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Insurance Through Marriage: Case of Parental Health Shocks and Social Security Claiming

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Abstract

Unpaid parental caregiving often arrives when older workers make largely irreversible Social Security benefit claiming decisions. Using the Health and Retirement Study linked to Social Security administrative records, we examine how parental caregiving is related to claiming and labor supply. In married households, caregiving is associated with specialization: when one spouse provides care, the caregiver is 12 percentage points more likely to claim by age 64 and 11 percentage points less likely to work full time, while the non-caregiving spouse is about 10 percentage points less likely to claim early and 10 percentage points more likely to delay retirement. These patterns are robust to rich controls, individual fixed effects, subjective survival beliefs, and an instrumental-variables strategy using the presence of living parents and in-laws. Administrative benefit-type data further show that sole married caregivers are about 10 percentage points more likely to claim spousal benefits consistent with intra-household insurance through Social Security's spousal provisions. We find no comparable effects of caregiving among non-married individuals. The results suggest that spousal benefits may buffer the retirement-income costs of family caregiving, and that reducing them could weaken this insurance channel.

JEL classifications: I14, J12, J14, J26, H55

Keywords: Social Security, Health, Informal Care, Retirement, Marriage, Insurance.

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1 Introduction

Long-term care needs are increasing worldwide as populations age. In the United States, a large share of these needs are met informally by family members, primarily spouses and adult children. A large literature shows that caregiving shocks affect caregivers’ health, labor supply, and retirement behavior (Van Houtven et al., 2013; Kaschowitz and Brandt, 2017; Bauer and Sousa-Poza, 2015; Jacobs et al., 2017; Mommaerts and Truskinovsky, 2020; Fahle and McGarry, 2022; Truskinovsky et al., 2022); using administrative data, Maestas et al. (2024) document sizable labor-supply responses among older caregivers. We build on this work by focusing on a specific, policy-relevant margin that has received less attention: how late-life parental care needs affect older adult children’s Social Security claiming and retirement, and how these impacts differ by household marital type. In particular, we ask whether marriage provides an additional margin of adjustment—through within-couple specialization in work, retirement, and claiming—that is not available to singles.¹ This distinction is directly relevant for evaluating reforms that change the generosity or eligibility of Social Security’s auxiliary benefits, as well as proposals that provide explicit support for unpaid family caregivers (Pepin and Truskinovsky, 2023).

The timing of parental care needs makes this question especially consequential. Late-life caregiving responsibilities often arise precisely when individuals are deciding when to exit full-time work and when to claim Social Security—choices that are difficult to reverse and that have persistent effects on post retirement resources. Social Security is the main source of annuitized income for most older Americans, and claiming earlier permanently reduces monthly benefits, while delaying beyond the Normal Retirement Age (NRA) raises benefits through delayed retirement credits. Care-induced reductions in work can therefore translate into earlier claiming and mechanically lower lifetime benefits, particularly for individuals with longer expected retirements. For married individuals, however, Social Security embeds an additional source of insurance through spousal benefits: a spouse may receive up to 50% of the other spouse’s Primary Insurance Amount (PIA), and (for some cohorts and claiming ages) households can sequence own and spousal benefits in ways that partially smooth income when one spouse reduces work to provide care. These provisions create claiming pathways that can allow married households to reallocate work and retirement responses to caregiving in ways that are largely unavailable to singles.

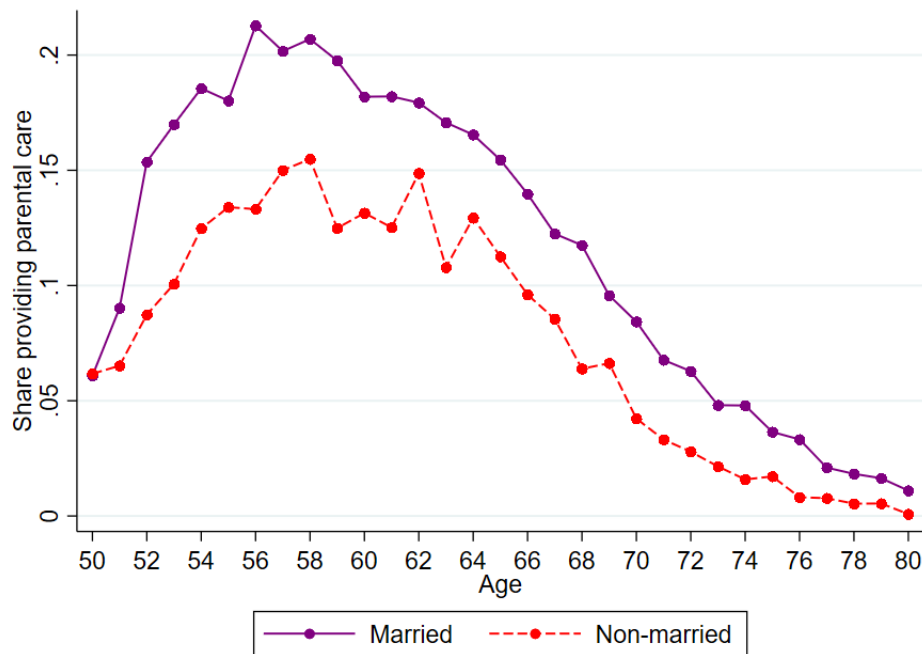
These institutional features map naturally into policy. First, because auxiliary benefits are a central component of Social Security’s household-level design, reforms that reduce or restructure these benefits change the extent to which couples can insure one spouse against late-life caregiving shocks. Second, proposals to support unpaid family caregivers—for example through caregiver credits within Social Security or through separate long-term-care programs—implicitly target the same risk we study: care-induced work reductions and earlier claiming. Third, because the claiming system offers multiple pathways, the complexity of the rules (and households’ ability to navigate them) becomes a policy-relevant determinant of how well Social Security delivers consumption-smoothing when caregiving needs arise.

Data from the Health and Retirement Study (HRS) show that roughly 10–20% of adults provide some form of parental care between ages 60 and 65 (see Figure 1). Older married individuals are more likely to do so than otherwise similar singles. To understand how these differences in family structure shape responses to caregiving, we estimate the effect of parental care provision

¹Bairoliya and McKiernan (2021) provides a discussion of key determinants of Social Security claiming behavior.

on both Social Security claiming and transitions out of full-time work, separately for married and non-married individuals. Our empirical strategy exploits the longitudinal structure of the HRS—which has been widely used to study retirement and Social Security claiming (Coile et al., 2002; Mastrobuoni, 2011; Liebman and Luttmer, 2015)—and augments it with individual fixed effects, subjective survival expectations, and an instrumental-variables specification based on the presence of living parents and in-laws. Together, these elements address key endogeneity concerns (including selection into caregiving based on anticipated retirement plans) and allow us to interpret our estimates as causal effects of caregiving shocks on claiming and labor supply.

Figure 1: Parental caregiving by age



Source: Authors calculation using data from the Health and Retirement Study (1992-2022).

Our first set of results shows a clear and economically meaningful pattern for married households. When the respondent provides parental care but the spouse does not, caregiving induces earlier Social Security claiming and exit from full-time work for the caregiver, while inducing delayed claiming and continued employment for the spouse. Quantitatively, married caregivers are about 12 percentage points more likely to claim by age 64 than married non-caregivers, while their spouses are roughly 10 percentage points less likely to do so. When both spouses provide care, the net effect on claiming is close to zero, consistent with couples sharing the caregiving burden rather than specializing. Labor-supply responses mirror these patterns, indicating that households jointly adjust claiming and work in response to caregiving needs. By contrast, we find no statistical association between parental caregiving and claiming or full-time work among singles between ages 62 and 70, consistent with the interpretation that the relevant adjustment margin is within marriage, not caregiving per se. These findings align with earlier evidence on labor-market responses to health and family shocks (Sammartino, 1987; McGarry, 2004; Coile, 2004; Disney et al., 2006;

Coe and Zamarro, 2011; Blundell et al., 2017) but highlight a specific institutional channel: the availability of spousal benefits.

The policy question, however, is not only whether couples *can* specialize, but whether they *actually* make use of the claiming pathways that Social Security makes available. To answer this, we link the HRS to restricted Social Security administrative records on earnings and benefits. These files provide two elements that are absent from public-use HRS data: the *date* and the *type* of the initial entitlement and most recent entitlement for Social Security own-worker and auxiliary benefits (e.g., retired-worker, spousal, survivor, and disability). With these data we can, for each married household, reconstruct the claiming pathways on both their own and spousal earnings records. We find that a spouse who is the sole caregiver in the household is 10 percentage points more likely to ever claim spousal benefits than a spouse in a household where the other spouse is the sole caregiver. In addition, caregiving induces an earlier onset of own-benefit claiming by caregivers—roughly 10 to 20 percentage points higher relative to non-caregiving households—while the caregiver’s spouse delays claiming, consistent with continued labor market attachment. Moreover, when parental care needs arise, the caregiving partner can exit the labor force earlier and draw on their own entitlements, while the non-caregiving partner continues working and defers claiming to accrue delayed retirement credits. Once the non-caregiving spouse claims their own benefit, the caregiving spouse can transition to the corresponding spousal benefit. Our findings show that spousal benefits operate as an implicit form of caregiver insurance within married households.

Our findings connect to several strands of work. First, they add to the literature on labor-market and retirement responses to health and caregiving shocks (Sammartino, 1987; McGarry, 2004; Coile, 2004; Disney et al., 2006; Coe and Zamarro, 2011; Blundell et al., 2017; Maestas et al., 2024) by showing that parental health shocks can be partly absorbed through Social Security claiming rather than exclusively through market work. Second, they contribute to the literature on marriage as a form of life-cycle insurance (Borella et al., 2019; Royalty and Abraham, 2006; Zissimopoulos et al., 2015; Miller and Bairoliya, 2021b) by identifying Social Security’s spousal provisions as an important channel for that insurance, and by documenting that it is used more when caregiving needs are present. Third, they add to the large literature on Social Security claiming and retirement behavior (Bairoliya and McKiernan, 2024; Bairoliya, 2019; Bairoliya and McKiernan, 2021; Blau, 2008; French and Jones, 2011; Brown et al., 2016; Imrohoroglu and Kitao, 2012; Yu, 2024; Liebman and Luttmmer, 2015; Mastrobuoni, 2011; Hurd et al., 2002; Coile et al., 2002) by showing that informal care shocks can be important determinants of both for many married individuals. Finally, we speak to work on later-life inequality and the institutional sources of welfare gaps (Miller and Bairoliya, 2021a; Miller et al., 2019; Angela and Henretta, 2018; Miller and Sedai, 2022; Bairoliya et al., 2023), suggesting that differential exposure to parental care shocks and differential ability to navigate complex claiming rules may be another channel through which old-age resources diverge.

In sum, we show that Social Security’s marital provisions can function as an implicit, household-level insurance mechanism against unpaid parental-care shocks. This evidence is informative for three policy margins: (i) reforms that reduce or restructure auxiliary benefits, (ii) policies that introduce explicit caregiver support (including caregiver credits inside or outside Social Security), and (iii) efforts to simplify claiming rules or improve information about claiming pathways. More broadly, our results underscore that evaluating retirement-policy reforms requires a household perspective when late-life caregiving risks are salient.

The paper is structured as follows. Section 2 provides background on Social Security. Section 3 describes the data and key variables. Section 4 outlines the empirical strategy. Section 5 presents the main results on benefit claiming and retirement behavior. Section 6 examines heterogeneity within married households by education and gender. Section 7 reports sensitivity analyses. Section 8 discusses the findings, and Section 9 concludes.

2 Background

Both men and women are eligible to claim Social Security retired-worker benefits, based on their own earnings history, as soon as they reach age 62. Individuals can claim benefits anytime between ages 62 and 70 and can start receiving a fixed stream of monthly benefits for life. The monthly benefit is permanently reduced for each month that benefits are claimed prior to the *Normal (Full) Retirement Age* (NRA/FRA), with the maximum reduction applying to claiming at age 62, also called the *Early Retirement Age* (ERA). Delaying claiming beyond NRA/FRA (up to age 70) increases the monthly benefit through delayed retirement credits.²

Each individual within a married household may also be eligible for spousal benefits.³ Spousal benefits allow an eligible spouse to receive up to 50% of the worker spouse's *primary insurance amount* (PIA), i.e., the benefit the worker is entitled to at the worker's NRA/FRA.⁴ In general, spousal benefits become payable only after the worker spouse has filed for retirement (or disability) benefits. If an individual is eligible for both a benefit on their own record and a spousal benefit, Social Security does not pay the sum of the two benefits. Instead, the individual is paid their own benefit first and, if the spousal benefit is higher, receives an additional amount so that total benefits equal the higher spousal rate.

These rules allow for several claiming patterns within married households. In particular, the following scenarios can arise:

Collection of own benefits first and switching to spousal benefits later: An individual can claim retired-worker benefits on their own record as early as age 62. If the worker spouse has not yet filed, the individual initially receives only their own retired-worker benefit. Once the worker spouse files, the individual may become eligible for an additional spousal component (often referred to as an "excess spousal" benefit) if the spousal rate exceeds their own benefit. In this case, the individual's total monthly benefit equals the higher of their own benefit and the spousal rate

²While the ERA is the same for all individuals, the NRA/FRA varies by birth cohort. For example, those born in 1937 or earlier have an NRA/FRA of 65; it increases gradually for later cohorts and reaches 67 for those born in 1960 or later.

³Divorced individuals may also be eligible for benefits on a former spouse's record. Eligibility generally requires that (i) the marriage lasted at least 10 years, (ii) the claimant is currently unmarried, (iii) the claimant is age-eligible (at least 62), and (iv) the claimant is not entitled to a retirement benefit on their own record that is as large as the full divorced-spouse benefit. In addition, a divorced spouse can be entitled even if the former spouse has not yet claimed, provided the former spouse is at least age 62 and the divorce has been final for at least two years.

⁴The maximum spousal benefit is 50% of the worker's PIA and is paid only if the spouse claims at their own NRA/FRA. Claiming a spousal benefit before the spouse's NRA/FRA results in a permanent reduction (e.g., claiming at 62 can yield a spousal benefit as low as 32.5% of the worker's PIA, depending on the spouse's NRA/FRA). There is no increase in spousal benefits for delaying beyond NRA/FRA, and spousal benefits do not increase with the worker's delayed retirement credits.

(not the sum of the two). If the worker spouse has already filed, then for individuals subject to *deemed filing* rules, applying for benefits generally requires filing for both the retired-worker and spousal benefit, and the individual receives the higher total benefit amount.

Collection of spousal benefits first and switching to own benefits later: This is only possible for certain cohorts. Historically, individuals who had reached their NRA/FRA could file a *restricted application* for spousal benefits only and delay their own retired-worker benefit claim (up to age 70), thereby accumulating delayed retirement credits on their own benefit. However, the Bipartisan Budget Act of 2015 extended deemed filing rules so that individuals who turn age 62 on or after January 2, 2016 are required to file for both benefits whenever they apply, eliminating the restricted application option for those cohorts.

Collection of spousal benefits without switching: The first two possibilities can potentially increase household resources in settings where one spouse has substantially higher lifetime earnings than the other. Even without using a restricted-application strategy, a common pattern in such households is that the lower-earning spouse claims earlier on their own record to generate current income, while the higher-earning spouse delays claiming to increase their own benefit. Once the higher-earning spouse has filed, the lower-earning spouse may receive a spousal supplement if the spousal rate exceeds their own benefit. Importantly, the spousal component is tied to the worker's PIA and does not rise with the worker's delayed retirement credits, even though delaying the worker's claim raises the worker's own benefit (and, if applicable, the survivor benefit).

Collection of own benefits only: In households where both spouses have similar earnings histories, each spouse typically receives benefits based on their own record, and the spousal benefit is not binding. In this scenario the couple faces the same tradeoffs as two singles trying to maximize their respective Social Security benefits by optimally choosing the timing of benefit claiming.⁵

3 Data

We use data from the Health and Retirement Study (HRS) (Health and Retirement Study, 2025). The HRS is a longitudinal panel study surveying individuals in the U.S. over the age of fifty and their spouses on a biennial basis. The study consists of seven primary birth cohorts—the early HRS cohort (born 1931-1936), late HRS cohort (born 1937-1941), AHEAD cohort (born before 1924), Children of Depression (born 1924-1930), War Babies (born 1942-1947), early Baby Boomers (born 1948-1953), and mid-Baby Boomers (born 1954-1959). The core survey was conducted for the early and late HRS cohorts every other year starting from 1992 with the other cohorts added periodically over subsequent waves of the survey.

⁵Even though the stream of Social Security benefits is mechanically maximized by delaying claiming to age 70, it may not be optimal for individuals who expect to live a shorter life due to underlying health conditions. For couples, it may still be optimal for the higher earner to delay claiming in order to increase the survivor benefit payable to the remaining spouse.

We first use the RAND HRS Longitudinal File 2022 (RAND, 2025), available through the HRS website, to obtain data on labor supply, health and Social Security claiming from 1992 to 2022.⁶ We also utilize other individual characteristics including age, education, gender, race, birth cohort, region, and occupation. We then use the RAND HRS Family Data 2018 file (RAND, 2018) to obtain information about the type and the extent of informal care provision by children to their parents. Together the two files provide comprehensive knowledge of the labor market and Social Security claiming outcomes of households along with informal care provision by children.

Our analysis of optimal claiming pathways further makes use of restricted Social Security administrative records linked to the HRS for respondents who agreed to have their SSA records matched to their survey responses. These data are essential for accurately measuring lifetime Social Security entitlements and identifying the type and timing of benefit claims—information not available in the public-use HRS files.

3.1 Explanatory variables

Our key variable of interest is a measure of parental informal care provided by households. In each survey wave, individuals were asked to self-report all care provision to parents since the previous survey wave. If married, respondents were also asked about caregiving provided to their spouse’s parents (in-laws). Data was collected separately for hours spent providing basic personal care (e.g., dressing, eating, bathing) and hours spent helping with other types of care (errands, household chores, and transportation). As our benchmark measure of interest, we use a binary indicator for if a respondent reported any type of care to a parent or in-law (IC_{it}). We examine several other definitions of caregiving in sensitivity analyses. As we are also interested in spousal spillover effects, we will also consider an indicator for if a respondent’s *spouse* provided any parental or in-law care (IC_{it}^s).

