Women Working Longer:
Labor Market Implications of Providing Family Care

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Introduction

The aging of the population brings with it a growing need for long-term care. This trend is exacerbated by increasing longevity; as individuals live longer, they face heightened risks of developing dementia and other disabilities that require long-term care. Formal long-term care is costly with nursing homes averaging approximately $90,000, and few Americans have long-term care insurance to help pay for this care. As a result, the vast majority of care is provided informally by family members. For married individuals, care is typically provided by a spouse, but for those who are unmarried children (typically daughters) provide most of the assistance. This caregiving can be an enormous burden on the caregiver—a burden measured not just in terms of the emotional stress and physical tasks borne by the caregiver, but very likely in the opportunity cost of the caregiver's time. Time spent caregiving may come at the expense of time in the labor force, the ability to invest in a career and experience wage growth, and the risk of having reduced or lost retirement benefits. With time out of the labor market, reduced wages, and lost benefits, these caregivers themselves may be far less prepared to finance their retirement future than they would have been absent such caregiving experience.

On a more macro level, the loss of skilled workers in the formal sector, as (primarily) women invest in caring for a parent or spouse, will hurt our productivity as a nation. This effect is compounded with the aging of the baby boom generation. We will be losing workers just at the time when population aging is putting more stress on the Social Security and Medicare programs and the economy, in general, needs more individuals in the labor force. Conversely, informal care may free up potential paid caregivers to do other work, perhaps work requiring more medical / health care training. Understanding the decisions regarding the provision of care to family members can help to ensure that resources are allocated efficiently.

Not only is the demand for long-term care in the U.S. projected to increase sharply over the coming decades, but the implicit cost to families of providing this care is also likely to increase. Coming generations of retirees will have fewer children than those that were responsible for the baby boom, so the burden of care will need to be shared by fewer siblings. Daughters, who traditionally provided much of the care, are increasingly likely to have strong attachments to the labor force, meaning that they have fewer non-work hours to devote to caregiving and that the cost of giving up hours of work is likely to be greater. Finally, divorce is more common, meaning that

even men, who traditionally relied on care from a spouse, may be unsupported in old age. Absent a spouse, children may again be called on to provide this care.

In the coming years, it is also likely that there will be changes in the Social Security and Medicare programs. These changes will require individuals to rely more on private savings and employer benefits to finance consumption during retirement. Caregiving obligations that impact employment will thus have important effects on well-being in retirement. Understanding decisions regarding caregiving, and the mechanisms that might alter these decisions, is thus paramount to understanding how coming generations, particularly generations of women, may be better prepared for retirement.

In this paper, we examine the relationship between caregiving and work. We use 10 waves of data from the Health and Retirement Study, spanning approximately 20 years, to follow the labor force trajectory of women who may potentially provide care for an elderly parent. Here we ignore caregiving for a spouse and focus exclusively on caregiving for elderly parents and parents-in-law because we anticipate that there are very different expectations and different consequences for spousal caregiving arrangements than for parents. Perhaps most obviously, spouses will share a home, so the cost of providing care is lessened. Similarly, because the age difference between spouses is unlikely to be more than a handful of years, we expect that most women (or men) will have already left the labor market when their spouse begins to need care.

We limit our sample to those women who are observed for the entire 21 year window of time and who are not providing care in the first wave of the survey. We find that 41 percent of our sample provided care for an elderly parent or parent-in-law, and 24 percent provided care for a spouse. Among those whom we observe to provide care to a parent, 21 percent of those who were working prior to caregiving left the labor force when they began providing care while 79 percent remained employed. Because of our exceptionally long window of observation, we are able to observe women who provided care who are no longer doing so. Of those who were not working while providing care, just 9 percent were observed to enter the labor force with the cessation of caregiving. We also find that caregiving is associated with lower earnings and a lower probability of working though most of the estimated effects are small in magnitude and statistically insignificant.

Our paper is organized as follows. The first section provides some background information on the role of informal care in the United States, and Section 2 describes our data in detail. In

Section 3, we illustrate patterns of caregiving over time looking at both departures from the labor force as well as reductions in hours and then at the potential return / increase in hours following care. Section 4 provides new work on the potential loss in wage rates and other forms of compensation such as health insurance and pension coverage. A final section concludes and offers avenues for future work.

I. Background

The need for long term care is already pervasive, and the demand is expected to increase sharply with the aging of the population. It is estimated that 69 percent of elderly individuals will need help with the Activities of Daily Living (ADLs) at some point.[2] Of these, one-fifth will require sustained assistance over a period of five or more years (Kemper et al., 2006). For the vast majority of individuals, this care will come from family members, primarily daughters and wives. Among those in the community receiving help with ADLs, 66 percent receive help exclusively from family members, 26 percent receive assistance from both family (informal) and paid (formal) care providers, and just 9 percent rely only on formal care (Doty, 2010). This reliance on informal care means that family members shoulder much of the burden. According to estimates from the American Association of Retired Persons (AARP) Public Policy Institute, in 2009, 42.1 million family members provided care at any given point in 2009, while a significantly greater number of individuals—61.6 million—provided care at some point over the course of the year (O'Shaughnessy, 2014).

