which is statistically significant at the one percent level. Thus, in less than three years after disability onset, the difference in marriage nearly doubled, from 13.44 percentage points in period -1 to 24.84 percentage points in period 2.

In contrast to younger beneficiaries, there is no systematic relationship between disability onset and marriage among older beneficiaries. The results for older male beneficiaries are presented in column one, panel A of **Table 2**. In period -1, older male beneficiaries were 2.18 percentage points less likely to be married than SIPP males. This difference is larger before disability onset and smaller after disability onset, indicating an upward trend in marriage throughout the analysis period. The results for older male beneficiaries are presented in column one, panel A of **Table 3**. In period -1, older female beneficiaries were 15.85 percentage points less likely to married than SIPP females. This difference appears stable both before and after disability onset.

The upward trend in marriage among older male beneficiaries is not systematically related to disability onset. Instead, the trend may be attributable to differences in marriage data between the NBS and the SIPP. The SIPP reports data for up to three marriages, but the NBS reports data only for the most recent marriage. This would lead to lower rates of marriage among the NBS relative to the SIPP, with the difference increasing with the years before the survey. To explore this possibility, the model for males is re-estimated with marriage in the SIPP defined only for the most recent marriage. With this specification, the estimates of D_{it}^{τ} for older male beneficiaries are small and statistically insignificant. This suggests that the upward

trend in marriage among older male beneficiaries is attributable to the lack of marriage data in the NBS.

B. Marriage Formation and Dissolution

Disability onset is associated with a decrease in marriage, particularly among younger beneficiaries. An important question is whether the decrease in marriage is due to marriage formation, marriage dissolution, or both. To address this question, the event-study model is re-estimated separately with marriage formation and dissolution as outcome variables. Because these variables are defined only for the non-married and married, respectively, the sample size decreases for each model.

The results are presented in panels B and C of **Tables 2 and 3**. Panel B presents results for marriage formation, and panel C presents results for marriage dissolution. As shown in **Table 2**, the decrease in marriage among younger male beneficiaries is due to both marriage formation and dissolution. For example, in period 0, the rate of marriage formation decreased by 5.78 percentage points, relative to a baseline difference in period -1 of -0.95 percentage points. Additionally, the rate of marriage dissolution increased by 3.49 percentage points, relative to a baseline difference of 0.64 percentage points. In contrast to younger male beneficiaries, the table reveals no statistically significant change in marriage formation or dissolution among older male beneficiaries.

As shown in **Table 3**, the decrease in marriage among younger female beneficiaries is also due to both marriage formation and dissolution, but the effects on formation are larger and statistically significant. For example, in period 2, the rate of marriage formation decreased by 6.93 percentage points, relative to a baseline difference of -0.97 percentage points. The rate of marriage dissolution increased by 4.83 percentage points, relative to a baseline difference of 2.85

percentage points. The table also reveals a decrease in marriage formation among older female beneficiaries. By period 2, the rate of marriage formation decreased by 3.96 percentage points, relative to a baseline difference of 2.11 percentage points. However, the decrease in marriage formation among older female beneficiaries did not affect rates of marriage, as shown in column two of panel A.

C. Educational Attainment

According to economic theories of marriage, the association between disability onset and marriage should be greater at higher levels of socioeconomic status. This because the incidence of disability is lower at higher levels of socioeconomic status and because the expectations of marital quality presumably increase with socioeconomic status. To explore this theoretical prediction, the event-study model is re-estimated with four sets of disability-by-period indicators, which differ by both age and educational attainment. Lower education is defined as no high school diploma, and higher education is defined as a high school diploma or more.

Table 4 presents the results for males, and **Table 5** presents the result for females. Each table consists of three panels, corresponding with the three different outcome variables. Each panel consists of four columns, corresponding to the four categories of age and educational attainment.

According to panel A of **Table 4**, disability onset is associated with a decrease in marriage among younger male beneficiaries, regardless of educational attainment. By period 2, marriage decreased by 6.89 percentage points among younger, lower educated males, and by 7.11 percentage points among younger, higher educated males. However, only the latter estimate is statistically significant.

Although marriage decreases among younger male beneficiaries, regardless of educational attainment, the mechanism for the decrease differs between the two groups. This is shown in panels B and C. Among younger, lower educated males, the decrease in marriage is due to both formation and dissolution. In regards to dissolution, the rate decreased temporarily in the year preceding disability onset, only to increase more after disability onset. This is evident in column one of panel C, where the main disability effect is -2.09 percentage points, and all the disability-by-period effects are positive and statistically significant. Among younger, more educated males, the decrease in marriage is due only to formation. In period 0, the rate of marriage formation decreased by 7.50 percentage points, relative to a baseline difference of -1.20 percentage points.

The results for females are presented in **Table 5**. As shown, disability onset is associated with a decrease in marriage among younger female beneficiaries, regardless of educational attainment. By period 2, marriage decreased 11.95 percentage points among younger, less educated females, and by 11.22 percentage points among younger, more educated females.

Although marriage decreases for younger female beneficiaries, regardless of educational attainment, the baseline difference in marriage differs between the two groups. Among younger, less educated females, the difference in marriage is small and statistically insignificant. However, among younger, more educated females, the difference in marriage is -16.8 percentage points. These results suggest that marriage selection occurs before disability onset among younger, more educated females, whereas no such selection is evident among younger, less educated females.