Our other respondent controls include age, gender, self-reported health status, total household wealth, an indicator for college education, and dummy variables for each survey wave. We also include labor market controls for the longest tenured job—occupation code, industry code, and length of tenure. We also exploit the longitudinal nature of the data by including a control for the maximum reported labor income of the respondent before the age of 62 to help control for initial (pre-retirement) conditions. For married respondents, we further include partner’s age, college education, and maximum reported spousal income prior to age 62. Finally, we also include an indicator variable for if a respondent reported providing any financial help to a parent or in-law since the previous survey wave. This controls for the possibility that financial transfers, in addition to caregiving, could impact claiming and labor market decisions of the household.

3.2 Dependent variables

Our first two outcomes of interest are the employment and Social Security claiming decisions of individuals. The HRS collects the precise age in months of Social Security claiming for each respondent (SS_{it}). From this, we construct an indicator variable (y_{it}^s) which takes the value of one

⁶The HRS collects data on each respondent’s spouse or partner. We follow the RAND data and treat cohabiting partners as spouses in all analyses. Partnered individuals make up only 2.5% of our sample. We define singles as those who are not married or partnered at a given point in time.

if an individual’s current age (in months) is greater than or equal to the reported Social Security claiming age (in months):

$$y_{it}^s = \begin{cases} 0 & \text{if } age_{it} < SS_{it} \\ 1 & \text{if } age_{it} \geq SS_{it} \end{cases}$$

The HRS also collects the current labor supply status of individuals. As our second outcome, we construct an indicator that equals one if the respondent reported holding a full-time job at the time of the survey.⁷

3.3 Claiming pathways variables

We rely on several restricted-use measures from the HRS linked to SSA administrative benefit records to characterize Social Security claiming pathways for married couples. The administrative files report benefit type and the month/year of the initial entitlement and current (most recent) entitlement, for benefits on one’s own earnings record (e.g., retired-worker and disability benefits) and auxiliary benefits tied to other’s earnings record (e.g., spousal and survivor benefits). This distinction between own-worker and auxiliary benefits is central for studying intra-household specialization and to evaluate whether couples coordinate between available Social Security benefit types. The initial entitlement reflects the date of the earliest entitlement for own-worker or auxiliary benefits and is not overwritten, whereas the current entitlement reflects the most recent entitlement and can be updated when the benefit type changes.⁸

Using the entitlement dates and types, we reconstruct each spouse’s observed claiming pathway. We define early-claiming indicators by comparing the individual’s age at initial retirement entitlement to the Normal Retirement Age, which varies by birth year and month. For age-specific claiming indicators, the spousal-benefit claiming indicator equals one if the individual’s age is at least as large as the age implied by the spousal-benefit entitlement date. The own retirement-benefit claiming indicator equals one if the individual’s age is at least as large as the age implied by the retired-worker entitlement date and the individual is not classified as claiming spousal benefits by that age. To focus on pathways that trade off retirement and spousal benefits, we set these indicators to missing at ages when an individual has already claimed disability benefits or survivor benefits. Finally, ever-claimed indicators for own-worker and spousal benefits are constructed using the initial and current entitlement information for the corresponding benefit type.

4 Empirical strategy

The key relationship explored in this analysis is the effect of parental informal care provision on working full-time and Social Security claiming decisions of older adult children. For a non-

⁷Reported full-time work status is also highly correlated with full-time work hours. For instance, those reporting full-time work have a mean annual hours of roughly 2,300 hours.

⁸Entitlement dates are maintained separately for own and auxiliary benefits. Someone who starts on their own benefit and later becomes entitled to spousal benefits will have an initial entitlement date on the own-record side and a separate initial entitlement date on the auxiliary side, rather than a single initial/current pair capturing both events. The current entitlement variables may provide an imperfect measure of benefit type switching. They retain only the most recent entitlement as of the administrative extract, so switches may not be fully observable.

married individual, we consider the following basic relationship:

$$y_{it} = f(IC_{it}, age_{it}, \mathbf{X}_{it}, \epsilon_{it})$$

where y_{it} is an indicator for working full-time or having claimed Social Security for individual i at time t ; IC_{it} is a dummy indicator for providing informal care to a parent; age_{it} is the age of individual i ; \mathbf{X}_{it} is a vector of additional socioeconomic controls; and ϵ_{it} is a randomly distributed error. For married individuals we consider the modified relationship:

$$y_{it} = f(IC_{it}, IC_{it}^s, age_{it}, \mathbf{X}_{it}, \mathbf{X}_{it}^s, \epsilon_{it})$$

where IC_{it} is now a dummy indicator for providing informal care to a *parent or in-law*; IC_{it}^s is a dummy indicator for individual i 's spouse providing care for a parent or in-law; \mathbf{X}_{it}^s is a vector of additional spousal controls; and other variables are as previously defined.

4.1 Model specifications

We empirically examine the above relationships by estimating a linear probability model for all outcomes. Given that Social Security benefits are altered depending on age at claiming, it could be that caregiving differentially impacts claiming decisions at different ages. For example, caregiving at age 62 could lead to claiming earlier than the normal retirement age of 65, while caregiving at age 70 may have limited impact on claiming. In order to examine this possibility, we estimate the following model for single individuals:

$$y_{it} = \sum_{d=1}^D [\beta_1^d (IC_{it} \times age_{it}^d) + \beta_2^d age_{it}^d] + \beta_3 \mathbf{X}_{it} + \epsilon_{it} \quad (1)$$

where age_{it}^d are age dummy indicators for $age \in [1 \dots D]$. In the case of Social Security, the coefficients of interests (β_1^d) can be interpreted as the increased probability of claiming benefits by age d associated with caregiving since the previous survey wave. For example, if the coefficient attached to age 64 is given by $\beta_1^d = 0.05$, this would imply that providing informal care between ages 62-64 is associated with a 5 percentage point increase in the probability of claiming by age 64.

For married individuals, it may likewise be that caregiving by a spouse has a heterogeneous impact on outcomes depending on the age of the respondent. In order to allow for this, we estimate the following benchmark model for married individuals:

$$y_{it} = \sum_{d=1}^D [\beta_1^d (IC_{it} \times age_{it}^d) + \beta_2^d (IC_{it}^s \times age_{it}^d) + \beta_3^d age_{it}^d] + \beta_4 \mathbf{X}_{it} + \beta_5 \mathbf{X}_{it}^s + \epsilon_{it} \quad (2)$$

where age_{it}^d are again age dummies for the respondent (individual i). Here, the β_1^d coefficients have similar interpretations as above. However, β_2^d now indicates the association between spousal caregiving and the outcome at age d . Continuing the previous example, consider a $\beta_2^d = -0.03$ at age 64. This implies that having a spouse that provides informal care when the *respondent*

is between ages 62-64 is associated with a 3 percentage point decrease in the probability of the *respondent* claiming by age 64.

We begin by estimating our model under the identifying assumption that informal care provision is conditionally exogenous. More specifically, for singles, we assume $E(\epsilon_{it}|IC_{it}, age_{it}, \mathbf{X}_{it}) = 0$ such that:

$$\begin{aligned} E(y_{it}|IC_{it}, age_{it}, \mathbf{X}_{it}) &= Pr(y_{it} = 1|IC_{it}, age_{it}, \mathbf{X}_{it}) \\ &= \sum_{d=1}^D [\beta_1^d (IC_{it} \times age_{it}^d) + \beta_3^d age_{it}^d] + \beta_5 \mathbf{X}_{it}. \end{aligned}$$

We make completely analogous assumptions for married individuals. This assumption allows estimates to be interpreted as causal effects. It is clear that respondent age and health are likely to correlate with both caregiving and retirement/claiming decisions. However, we control for this with the inclusion of age dummies and self-rated health. An additional primary concern with this assumption is that individuals that are less attached to the labor market may select into caregiving roles. For example, if an individual worked only part-time their entire career, they may be more likely to choose to provide care. This reverse causation could lead to a spurious correlation between caregiving and our outcomes. However, as we have a long panel of HRS data, we are able to control for previous labor market attachment through our labor market controls (e.g., income prior to age 62). Nonetheless, we also estimate results treating informal care as conditionally endogenous as detailed below.

4.1.1 Individual fixed effects

While our benchmark analysis exploits the panel data to control for many relevant factors, it is still plausible that caregiving patterns could be correlated with additional unobserved characteristics of survey respondents. For example, an individual may choose to retire and claim benefits at age 62 for unobserved reasons, then subsequently choose to provide care at age 65 because they are already retired. This implies that at least some of the correlation between caregiving and retirement/claiming decisions in our benchmark results would likely be driven by reverse causation or omitted variable bias. In order to control for any unobserved time-invariant source of error, we estimate the following slightly modified linear probability model with fixed effects (FE) for singles:

$$y_{it} = \sum_{d=1}^D [\beta_1^d (IC_{it} \times age_{it}^d) + \beta_2^d age_{it}^d] + \beta_3 \mathbf{X}_{it} + \delta_i + \epsilon_{it}$$

where δ_i is an unobserved individual-level fixed effect and other variables are as previously defined. We estimate the model assuming that informal care is exogenous conditional on observed controls and the unobserved time-invariant fixed effect: $E(\epsilon_{it}|IC_{it}, age_{it}, \mathbf{X}_{it}, \delta_i) = 0$. The fixed effects model for married individuals is analogous. In support of this assumption, other studies have found little evidence of an endogenous caregiving decision, particularly when similarly controlling for unobserved characteristics using panel data (Bolin et al., 2008; Ciani, 2012; Meng, 2013; Van Houtven et al., 2013; Nguyen and Connelly, 2014). Nonetheless, we also check robust-

ness of results to use of instrumental variables as detailed next.

4.1.2 Instrumental variable

While fixed effects control for permanent unobserved heterogeneity across individuals, they do not correct estimates for unobserved time-varying confounders. For example, an individual may choose to retire *between* survey waves for reasons independent of caregiving, then shortly thereafter choose to provide care due to their retirement. In order to deal with the case where the individual time-varying error may be correlated with our measure of informal care provision, we propose a vector of instruments (\mathbf{Z}_{it}) that are correlated with our measure of caregiving ($\text{corr}(IC_{it}, Z_{it}) \neq 0$) and are uncorrelated with the error component ($\text{corr}(\epsilon_{it}, \mathbf{Z}_{it}) = 0$). Similar to Van Houtven et al. (2013), we use an age-specific indicator for whether the respondent has a living parent at the time of the survey as an instrument. For married individuals we treat spousal caregiving as endogenous as well and include a separate indicator for a living parent-in-law as an additional instrument. Existing research has used the number of siblings or their characteristics as instruments for parental informal care provision. However, these characteristics are generally time invariant and poor choice for specifications with fixed effects. This problem is circumvented by considering the living status of parents/parent-in-laws in our panel as an instrument. The identifying assumption is that, conditional on controls, the presence of a living parent should not affect labor supply or claiming decisions of adult children except through affecting the demand for informal care. Recall that we control for financial transfers to parents and in-laws. There could be further concerns that the absence of a parent could imply early demise due to poor health which could be transmitted to kids inter-generationally. However, these concerns should be alleviated by the fact that we control for the health status of the children along with the inclusion of fixed effects.

Given that our instruments are theoretically sound for the chosen specification, we estimate the model treating informal care as endogenous using a 2SLS approach. We present results of the IV model with and without the inclusion of individual fixed effects. Note that in the former case our choice of instruments must be time-varying themselves or their effect will be captured in the fixed effect. Appendix table A.3 provides the Sanderson-Windmeijer (SW) first-stage F statistics for weak instruments. All first-stage F-statistics are very large providing no evidence that our instruments are weak.

5 Results

5.1 Descriptive statistics

Table 1 shows some descriptive statistics from our analytic sample used for estimation. We keep all individuals who are between ages 62 and 70 and for whom caregiving information is available. We also restrict the sample to those who claimed Social Security between the ages of 62 and 70 and were born prior to 1943.⁹This gives us a total of 25,647 individual-wave observations for non-caregivers and 3,905 for caregivers. Caregivers are somewhat more likely to be married

⁹Social Security rules including delayed retirement credit, normal age of retirement and earnings test have been changing over time, affecting the retirement incentives of various birth cohorts differently. We restrict all our analysis to those born prior to 1943 as these individuals faced similar Social Security rules.

and college educated than non-caregivers. They also hold higher total household wealth and have higher incomes before the age of 62. Caregivers are much more likely to have living parents or parent-in-laws (in case of married households) at the time of the survey than non-caregivers. Appendix table A.1 further breaks down our sample by marital type within each caregiving group.

Table 1: Descriptive statistics - analytic sample

	Non-caregiver				Caregiver			
	Mean	SD	Min	Max	Mean	SD	Min	Max
Female	0.50	0.50	0.00	1.00	0.47	0.50	0.00	1.00
Married	0.75	0.43	0.00	1.00	0.84	0.37	0.00	1.00
Age (years)	66.17	2.59	62.00	70.00	65.48	2.50	62.00	70.00
Self-rated health	2.69	1.06	1.00	5.00	2.54	1.03	1.00	5.00
College	0.39	0.49	0.00	1.00	0.50	0.50	0.00	1.00
Spouse college	0.39	0.49	0.00	1.00	0.50	0.50	0.00	1.00
Wealth	41.01	108.97	-62.18	8218.70	54.05	130.64	-33.60	3689.06
Longest job (years)	20.43	11.11	0.00	55.90	21.58	11.32	0.00	55.50
Spouse age	64.89	6.51	32.00	100.00	63.39	6.16	24.00	85.00
Income before 62	3.49	4.74	0.00	141.00	4.12	6.88	0.00	189.31
Spouse income before 62	3.01	4.35	0.00	81.39	3.52	4.60	0.00	81.39
Caregiving spouse	0.02	0.15	0.00	1.00	0.72	0.45	0.00	1.00
Financial help to parent	0.04	0.19	0.00	1.00	0.23	0.42	0.00	1.00
Living parent	0.13	0.33	0.00	1.00	0.55	0.50	0.00	1.00
Living in-law	0.14	0.35	0.00	1.00	0.42	0.49	0.00	1.00
Siblings	2.83	2.38	0.00	19.00	2.48	2.18	0.00	17.00
Spouse's siblings	2.81	2.34	0.00	20.00	2.53	2.16	0.00	17.00
Claimed SS	0.87	0.34	0.00	1.00	0.84	0.37	0.00	1.00
FT work	0.20	0.40	0.00	1.00	0.22	0.41	0.00	1.00
Observations	25647				3905			

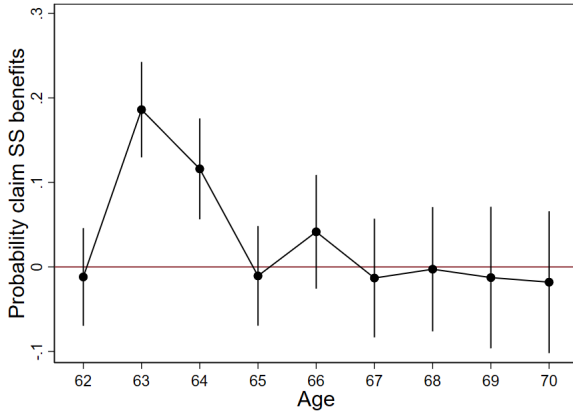
Source: HRS. Wealth and income in \$10,000s (1998 dollars).

5.2 Behavioral responses to caregiving

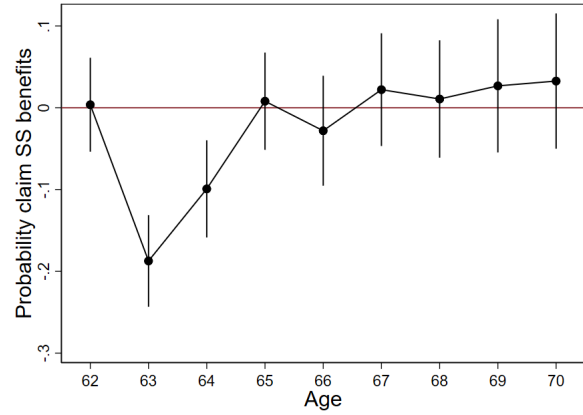
Figure 2 shows the benchmark OLS point estimates of the respondent's age interacted with indicators for their own and their spouse's informal caregiving. Specifically, panels (a) and (b) provide the sequence of estimates $\{\beta_1^d\}_{d=62}^{70}$ and $\{\beta_2^d\}_{d=62}^{70}$ from equation (2) with Social Security claiming as the outcome. Panels (c) and (d) provide analogous results for full-time work.

