Divorce, Widowhood, and Labor Supply among Older Adults

1. Overview and Research Questions

Divorce and widowhood are major life events for older people and can have an impact on both retirement security and labor supply. We will address the following research questions:

- What explains changes in labor supply around the time of divorce and widowhood, if there are any?
- Is there heterogeneity by gender in these patterns?
- How will potential changes to divorce laws or Social Security spousal and survivor benefits affect labor supply and retirement security for older people who experience marital transitions?

We will construct a dynamic framework that features exogenous widowhoods, and endogenous divorce and labor supply decisions. We will use the model to understand the observed labor supply patterns of respondents before and after these events in the Health and Retirement Study (HRS). We plan to use HRS data to estimate the structural parameters of the dynamic model. Once the model is estimated, we will conduct counterfactual experiments to examine the impact of potential reforms to divorce laws or Social Security spousal and survivor benefits.

2. Relevance to Understanding the Aging Work Force

While widowhood is widely recognized as a marital transition affecting older adults, divorce is also becoming increasingly common in that age group. The divorce rate among adults aged 50 and older, the so-called "gray divorce" rate, doubled between 1990 and 2010 (Brown and Lin 2012). The main relevance to understanding the aging workforce comes from the link between marital transitions and labor supply (retirement). This link could occur through many channels. Divorce and widowhood may cause changes in wealth, income, health insurance coverage, or marginal tax rate. They are also

associated with the loss of some of the implicit financial benefits of marriage, including economies of scale, gains from specialization, and risk pooling. All these changes may in turn drive labor supply responses. The labor supply and welfare effects of marital transitions may differ for older people relative to younger ones, as older people have less remaining time to accumulate either financial or human capital and more limited options for remarriage.

Gender differentials in post-divorce or post-widowhood labor market outcomes could arise from the fact that older women may not have worked when they were younger due to marital specialization in home production. From a distributional standpoint, while older people experience lower poverty rates on average than the general population, older single women experience significantly higher poverty rates. Thus, the increase in gray divorce and higher probability of female widowhood (due to women's longer life expectancy and the fact that women tend to be younger than their husbands) affect a particularly vulnerable group. Understanding the dynamics of marriage and labor supply at older ages can help inform policy interventions targeting this group.

Our project also has theoretical significance for understanding the aging work force. Micro- and macro-economists have spent decades debating the magnitude of labor elasticity. Specifically, elasticity estimates based on micro data are generally smaller than those based on aggregate data. Recent research has shown that the extensive margin of labor supply adjustment plays a large role in driving these differences (see Chetty et al. 2011 for a summary). Current literature has therefore focused on retirement decisions and female labor supply decisions, which play a large role in determining the extensive margin of labor supply adjustment, to reconcile diverse views on labor supply elasticity. Our project studies labor supply (retirement) decisions of older people, with special focus on labor supply decisions of older women. As a result, our project will contribute to the debate on the labor supply elasticity in general, and that of the aging work force in particular.

3. Data and Methodology

We will construct a heterogeneous-agent dynamic framework that captures labor supply decisions for older people who may also experience divorce and widowhood. We will model divorce and labor supply as part of a joint endogenous decision. Widowhood will be modeled as an exogenous shock. We will then use HRS data to estimate structural parameters of our dynamic model. Once the model is estimated, we conduct counterfactual policy experiments to examine how divorce law and Social Security benefit changes may impact labor supply decisions and the welfare of people at old ages.

a. Theoretical Model

We will construct a dynamic heterogeneous agent model that describes the divorce decisions of married couples over the age of 50, and their labor supply decisions before and after deciding to divorce or experiencing exogenous widowhood. We will focus on married couples characterized by their family wealth, marriage tenure, ages, human capital, incomes, and health conditions. Faced with random shocks to their incomes, health, mortality, and amount of "love" in their relationship, married couples make decisions on whether to stay married and whether to stay on the labor market. We will assume all individuals claim Social Security benefits at age 66 and have the option to work up to age 70.

The model will have three key ingredients. First, a divorce occurs when one party prefers being single to being married. Due to limited commitment, Pareto weights within households shift over time, which affects both intra-household allocations and the future survival of marriages. As a result, divorce probabilities may depend upon family wealth, marriage tenure, and other demographic variables. Second, widowhood may affect the labor supply decisions of the survivor. Third, women have longer life spans than men, and wives tend to be younger and have lower human capital than their husbands. This key gender difference may influence both divorce decisions and post-divorce labor supply decisions.