Moreover, the mechanism for the decrease in marriage after disability onset also differs between the two groups. Among younger, less educated females, the decrease in marriage is due

predominately to marriage dissolution. By period year 2, the rate of marriage dissolution increased by 13.07 percentage points, relative to a baseline difference of -0.37 percentage points. Among younger, more educated beneficiaries, the decrease in marriage is due predominately to marriage formation. By period 2, the rate of marriage formation decreased by 7.46 percentage points, relative to a baseline difference of -1.55 percentage points.

D. Mortality

Several studies document an association between marital status and mortality. Thus, an important question is whether the dynamic association between disability onset and marriage differs by subsequent mortality. To address this question, the analysis utilizes administrative data on mortality available in the NBS. Using these data, the event-study model is re-estimated with four sets of disability-by-period indicators, which differ by age and subsequent mortality. Subsequent mortality is measured as being deceased by 1990.

Table 6 presents the results for males, and **Table 7** presents the result for females. According to panel A of **Table 6**, disability onset is associated with a decrease in marriage among younger male beneficiaries, regardless of subsequent mortality. By period 2, marriage decreased by -9.77 percentage points among males who were deceased by 1990, and by 6.61 percentage points among those who were not deceased by 1990. However, the mechanism for the decrease in marriage differs between the two groups. While both groups exhibit a decrease in marriage formation, only those who were deceased by 1990 exhibited an increase in marriage dissolution, particularly in period 0. In that period, the rate of marriage dissolution increased by 11.16 percentage, relative to baseline difference of -0.13 percentage points.

According to panel A of **Table 7**, disability onset is associated with a decrease in marriage among younger female beneficiaries, regardless of subsequent mortality. By period 2,

marriage decreased by 17.91 percentage points among those who were deceased by 1990, and by 10.53 percentage points among those who were not. However, the mechanism for the decrease in marriage differs between the two groups. While both groups exhibit a decrease in marriage formation, only those who were deceased by 1990 exhibited an increase in marriage dissolution, though the effects are not statistically significant. For example, in period 1, the rate of marriage dissolution increased by 7.45 percentage, relative to baseline difference of -2.10 percentage points.

The two groups also exhibit different trends in marriage before disability onset. Among females who were not deceased by 1990, marriage was relatively stable before disability onset. However, among females who were deceased by 1990, marriage increased substantially relative to SIPP females. In fact, by period -1, these beneficiaries were 15.03 percentage points more likely to married than females in the SIPP. The mechanism for the increase in marriage is evident in panels B and C. As shown, female beneficiaries who were deceased by 1990 were significantly more likely to form marriages before disability onset than SIPP females, and the rate of marriage formation increased closer to the date of disability onset. By period -1, the rate of marriage formation was 18.18 percentage points greater among younger female beneficiaries who were deceased by 1990.

E. Health Conditions

According to the baseline results, disability onset is associated with a decrease in marriage, particularly among younger beneficiaries. These results are consistent with economic theory, because the incidence of disability is lower among the young, and because the effect of disability on marital quality is presumably larger among the young. However, an alternative interpretation is that disabilities differ between the young and old, and these differences account

for the dynamic effect of disability onset marriage. For this interpretation to be plausible, the young must experience more debilitating disabilities, despite a lower incidence of disability onset.

To address this possible interpretation, the baseline model is estimated using controls for health conditions reported in the NBS. Unfortunately, the NBS does not report the precise cause of disability onset. Instead, the data report whether participants have specific health conditions posed by the survey. Survey participants may respond affirmatively to any and all conditions. The data report information on 14 health conditions, which are then aggregated to eight.

Summary statistics of health conditions are reported in **Table 8**. The table reports rates of the eight health conditions, and enumerates the initial 14 health conditions reported in the survey. Response rates are reported separately by sex and age. In general, older beneficiaries are more likely to report specific health conditions than younger beneficiaries. The two exceptions are the nervous system, which includes multiple sclerosis and cerebral palsy, and mental illness, defined as a nervous or emotional problem. The different rates of these conditions by age are statistically significant among both males and females.

An empirical question is whether the dynamic effect of disability on marriage, measured in **Tables 2 and 3**, are robust to controls for health conditions. To address this question, the event-study model includes eight sets of disability-by-period indicators. The eight sets correspond to the conditions in **Table 8**. With these additional control variables, the event-study model measures the dynamic association between disability and marriage separately for younger and older beneficiaries, controlling dynamically for health conditions that may differ between the two groups.

The results for males are presented in **Table 9**, and the results for females are presented in **Table 10**. As shown, the baseline results in **Tables 2 and 3** are generally robust to dynamic controls for health conditions. In **Table 9**, disability onset decreases marriage among younger male beneficiaries, and the decrease is due to both marriage formation and dissolution. However, only the estimate for marriage formation is statistically significant, in contrast to **Tables 2**. In **Table 10**, disability onset decreases marriage among younger female beneficiaries, and this decrease is due predominately to marriage formation. These results are consistent with the baseline results reported in **Table 3**. Although the baseline results are robust to dynamic controls for health conditions, these controls do not substantially improve the explanatory power of the model. This is evident by the similar measures of R-square between **Tables 2 and 9** and between **Tables 3 and 10**.

VII. Discussion and Conclusion

This study examines the dynamic effect of disability on marriage. Data for the treatment come from the NBS, designed to characterize new beneficiaries to the SSDI program. The results suggest that disability onset decreases the likelihood of marriage, particularly among younger beneficiaries. The decrease in marriage reflects both a decrease in marriage formation and an increase in marriage dissolution.