Point estimates in panel (a) suggest that individuals who provide parental care between ages 60-62 are not significantly more likely than others to have claimed their Social Security by age 62. However, providing care between ages 61-63 is associated with a statistically significant 18.6 percentage point (pp) increase in the probability of claiming by age 63. Likewise, there remains a significant increase of 11.6 pp in the probability of claiming by age 64. After 64, point estimates return to close to zero. These results suggest that care provision may have a large impact on early Social Security benefit claiming for married adult children who choose to provide care. However,

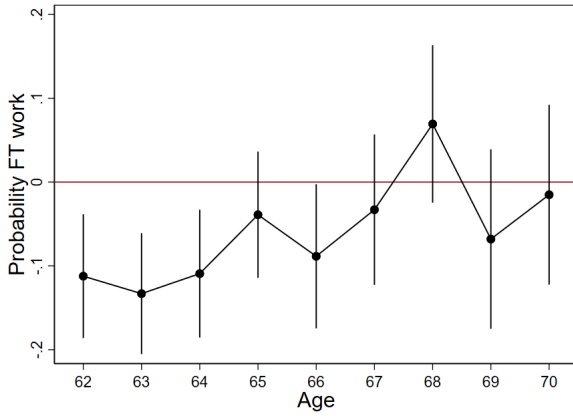
Figure 2: Benchmark model results



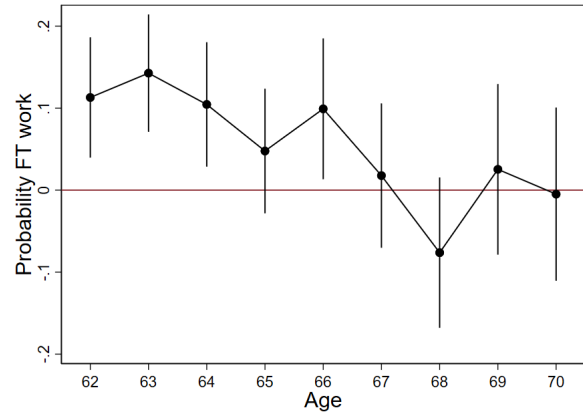
(a) SS Claiming : Married Caregiver



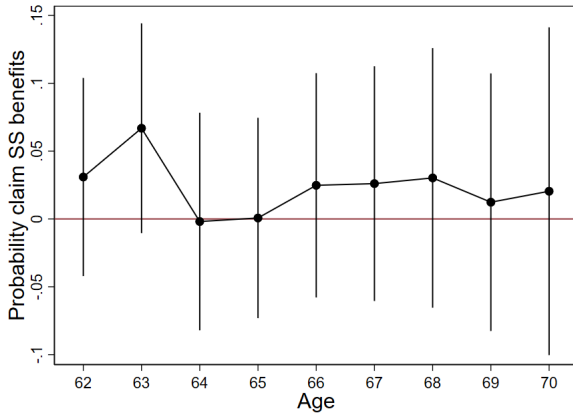
(b) SS Claiming : Married Caregiver's Spouse



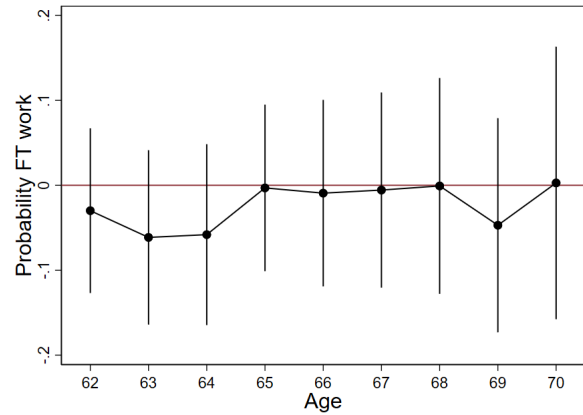
(c) FT Work : Married Caregiver



(d) FT Work : Married Caregiver's Spouse



(e) SS Claiming : Single Caregiver



(f) FT Work : Single Caregiver

Notes: Figure plots estimated coefficients on caregiving (IC) or having a caregiving spouse (IC^s). Spikes show 95% confidence intervals.

at the same time, panel (b) shows that if a spouse is providing parental care, it has the opposite effect on the claiming behavior of the respondents. Specifically, those whose spouses are providing care between ages 61-63 are roughly 18.7 pp less likely to have claimed benefits by age 63. The analogous number is 9.9 pp for claiming by age 64. It is important to highlight that these results suggest that for caregivers with a caregiving spouse, the *net* impact of caregiving on claiming is close to zero. In other words, couples appear to provide insurance either by altering claiming behavior *or* sharing the burden of care directly.¹⁰

Panels (c) and (d) of figure 2 show similar patterns when using full-time work as the outcome as opposed to Social Security claiming. Although, the effect on full-time-work is apparent by age 62 and statistically persists until age 66. For example, caregiving lowers the probability of working full-time by 11.2 pp at age 62 and 8.9 pp at age 66. In cases where spouses are providing care, these patterns flip, resulting in higher chances of working full-time than if a spouse were not providing care.

Panels (e) and (f) of figure 2 show the impact of parental care provision for singles at each age between 62 and 70. We find that in our benchmark regressions, caregiving does not impact the Social Security claiming or full-time work decisions of singles in any significant way. This may indicate that singles do not have the ability to smooth the caregiving shock through a spouse and may therefore need to shoulder the joint burden of caregiving and market work. This hypothesis is further supported by figure 3 which shows the association between marital type and annual care hours as well as total work and care hours combined, conditional on providing parental care. In other words, we want to understand if caregivers in married households experience a lower burden of care provision and work due to their spouses shouldering some of this joint responsibility.

We find that between ages 62 and 70, married caregivers provide anywhere between 200 and 600 fewer annual hours of care than single caregivers. Similarly, combined work and care burden is 500 to 1000 hours less for individuals in married households across similar ages. Note that married households in total are providing roughly the same number of caregiving hours as non-married households, especially between ages 62 and 65 (panel (c) of figure 3). Together panels (a) and (c) indicate that while the total caregiving burden might be the same for all types of households, individuals in married households experience a somewhat lesser burden due to the presence of a spouse.

5.2.1 Alternate specifications

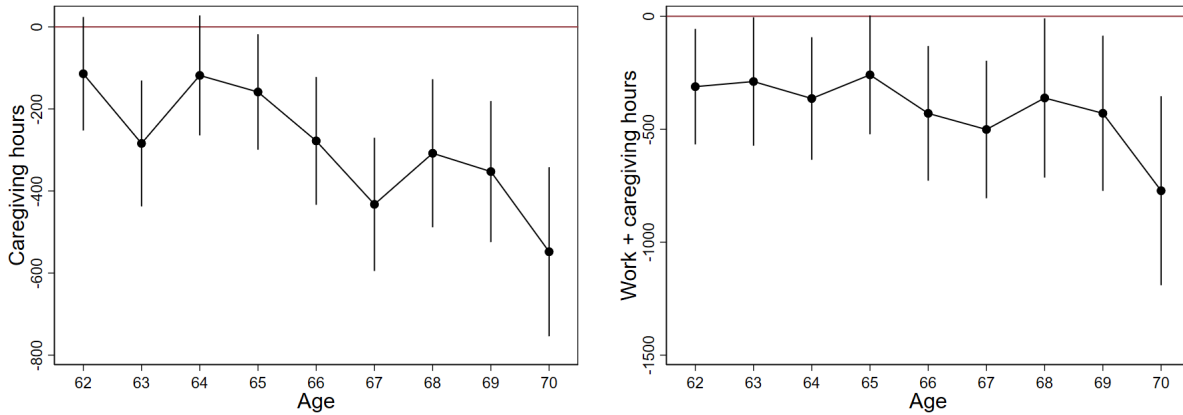
Table 2 provides our main results using the fixed effects (FE), instrumental variable (IV), and instrumental variable with fixed effects (FE-IV) models.¹¹ Our benchmark results (OLS) are also replicated in the table for convenience. The first four columns provide results on Social Security claiming for married individuals. Similar to our benchmark model, there were significant effects of caregiving on claiming by age 63 and 64 under all alternate model specifications (with the exception of the FE-IV model at age 64, which has a large but statistically insignificant coefficient).¹²

¹⁰A majority of married caregivers in our sample also have a spouse that provides care. However, in a sensitivity analysis we redefine caregivers as those providing at least 100 hours of care. Under this definition, only 48% of caregivers have a caregiving spouse and all claiming and labor supply results still hold. This suggests that insurance through claiming behavior occurs for a non-trivial share of married caregivers.

¹¹Refer to appendix figures A.1-A.2 for a graphical representation of results.

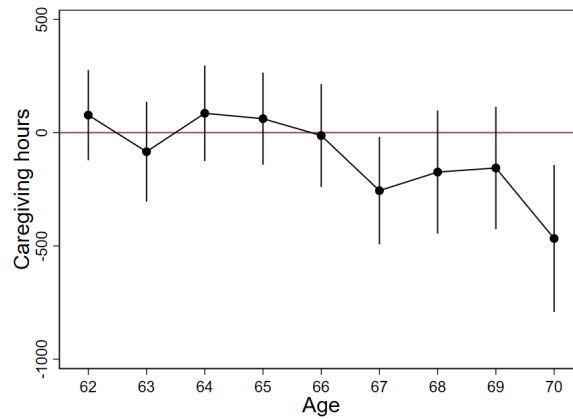
¹²As caregiving is a binary indicator, point estimates should not be directly compared across IV and non-IV models. The first stage of the IV regression effectively changes caregiving into a probability measure that changes the

Figure 3: Hours of Care and Work: Married vs. Single Caregivers



(a) Care Hours

(b) Work + Care Hours



(c) Household Care Hours (Cargiver + Spouse)

Notes: Figure plots estimated coefficients from regressing annual hours on an indicator for being married/partnered (reference group is singles). Additional controls in all regressions: age, gender, health, education, wealth, and labor market variables. All regressions include only caregivers. Spikes show 95% confidence intervals.

Similarly, a spouse providing care has a negative impact on claiming probability by age 63 and 64 under all models. Effects of both caregiving and spousal caregiving on claiming behavior are insignificant at all other ages across all specifications.

Columns 5-8 provide results on full-time employment for married individuals.¹³ These results tend to be somewhat more sensitive to model specification than claiming behavior. However, we still generally see negative point estimates for caregiving on full-time work between ages 63-65 across models, though effects are only significant in the IV and FE-IV models at age 65 and in the FE model at age 62. The positive association between full-time work and a spouse providing care

interpretation of results. Nonetheless, the IV models are useful for checking the robustness of overall patterns.

¹³Due to noisy estimates, we added respondents over the age 70 in our FE-IV model for full-time employment. Note we could also include these older individuals in our Social Security claiming models, but they make no difference given that virtually all respondents have claimed by age 70.

Table 2: Alternate Specifications: Main results

	Married												Single					
	Claimed			FT Employed			Claimed			FT Employed			IV			FE		
	OLS	FE-IV	OLS	FE	FE-IV	OLS	IV	FE	FE-IV	OLS	FE	FE-IV	OLS	IV	FE	FE-IV	OLS	IV
Caregiver x 62	-0.012 (0.029)	-0.255 (0.185)	0.010 (0.031)	0.091 (0.310)	-0.112*** (0.038)	0.309 (0.235)	-0.061* (0.033)	-0.019 (0.215)	0.031 (0.037)	-0.068 (0.074)	0.044 (0.040)	0.027 (0.118)	-0.030 (0.049)	0.053 (0.099)	-0.043 (0.045)	0.124* (0.070)		
Caregiver x 63	0.186*** (0.029)	0.318*** (0.142)	0.147*** (0.030)	0.371* (0.225)	-0.133*** (0.037)	-0.286 (0.180)	-0.048 (0.032)	-0.197 (0.144)	0.067* (0.039)	-0.139* (0.082)	0.027 (0.042)	-0.072 (0.173)	-0.061 (0.052)	0.051 (0.109)	-0.134*** (0.048)	-0.134 (0.085)		
Caregiver x 64	0.116*** (0.030)	0.283* (0.159)	0.107*** (0.031)	0.342 (0.231)	-0.109*** (0.039)	-0.106 (0.202)	-0.047 (0.033)	-0.126 (0.157)	-0.002 (0.041)	-0.049 (0.089)	-0.016 (0.042)	0.089 (0.133)	-0.058 (0.054)	0.159 (0.118)	-0.070 (0.048)	0.203*** (0.082)		
Caregiver x 65	-0.011 (0.030)	0.079 (0.136)	-0.001 (0.031)	0.110 (0.229)	-0.039 (0.038)	-0.383** (0.173)	0.004 (0.033)	-0.327** (0.146)	0.001 (0.038)	0.038 (0.083)	0.002 (0.041)	0.056 (0.175)	-0.003 (0.050)	0.061 (0.110)	-0.090* (0.046)	-0.032 (0.085)		
Caregiver x 66	0.042 (0.034)	-0.058 (0.188)	0.021 (0.034)	0.100 (0.262)	-0.089** (0.044)	0.378 (0.240)	-0.002 (0.036)	0.281 (0.185)	0.025 (0.042)	0.149* (0.084)	0.025 (0.043)	0.153 (0.124)	-0.009 (0.056)	-0.122 (0.112)	-0.063 (0.049)	-0.006 (0.074)		
Caregiver x 67	-0.013 (0.036)	-0.099 (0.152)	0.014 (0.036)	-0.078 (0.225)	-0.033 (0.046)	0.009 (0.193)	-0.010 (0.038)	0.034 (0.151)	0.026 (0.044)	0.047 (0.102)	0.023 (0.048)	0.073 (0.188)	-0.006 (0.059)	-0.003 (0.135)	-0.078 (0.054)	-0.051 (0.100)		
Caregiver x 68	-0.003 (0.038)	-0.114 (0.178)	0.010 (0.037)	-0.145 (0.248)	0.069 (0.048)	0.182 (0.227)	0.082** (0.039)	0.246 (0.174)	0.030 (0.049)	0.006 (0.108)	-0.006 (0.051)	0.016 (0.161)	-0.001 (0.065)	-0.134 (0.144)	-0.046 (0.058)	-0.107 (0.094)		
Caregiver x 69	-0.013 (0.043)	-0.029 (0.204)	0.000 (0.042)	0.148 (0.270)	-0.068 (0.055)	0.200 (0.260)	-0.023 (0.046)	0.146 (0.198)	0.012 (0.048)	0.024 (0.098)	0.020 (0.053)	0.040 (0.151)	-0.047 (0.064)	-0.096 (0.130)	-0.034 (0.060)	-0.050 (0.093)		
Caregiver x 70	-0.018 (0.043)	-0.080 (0.169)	-0.024 (0.041)	-0.043 (0.209)	-0.015 (0.055)	-0.070 (0.215)	0.025 (0.045)	0.136 (0.122)	0.020 (0.062)	0.028 (0.138)	0.008 (0.066)	0.136 (0.196)	0.003 (0.082)	-0.028 (0.183)	-0.060 (0.075)	0.167 (0.106)		
Caregiver's Spouse x 62	0.004 (0.029)	-0.034 (0.186)	-0.008 (0.031)	-0.126 (0.316)	0.113*** (0.037)	-0.048 (0.237)	0.063* (0.033)	0.077 (0.219)										
Caregiver's Spouse x 63	-0.187*** (0.029)	-0.614*** (0.137)	-0.145*** (0.029)	-0.460** (0.202)	0.143*** (0.037)	0.556*** (0.174)	0.053* (0.032)	0.304** (0.138)										
Caregiver's Spouse x 64	-0.099*** (0.030)	-0.579*** (0.132)	-0.086*** (0.031)	-0.460*** (0.205)	0.104*** (0.039)	0.424** (0.168)	0.051 (0.034)	0.286* (0.140)										
Caregiver's Spouse x 65	0.008 (0.030)	-0.114 (0.073)	-0.001 (0.034)	-0.069 (0.252)	0.048 (0.044)	0.460*** (0.190)	0.006 (0.033)	0.379*** (0.150)										
Caregiver's Spouse x 66	-0.028 (0.034)	0.073 (0.183)	0.014 (0.034)	0.087 (0.252)	0.099** (0.044)	-0.115 (0.233)	0.004 (0.036)	-0.235 (0.180)										
Caregiver's Spouse x 67	0.022 (0.035)	0.112 (0.145)	0.015 (0.035)	0.103 (0.198)	0.018 (0.045)	0.048 (0.184)	-0.028 (0.038)	0.038 (0.143)										
Caregiver's Spouse x 68	0.011 (0.037)	0.146 (0.174)	0.009 (0.036)	0.301 (0.240)	-0.076 (0.047)	-0.030 (0.221)	-0.095** (0.039)	-0.238 (0.170)										
Caregiver's Spouse x 69	0.027 (0.042)	0.077 (0.193)	0.011 (0.041)	-0.075 (0.233)	0.025 (0.053)	-0.207 (0.245)	-0.017 (0.044)	-0.160 (0.187)										
Caregiver's Spouse x 70	0.033 (0.042)	0.124 (0.161)	0.060 (0.041)	0.155 (0.200)	-0.005 (0.054)	-0.147 (0.205)	-0.090** (0.044)	-0.246** (0.108)										
Observations	16756	16756	16756	16442	16756	16756	16756	28919	5820	5820	5820	5487	5820	5820	5820	13712		
Cragg-Donald statistic		23.193		2.740		23.193		13.979		145.531		10.489		145.531		57.085		

Standard errors in parentheses, p-values—*** p<0.01, ** p<0.05, * p<0.1. Additional controls included in all regressions.

is more robust. Specifically, estimates were significant at ages 63 and 64 across all models except the IV, and at 65 in the IV and FE-IV models.

The last eight columns in table 2 provide results for single individuals. Generally, there are not significant effects from caregiving on singles for either outcome across all models, with two exceptions. First, there was marginal associations between caregiving and Social Security claiming at age 63 in the OLS and IV models for singles, though the estimates had opposite sign. Second, caregiving was associated with the probability of full-time employment at several ages in the FE and FE-IV model. For instance, single caregivers had an estimated 13.4 pp lower chance of working full-time at age 63 than single non-carers. However, these results are clearly not robust for singles, with point estimates losing significance and even changing sign across model specifications.

5.3 Evidence on utilization of claiming pathways

We next use the HRS data linked to SSA administrative records on benefits and earnings to more closely examine how Social Security claiming pathways among married households vary with whether the *respondent* and/or the *spouse* provided informal parental care between ages 62 and 70. Table 3 presents additional descriptive statistics from the linked analytic sample. The table separates married households into those that provided care at any time between ages 62 and 70 and those that did not. Among caregiving households, it further distinguishes between cases where only the respondent provided care (R1S0), only the spouse provided care (R0S1), and both provided care (R1S1).

Table 3: SS Claiming Pathways and Timing
by Household Caregiving Status (Ages 62–70)

	No care (R0S0)	Care			All
		R1S0	R0S1	R1S1	
Claimed before NRA (%)	80.2	87.7	73.2	78.7	79.9
Ever claimed spousal (%)	12.9	13.6	3.3	10.8	12.1
Ever claimed own retirement (%)	90.8	89.4	98.0	92.4	91.4
Observations (N)	3,410	236	299	564	4,509

Notes: Column groups classify households by informal parental care provision between ages 62 and 70: R1S0 = only respondent provides care; R0S1 = spouse only; R1S1 = both; R0S0 = neither. Sample restrictions: married at first observation (ages 62–70); exclude first-ever Social Security claims before age 62; exclude disability beneficiaries; restrict spousal/own retirement claims to the 62–70 window; retain individuals who either claimed own retirement or claimed spousal (survivor benefits allowed after 70). Cells report column shares in percent. All figures derived from restricted SSA microdata linked to HRS.