We have preliminary and ongoing empirical work that uses an event study framework to examine labor supply decisions prior to and after divorce and widowhood (Slavov and Wei, 2021). Addressing these labor supply decisions with a theoretical model complements this empirical approach in the following ways. First, a theoretical model allows us to distinguish the roles played by multiple factors that occur around the same time as the marital transition and may affect labor supply decisions. Those factors include: (1) the substitution effect due to the absence of second-earner tax penalty; (2) the income and wealth effects from split of assets, changes in non-wage income, and the absence of economies of scale; (3) the loss of an insurance mechanism that allows the couple to share income, health and mortality risks; (4) substitution and complementarity effects of spousal time allocation. In a theoretical model we can turn on and off individual factors to isolate their effect on labor supply. Second, a valid instrumental variable is required to identify a causal relationship between divorce and labor supply. Such instrument variables may be hard to find. When we model joint divorce and labor supply decisions in a theoretical model, we can incorporate the endogenous nature of divorce decisions and account for the presence of selection bias among those who get divorced. We can also examine the causal link between divorce and labor supply decisions by manipulating the exogenous factors that contribute to divorces in our theoretical model. Third, we can carry out counterfactual policy experiments using our theoretical model.

b. Estimation

The HRS is an ongoing, nationally representative panel survey of individuals aged 50+ and their spouses. It has been conducted every other year since 1992. New cohorts have been added periodically to keep the panel representative of the target population. The HRS provides panel data on marital status, health, wealth, labor force participation, and other variables. We can use it to estimate (1) divorce rates and labor force participation rates conditional on demographics and other observable

factors and (2) the association between marital transitions and labor supply. Our dynamic model can then generate endogenous divorce and labor supply decisions of households that differ in demographics, marital tenure, and other observable and unobservable characteristics. The model can also generate the dynamic evolution of labor supply before and after exogenous widowhood. The correspondence between our theoretical model and the HRS data will allow us to use simulated method of moments and/or indirect inference to estimate structural parameters.

In our recent, preliminary work (Slavov and Wei 2021), we use HRS data from 1992-2018 to examine how labor supply changes around divorces and widowhoods that occur later in life. Based on that work, Figures 1 and 2 show the dynamics of the probability of work and weekly hours worked (not conditional on working) for men and women around the time of divorce. Figures 3 and 4 present similar results for widowhood. In each figure, the horizontal axis captures the number of survey waves (2-year intervals) since divorce or widowhood; waves outside the five-year event window are binned (represented by a single dummy variable). The models underlying the figures include age dummies, wave dummies, and individual fixed effects, and they are based on all individuals in the survey, including those who never experience divorce or widowhood. These preliminary results suggest that both the probability of work and hours worked increase for women, and decline for men, following divorce and widowhood. There is some evidence of an anticipation effect or pre-trend for men prior to divorce, and for both genders prior to widowhood.

c. Policy Experiments

We will use our model to conduct policy experiments and examine the impact of potential policy changes. We plan to examine policy changes in two areas in particular: (1) divorce and property division laws; (2) Social Security and other retirement benefits (particularly spousal and survivor benefits). Since our model will allow for joint divorce and labor supply decisions, we can use it to examine the impact of

these policy changes on the probability of divorce at older ages, as well as labor supply dynamics at older ages. We will also be able to examine the impact of these policy changes on the welfare of older people. Additionally, by varying lifespans and the distribution of marriage tenure, we can consider the extent to which longer lifespans and increasing age at marriage may be driving later life divorce, and the ramifications of this phenomenon for retirement security and an aging workforce.

Research Team

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Each institution will submit a separate proposal for half the requested budget.

Budget Outline (George Mason University portion)

Sita Slavov – 61.30% effort during summer 2022

Salary:	$31,233 (base 9-month salary = $152,857.41)
Fringe benefits:	$2,249
Indirect Costs:	$4,018
Total:	$37,500

References

Brown, Susan L. and I-Fen Lin. 2012. The Gray Divorce Revolution: Rising Divorce Among Middle-Aged and Older Adults, 1990-2010. *Journals of Gerontology Series B: Psychological Sciences and Social Sciences* 67(6): 731-741.

Chetty, Raj, Adam Guren, Day Manoli, and Andrea Weber. 2011. "Are Micro and Macro Labor Supply Elasticities Consistent? A Review of Evidence on the Intensive and Extensive Margins." American Economic Review, 101 (3): 471-75.