The study contributes to an existing literature on dynamic effect of disability on marriage. Studies in this literature use longitudinal or retrospective survey data on disability and marriage, and disability onset is measured by self-report. These studies find either no effect of disability on divorce, or only limited effects among younger, educated males. No study finds effect of disability on marriage formation. Using novel data from the NBS, this study finds substantial

effects of disability on marriage, marriage formation, and marriage dissolution. The difference in findings may reflect that the NBS is limited individuals with the more severe disabilities and greater attachment to the labor force.

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A. Ages 20 to 59

B. Ages 20 to 44

C. Ages 45 to 59
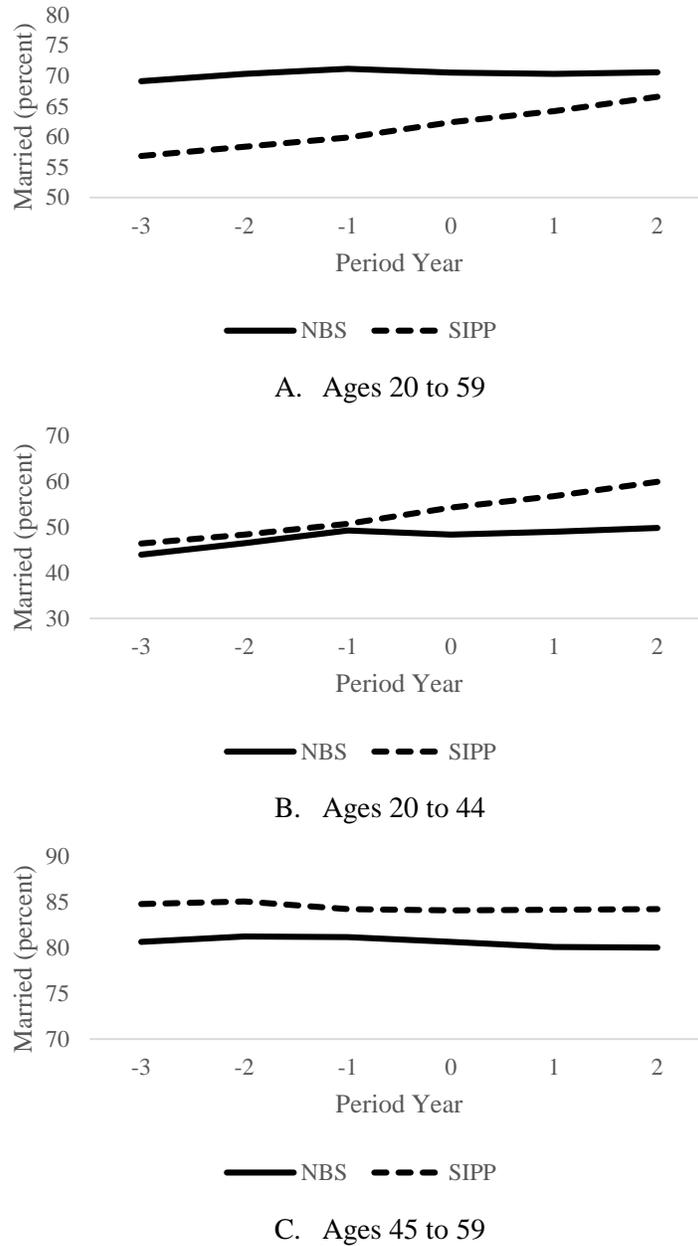
Figure 1
Percent Married by Period Year: Males Ages 20 to 59

The data come from the New Beneficiary Survey and the Survey of Income and Program Participation. The New Beneficiary Survey is limited to new beneficiaries of the Social Security Disability Insurance Program. By construction, new beneficiaries became disabled in period 0.