The evidence reveals substantial heterogeneity in claiming behavior, consistent with the intra-household specialization between market work and caregiving documented in earlier sections. Among caregiving households, 87% of respondents claimed Social Security benefits before reaching the normal retirement age when they were the sole care provider. In contrast, 73% claimed early when only the spouse provided care, and 78% did so when both spouses provided care. Notably, caregivers rely more heavily on *spousal benefits*. When the respondent was the sole caregiver

in a married household (R1S0), 13.6% ever claimed spousal benefits, compared to only 3.3% when only the spouse provided care (R0S1).

To further explore these pathways and get a more dynamic overview, we estimate equation 2 distinguishing between *own* and *spousal* benefit claiming as dependent variables. Panels (a) and (b) of figure 4 report OLS estimates for the probability of claiming *own* retirement benefits for the caregiver and the caregiver’s spouse, respectively. Panels (c) and (d) show analogous results for *spousal* benefits. The results indicate that caregiving is associated with an earlier onset of own-benefit claiming by caregivers—roughly 10 to 20 pp higher relative to non-caregiving households—while the caregiver’s spouse delays claiming, consistent with continued labor market attachment. A similar pattern emerges for spousal benefits: caregiving spouses are somewhat less likely to claim spousal benefits early, but more likely to claim them at older ages (by about 5 pp at age 69). Conversely, the non-caregiving spouse is more likely to claim spousal benefits early (by about 4 pp) and less likely to do so later in life.

These patterns suggest that spousal benefits can act as an implicit form of *caregiver insurance* within married households. When parental care needs arise, the caregiving partner can exit the labor force earlier and draw on their own entitlements, while the non-caregiving partner continues working and defers claiming to accrue delayed retirement credits. Once the non-caregiving spouse claims their own (typically higher) benefit, the caregiving spouse can transition to the corresponding spousal benefit (as shown in panel (c)).

This dynamic effectively cushions the consumption loss associated with caregiving-related earnings interruptions, by delinking the caregiver’s near-term consumption from their (typically lower) own PIA. Policy reforms that reduce access to, or generosity of, spousal benefits could therefore weaken this intra-household adjustment mechanism. Conversely, reforms that explicitly recognize caregiving—such as caregiver credits in the AIME calculation or second-earner boosts tied to the PIA ratio—may better target support to households experiencing parental care shocks, without discouraging continued labor supply among non-caregiving spouses.

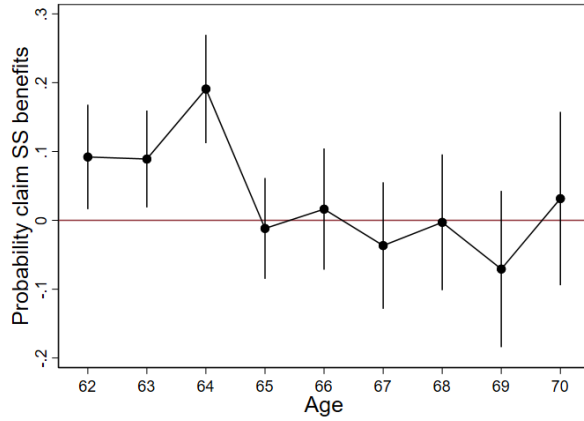
6 Heterogeneity analysis

Next, we explore heterogeneity in our key results of early Social Security claiming and retirement from full-time work in married households by education and gender.

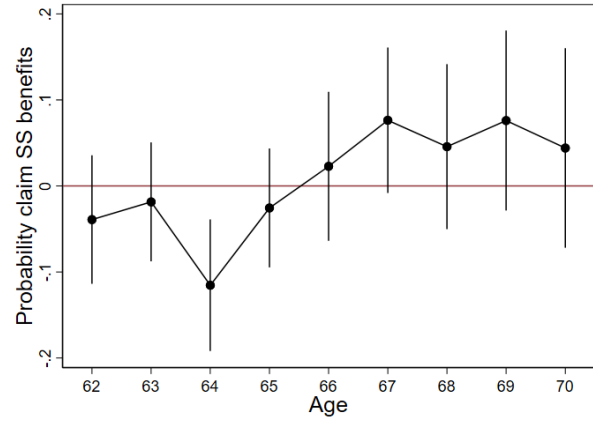
6.1 Education

First, we explore the heterogeneity in the effects by education. Specifically, we carry out all analyses separately for those with a college degree and those without. The first panel of figures 5a to 5d show the estimated effect (OLS specification) of parental caregiving on early Social Security claiming and full-time work by education category. Table 4 provides these results for all other specifications while results for all other ages and for singles are provided in the appendix. In the OLS model, we find that parental caregiving increases the probability of early claiming (claiming benefits by age 64) for a college educated caregiver by 25 pp. At the same time, a college educated spouse of a caregiver is 19 pp less likely to claim early. This is in sharp contrast to results for a non-college educated caregiver or spouse, where we find no statistically significant effects on claiming behavior. The pattern of results across education categories is similar when

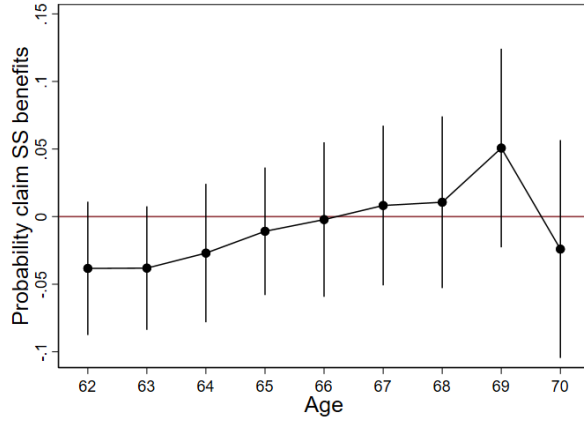
Figure 4: Claiming pathways in couples



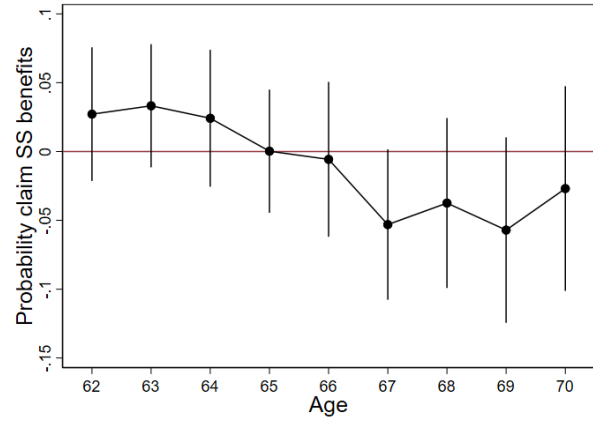
(a) SS Own Retirement Benefit Claiming: Married Caregiver



(b) SS Own Retirement Benefit Claiming: Married Caregiver's Spouse



(c) SS Spousal Benefit Claiming: Married Caregiver



(d) SS Spousal Benefit Claiming: Married Caregiver's Spouse

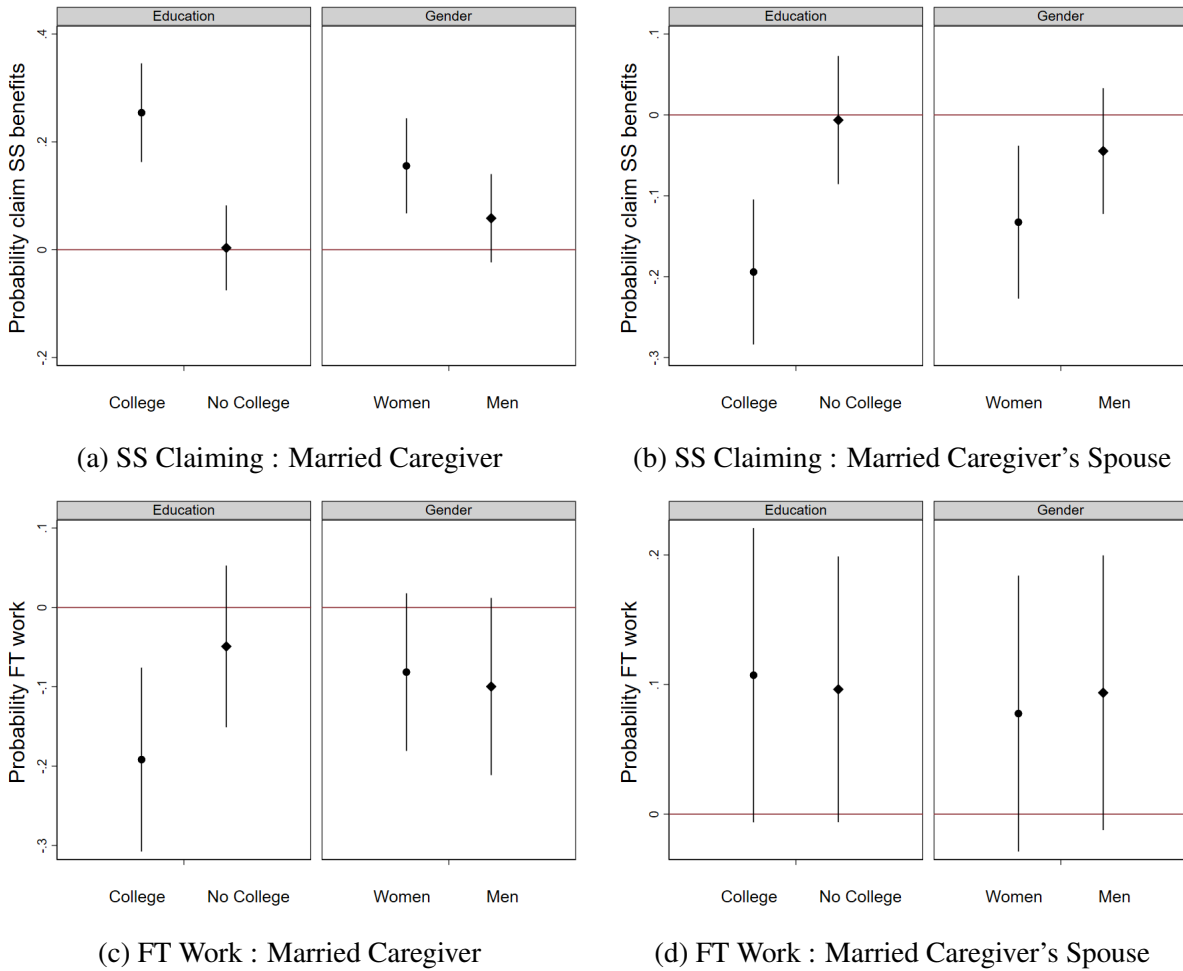
Notes: Figure plots estimated coefficients on caregiving (IC) or having a caregiving spouse (IC^s). Spikes show 95% confidence intervals.

using full-time work as the outcome. Given assortative matching is likely between couples, these results suggests insurance through claiming behavior in response to a caregiving shock may be more prevalent in educated households. This may stem from higher wealth levels affording more flexibility in claiming and labor market behavior. It could also stem from the fact that non-college educated individuals are significantly more likely to claim early regardless of caregiving status of the household.

6.2 Gender

Our benchmark analysis treats spouses symmetrically regardless of gender. However, for the birth cohorts considered in the analysis, it is plausible that gender roles might be more "traditional"

Figure 5: Heterogeneity in Early Claiming and Retirement by Age 64



Notes: Figure plots estimated coefficients on caregiving (IC) or having a caregiving spouse (IC^s). Spikes show 95% confidence intervals.

such that it would matter for claiming and labor supply behavior which spouse was the caregiver. In order to explore gender heterogeneity in these household decisions, we conduct our analyses separately for each gender. OLS results are shown in the second panel of figures 5a to 5d. Table 4 provides these results for all other specifications while gender specific results for all other ages and singles are provided in the appendix. The pattern of early claiming for caregivers and delayed claiming for spouses is observed for both women and men in the OLS results. Likewise, the aggregate pattern of results for full-time employment hold for both genders. Results for other specifications are noisier but do not show a clear pattern of asymmetry between women and men. Overall, these results suggest the presence of insurance through claiming behavior of the household regardless of which spouse is providing care. It is worth noting that over most model specifications, point estimates for effects are somewhat larger for women than men, suggesting women are somewhat more likely than men to adjust behavior. This could be related to gender norms or due to the lower average earnings of women, which could make claiming and labor supply adjustments

Table 4: Heterogeneity for Early Claiming and Retirement by Age 64

	Claimed				FT Employed			
	OLS	IV	FE	FE-IV	OLS	IV	FE	FE-IV
<i>Panel A: Caregiver x 64</i>								
Benchmark	0.116*** (0.030)	0.283* (0.159)	0.107*** (0.031)	0.342 (0.231)	-0.109*** (0.039)	-0.106 (0.202)	-0.047 (0.033)	-0.126 (0.157)
Education Asymmetry								
College	0.254*** (0.047)	0.478** (0.205)	0.229*** (0.046)	0.425 (0.318)	-0.192*** (0.059)	-0.368 (0.253)	-0.066 (0.049)	-0.398** (0.196)
No college	0.003 (0.040)	0.067 (0.266)	-0.002 (0.041)	0.297 (0.381)	-0.049 (0.052)	0.237 (0.344)	-0.025 (0.045)	0.276 (0.270)
Gender Asymmetry								
Women	0.156*** (0.045)	0.807*** (0.196)	0.123*** (0.045)	-0.200 (0.774)	-0.082 (0.051)	-0.137 (0.218)	-0.012 (0.044)	-0.290 (0.195)
Men	0.058 (0.042)	-0.760** (0.353)	0.069* (0.042)	0.438 (0.480)	-0.100* (0.057)	0.353 (0.483)	-0.054 (0.048)	0.200 (0.337)
<i>Panel B: Caregiver's Spouse x 64</i>								
Benchmark	-0.099*** (0.030)	-0.579*** (0.149)	-0.086*** (0.031)	-0.460** (0.220)	0.104*** (0.039)	0.424** (0.190)	0.051 (0.033)	0.286* (0.150)
Education Asymmetry								
College	-0.194*** (0.046)	-0.926*** (0.191)	-0.179*** (0.046)	-0.616* (0.342)	0.107* (0.058)	0.807*** (0.236)	0.034 (0.048)	0.554*** (0.194)
No college	-0.006 (0.040)	-0.243 (0.255)	0.006 (0.041)	-0.297 (0.338)	0.096* (0.052)	-0.017 (0.330)	0.059 (0.046)	-0.121 (0.258)
Gender Asymmetry								
Women	-0.133*** (0.048)	-0.954*** (0.222)	-0.124** (0.049)	0.227 (0.993)	0.078 (0.054)	0.281 (0.246)	0.053 (0.047)	0.392* (0.225)
Men	-0.045 (0.040)	0.188 (0.286)	-0.034 (0.040)	-0.497 (0.376)	0.094* (0.054)	0.139 (0.392)	0.035 (0.046)	0.030 (0.280)

less salient to the household.

7 Sensitivity

First, we test whether our results are sensitive to the definition of parental care utilized in the benchmark analysis. Second, we utilize self-reported subjective beliefs of longevity as an additional control to gauge the validity of our instrument. Table 5 provides sensitivity results at age 64 for married individuals to gain a sense of how results compare to the benchmark. Panel A provides results for own caregiving and panel B for spousal caregiving. Results for all other ages are provided in the appendix. The appendix also provides sensitivity results for singles, which remain widely insignificant.

7.1 Alternate care definitions

We redo our analysis under alternate care definitions to test whether our key results are driven by the way we measure parental care. Specifically, we define parental caregiving as (1) personal care provision (2) chore/errands care provision and (3) providing at least 100 hours of care (any type) since the previous survey wave. Roughly 5% of respondents reported providing personal care, 12% chore care, and 6% providing over 100 hours of care. As shown in both panels of table 5, results for Social Security claiming and full-time employment at age 64 are similar to

the benchmark regardless of how we define caregiving. For example, providing personal, chore, or more than 100 hours of care between ages 62-64 is associated with a statistically significant increase of 7-16 pp in the probability of claiming by age 64 based on the OLS model. The IV results tend to be somewhat larger for personal care than chore care, though generally not after fixed effects are added. Appendix tables A.8 to A.10 provides estimates for all other ages and for singles.