Slavov, Sita Nataraj and Chao Wei. 2021, “Gray Divorce and Labor Supply,” Working Paper.

Figure 1: Change in Probability of Work Around Divorce

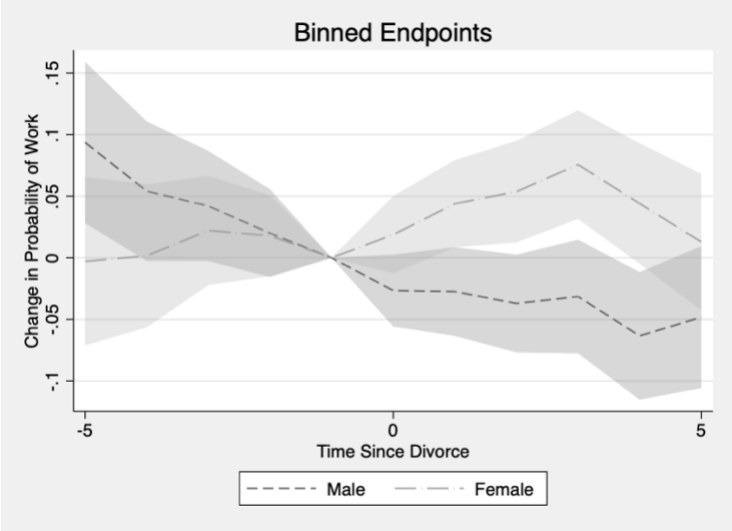


Figure 2: Change in Weekly Hours Worked Around Divorce

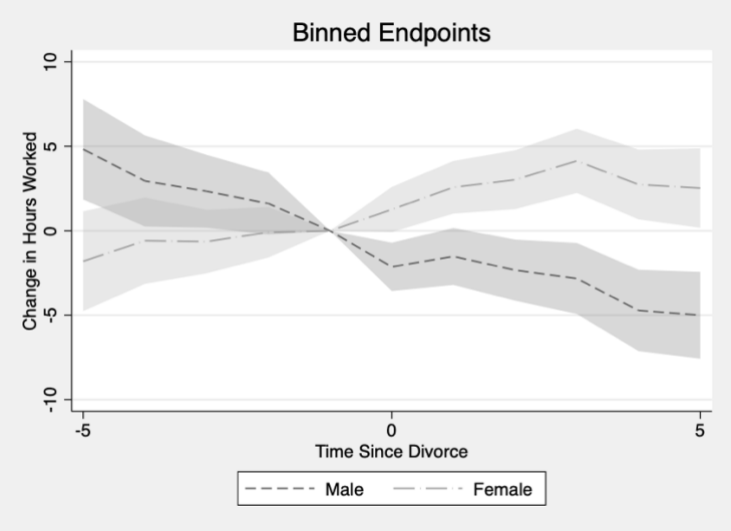


Figure 3: Change in Probability of Work Around Widowhood

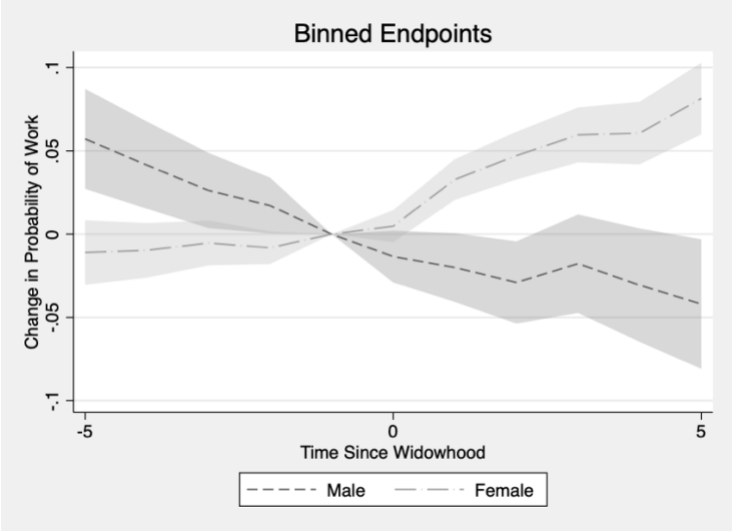


Figure 4: Change in Weekly Hours Worked Around Widowhood