A. Ages 20 to 59

B. Ages 20 to 44

C. Ages 45 to 59
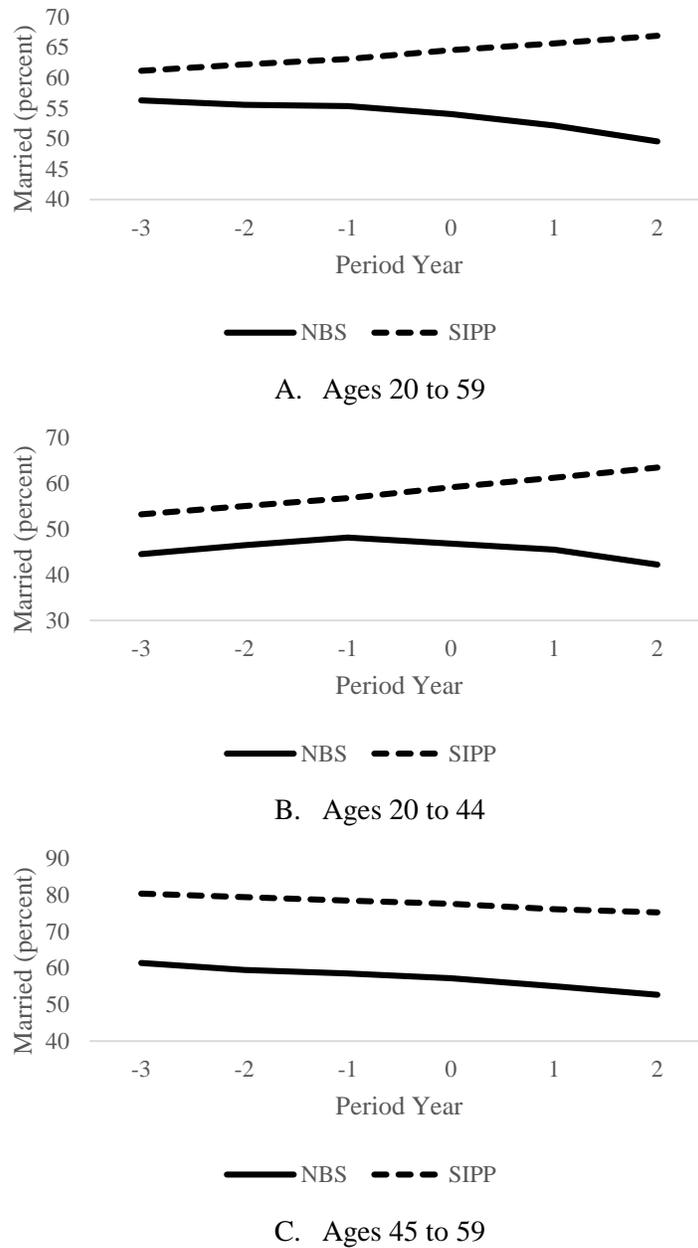
Figure 2
Percent Married by Period Year: Females Ages 20 to 59

The data come from the New Beneficiary Survey and the Survey of Income and Program Participation. The New Beneficiary Survey is limited to new beneficiaries of the Social Security Disability Insurance Program. By construction, new beneficiaries became disabled in period 0.

Table 1

Summary Statistics by Sex and Survey

Survey	Males		Females	
	NBS	SIPP	NBS	SIPP
Age (years)	47.69	36.36	47.91	36.93
	(0.23)	(0.16)	(0.34)	(0.15)
White	80.90	89.65	76.94	87.30
	(0.85)	(0.41)	(1.34)	(0.43)
Less than HS	53.65	19.48	45.02	19.12
	(1.07)	(0.54)	(1.58)	(0.51)
HS only	30.30	42.34	33.53	48.89
	(0.99)	(0.67)	(1.50)	(0.65)
More than HS	16.05	38.18	21.45	31.99
	(0.79)	(0.66)	(1.30)	(0.60)
Married	70.58	72.77	49.55	69.73
	(0.98)	(0.60)	(1.59)	(0.59)
Widowed	2.08	0.85	11.18	4.65
	(0.31)	(0.12)	(1.00)	(0.27)
Separated	3.70	2.28	8.56	3.25
	(0.41)	(0.20)	(0.89)	(0.23)
Divorced	9.90	8.23	18.03	10.52
	(0.64)	(0.37)	(1.22)	(0.40)
Single	13.74	15.87	12.69	11.85
	(0.74)	(0.50)	(1.06)	(0.42)
Observations	2,162	5,432	993	5,999

The data come from the New Beneficiary Survey and the Survey of Income and Program Participation. The New Beneficiary Survey is limited to new beneficiaries of the Social Security Disability Insurance Program. All estimates are in percent, unless otherwise noted. Standard errors are in parentheses.

Table 2

Event-Study Model of Marriage and Disability by Age: Males Ages 20 to 59

Age	A. Married		B. Formation		C. Dissolution	
	20-44	45-59	20-44	45-59	20-44	45-59
D_i	-8.12	-2.18	-0.95	1.18	0.64	0.11
	(1.83)*	(1.20)	(1.53)	(1.59)	(0.90)	(0.36)
D_{it}^{-3}	-1.80	-3.58	-1.76	-1.77	1.55	0.21
	(2.51)	(1.62)*	(1.94)	(1.95)	(1.42)	(0.50)
D_{it}^{-2}	-1.03	-1.43	-0.68	1.16	-0.19	0.22
	(2.53)	(1.61)	(2.03)	(2.13)	(1.18)	(0.47)
D_{it}^{0}	-3.69	-0.09	-5.78	-3.11	3.49	0.37
	(2.59)	(1.63)	(1.96)*	(1.96)	(1.54)*	(0.50)
D_{it}^{1}	-5.26	0.45	-4.77	-0.58	1.02	0.05
	(2.60)*	(1.64)	(1.99)*	(2.06)	(1.35)	(0.51)
D_{it}^{2}	-7.04	0.94	-2.86	-1.72	3.08	-0.02
	(2.61)*	(1.65)	(2.18)	(1.99)	(1.49)*	(0.48)
Observations	45,564		17,099		29,802	
R-Square	0.27		0.02		0.01	

The estimates are derived from an event-study measuring the dynamic effect of disability on marital outcomes. The treatment group is derived from the New Beneficiary Survey, limited to new beneficiaries of the Social Security Disability Insurance Program. The comparison group is derived from the Survey of Income and Program Participation. The coefficient on the variable D_i measures the difference in marriage between groups in period -1, the year before disability onset. The coefficients on the variables D_{it}^{τ} measure the differential change in marital outcomes from period -1 to τ. In panel A, the outcome variable is an indicator of marriage; in panel B, the outcome variable is an indicator of marriage formation, conditional on being non-married; in panel C, the outcome variable is an indicator of marriage dissolution, conditional on being married. All estimates are factored by 100. Standard errors are in parentheses. * indicates statistical significance at the five percent level.