Table 5: Sensitivity for Early Claiming and Retirement by Age 64

	Claimed				FT Employed			
	OLS	IV	FE	FE-IV	OLS	IV	FE	FE-IV
<i>Panel A: Caregiver x 64</i>								
Benchmark	0.116*** (0.030)	0.283* (0.159)	0.107*** (0.031)	0.342 (0.231)	-0.109*** (0.039)	-0.106 (0.202)	-0.047 (0.033)	-0.126 (0.157)
Alternate Care Definitions								
Personal caregiving	0.143*** (0.041)	1.551** (0.620)	0.122*** (0.041)	0.605 (0.696)	-0.139*** (0.053)	-0.990 (0.706)	-0.080* (0.044)	-0.296 (0.471)
Chore care	0.076** (0.033)	0.342* (0.187)	0.083** (0.033)	0.492 (0.306)	-0.103** (0.042)	-0.152 (0.237)	-0.037 (0.035)	-0.196 (0.190)
Care>100 hours	0.165*** (0.031)	0.178 (0.157)	0.130*** (0.031)	0.298 (0.197)	-0.191*** (0.039)	-0.008 (0.196)	-0.094*** (0.033)	-0.068 (0.147)
Subjective Survival	- -	0.760*** (0.176)	- -	0.543** (0.265)	- -	-0.341 (0.249)	- -	-0.243 (0.180)
<i>Panel B: Caregiver's Spouse x 64</i>								
Benchmark	-0.099*** (0.030)	-0.579*** (0.149)	-0.086*** (0.031)	-0.460** (0.220)	0.104*** (0.039)	0.424** (0.190)	0.051 (0.033)	0.286* (0.150)
Alternate Care Definitions								
Personal caregiving	-0.062 (0.040)	-2.957*** (0.749)	-0.088** (0.040)	-0.559 (0.878)	0.052 (0.051)	2.392*** (0.853)	0.061 (0.043)	0.770 (0.578)
Chore care	-0.076** (0.032)	-0.632*** (0.172)	-0.065** (0.033)	-0.601** (0.296)	0.120*** (0.041)	0.470** (0.219)	0.049 (0.035)	0.354** (0.176)
Care>100 hours	-0.101*** (0.031)	-0.861*** (0.172)	-0.088*** (0.030)	-0.552** (0.216)	0.116*** (0.039)	0.721*** (0.215)	0.063* (0.033)	0.432*** (0.161)
Subjective Survival	- -	-1.127*** (0.172)	- -	-0.871*** (0.286)	- -	0.739*** (0.244)	- -	0.518*** (0.182)

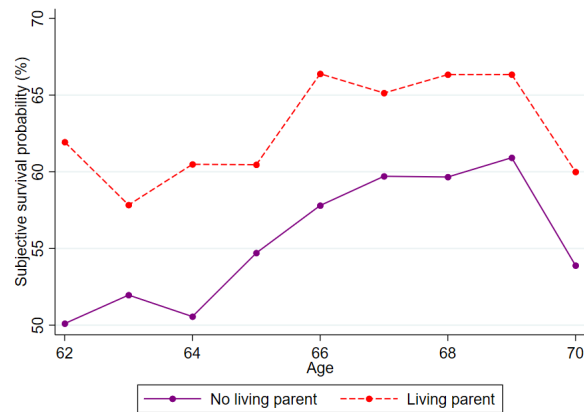
7.2 Subjective survival

In our benchmark analysis, we have addressed potential endogeneity of the parental caregiving variable by utilizing the information on whether the respondent has a living parent as an instrument for caregiving. However, one could argue that this variable may fail the exclusion restriction. Specifically, whether the respondent has a living parent is correlated with unobserved time-varying factors determining labor force status and Social Security claiming. This could be due to the fact that the longevity or health of one's parents is likely to affect estimates of one's own longevity and thus when to retire and/or claim. Controlling for measures of health status and individual fixed effects will not eliminate such a problem. However, the HRS includes data on subjective probability of survival for about two-thirds of the respondents in our sample which allows us to explore this possible source of endogeneity further.

Figure 6 plots the mean subjective probability of surviving an additional ten years by age and whether the respondent has a living parent. Clearly those with living parents report higher probabilities of survival at all ages on average. For example, 62-year-old respondents without a living

parent report an average of a 50% chance of surviving ten years. In comparison, 62-year-olds with at least one living parent report an average survival probability of over 60%. These data suggest at least a tentative possibility that the exclusion restriction could be violated. So as a sensitivity check we add this subjective survival probability as an additional control in our IV model specifications. This controls for the change in subjective longevity that may accompany the loss of a parent. The final row of both panels in table 5 show a similar pattern of results as the benchmark when adding the subjective survival control. Appendix table A.11 provides estimates for all other ages and for singles. Overall, these sensitivity results provide no evidence that our benchmark IV results are significantly biased through a violation of the exclusion restriction, but of course we cannot rule out this possibility entirely.

Figure 6: Mean subjective probability of surviving ten years



Source: Authors calculation using data from the Health and Retirement Study (1992-2022).

8 Discussion

Our results point to a clear household-level adjustment pattern in response to late-life parental caregiving, and help clarify which Social Security margins are potentially used when these shocks coincide with the claiming window. Across our main specifications, the strongest and most robust evidence is for married households: when caregiving is concentrated in one partner, the caregiver shifts toward earlier retirement and earlier claiming, while the non-caregiving spouse shifts toward continued work and delayed claiming. In economic terms, the magnitudes are sizable: when one spouse provides care, the caregiver is about 12 percentage points more likely to claim by age 64 (and about 11 pp less likely to work full time), while the non-caregiving spouse is about 10 pp less likely to claim early (and about 10 pp more likely to remain in full-time work). When both spouses provide care, the net effects on claiming and labor supply are comparatively small, consistent with couples sharing the caregiving burden rather than specializing. In contrast, for singles between ages 62 and 70 we do not find a robust relationship between caregiving and either full-time work or

claiming across specifications, suggesting that the primary adjustment margin we identify operates within couples rather than through caregiving per se.

We move beyond reduced-form claiming indicators and provide evidence on claiming pathways using the HRS linked to restricted SSA administrative benefit records. Results show that within caregiving couples, spousal-benefit receipt is markedly more common for the caregiving spouse than for the non-caregiving spouse: when the respondent is the sole caregiver, 13.6% ever claim spousal benefits, compared to only 3.3% when only the spouse provides care. This roughly 10 pp gap is difficult to reconcile with purely individual-level responses and is consistent with a household strategy in which the caregiving spouse draws on own benefits earlier while the non-caregiving spouse delays claiming on their own record.

The dynamic patterns in figure 4 reinforce this interpretation. Caregiving is associated with an earlier onset of own-benefit claiming for caregivers (roughly 10–20 percentage points higher at certain ages relative to non-caregiving households), while the caregiver’s spouse delays own-benefit claiming. For spousal benefits, we see timing shifts consistent with sequencing: caregiving spouses are somewhat less likely to claim spousal benefits at younger ages but more likely to do so later (by about 5 pp at age 69), while the non-caregiving spouse is more likely to claim spousal benefits earlier (by about 4 pp) and less likely to do so at older ages. Taken together, these pathway results provide direct support for the mechanism emphasized throughout the paper: Social Security’s auxiliary benefits can operate as an implicit form of caregiver insurance within marriage, allowing couples to partially buffer income losses associated with care-induced reductions in work.

At the same time, an important limitation is that even the restricted administrative measures, available to researchers, do not provide a complete, month-by-month history of each individual’s benefit status. The linked files report benefit type and entitlement dates for initial entitlement and the current (most recent) entitlement for own-worker and auxiliary benefits, but the data structure does not always preserve the full sequence of intermediate switches.¹⁴ As a result, our reconstructed pathways are best interpreted as an observed and policy-relevant characterization of whether and when individuals become entitled to own-worker versus spousal benefits, rather than a definitive accounting of all potential switches. This constraint limits our ability to pin down certain nuanced strategies (e.g., to distinguish all instances of restricted-application-style behavior from other forms of auxiliary entitlement, or to fully map the timing of switching relative to spousal claiming and caregiving episodes). Future work using more granular administrative histories of benefit receipt and changes in entitlement status could further sharpen these tests and help quantify the extent to which specific claiming rules (as opposed to broader household coordination) drive the patterns we document.

From a policy perspective, these results suggest a more specific takeaway than a generic “caregiving affects retirement.” The evidence indicates that a nontrivial share of the adjustment to parental-care shocks in married households runs through household-level claiming and work coordination, with spousal benefits playing a visible role in the realized pathways. This implies that reforms that reduce or restructure auxiliary benefits would not only affect redistribution across household types, but could also weaken an insurance channel that households appear to use when caregiving needs arise. Conversely, proposals that explicitly support unpaid family caregivers

¹⁴As described in Section 3, entitlement dates are maintained separately for own and auxiliary benefits. The current entitlement variable retains only the most recent entitlement as of the administrative extract and can therefore miss earlier, transient switches or multiple transitions across benefit types.

(e.g., caregiver credits within Social Security or complementary long-term care policies) target the same risk highlighted by our estimates: care-induced work reductions and earlier claiming. More broadly, our findings emphasize that evaluating retirement-policy reforms in an aging society requires a household perspective, both because caregiving risks are shared within families and because Social Security rules create meaningful within-couple adjustment margins that are largely unavailable to singles.

9 Conclusion

In this study, we empirically estimate the effect of parental caregiving on the Social Security benefit claiming and full-time work of married and single individuals. We provide new evidence on how married households respond to late-life family shocks through coordinated labor supply and retirement behaviors. Using longitudinal data from the Health and Retirement Study linked to administrative Social Security records, we show that parental caregiving triggers earlier retirement and benefit claiming among caregivers, but delayed claiming and extended work participation among their spouses. This offsetting behavior constitutes an important form of intra-household insurance that partially shields household retirement income from caregiving-induced earnings losses. In contrast, single individuals—lacking such coordination margins—exhibit no significant adjustments in claiming or work behavior following caregiving shocks. Taken together, our results highlight the insight that spousal benefits play a crucial role in enabling married households to smooth shocks to labor supply and retirement income—effectively functioning as an implicit form of caregiver insurance.

From a policy perspective, these findings suggest that reforms reducing the generosity or availability of spousal benefits may weaken an important source of private insurance against caregiving shocks. Conversely, policies that explicitly account for caregiving—such as caregiver credits in the Social Security earnings record or second-earner enhancements tied to the PIA ratio—could improve welfare outcomes without discouraging continued labor supply among non-caregiving spouses. More broadly, our results point to the importance of viewing Social Security not only as an individual retirement program but also as a household-level institution that shapes families' capacity to absorb life-cycle risks in an aging society.

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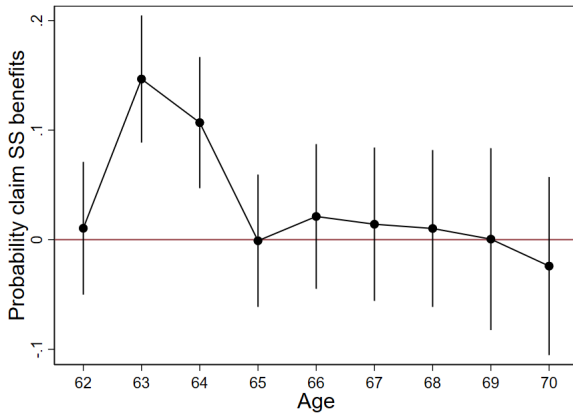
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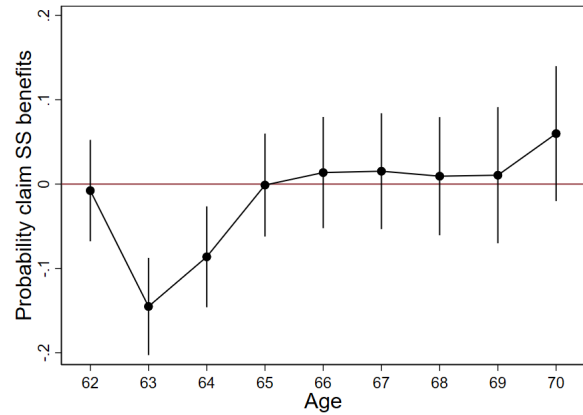
Appendix

A Additional Figures and Tables

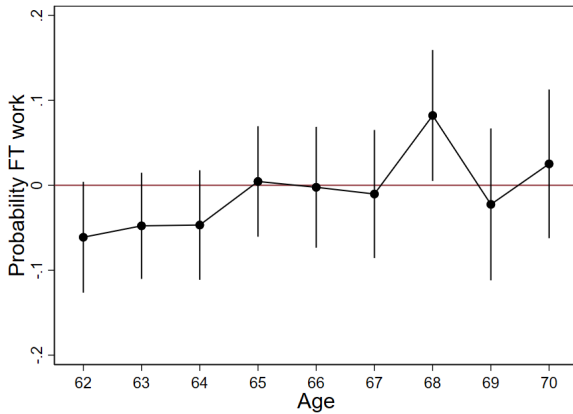
Figure A.1: Married Households - FE Regressions



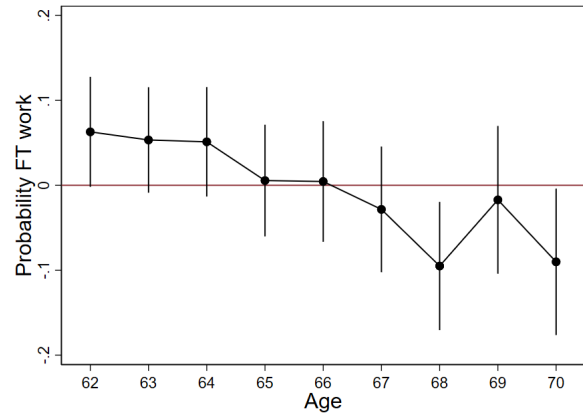
(a) SS Claiming : Caregiver



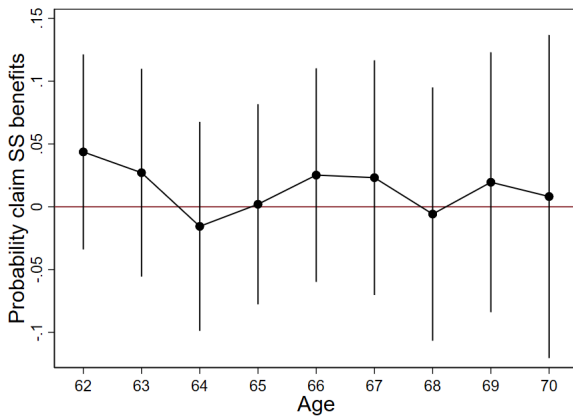
(b) SS Claiming : Caregiver's Spouse



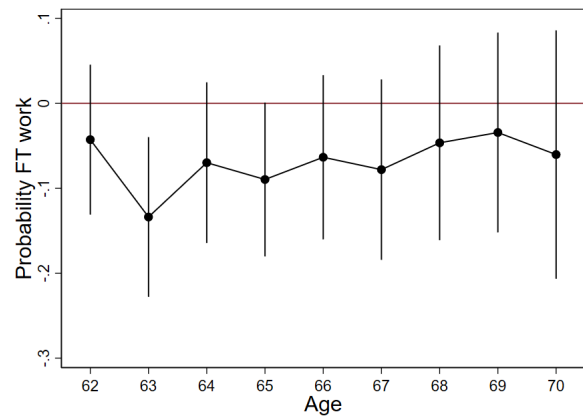
(c) FT work: Caregiver



(d) FT work: Caregiver's Spouse



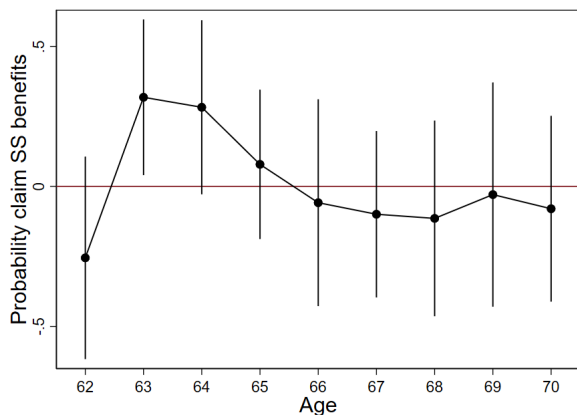
(e) SS Claiming : Caregiver



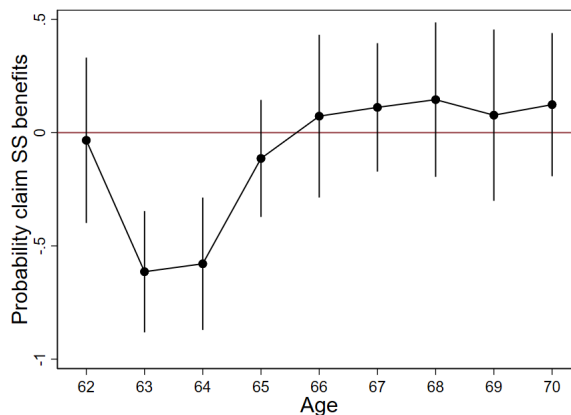
(f) FT work: Caregiver

Notes: Figure plots estimated coefficients on caregiving (IC) or having a caregiving spouse (IC^s). Spikes show 95% confidence intervals.