Table 3

Event-Study Model of Marriage and Disability by Age: Females Ages 20 to 59

Age	A. Married		B. Formation		C. Dissolution	
	20-44	45-59	20-44	45-59	20-44	45-59
D_i	-13.44	-15.85	-0.97	2.11	2.85	1.04
	(2.82)*	(1.99)*	(2.21)	(1.28)	(1.81)	(0.69)
D_{it}^{-3}	-0.66	-0.64	0.51	-0.94	-1.96	-0.56
	(3.97)	(2.73)	(3.01)	(1.62)	(2.32)	(0.88)
D_{it}^{-2}	-0.22	-0.79	-0.17	0.28	-1.84	0.54
	(3.99)	(2.73)	(3.04)	(1.75)	(2.36)	(1.04)
D_{it}^{0}	-3.32	-0.08	-4.00	-1.38	1.65	0.69
	(3.97)	(2.75)	(2.84)	(1.65)	(2.70)	(1.01)
D_{it}^{1}	-6.25	-0.67	-4.51	-2.08	1.81	0.71
	(3.97)	(2.76)	(2.74)	(1.53)	(2.76)	(1.03)
D_{it}^{2}	-11.39	-1.66	-6.93	-3.96	4.83	1.33
	(3.96)*	(2.78)	(2.61)*	(1.43)*	(3.09)	(1.12)
Observations	41,952		16,091		27,076	
R-Square	0.18		0.03		0.01	

The estimates are derived from an event-study measuring the dynamic effect of disability on marital outcomes. The treatment group is derived from the New Beneficiary Survey, limited to new beneficiaries of the Social Security Disability Insurance Program. The comparison group is derived from the Survey of Income and Program Participation. The coefficient on the variable D_i measures the difference in marriage between groups in period -1, the year before disability onset. The coefficients on the variables D_{it}^{τ} measure the differential change in marital outcomes from period -1 to τ. In panel A, the outcome variable is an indicator of marriage; in panel B, the outcome variable is an indicator of marriage formation, conditional on being non-married; in panel C, the outcome variable is an indicator of marriage dissolution, conditional on being married. All estimates are factored by 100. Standard errors are in parentheses. * indicates statistical significance at the five percent level.

Table 4

Event-Study Model of Marriage and Disability by Age and Education: Males Ages 20 to 59

	A. Married				B. Formation				C. Dissolution			
Age	20-44	20-44	45-59	45-59	20-44	20-44	45-59	45-59	20-44	20-44	45-59	45-59
Education	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High
D_i	-5.64	-9.35	-1.70	-2.44	-0.47	-1.20	0.59	0.29	-2.09	2.35	0.29	-0.17
	(3.02)	(2.23)*	(1.62)	(1.61)	(2.38)	(1.91)	(1.68)	(0.48)	(0.33)*	(1.40)	(0.48)	(0.46)
D_{it}^{-3}	-2.25	-1.54	-2.84	-4.62	-1.74	-1.77	-2.42	0.17	4.22	-0.11	0.17	0.27
	(4.13)	(3.04)	(2.07)	(2.22)*	(3.01)	(2.39)	(1.94)	(0.64)	(1.76)*	(1.99)	(0.64)	(0.63)
D_{it}^{-2}	-2.82	0.07	-0.99	-2.05	-3.18	0.75	1.99	0.13	3.74	-2.67	0.13	0.35
	(4.14)	(3.08)	(2.06)	(2.21)	(2.85)	(2.61)	(2.37)	(0.60)	(1.59)*	(1.59)	(0.60)	(0.60)
D_{it}^{0}	-2.12	-4.65	0.03	-0.33	-2.81	-7.50	-2.03	-0.34	6.07	1.88	-0.34	1.38
	(4.19)	(3.18)	(2.07)	(2.25)	(3.21)	(2.30)*	(2.19)	(0.58)	(1.98)*	(2.15)	(0.58)	(0.77)
D_{it}^{1}	-4.43	-5.77	0.09	0.88	-5.90	-4.11	-0.41	-0.19	3.9	-0.79	-0.19	0.37
	(4.18)	(3.19)	(2.09)	(2.26)	(2.73)*	(2.55)	(2.25)	(0.64)	(1.66)*	(1.88)	(0.64)	(0.66)
D_{it}^{2}	-6.89	-7.11	0.17	1.96	-1.86	-3.45	-1.78	-0.35	7.61	0.23	-0.35	0.44
	(4.20)	(3.21)*	(2.11)	(2.27)	(3.29)	(2.69)	(2.15)	(0.59)	(2.21)*	(1.96)	(0.59)	(0.63)
Observations	45,564				17,099				29,802			
R-Square	0.27				0.02				0.01			

The estimates are derived from an event-study measuring the dynamic effect of disability on marital outcomes. The treatment group is derived from the New Beneficiary Survey, limited to new beneficiaries of the Social Security Disability Insurance Program. The comparison group is derived from the Survey of Income and Program Participation. Low education is defined as less than a high school diploma. The coefficient on the variable D_i measures the difference in marriage between groups in period -1, the year before disability onset. The coefficients on the variables D_{it}^{τ} measure the differential change in marital outcomes from period -1 to τ. In panel A, the outcome variable is an indicator of marriage; in panel B, the outcome variable is an indicator of marriage formation, conditional on being non-married; in panel C, the outcome variable is an indicator of marriage dissolution, conditional on being married. All estimates are factored by 100. Standard errors are in parentheses. * indicates statistical significance at the five percent level.