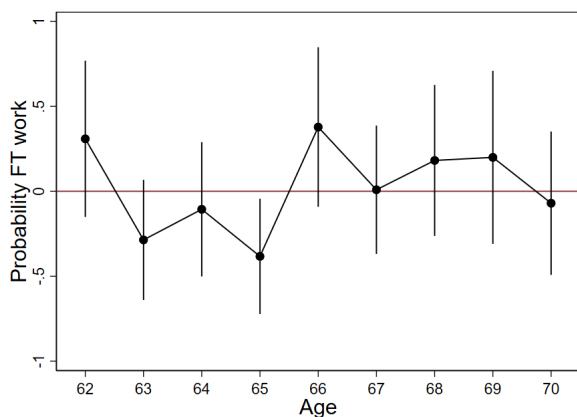
Figure A.2: Married Households - IV Regressions



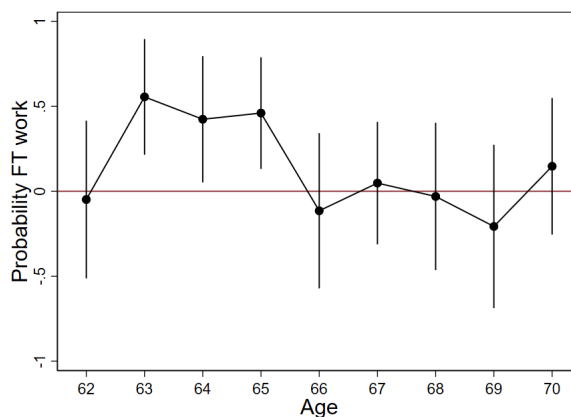
(a) SS Claiming : Caregiver



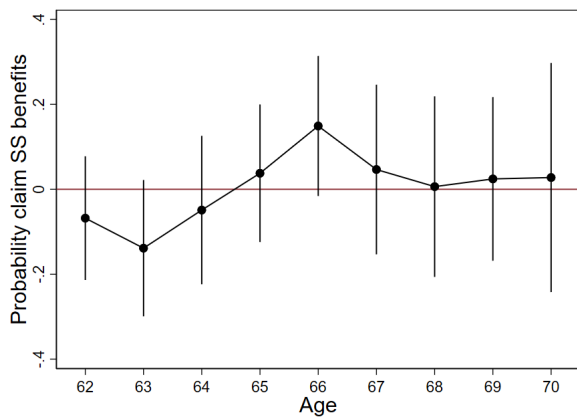
(b) SS Claiming : Caregiver's Spouse



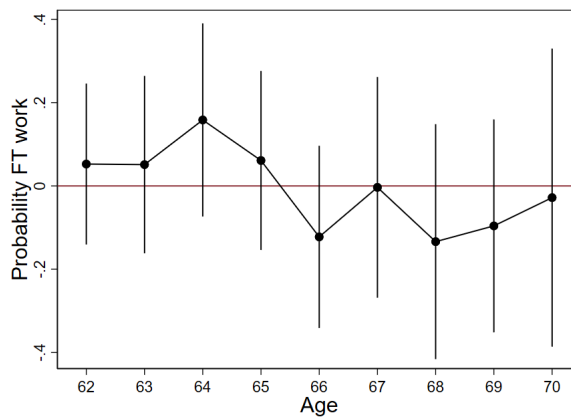
(c) FT work: Caregiver



(d) FT work: Caregiver's Spouse



(e) SS Claiming : Caregiver



(f) FT work: Caregiver

Table A.1: Descriptive statistics - analytic sample

	Married non-caregiver					Married caregiver					Non-married non-caregiver					Non-married caregiver				
	Mean	SD	Min	Max	Observations	Mean	SD	Min	Max	Observations	Mean	SD	Min	Max	Observations	Mean	SD	Min	Max	Observations
Female	0.44	0.50	0.00	1.00	19341	0.42	0.49	0.00	1.00	3261	0.69	0.46	0.00	1.00	641	0.74	0.44	0.00	1.00	6283
Age (years)	66.08	2.58	62.00	70.00		65.48	2.51	62.00	70.00		66.46	2.58	62.00	70.00		65.50	2.49	62.00	70.00	
Self-rated health	2.65	1.05	1.00	5.00		2.50	1.02	1.00	5.00		2.83	1.09	1.00	5.00		2.69	1.09	1.00	5.00	
College	0.39	0.49	0.00	1.00		0.51	0.50	0.00	1.00		0.36	0.48	0.00	1.00		0.45	0.50	0.00	1.00	
Spouse college	0.39	0.49	0.00	1.00		0.50	0.50	0.00	1.00		0.24	0.43	0.00	1.00		0.57	0.51	0.00	1.00	
Wealth	47.08	106.39	-62.18	3842.81		57.87	103.31	-33.60	2502.08		22.32	114.48	-47.22	8218.70		34.87	222.01	-3.82	3689.06	
Longest job (years)	20.87	11.30	0.00	55.90		22.00	11.37	0.00	55.50		19.10	10.43	0.10	55.10		19.55	10.80	0.50	52.40	
Spouse age	64.88	6.49	32.00	100.00		63.38	6.16	24.00	85.00		66.54	8.11	38.00	89.00		67.36	5.40	53.00	74.00	
Income before 62	3.65	5.06	0.00	141.00		4.10	4.41	0.00	46.19		3.05	3.68	0.00	61.10		4.26	13.33	0.00	189.31	
Spouse income before 62	3.08	4.42	0.00	81.39		3.59	4.70	0.00	81.39		2.50	3.78	0.00	42.59		2.66	2.94	0.00	19.40	
Caregiving spouse	0.03	0.17	0.00	1.00		0.86	0.35	0.00	1.00		0.00	0.03	0.00	1.00		0.01	0.12	0.00	1.00	
Living parent	0.14	0.34	0.00	1.00		0.50	0.50	0.00	1.00		0.10	0.30	0.00	1.00		0.77	0.42	0.00	1.00	
Living in-law	0.19	0.39	0.00	1.00		0.51	0.50	0.00	1.00		0.00	0.05	0.00	1.00		0.00	0.06	0.00	1.00	
Siblings	2.80	2.37	0.00	19.00		2.48	2.15	0.00	17.00		2.90	2.40	0.00	17.00		2.47	2.32	0.00	14.00	
Spouse's siblings	2.81	2.34	0.00	20.00		2.53	2.16	0.00	17.00		3.57	2.63	0.00	13.00		2.21	1.89	0.00	5.00	
Claimed SS	0.87	0.34	0.00	1.00		0.84	0.37	0.00	1.00		0.87	0.34	0.00	1.00		0.82	0.38	0.00	1.00	
FT work	0.19	0.40	0.00	1.00		0.21	0.41	0.00	1.00		0.21	0.41	0.00	1.00		0.26	0.44	0.00	1.00	
Observations	19341					3261					6283					641				
indx																				

Source: HRS. Wealth and income in \$10,000s (1998 dollars).

Table A.2: Distribution of Married Households
By Care Providing Status (Ages 62-70)

	Mean
Respondent care-provider	0.106*** (23.04)
Spouse care-provider	0.166*** (28.12)
Both care-provider	0.728*** (105.49)
Total	1 (.)
Observations	5115

t statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table A.3: Sanderson-Windmeijer first-stage F statistics for weak instruments

	Married				Single			
	Claimed		FT Employed		Claimed		FT Employed	
	IV	FE-IV	IV	FE-IV	IV	FE-IV	IV	FE-IV
Caregiver x 62	426.645 (0.000)	64.251 (0.000)	426.645 (0.000)	355.292 (0.000)	1907.071 (0.000)	147.948 (0.000)	1907.071 (0.000)	2182.158 (0.000)
Caregiver x 63	734.772 (0.000)	76.893 (0.000)	734.772 (0.000)	579.616 (0.000)	1717.360 (0.000)	110.664 (0.000)	1717.360 (0.000)	1227.090 (0.000)
Caregiver x 64	662.351 (0.000)	72.613 (0.000)	662.351 (0.000)	551.874 (0.000)	1515.033 (0.000)	154.544 (0.000)	1515.033 (0.000)	1899.985 (0.000)
Caregiver x 65	881.739 (0.000)	77.217 (0.000)	881.739 (0.000)	549.111 (0.000)	1490.238 (0.000)	109.961 (0.000)	1490.238 (0.000)	1210.708 (0.000)
Caregiver x 66	580.133 (0.000)	76.360 (0.000)	580.133 (0.000)	497.246 (0.000)	1907.141 (0.000)	158.104 (0.000)	1907.141 (0.000)	2156.172 (0.000)
Caregiver x 67	1000.918 (0.000)	88.521 (0.000)	1000.918 (0.000)	667.986 (0.000)	1313.246 (0.000)	117.335 (0.000)	1313.246 (0.000)	1141.861 (0.000)
Caregiver x 68	767.173 (0.000)	75.487 (0.000)	767.173 (0.000)	541.711 (0.000)	1443.425 (0.000)	156.649 (0.000)	1443.425 (0.000)	1733.431 (0.000)
Caregiver x 69	783.912 (0.000)	94.061 (0.000)	783.912 (0.000)	628.132 (0.000)	1821.809 (0.000)	143.052 (0.000)	1821.809 (0.000)	1298.557 (0.000)
Caregiver x 70	1182.721 (0.000)	106.458 (0.000)	1182.721 (0.000)	373.651 (0.000)	1425.784 (0.000)	168.301 (0.000)	1425.784 (0.000)	539.089 (0.000)
Caregiver's Spouse x 62	423.757 (0.000)	66.737 (0.000)	423.757 (0.000)	355.027 (0.000)				
Caregiver's Spouse x 63	750.193 (0.000)	83.693 (0.000)	750.193 (0.000)	590.100 (0.000)				
Caregiver's Spouse x 64	687.189 (0.000)	76.223 (0.000)	687.189 (0.000)	551.828 (0.000)				
Caregiver's Spouse x 65	908.404 (0.000)	82.157 (0.000)	908.404 (0.000)	562.268 (0.000)				
Caregiver's Spouse x 66	586.829 (0.000)	76.477 (0.000)	586.829 (0.000)	491.335 (0.000)				
Caregiver's Spouse x 67	1016.755 (0.000)	93.585 (0.000)	1016.755 (0.000)	675.528 (0.000)				
Caregiver's Spouse x 68	766.483 (0.000)	79.794 (0.000)	766.483 (0.000)	550.372 (0.000)				
Caregiver's Spouse x 69	799.090 (0.000)	114.531 (0.000)	799.090 (0.000)	652.517 (0.000)				
Caregiver's Spouse x 70	1216.388 (0.000)	102.895 (0.000)	1216.388 (0.000)	369.483 (0.000)				
Observations	16756	16442	16756	28919	5820	5487	5820	13712
Cragg-Donald statistic	23.193	2.740	23.193	13.979	145.531	10.489	145.531	57.085

P-values in parentheses.

Table A.4: Heterogeneity: Female only

	Married						Single										
	Claimed			FT Employed			Claimed			FT Employed							
	OLS	IV	FE	FE-IV	OLS	IV	FE	FE-IV	OLS	IV	FE	FE-IV	OLS	IV	FE	FE-IV	
Caregiver x 62	-0.139*** (0.044)	-0.301 (0.258)	-0.088* (0.048)	-1.703 (1.636)	-0.061 (0.049)	0.509* (0.286)	-0.027 (0.046)	-0.007 (0.378)	0.045 (0.044)	-0.127 (0.086)	0.018 (0.046)	-0.076 (0.125)	-0.077 (0.058)	0.120 (0.114)	-0.036 (0.053)	-0.076 (0.125)	0.168** (0.076)
Caregiver x 63	0.191*** (0.042)	0.466*** (0.192)	0.204*** (0.044)	-0.041 (0.596)	0.025 (0.048)	-0.041 (0.213)	0.023 (0.042)	-0.118 (0.158)	0.026 (0.048)	-0.098 (0.105)	-0.025 (0.051)	-0.213 (0.210)	-0.055 (0.063)	-0.025 (0.138)	-0.082 (0.058)	-0.055 (0.063)	-0.234** (0.102)
Caregiver x 64	0.156*** (0.045)	0.807*** (0.196)	0.123*** (0.045)	-0.200 (0.774)	-0.082 (0.051)	-0.137 (0.218)	-0.012 (0.044)	-0.290 (0.195)	-0.006 (0.048)	-0.077 (0.102)	-0.015 (0.049)	-0.002 (0.134)	-0.017 (0.063)	0.242* (0.135)	-0.041 (0.056)	0.242* (0.135)	0.166* (0.086)
Caregiver x 65	0.028 (0.042)	0.119 (0.191)	0.033 (0.043)	-0.488 (0.683)	-0.039 (0.047)	-0.150 (0.212)	0.018 (0.041)	-0.156 (0.174)	-0.025 (0.045)	0.006 (0.086)	-0.055 (0.048)	-0.087 (0.178)	-0.008 (0.059)	0.021 (0.113)	-0.061 (0.055)	-0.008 (0.055)	0.085 (0.085)
Caregiver x 66	0.024 (0.052)	0.143 (0.244)	0.034 (0.051)	-0.709 (0.725)	-0.115* (0.059)	-0.142 (0.271)	-0.065 (0.049)	-0.342 (0.222)	0.020 (0.049)	0.160* (0.093)	0.025 (0.050)	0.096 (0.133)	0.012 (0.065)	-0.061 (0.122)	-0.050 (0.058)	-0.061 (0.122)	-0.117 (0.080)
Caregiver x 67	-0.009 (0.053)	0.177 (0.291)	0.013 (0.053)	-0.813 (0.884)	0.023 (0.060)	-0.007 (0.323)	0.031 (0.051)	0.000 (0.255)	0.022 (0.050)	0.035 (0.114)	-0.013 (0.054)	-0.092 (0.201)	0.038 (0.065)	-0.015 (0.150)	-0.031 (0.062)	-0.015 (0.150)	-0.131 (0.108)
Caregiver x 68	0.021 (0.058)	-0.045 (0.381)	0.035 (0.056)	-1.690 (1.029)	0.024 (0.065)	-0.399 (0.422)	0.035 (0.054)	-0.300 (0.341)	0.024 (0.055)	0.054 (0.109)	-0.006 (0.058)	-0.012 (0.156)	0.007 (0.072)	-0.125 (0.143)	-0.071 (0.066)	-0.125 (0.143)	-0.156* (0.091)
Caregiver x 69	0.011 (0.066)	0.034 (0.347)	0.009 (0.065)	-0.879 (1.029)	-0.106 (0.074)	0.057 (0.385)	-0.088 (0.062)	-0.096 (0.322)	0.002 (0.051)	0.006 (0.096)	0.007 (0.056)	-0.051 (0.152)	-0.018 (0.068)	-0.051 (0.127)	-0.016 (0.064)	-0.051 (0.127)	-0.042 (0.090)
Caregiver x 70	0.011 (0.069)	-0.063 (0.264)	0.012 (0.067)	-1.055* (0.602)	0.009 (0.078)	-0.182 (0.293)	-0.029 (0.064)	-0.300 (0.188)	0.013 (0.068)	0.018 (0.128)	0.008 (0.073)	-0.036 (0.196)	0.031 (0.089)	0.024 (0.168)	-0.029 (0.084)	0.024 (0.168)	0.104 (0.117)
Caregiver's Spouse x 62	0.138*** (0.046)	0.175 (0.315)	0.070 (0.051)	2.036 (2.106)	0.102* (0.052)	-0.469 (0.349)	0.088* (0.049)	0.034 (0.463)	0.034 (0.463)	0.034 (0.463)	0.034 (0.463)	0.034 (0.463)	0.034 (0.463)	0.034 (0.463)	0.034 (0.463)	0.034 (0.463)	0.034 (0.463)
Caregiver's Spouse x 63	-0.156*** (0.045)	-0.673*** (0.226)	-0.182*** (0.047)	-0.029 (0.737)	-0.028 (0.051)	0.111 (0.251)	-0.021 (0.045)	0.113 (0.180)	0.113 (0.180)	0.113 (0.180)	0.113 (0.180)	0.113 (0.180)	0.113 (0.180)	0.113 (0.180)	0.113 (0.180)	0.113 (0.180)	0.113 (0.180)
Caregiver's Spouse x 64	-0.133*** (0.048)	-0.954*** (0.222)	-0.124*** (0.049)	0.227 (0.993)	0.078 (0.054)	0.281 (0.246)	0.053 (0.047)	0.392* (0.225)	0.053 (0.047)	0.053 (0.047)	0.053 (0.047)	0.053 (0.047)	0.053 (0.047)	0.053 (0.047)	0.053 (0.047)	0.053 (0.047)	0.053 (0.047)
Caregiver's Spouse x 65	-0.021 (0.046)	-0.205 (0.280)	-0.035 (0.047)	0.549 (1.053)	0.030 (0.052)	0.164 (0.311)	-0.014 (0.045)	0.170 (0.249)	0.170 (0.249)	0.170 (0.249)	0.170 (0.249)	0.170 (0.249)	0.170 (0.249)	0.170 (0.249)	0.170 (0.249)	0.170 (0.249)	0.170 (0.249)
Caregiver's Spouse x 66	-0.007 (0.058)	-0.130 (0.316)	-0.008 (0.056)	1.186 (1.131)	0.120* (0.065)	0.204 (0.351)	0.015 (0.054)	0.352 (0.296)	0.015 (0.054)	0.015 (0.054)	0.015 (0.054)	0.015 (0.054)	0.015 (0.054)	0.015 (0.054)	0.015 (0.054)	0.015 (0.054)	0.015 (0.054)
Caregiver's Spouse x 67	0.036 (0.060)	-0.197 (0.402)	-0.007 (0.059)	1.014 (1.256)	-0.086 (0.067)	-0.124 (0.447)	-0.034 (0.057)	-0.057 (0.348)	-0.034 (0.348)	-0.034 (0.348)	-0.034 (0.348)	-0.034 (0.348)	-0.034 (0.348)	-0.034 (0.348)	-0.034 (0.348)	-0.034 (0.348)	-0.034 (0.348)
Caregiver's Spouse x 68	-0.002 (0.062)	0.104 (0.532)	-0.019 (0.061)	2.267 (1.829)	-0.098 (0.070)	0.468 (0.590)	-0.086 (0.058)	0.352 (0.467)	0.352 (0.467)	0.352 (0.467)	0.352 (0.467)	0.352 (0.467)	0.352 (0.467)	0.352 (0.467)	0.352 (0.467)	0.352 (0.467)	0.352 (0.467)
Caregiver's Spouse x 69	-0.003 (0.072)	-0.008 (0.431)	-0.012 (0.071)	0.943 (1.351)	0.151* (0.081)	-0.183 (0.478)	0.136** (0.068)	0.197 (0.408)	0.197 (0.408)	0.197 (0.408)	0.197 (0.408)	0.197 (0.408)	0.197 (0.408)	0.197 (0.408)	0.197 (0.408)	0.197 (0.408)	0.197 (0.408)
Caregiver's Spouse x 70	0.001 (0.077)	0.115 (0.349)	-0.035 (0.075)	1.260 (0.865)	0.034 (0.087)	0.390 (0.387)	0.043 (0.071)	0.389* (0.235)	0.043 (0.235)	0.043 (0.235)	0.043 (0.235)	0.043 (0.235)	0.043 (0.235)	0.043 (0.235)	0.043 (0.235)	0.043 (0.235)	0.043 (0.235)
Observations	7342	7342	7342	7176	7342	7342	7342	12156	7342	3978	3978	3802	3978	3978	3978	3978	9692
Cragg-Donald statistic	5.912	5.912	5.912	0.130	5.912	5.912	5.912	2.769	5.912	100.098	100.098	8.858	100.098	100.098	100.098	100.098	40.689

Standard errors in parentheses, p-values—*** p<0.01, ** p<0.05, * p<0.1. Additional controls included in all regressions.