Table 5

Event-Study Model of Marriage and Disability by Age and Education: Females Ages 20 to 59

	A. Married				B. Formation				C. Dissolution			
Age	20-44	20-44	45-59	45-59	20-44	20-44	45-59	45-59	20-44	20-44	45-59	45-59
Education	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High
D_i	-0.57	-16.8	-11.33	-19.83	2.03	-1.55	1.52	2.87	-0.37	3.99	1.69	0.26
	(5.78)	(3.17)*	(2.62)*	(2.93)*	(5.17)	(2.42)	(1.37)	(2.04)	(2.43)	(2.28)	(1.04)	(0.80)
D_{it}^{-3}	-0.85	-0.62	2.00	-3.87	0.16	0.58	2.18	-4.13	-2.19	-1.79	-1.23	0.33
	(8.02)	(4.48)	(3.52)	(4.08)	(7.12)	(3.28)	(2.04)	(2.23)	(2.43)	(3.02)	(1.25)	(1.13)
D_{it}^{-2}	-1.22	0.04	1.24	-3.29	0.54	-0.29	1.63	-1.12	2.40	-3.36	0.14	1.06
	(8.18)	(4.49)	(3.53)	(4.08)	(7.50)	(3.28)	(2.01)	(2.67)	(4.20)	(2.80)	(1.47)	(1.35)
D_{it}^{0}	-4.10	-3.11	-1.09	1.14	0.40	-4.84	-1.97	-0.66	7.58	-0.49	0.15	1.40
	(8.12)	(4.47)	(3.56)	(4.09)	(7.48)	(3.01)	(1.57)	(2.77)	(5.18)	(3.13)	(1.41)	(1.35)
D_{it}^{1}	-3.19	-7.06	-2.90	2.04	3.86	-6.24	-1.87	-2.34	2.78	1.51	0.68	0.80
	(8.14)	(4.45)	(3.57)	(4.10)	(7.81)	(2.81)*	(1.57)	(2.44)	(4.22)	(3.41)	(1.50)	(1.26)
D_{it}^{2}	-11.95	-11.22	-3.97	1.12	-4.09	-7.46	-3.08	-5.10	13.07	1.77	0.38	2.57
	(8.24)	(4.43)*	(3.60)	(4.13)	(6.38)	(2.80)*	(1.56)*	(2.10)*	(6.22)*	(3.50)	(1.49)	(1.62)
Observations	41,952				16,091				27,076			
R-Square	0.18				0.03				0.01			

The estimates are derived from an event-study measuring the dynamic effect of disability on marital outcomes. The treatment group is derived from the New Beneficiary Survey, limited to new beneficiaries of the Social Security Disability Insurance Program. The comparison group is derived from the Survey of Income and Program Participation. Low education is defined as less than a high school diploma. The coefficient on the variable D_i measures the difference in marriage between groups in period -1, the year before disability onset. The coefficients on the variables D_{it}^{τ} measure the differential change in marital outcomes from period -1 to τ. In panel A, the outcome variable is an indicator of marriage; in panel B, the outcome variable is an indicator of marriage formation, conditional on being non-married; in panel C, the outcome variable is an indicator of marriage dissolution, conditional on being married. All estimates are factored by 100. Standard errors are in parentheses. * indicates statistical significance at the five percent level.

Table 6

Event-Study Model of Marriage and Disability by Age and Mortality: Males Ages 20 to 59

	A. Married				B. Formation				C. Dissolution			
Age	20-44	20-44	45-59	45-59	20-44	20-44	45-59	45-59	20-44	20-44	45-59	45-59
Deceased by 1990	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
D_i	-5.83	-8.44	-6.11	-0.40	1.03	-1.18	-0.05	1.89	-0.13	0.78	1.18	-0.36
	(4.72)	(1.95)*	(2.01)*	(1.34)	(4.49)	(1.60)	(2.02)	(2.04)	(1.89)	(0.99)	(0.76)	(0.34)
D_{it}^{-3}	-6.09	-1.14	-2.95	-3.84	-2.54	-1.68	-2.43	-1.32	-1.46	2.02	-1.01	0.76
	(6.50)	(2.68)	(2.79)	(1.84)*	(5.62)	(2.03)	(2.35)	(2.68)	(1.90)	(1.61)	(0.91)	(0.53)
D_{it}^{-2}	-1.93	-0.89	-0.52	-1.84	3.84	-1.36	2.52	0.32	0.69	-0.35	-0.77	0.66
	(6.61)	(2.70)	(2.77)	(1.83)	(6.57)	(2.07)	(3.00)	(2.78)	(2.75)	(1.29)	(0.90)	(0.48)
D_{it}^{0}	-5.70	-3.38	-0.53	0.10	-1.29	-6.36	-2.36	-3.59	11.16	2.06	-0.13	0.60
	(6.86)	(2.76)	(2.81)	(1.83)	(6.57)	(1.99)*	(2.51)	(2.61)	(4.88)*	(1.56)	(1.02)	(0.50)
D_{it}^{1}	-6.37	-5.08	-1.05	1.12	-8.60	-4.25	-2.10	0.50	-1.72	1.46	-0.60	0.35
	(6.93)	(2.77)	(2.84)	(1.84)	(5.12)	(2.10)*	(2.33)	(2.88)	(1.91)	(1.53)	(0.99)	(0.51)
D_{it}^{2}	-9.74	-6.61	-0.43	1.54	-4.49	-2.64	-0.66	-2.46	6.23	2.54	-0.86	0.38
	(6.91)	(2.78)*	(2.85)	(1.85)	(6.06)	(2.28)	(2.59)	(2.62)	(4.15)	(1.59)	(0.92)	(0.47)
Observations	45,564				17,099				29,802			
R-Square	0.27				0.02				0.01			