Table A.5: Heterogeneity: Male only

	Married						Single						
	Claimed			FT Employed			Claimed			FT Employed			
	OLS	FE	FE-IV	OLS	FE	FE-IV	OLS	FE	FE-IV	OLS	FE	FE-IV	
Caregiver x 62	0.045 (0.041)	-0.551 (0.361)	0.051 (0.041)	0.866 (0.541)	-0.120** (0.055)	0.584 (0.495)	-0.046 (0.047)	0.097 (0.399)	0.091 (0.079)	0.530 (0.371)	0.083 (0.097)	-0.091 (0.210)	-0.012 (0.088)
Caregiver x 63	0.137*** (0.040)	-0.085 (0.286)	0.063 (0.040)	0.519 (0.447)	-0.216*** (0.054)	-0.169 (0.392)	-0.071 (0.046)	-0.002 (0.287)	0.131* (0.078)	0.397 (0.398)	-0.110 (0.096)	0.117 (0.175)	-0.271*** (0.087)
Caregiver x 64	0.058 (0.042)	-0.760** (0.353)	0.069* (0.042)	0.438 (0.480)	-0.100* (0.057)	0.353 (0.483)	-0.054 (0.048)	0.200 (0.337)	0.020 (0.090)	0.844* (0.509)	-0.153 (0.110)	-0.050 (0.248)	-0.162 (0.100)
Caregiver x 65	-0.040 (0.044)	0.154 (0.348)	-0.014 (0.045)	0.925 (0.584)	-0.060 (0.060)	-0.874* (0.477)	-0.024 (0.051)	-0.545 (0.369)	0.115 (0.077)	0.866 (0.675)	0.068 (0.097)	0.263 (0.348)	-0.150* (0.085)
Caregiver x 66	0.066 (0.046)	-0.217 (0.357)	0.032 (0.045)	0.565 (0.483)	-0.079 (0.063)	1.087*** (0.490)	0.036 (0.052)	1.104*** (0.358)	0.052 (0.087)	0.573 (0.397)	-0.046 (0.111)	-0.268 (0.258)	-0.074 (0.097)
Caregiver x 67	-0.001 (0.049)	-0.242 (0.281)	0.061 (0.049)	0.480 (0.461)	-0.069 (0.067)	0.165 (0.385)	-0.047 (0.056)	0.204 (0.287)	0.107 (0.101)	0.829 (0.615)	-0.176 (0.135)	0.220 (0.336)	-0.195* (0.113)
Caregiver x 68	0.009 (0.050)	-0.152 (0.364)	0.018 (0.049)	0.521 (0.485)	0.084 (0.069)	0.934* (0.499)	0.101* (0.056)	0.711** (0.357)	0.027 (0.121)	0.243 (0.783)	0.022 (0.154)	-0.238 (0.556)	0.103 (0.134)
Caregiver x 69	-0.017 (0.058)	0.085 (0.422)	0.021 (0.057)	0.942* (0.562)	-0.067 (0.079)	0.478 (0.578)	-0.011 (0.065)	0.245 (0.416)	-0.126 (0.189)	0.730 (0.821)	-0.190 (0.213)	-0.355 (0.924)	0.057 (0.210)
Caregiver x 70	-0.016 (0.056)	-0.067 (0.312)	-0.001 (0.054)	0.792* (0.415)	-0.058 (0.076)	0.129 (0.428)	0.019 (0.062)	0.194 (0.218)	0.072 (1.898)	1.297 (1.081)	-0.060 (0.208)	-1.409 (2.595)	-0.138 (0.170)
Caregiver's Spouse x 62	-0.043 (0.038)	0.180 (0.320)	-0.027 (0.039)	-0.763 (0.468)	0.085 (0.052)	-0.260 (0.439)	0.009 (0.045)	-0.101 (0.358)					
Caregiver's Spouse x 63	-0.161*** (0.038)	-0.290 (0.244)	-0.076** (0.039)	-0.462 (0.336)	0.223*** (0.051)	0.544 (0.334)	0.067 (0.044)	0.145 (0.252)					
Caregiver's Spouse x 64	-0.045 (0.040)	0.188 (0.286)	-0.034 (0.040)	-0.497 (0.376)	0.094* (0.054)	0.139 (0.392)	0.035 (0.046)	0.030 (0.280)					
Caregiver's Spouse x 65	0.029 (0.042)	-0.160 (0.265)	0.012 (0.043)	-0.546 (0.406)	0.079 (0.057)	0.859** (0.363)	0.035 (0.049)	0.549* (0.288)					
Caregiver's Spouse x 66	-0.056 (0.044)	0.175 (0.310)	0.004 (0.043)	-0.296 (0.395)	0.099* (0.060)	-0.594 (0.424)	0.001 (0.049)	-0.846*** (0.309)					
Caregiver's Spouse x 67	-0.006 (0.045)	0.184 (0.228)	-0.020 (0.045)	-0.295 (0.322)	0.062 (0.061)	-0.012 (0.312)	-0.012 (0.052)	-0.061 (0.232)					
Caregiver's Spouse x 68	-0.009 (0.046)	0.123 (0.279)	-0.002 (0.045)	-0.222 (0.361)	-0.047 (0.063)	-0.457 (0.382)	-0.082 (0.052)	-0.533* (0.276)					
Caregiver's Spouse x 69	0.023 (0.054)	-0.034 (0.352)	-0.007 (0.053)	-0.569 (0.413)	-0.010 (0.074)	-0.385 (0.482)	-0.049 (0.061)	-0.255 (0.347)					
Caregiver's Spouse x 70	0.023 (0.052)	0.080 (0.258)	0.053 (0.051)	-0.493 (0.333)	0.018 (0.071)	0.192 (0.353)	-0.103* (0.058)	-0.297* (0.172)					
Observations	9414	9414	9414	9266	9414	9414	9414	16763	1842	1685	1842	1842	1842
Cragg-Donald statistic		7.192		0.946		7.192		5.118	1.261	1.115	1.261	1.261	9.931

Standard errors in parentheses, p-values—*** p<0.01, ** p<0.05, * p<0.1. Additional controls included in all regressions.

Table A.6: Heterogeneity: College educated only

	Married												Single													
	Claimed				FT Employed				Claimed				FT Employed				Claimed				FT Employed					
	OLS	IV	FE	FE-IV	OLS	IV	FE	FE-IV	OLS	IV	FE	FE-IV	OLS	IV	FE	FE-IV	OLS	IV	FE	FE-IV	OLS	IV	FE	FE-IV		
Caregiver x 62	-0.034 (0.047)	0.314 (0.356)	-0.008 (0.047)	0.301 (0.575)	-0.166*** (0.059)	0.027 (0.439)	-0.125** (0.049)	-0.052 (0.346)	0.066 (0.055)	-0.010 (0.098)	0.097* (0.059)	0.347 (0.460)	-0.023 (0.073)	0.014 (0.129)	-0.041 (0.065)	0.103 (0.101)										
Caregiver x 63	0.227*** (0.045)	0.175 (0.249)	0.191*** (0.046)	0.151 (0.410)	-0.212*** (0.058)	-0.265 (0.307)	-0.137*** (0.049)	-0.354 (0.241)	0.004 (0.062)	-0.223* (0.120)	-0.002 (0.066)	0.180 (0.654)	0.099 (0.082)	0.268* (0.158)	-0.111 (0.074)	0.184 (0.135)										
Caregiver x 64	0.254*** (0.047)	0.478*** (0.205)	0.229*** (0.046)	0.425 (0.318)	-0.192*** (0.059)	-0.368 (0.253)	-0.066 (0.049)	-0.398** (0.196)	0.045 (0.070)	0.113 (0.127)	0.032 (0.070)	0.375 (0.492)	-0.049 (0.093)	0.098 (0.167)	-0.099 (0.077)	0.192 (0.120)										
Caregiver x 65	-0.029 (0.046)	0.131 (0.203)	0.010 (0.047)	0.015 (0.385)	-0.077 (0.058)	-0.395 (0.251)	-0.027 (0.049)	-0.229 (0.217)	0.136** (0.062)	0.409** (0.179)	0.136** (0.065)	0.805 (0.851)	0.026 (0.082)	0.302 (0.235)	-0.098 (0.072)	0.190 (0.184)										
Caregiver x 66	0.082 (0.052)	-0.066 (0.364)	0.060 (0.047)	-0.202 (0.496)	-0.110* (0.065)	0.365 (0.449)	0.037 (0.053)	0.186 (0.341)	0.045 (0.071)	0.265* (0.157)	0.042 (0.072)	0.523 (0.598)	-0.058 (0.094)	-0.099 (0.207)	-0.121 (0.080)	0.148 (0.140)										
Caregiver x 67	-0.024 (0.052)	-0.126 (0.206)	-0.002 (0.051)	-0.042 (0.324)	-0.075 (0.066)	0.034 (0.254)	-0.029 (0.054)	-0.063 (0.195)	0.036 (0.067)	0.142 (0.131)	0.058 (0.069)	0.359 (0.574)	0.036 (0.089)	0.086 (0.173)	-0.121 (0.076)	0.099 (0.133)										
Caregiver x 68	-0.015 (0.059)	-0.124 (0.237)	-0.010 (0.057)	-0.395 (0.381)	0.094 (0.075)	-0.098 (0.293)	0.165*** (0.060)	0.048 (0.234)	0.040 (0.086)	0.189 (0.356)	0.046 (0.087)	0.517 (0.998)	0.079 (0.114)	-0.147 (0.468)	-0.110 (0.096)	0.051 (0.332)										
Caregiver x 69	-0.021 (0.061)	0.024 (0.323)	0.008 (0.059)	0.105 (0.467)	-0.060 (0.077)	-0.061 (0.399)	-0.034 (0.062)	-0.136 (0.306)	0.016 (0.089)	0.006 (0.198)	0.036 (0.091)	0.282 (0.535)	-0.003 (0.118)	0.084 (0.260)	0.001 (0.101)	0.216 (0.185)										
Caregiver x 70	-0.032 (0.063)	-0.047 (0.233)	-0.032 (0.060)	-0.143 (0.290)	-0.020 (0.079)	-0.426 (0.288)	0.056 (0.063)	0.287* (0.160)	0.034 (0.090)	0.035 (0.158)	-0.005 (0.092)	0.126 (0.492)	-0.041 (0.119)	0.125 (0.208)	-0.206** (0.102)	0.370** (0.162)										
Caregiver's Spouse x 62	0.011 (0.046)	-0.702* (0.379)	-0.012 (0.046)	-0.442 (0.659)	0.122*** (0.058)	0.192 (0.468)	0.090* (0.049)	0.069 (0.378)																		
Caregiver's Spouse x 63	-0.216*** (0.045)	-0.446*** (0.222)	-0.168*** (0.046)	-0.185 (0.391)	0.233*** (0.057)	0.511* (0.274)	0.115** (0.048)	0.440* (0.224)																		
Caregiver's Spouse x 64	-0.194*** (0.046)	-0.926*** (0.191)	-0.179*** (0.046)	-0.616* (0.342)	0.107* (0.058)	0.807*** (0.236)	0.034 (0.048)	0.554*** (0.194)																		
Caregiver's Spouse x 65	0.021 (0.046)	-0.202 (0.204)	-0.011 (0.047)	0.023 (0.381)	0.072 (0.059)	0.386 (0.252)	-0.005 (0.050)	0.193 (0.216)																		
Caregiver's Spouse x 66	-0.055 (0.052)	0.140 (0.357)	-0.010 (0.050)	0.430 (0.521)	0.092 (0.065)	-0.155 (0.441)	-0.029 (0.053)	-0.165 (0.342)																		
Caregiver's Spouse x 67	0.030 (0.052)	0.129 (0.202)	0.063 (0.051)	0.142 (0.314)	0.047 (0.066)	0.056 (0.249)	-0.060 (0.054)	0.112 (0.193)																		
Caregiver's Spouse x 68	0.022 (0.056)	0.231 (0.236)	0.029 (0.055)	0.688 (0.434)	-0.114 (0.071)	0.226 (0.291)	-0.133** (0.057)	-0.007 (0.246)																		
Caregiver's Spouse x 69	0.041 (0.059)	0.049 (0.309)	0.008 (0.058)	0.040 (0.419)	0.001 (0.074)	0.050 (0.382)	-0.024 (0.061)	0.079 (0.293)																		
Caregiver's Spouse x 70	0.052 (0.060)	0.143 (0.230)	0.062 (0.058)	0.328 (0.334)	-0.027 (0.077)	0.423 (0.284)	-0.117* (0.061)	-0.453*** (0.146)																		
Observations	7081	7081	7081	6975	7081	7081	7081	7081	7081	7081	7081	7081	7081	7081	7081	7081	7081	7081	7081	7081	7081	7081	7081	7081	7081	
Cragg-Donald statistic		6.336		0.730		6.336		5.171		14.611		0.451		14.611		13.824		14.611		0.451		14.611		0.451		

Standard errors in parentheses, p-values—*** p<0.01, ** p<0.05, * p<0.1. Additional controls included in all regressions.

Table A.7: Heterogeneity: No college education only

	Married						Single										
	Claimed			FT Employed			Claimed			FT Employed							
	OLS	IV	FE	FE-IV	OLS	IV	FE	FE-IV	OLS	IV	FE	FE-IV	OLS	IV	FE	FE-IV	
Caregiver x 62	0.004 (0.038)	-0.579*** (0.211)	0.018 (0.041)	-0.071 (0.395)	-0.070 (0.049)	0.512* (0.273)	0.002 (0.045)	0.164 (0.287)	0.044 (0.052)	-0.084 (0.118)	0.024 (0.055)	-0.018 (0.143)	-0.068 (0.069)	0.100 (0.155)	-0.059 (0.064)	0.200* (0.106)	
Caregiver x 63	0.147*** (0.037)	0.517*** (0.173)	0.105*** (0.038)	0.608** (0.262)	-0.075 (0.048)	-0.329 (0.223)	0.026 (0.042)	-0.111 (0.177)	0.143*** (0.052)	-0.053 (0.113)	0.083 (0.055)	0.058 (0.193)	-0.187*** (0.068)	-0.112 (0.149)	-0.161** (0.064)	-0.332*** (0.112)	
Caregiver x 64	0.003 (0.040)	0.067 (0.266)	-0.002 (0.041)	0.297 (0.381)	-0.049 (0.052)	0.237 (0.344)	-0.025 (0.045)	0.276 (0.270)	-0.028 (0.050)	0.113 (0.128)	-0.037 (0.053)	0.113 (0.169)	-0.032 (0.066)	0.259 (0.169)	-0.055 (0.062)	0.270** (0.121)	
Caregiver x 65	-0.001 (0.040)	0.054 (0.189)	-0.010 (0.041)	0.154 (0.309)	-0.002 (0.051)	-0.356 (0.244)	0.043 (0.045)	-0.433** (0.204)	-0.099** (0.047)	-0.123 (0.089)	-0.096* (0.052)	-0.089 (0.165)	-0.024 (0.062)	-0.033 (0.117)	-0.086 (0.060)	-0.109 (0.093)	
Caregiver x 66	0.004 (0.046)	-0.051 (0.215)	-0.017 (0.045)	0.364 (0.323)	-0.069 (0.059)	0.356 (0.278)	-0.038 (0.050)	0.358 (0.221)	0.011 (0.052)	0.086 (0.097)	0.012 (0.054)	0.143 (0.124)	0.030 (0.069)	-0.110 (0.128)	-0.021 (0.063)	-0.059 (0.088)	
Caregiver x 67	-0.014 (0.050)	-0.071 (0.233)	0.015 (0.050)	-0.229 (0.376)	0.027 (0.065)	0.001 (0.301)	0.024 (0.056)	0.168 (0.246)	0.023 (0.060)	-0.076 (0.167)	-0.034 (0.068)	0.053 (0.263)	-0.056 (0.079)	-0.158 (0.221)	-0.034 (0.079)	-0.201 (0.168)	
Caregiver x 68	0.009 (0.049)	-0.058 (0.272)	0.031 (0.048)	0.253 (0.351)	0.039 (0.063)	0.465 (0.351)	0.023 (0.053)	0.465* (0.264)	0.024 (0.059)	-0.033 (0.102)	-0.042 (0.065)	0.043 (0.133)	0.005 (0.078)	-0.124 (0.135)	0.047 (0.075)	-0.112 (0.087)	
Caregiver x 69	0.002 (0.061)	-0.112 (0.272)	-0.009 (0.061)	-0.008 (0.354)	-0.089 (0.079)	0.434 (0.352)	-0.016 (0.067)	0.402 (0.267)	0.017 (0.057)	0.012 (0.109)	0.004 (0.064)	0.053 (0.162)	-0.074 (0.075)	-0.183 (0.143)	-0.026 (0.074)	-0.189* (0.108)	
Caregiver x 70	-0.004 (0.059)	-0.076 (0.257)	-0.013 (0.058)	0.124 (0.341)	-0.000 (0.076)	0.335 (0.332)	-0.013 (0.064)	-0.069 (0.199)	0.007 (0.087)	-0.011 (0.224)	0.004 (0.097)	0.466 (0.287)	0.039 (0.115)	-0.228 (0.295)	0.170 (0.112)	-0.044 (0.144)	
Caregiver's Spouse x 62	0.007 (0.038)	0.335 (0.205)	-0.002 (0.041)	0.152 (0.351)	0.110** (0.049)	-0.186 (0.265)	0.043 (0.045)	-0.037 (0.274)									
Caregiver's Spouse x 63	-0.154*** (0.037)	-0.813*** (0.183)	-0.111*** (0.038)	-0.683*** (0.228)	0.074 (0.048)	0.635*** (0.236)	0.009 (0.042)	0.226 (0.179)									
Caregiver's Spouse x 64	-0.006 (0.040)	-0.243 (0.255)	0.006 (0.041)	-0.297 (0.338)	0.096* (0.052)	-0.017 (0.330)	0.059 (0.046)	-0.121 (0.258)									
Caregiver's Spouse x 65	-0.002 (0.040)	-0.068 (0.176)	0.004 (0.041)	-0.094 (0.245)	0.031 (0.052)	0.520** (0.228)	0.014 (0.046)	0.544*** (0.189)									
Caregiver's Spouse x 66	-0.006 (0.046)	0.023 (0.208)	0.036 (0.045)	-0.162 (0.278)	0.103* (0.059)	-0.082 (0.269)	0.039 (0.050)	-0.279 (0.210)									
Caregiver's Spouse x 67	0.020 (0.048)	0.087 (0.215)	-0.031 (0.048)	0.179 (0.292)	-0.019 (0.062)	0.036 (0.278)	0.002 (0.053)	-0.072 (0.221)									
Caregiver's Spouse x 68	-0.009 (0.048)	0.045 (0.261)	-0.012 (0.047)	-0.121 (0.304)	-0.026 (0.062)	-0.299 (0.338)	-0.066 (0.052)	-0.433* (0.246)									
Caregiver's Spouse x 69	0.004 (0.059)	0.138 (0.252)	0.012 (0.059)	0.014 (0.284)	0.058 (0.077)	-0.435 (0.325)	0.004 (0.066)	-0.387 (0.246)									
Caregiver's Spouse x 70	0.014 (0.059)	0.089 (0.239)	0.047 (0.058)	-0.021 (0.282)	0.008 (0.077)	-0.197 (0.309)	-0.055 (0.064)	0.004 (0.174)									
Observations	9675	9675	9675	9467	9675	9675	9675	16332	3582	3582	3582	3377	3582	3582	3582	8576	
Cragg-Donald statistic		12.629		1.584		12.629		6.787		56.959		9.880		56.959		36.392	

Standard errors in parentheses, p-values—*** p<0.01, ** p<0.05, * p<0.1. Additional controls included in all regressions.