The estimates are derived from an event-study measuring the dynamic effect of disability on marital outcomes. The treatment group is derived from the New Beneficiary Survey, limited to new beneficiaries of the Social Security Disability Insurance Program. The comparison group is derived from the Survey of Income and Program Participation. The coefficient on the variable D_i measures the difference in marriage between groups in period -1, the year before disability onset. The coefficients on the variables D_{it}^{τ} measure the differential change in marital outcomes from period -1 to τ. In panel A, the outcome variable is an indicator of marriage; in panel B, the outcome variable is an indicator of marriage formation, conditional on being non-married; in panel C, the outcome variable is an indicator of marriage dissolution, conditional on being married. All estimates are factored by 100. Standard errors are in parentheses. * indicates statistical significance at the five percent level.

Table 7

Event-Study Model of Marriage and Disability by Age and Mortality: Females Ages 20 to 59

	A. Married				B. Formation				C. Dissolution			
Age	20-44	20-44	45-59	45-59	20-44	20-44	45-59	45-59	20-44	20-44	45-59	45-59
Deceased by 1990	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
D_i	15.03	-17.19	-14.00	-16.36	18.18	-1.97	0.34	2.64	-2.10**	4.01	0.23	1.29
	(4.98)*	(3.03)*	(3.85)*	(2.25)*	(14.89)	(2.16)	(1.67)	(1.50)	(0.28)	(2.21)	(1.03)	(0.83)
D_{it}^{-3}	-9.64	0.52	-2.52	-0.04	-15.57	1.30	2.14	-1.87	0.41	-2.54	0.13	-0.78
	(8.68)	(4.25)	(5.39)	(3.10)	(17.20)	(3.00)	(2.83)	(1.81)	(0.36)	(2.83)	(1.42)	(1.04)
D_{it}^{-2}	-4.87	0.39	-1.30	-0.63	-4.94	-0.09	1.98	-0.21	0.02	-2.29	-0.14	0.75
	(7.80)	(4.29)	(5.39)	(3.11)	(19.30)	(2.97)	(2.79)	(2.03)	(0.37)	(2.89)	(1.42)	(1.26)
D_{it}^{0}	-4.25	-3.20	1.33	-0.53	-24.72	-2.94	1.30	-2.18	3.81	1.15	0.34	0.80
	(7.56)	(4.26)	(5.41)	(3.12)	(15.01)	(2.84)	(2.76)	(1.87)	(3.38)	(3.22)	(1.45)	(1.23)
D_{it}^{1}	-10.97	-5.63	1.19	-1.27	-24.95	-3.45	-1.34	-2.32	7.45	0.48	1.34	0.52
	(8.07)	(4.26)	(5.44)	(3.13)	(14.98)	(2.74)	(1.76)	(1.80)	(4.85)	(3.19)	(1.76)	(1.21)
D_{it}^{2}	-17.91	-10.53	-0.43	-2.07	-26.31	-5.92	-2.22	-4.49	7.96	4.08	2.45	0.97
	(8.41)*	(4.24)*	(5.48)	(3.15)	(14.96)	(2.60)*	(1.77)	(1.65)*	(5.13)	(3.60)	(2.05)	(1.30)
Observations	41,952				16,091				27,076			
R-Square	0.18				0.03				0.01			

The estimates are derived from an event-study measuring the dynamic effect of disability on marital outcomes. The treatment group is derived from the New Beneficiary Survey, limited to new beneficiaries of the Social Security Disability Insurance Program. The comparison group is derived from the Survey of Income and Program Participation. The coefficient on the variable D_i measures the difference in marriage between groups in period -1, the year before disability onset. The coefficients on the variables D_{it}^{τ} measure the differential change in marital outcomes from period -1 to τ. In panel A, the outcome variable is an indicator of marriage; in panel B, the outcome variable is an indicator of marriage formation, conditional on being non-married; in panel C, the outcome variable is an indicator of marriage dissolution, conditional on being married. All estimates are factored by 100. Standard errors are in parentheses. * indicates statistical significance at the five percent level.

Table 8

Health Conditions by Sex and Age, New Beneficiary Survey

	Males		Females	
	20-44	45-59	20-44	45-59
Sensory	31.12	45.35	35.88	42.34
(1) Blindness or eye trouble	(1.78)	(1.29)	(2.77)	(1.88)
(2) Cataracts or glaucoma				
(3) Deafness or trouble hearing				
Musculoskeletal	61.94	74.80	59.80	80.49
(4) Missing appendage	(1.87)	(1.13)	(2.83)	(1.51)
(5) Bone of muscle condition				
(6) Stiffness or deformity				
Nervous System	31.56	18.40	28.24	14.16
(7) Multiple sclerosis, cerebral palsy	(1.79)	(1.01)	(2.60)	(1.33)
(8) Other paralysis				
Lung				
(9) Asthma, emphysema	16.52	31.74	15.28	29.19
Lung: asthma, emphysema	(1.43)	(1.21)	(2.08)	(1.73)
Digestive system	29.50	37.87	30.90	41.18
(10) Gallbladder, stomach, kidney, liver	(1.75)	(1.26)	(2.67)	(1.87)
Cancer				
(11) Cancer or growth not already mentioned	5.01	7.28	6.31	11.71
Mental illness	(0.84)	(0.67)	(1.40)	(1.22)
(12) Nervous or emotional problem	38.50	36.05	42.19	38.58
	(1.87)	(1.25)	(2.85)	(1.85)
Heart	35.99	74.19	34.88	66.04
(13) Heart attack	(1.84)	(1.14)	(2.75)	(1.80)
(14) Heart problem				
Observations	678	1,484	301	692