Table A.8: Robustness: Personal caregiving only

	Married												Single													
	Claimed				FT Employed				Claimed				FT Employed				Claimed				FT Employed					
	OLS	IV	FE	FE-IV	OLS	IV	FE	FE-IV	OLS	IV	FE	FE-IV	OLS	IV	FE	FE-IV	OLS	IV	FE	FE-IV	OLS	IV	FE	FE-IV		
Caregiver x 62	0.085** (0.042)	0.511 (0.747)	0.048 (0.043)	-0.758 (1.040)	-0.193*** (0.054)	-0.218 (0.851)	-0.151*** (0.046)	0.185 (0.730)	0.029 (0.055)	-0.221 (0.250)	-0.008 (0.058)	0.112 (0.319)	-0.101 (0.073)	0.173 (0.330)	-0.016 (0.066)	0.509** (0.258)										
Caregiver x 63	0.130*** (0.042)	1.282** (0.525)	0.109** (0.043)	0.685 (0.875)	-0.026 (0.054)	-1.153* (0.598)	0.033 (0.047)	-0.443 (0.463)	0.042 (0.062)	-0.490* (0.293)	0.028 (0.064)	-0.194 (0.463)	-0.085 (0.082)	0.186 (0.388)	-0.180** (0.072)	-0.332 (0.345)										
Caregiver x 64	0.143*** (0.041)	1.551** (0.620)	0.122*** (0.041)	0.605 (0.696)	-0.139*** (0.053)	-0.990 (0.706)	-0.080* (0.044)	-0.296 (0.471)	0.024 (0.064)	-0.203 (0.381)	0.024 (0.064)	0.327 (0.379)	-0.125 (0.085)	0.670 (0.504)	-0.088 (0.072)	0.910*** (0.335)										
Caregiver x 65	-0.029 (0.041)	0.151 (0.372)	-0.043 (0.041)	0.184 (0.752)	0.017 (0.052)	-0.697 (0.424)	0.065 (0.044)	-0.510 (0.349)	0.003 (0.053)	0.156 (0.336)	-0.007 (0.055)	0.323 (0.445)	-0.028 (0.070)	0.247 (0.445)	-0.096 (0.062)	0.052 (0.397)										
Caregiver x 66	0.084* (0.049)	-0.240 (1.065)	0.038 (0.048)	-0.802 (1.208)	-0.080 (0.062)	0.810 (1.213)	0.021 (0.051)	1.613* (0.826)	0.005 (0.059)	0.333* (0.191)	0.035 (0.059)	0.313 (0.215)	-0.145* (0.078)	-0.271 (0.252)	-0.135** (0.067)	0.065 (0.187)										
Caregiver x 67	-0.056 (0.055)	-0.304 (0.689)	-0.052 (0.055)	-0.415 (1.054)	0.069 (0.071)	0.021 (0.785)	0.049 (0.059)	0.302 (0.595)	-0.002 (0.061)	0.433 (0.976)	0.030 (0.064)	0.343 (0.795)	0.048 (0.081)	-0.030 (1.290)	-0.035 (0.072)	0.069 (0.951)										
Caregiver x 68	-0.050 (0.050)	-0.321 (0.620)	-0.016 (0.049)	-0.775 (0.700)	-0.000 (0.064)	0.347 (0.706)	0.075 (0.053)	0.834* (0.473)	0.024 (0.061)	0.013 (0.217)	0.028 (0.064)	-0.030 (0.248)	0.018 (0.081)	-0.263 (0.286)	-0.081 (0.072)	-0.173 (0.196)										
Caregiver x 69	-0.010 (0.057)	-0.001 (0.797)	-0.002 (0.057)	0.187 (0.968)	0.061 (0.073)	0.511 (0.908)	0.078 (0.061)	0.568 (0.659)	0.017 (0.061)	0.070 (0.280)	0.016 (0.063)	0.026 (0.246)	-0.056 (0.081)	-0.263 (0.371)	0.013 (0.072)	-0.049 (0.239)										
Caregiver x 70	-0.021 (0.054)	0.018 (0.476)	-0.005 (0.052)	0.319 (0.505)	0.043 (0.069)	0.044 (0.543)	0.059 (0.056)	0.152 (0.251)	0.020 (0.073)	0.048 (0.258)	0.028 (0.077)	0.167 (0.272)	0.031 (0.097)	-0.054 (0.341)	-0.058 (0.087)	0.679** (0.335)										
Caregiver's Spouse x 62	-0.012 (0.041)	-1.792** (0.886)	-0.013 (0.041)	1.223 (1.510)	0.141*** (0.053)	1.361 (1.010)	0.152*** (0.045)	-0.084 (0.873)																		
Caregiver's Spouse x 63	-0.089** (0.040)	-2.733*** (0.573)	-0.088** (0.042)	-0.258 (0.842)	0.047 (0.052)	2.468*** (0.653)	0.044 (0.045)	0.694 (0.494)																		
Caregiver's Spouse x 64	-0.062 (0.040)	-2.957*** (0.749)	-0.088** (0.040)	-0.559 (0.878)	0.052 (0.051)	2.392*** (0.853)	0.061 (0.043)	0.770 (0.578)																		
Caregiver's Spouse x 65	0.022 (0.041)	-0.301 (0.378)	0.015 (0.042)	0.507 (1.518)	-0.008 (0.053)	1.060** (0.430)	-0.055 (0.045)	0.462 (0.332)																		
Caregiver's Spouse x 66	-0.065 (0.048)	0.230 (0.885)	-0.031 (0.047)	1.853** (0.918)	0.042 (0.061)	0.380 (1.009)	0.032 (0.051)	-1.378** (0.679)																		
Caregiver's Spouse x 67	0.060 (0.055)	0.327 (0.593)	0.031 (0.054)	0.845 (1.714)	-0.084 (0.070)	0.231 (0.675)	-0.046 (0.058)	-0.253 (0.508)																		
Caregiver's Spouse x 68	0.015 (0.050)	0.365 (0.544)	0.024 (0.049)	1.527*** (0.588)	0.009 (0.064)	0.223 (0.620)	-0.024 (0.053)	-0.946** (0.437)																		
Caregiver's Spouse x 69	0.014 (0.050)	0.193 (0.468)	0.007 (0.050)	0.214 (0.475)	-0.035 (0.064)	-0.338 (0.533)	-0.079 (0.054)	-0.696* (0.373)																		
Caregiver's Spouse x 70	0.023 (0.050)	0.286 (0.404)	0.055 (0.049)	0.671* (0.370)	-0.002 (0.064)	0.399 (0.460)	-0.128** (0.053)	-0.800*** (0.219)																		
Observations	16755	16755	16755	16441	16755	16755	16755	28918	5819	5819	5819	5486	5819	5819	5819	13711										
Cragg-Donald statistic		3.208		0.525		3.208		2.420		2.524		1.999		2.524		3.572										

Standard errors in parentheses, p-values—*** p<0.01, ** p<0.05, * p<0.1. Additional controls included in all regressions.

Table A.9: Robustness: Chore care only

	Married						Single									
	Claimed			FT Employed			Claimed			FT Employed						
	OLS	IV	FE	FE-IV	OLS	IV	FE	FE-IV	OLS	IV	FE	FE-IV	OLS	IV	FE	FE-IV
Caregiver x 62	0.005 (0.031)	-0.311 (0.207)	0.027 (0.033)	0.213 (0.394)	-0.145*** (0.040)	0.364 (0.263)	-0.074** (0.036)	-0.039 (0.252)	0.029 (0.038)	-0.071 (0.078)	0.035 (0.041)	0.014 (0.116)	-0.036 (0.051)	0.056 (0.104)	-0.039 (0.046)	0.124* (0.073)
Caregiver x 63	0.200*** (0.029)	0.273*** (0.131)	0.155*** (0.030)	0.386* (0.217)	-0.162*** (0.037)	-0.231 (0.166)	-0.076*** (0.032)	-0.182 (0.131)	0.055 (0.041)	-0.144* (0.085)	0.016 (0.043)	-0.085 (0.163)	-0.051 (0.054)	0.053 (0.113)	-0.125** (0.049)	-0.142* (0.084)
Caregiver x 64	0.076** (0.033)	0.342* (0.187)	0.083** (0.033)	0.492 (0.306)	-0.103** (0.042)	-0.152 (0.237)	-0.037 (0.035)	-0.196 (0.190)	0.007 (0.042)	-0.050 (0.091)	-0.017 (0.044)	0.072 (0.129)	-0.067 (0.056)	0.162 (0.121)	-0.095* (0.050)	0.195** (0.082)
Caregiver x 65	-0.007 (0.033)	0.111 (0.177)	-0.003 (0.034)	0.216 (0.305)	-0.080* (0.042)	-0.505** (0.225)	-0.018 (0.036)	-0.458*** (0.187)	0.015 (0.040)	0.067 (0.091)	0.025 (0.043)	0.064 (0.176)	-0.015 (0.053)	0.074 (0.121)	-0.080* (0.048)	-0.031 (0.090)
Caregiver x 66	0.029 (0.037)	-0.062 (0.204)	0.016 (0.036)	0.189 (0.297)	-0.072 (0.047)	0.412 (0.260)	0.007 (0.039)	0.266 (0.198)	0.019 (0.044)	0.176* (0.098)	0.019 (0.046)	0.166 (0.136)	0.032 (0.059)	-0.137 (0.130)	-0.037 (0.052)	-0.014 (0.083)
Caregiver x 67	0.003 (0.038)	-0.108 (0.163)	0.011 (0.038)	-0.021 (0.258)	-0.037 (0.048)	0.009 (0.207)	-0.020 (0.041)	0.011 (0.161)	0.020 (0.046)	0.047 (0.101)	0.005 (0.050)	0.068 (0.176)	-0.025 (0.061)	-0.004 (0.134)	-0.063 (0.057)	-0.060 (0.096)
Caregiver x 68	-0.001 (0.042)	-0.115 (0.183)	0.011 (0.041)	-0.054 (0.275)	0.098* (0.053)	0.197 (0.232)	0.072 (0.044)	0.222 (0.181)	0.031 (0.052)	0.006 (0.126)	-0.005 (0.055)	-0.001 (0.182)	0.025 (0.069)	-0.155 (0.167)	-0.046 (0.062)	-0.137 (0.107)
Caregiver x 69	-0.015 (0.045)	-0.041 (0.257)	-0.019 (0.045)	0.259 (0.378)	-0.088 (0.058)	0.257 (0.327)	-0.025 (0.049)	0.149 (0.246)	0.007 (0.050)	0.028 (0.109)	0.030 (0.055)	0.035 (0.166)	-0.051 (0.067)	-0.106 (0.145)	-0.051 (0.062)	-0.060 (0.102)
Caregiver x 70	-0.014 (0.046)	-0.107 (0.217)	-0.027 (0.046)	0.009 (0.281)	-0.008 (0.061)	-0.097 (0.276)	0.044 (0.050)	0.129 (0.137)	0.018 (0.069)	0.033 (0.159)	-0.021 (0.076)	0.161 (0.232)	-0.001 (0.092)	-0.029 (0.211)	-0.102 (0.087)	0.166 (0.106)
Caregiver's Spouse x 62	-0.020 (0.031)	0.016 (0.210)	-0.030 (0.033)	-0.248 (0.407)	0.150*** (0.040)	-0.102 (0.267)	0.077** (0.036)	0.095 (0.256)								
Caregiver's Spouse x 63	-0.207*** (0.029)	-0.619*** (0.136)	-0.159*** (0.030)	-0.518*** (0.213)	0.171*** (0.037)	0.551*** (0.173)	0.074** (0.032)	0.322** (0.136)								
Caregiver's Spouse x 64	-0.076** (0.032)	-0.632*** (0.172)	-0.065*** (0.033)	-0.601*** (0.296)	0.120*** (0.041)	0.470** (0.219)	0.049 (0.035)	0.354** (0.179)								
Caregiver's Spouse x 65	0.000 (0.033)	-0.151 (0.176)	0.000 (0.034)	-0.177 (0.291)	0.081* (0.043)	0.597*** (0.224)	0.019 (0.037)	0.527*** (0.186)								
Caregiver's Spouse x 66	-0.012 (0.037)	0.079 (0.200)	0.024 (0.036)	-0.003 (0.298)	0.080* (0.047)	-0.139 (0.254)	-0.007 (0.039)	-0.218 (0.195)								
Caregiver's Spouse x 67	0.005 (0.038)	0.123 (0.157)	0.021 (0.037)	0.056 (0.235)	0.035 (0.048)	0.054 (0.200)	-0.014 (0.040)	0.067 (0.154)								
Caregiver's Spouse x 68	0.010 (0.040)	0.157 (0.187)	0.014 (0.040)	0.234 (0.285)	-0.098* (0.052)	-0.042 (0.238)	-0.088** (0.043)	-0.224 (0.186)								
Caregiver's Spouse x 69	0.030 (0.044)	0.092 (0.248)	0.021 (0.045)	-0.176 (0.341)	0.033 (0.057)	-0.265 (0.315)	-0.013 (0.048)	-0.166 (0.239)								
Caregiver's Spouse x 70	0.029 (0.046)	0.155 (0.208)	0.059 (0.045)	0.111 (0.279)	-0.020 (0.059)	0.182 (0.265)	-0.101** (0.048)	-0.247** (0.123)								
Observations	16745	16745	16745	16429	16745	16745	16745	28903	5816	5816	5816	5483	5816	5816	5816	13707
Cragg-Donald statistic		21.076		1.850		21.076		12.034		130.515		11.789		130.515		68.770

Standard errors in parentheses, p-values—*** p<0.01, ** p<0.05, * p<0.1. Additional controls included in all regressions.

Table A.11: Robustness: IV with subjective mortality probability

	Married				Single			
	Claimed		FT Employed		Claimed		FT Employed	
	IV	FE-IV	IV	FE-IV	IV	FE-IV	IV	FE-IV
Caregiver x 62	-0.702*** (0.267)	-0.653 (0.471)	1.031*** (0.378)	0.643** (0.293)	0.012 (0.079)	0.035 (0.140)	-0.131 (0.117)	0.084 (0.083)
Caregiver x 63	0.052 (0.144)	-0.037 (0.272)	-0.195 (0.204)	-0.237 (0.160)	-0.122 (0.102)	0.004 (0.199)	-0.135 (0.150)	-0.226** (0.110)
Caregiver x 64	0.760*** (0.176)	0.543** (0.265)	-0.341 (0.249)	-0.243 (0.180)	-0.015 (0.091)	-0.023 (0.164)	0.103 (0.135)	0.201** (0.091)
Caregiver x 65	-0.008 (0.129)	-0.313 (0.308)	-0.416** (0.182)	-0.404** (0.158)	0.005 (0.102)	0.050 (0.200)	0.083 (0.151)	0.046 (0.115)
Caregiver x 66	-0.023 (0.163)	-0.057 (0.278)	0.338 (0.231)	0.148 (0.166)	0.157 (0.097)	0.203 (0.170)	-0.171 (0.144)	-0.001 (0.090)
Caregiver x 67	-0.089 (0.150)	-0.387 (0.309)	-0.064 (0.213)	-0.101 (0.163)	-0.004 (0.095)	0.045 (0.184)	0.039 (0.140)	-0.002 (0.100)
Caregiver x 68	-0.116 (0.169)	-0.373 (0.372)	-0.046 (0.239)	-0.053 (0.177)	0.010 (0.094)	0.035 (0.216)	-0.103 (0.139)	-0.032 (0.090)
Caregiver x 69	-0.041 (0.209)	-0.192 (0.425)	0.265 (0.295)	-0.001 (0.229)	0.019 (0.081)	0.080 (0.145)	-0.077 (0.120)	-0.037 (0.084)
Caregiver x 70	-0.073 (0.160)	-0.269 (0.289)	-0.204 (0.226)	0.024 (0.139)	0.027 (0.133)	0.086 (0.228)	0.006 (0.197)	0.209** (0.102)
Caregiver's Spouse x 62	0.297 (0.289)	0.455 (0.526)	-0.590 (0.410)	-0.436 (0.320)				
Caregiver's Spouse x 63	-0.280** (0.126)	-0.159 (0.252)	0.391** (0.179)	0.352** (0.141)				
Caregiver's Spouse x 64	-1.127*** (0.172)	-0.871*** (0.286)	0.739*** (0.244)	0.518*** (0.182)				
Caregiver's Spouse x 65	-0.009 (0.135)	0.234 (0.317)	0.494*** (0.190)	0.449*** (0.162)				
Caregiver's Spouse x 66	0.057 (0.162)	0.216 (0.291)	-0.022 (0.230)	-0.026 (0.165)				
Caregiver's Spouse x 67	0.086 (0.148)	0.310 (0.295)	0.112 (0.209)	0.170 (0.161)				
Caregiver's Spouse x 68	0.146 (0.174)	0.437 (0.401)	0.132 (0.247)	0.103 (0.185)				
Caregiver's Spouse x 69	0.070 (0.205)	0.058 (0.390)	-0.231 (0.290)	0.034 (0.224)				
Caregiver's Spouse x 70	0.107 (0.154)	0.338 (0.302)	0.280 (0.217)	-0.089 (0.132)				
Observations	11362	10720	11362	22227	4260	3860	4260	11094
Cragg-Donald statistic	15.298	1.123	15.298	9.593	81.427	5.805	81.427	46.980

Standard errors in parentheses, p-values—*** p<0.01, ** p<0.05, * p<0.1. Additional controls included in all regressions.