The data come from the New Beneficiary Survey, limited to new beneficiaries of the Social Security Disability Insurance Program. All estimates are in percent, unless otherwise noted. Standard errors are in parentheses.

Table 9

Event-Study Model of Marriage and Disability by Age: Males Ages 20 to 59

Age	A. Married		B. Formation		C. Dissolution	
	20-44	45-59	20-44	45-59	20-44	45-59
D_i	-9.82**	-5.04	-0.78	1.75	0.46	-0.23
	(2.49)	(2.60)	(2.43)	(2.96)	(1.14)	(1.01)
D_{it}^{-3}	-1.44	-3.36	0.72	-0.20	0.13	-1.09
	(3.42)	(3.63)	(3.15)	(3.54)	(1.65)	(1.37)
D_{it}^{-2}	-1.30	-2.01	-1.40	-0.27	0.30	0.92
	(3.45)	(3.64)	(3.23)	(3.93)	(1.53)	(1.36)
D_{it}^{0}	-4.11	-1.69	-8.03**	-7.58*	3.57	1.25
	(3.53)	(3.68)	(3.04)	(3.68)	(1.84)	(1.32)
D_{it}^{1}	-6.21	-2.75	-4.91	-2.77	2.06	1.95
	(3.54)	(3.70)	(3.15)	(3.77)	(1.84)	(1.45)
D_{it}^{2}	-7.01*	-1.28	-1.17	-1.88	2.45	-0.73
	(3.57)	(3.71)	(3.44)	(3.68)	(1.74)	(1.42)
Observations	45,564		17,099		29,802	
R-Square	0.27		0.02		0.01	

The estimates are derived from an event-study measuring the dynamic effect of disability on marital outcomes. The treatment group is derived from the New Beneficiary Survey, limited to new beneficiaries of the Social Security Disability Insurance Program. The comparison group is derived from the Survey of Income and Program Participation. The coefficient on the variable D_i measures the difference in marriage between groups in period -1, the year before disability onset. The coefficients on the variables D_{it}^{τ} measure the differential change in marital outcomes from period -1 to τ. In panel A, the outcome variable is an indicator of marriage; in panel B, the outcome variable is an indicator of marriage formation, conditional on being non-married; in panel C, the outcome variable is an indicator of marriage dissolution, conditional on being married. All estimates are factored by 100. Standard errors are in parentheses. * indicates statistical significance at the five percent level.

Table 10

Event-Study Model of Marriage and Disability by Age: Females Ages 20 to 59

Age	A. Married		B. Formation		C. Dissolution	
	20-44	45-59	20-44	45-59	20-44	45-59
D_i	-13.50**	-18.87**	0.23	5.11	3.48	2.06
	(4.04)	(4.25)	(3.29)	(2.88)	(2.56)	(2.19)
D_{it}^{-3}	-5.59	-6.80	-0.75	-6.10	-1.47	0.26
	(5.60)	(5.95)	(4.39)	(3.78)	(3.21)	(2.51)
D_{it}^{-2}	-1.99	-3.57	-0.96	-3.88	-4.53	-2.26
	(5.68)	(5.97)	(4.23)	(3.91)	(3.31)	(3.00)
D_{it}^{0}	-3.18	0.77	-6.61	-6.52	1.18	-1.04
	(5.72)	(6.01)	(3.81)	(3.36)	(3.42)	(2.65)
D_{it}^{1}	-5.94	-0.07	-5.70	-5.19	1.23	0.96
	(5.71)	(6.04)	(3.84)	(3.50)	(3.95)	(2.96)
D_{it}^{2}	-12.21*	-2.98	-8.21*	-7.11*	6.18	3.35
	(5.71)	(6.07)	(3.77)	(3.22)	(4.09)	(3.20)
Observations	41,952		16,091		27,076	
R-Square	0.18		0.03		0.01	

The estimates are derived from an event-study measuring the dynamic effect of disability on marital outcomes. The treatment group is derived from the New Beneficiary Survey, limited to new beneficiaries of the Social Security Disability Insurance Program. The comparison group is derived from the Survey of Income and Program Participation. The coefficient on the variable D_i measures the difference in marriage between groups in period -1, the year before disability onset. The coefficients on the variables D_{it}^{τ} measure the differential change in marital outcomes from period -1 to τ. In panel A, the outcome variable is an indicator of marriage; in panel B, the outcome variable is an indicator of marriage formation, conditional on being non-married; in panel C, the outcome variable is an indicator of marriage dissolution, conditional on being married. All estimates are factored by 100. Standard errors are in parentheses. * indicates statistical significance at the five percent level.