The economic value of this care is immense. Reinhard, Houser, and Choula, (2011) estimate that the value of informal care in 2009 exceeded $450 billion. This figure is more than twice the estimated value of formal care and is equivalent to approximately 19 percent of national health care expenditures (O'Shaughnessy, 2014).[3] Thus, while there is great concern about the level and growth of health care expenditure in the United States, in ignoring the economic value of informal care, our official statistics are missing an important component of the true cost and thus underestimating the economic impact of health care costs for the elderly. Furthermore, because these imputations are calculated by simply multiplying the hours of care provided by an

[2] The activities of daily living (ADLs) include basic tasks such as bathing, eating, dressing, and toileting.

[3] According to the National Health Policy Forum (O'Shaughnessy, 2014), Americans spent $219 billion on paid long-term care for the elderly in 2012. In that year, this expenditure represented 9.3 percent of all U.S. personal health care spending. The value of informal care is not included in these figures.

hourly wage, we also likely underestimate the true economic cost borne by the caregivers. The National Association of Insurance Companies / American Council of Life Insurers reports that 10 percent of caregivers cut back on hours worked because of the demands of caregiving. This reduction would likely entail not just lost wages, but perhaps the loss of benefits like health insurance and / or a decline in wage growth. In addition, an estimated 6 percent of caregivers left paid work entirely, again losing benefits as well as likely taking a hit to wages should they return to the labor force after a spell of caregiving. Seventeen percent of caregivers take a leave of absence, which again has the potential for lost benefits, foregone earnings, and reduced wage growth and promotion potential. Finally, 4 percent turn down promotions, directly reducing wage growth in the near term and perhaps future opportunities for promotions as well. This latter figure is suggestive of a broader phenomenon in which caregivers invest less intensively in a job because of other responsibilities. They may do so in less obvious ways than by turning down promotions, such as by not volunteering for important / high visibility assignments, not putting in overtime to ensure that projects are done in a timely manner, or simply not accepting extra responsibility in the anticipation of greater wage increases in the future.

Complete departures from the labor force are relatively easily documented, and many researchers have examined labor market responses on this extensive margin (Ettner, 1996; Heitmueller, 2007; Lo Sasso 2006; Bolin et al., 2008; Carmichael, et al, 2010; Van Houtven et al. 2013). It is far more difficult to measure a reduction in effort on the job, or even often a reduction in hours. Johnson and Lo Sasso (2006) find that those women who provide care to an elderly parent care reduce hours of work by approximately 40 percent. With such sizable reductions can come a loss of benefits on the job—particularly health insurance and / or pension contributions, and a loss of wage growth. A loss of benefits likely has implications for financial security in old age. Because the burden of care is borne primarily by women, these losses could help explain the much higher poverty rates for older women relative to men.

II. Data

Our data come from the Health and Retirement Study (HRS). The HRS is a panel study that is approximately representative of the United States population ages 51 or older and their spouses and partners. The first cohort consists of those individuals born in 1931-1942 who were first

interviewed in 1992 and have been interviewed biennially thereafter.[4] In 1998, three additional cohorts consisting of older and younger groups were added to make the sample approximately representative of the target population. Refresher cohorts were added in 2004 and 2010 to fill in the population ages 51-56 as respondents aged out of that bracket. Because spouses and partners are interviewed, regardless of age, there are individuals younger than 51 in the survey. We include these individuals in our sample to maximize sample size. The HRS also oversamples individuals in heavily black and Hispanic neighborhoods, so we use weights to correct for the oversampling.[5]

We limit our sample to those in the first HRS cohort who had living parents or parents-in-law when they were first interviewed but who were not providing care at the initial interview. These individuals were approximately ages 51-61 at the time of the 1992 interviews. As Figure 1 illustrates, caregiving for parents peaks in the mid-50s and falls off thereafter. (Caregiving for a spouse, while important, does not become a widespread phenomenon until the mid-60s, by which time many of these women have already left the labor force.) For our cohort of women, we have data from 1992 to 2010, so we can observe caregiving and labor market behavior over a 20 year period. In order to maintain a constant window of observation, we require that those in our sample be observed throughout this time. After this final restriction, we are left with a sample of 2,325 women. Although not shown here, we have repeated our analyses with larger samples that draw on observations from other cohorts. Our conclusions are similar. We have chosen to restrict that analysis to the sample described above because it is more straightforward to present the results when the period of observation does not vary across the sample and when women can be observed over many years.

Figure 2 illustrates the cumulative burden of care, examining the fraction of women ever providing a particular type of care by age. By the mid-60s, close to 40 percent of women in our sample will have provided care to a parent or parent in-law. If we include care to a spouse, then, eventually more than half of all women in our sample will have provided some care.

The means of a set of demographic and economic variables for our sample are presented in Table 1. Using one observation per individual, we show the means and standard errors for the

[4] In 1993, an older AHEAD cohort was added to the sample consisting of those individuals born in 1923 or earlier and their spouses or partners. Because of their advanced age, few have living parents, even in the initial years of the survey, so we do not include them here.

[5] Individuals outside the target age range have zero person weights. We therefore use household weights in lieu of individual weights so we can include the younger women in the analysis. Our conclusions are similar when we use an unweighted sample. See http://hrsonline.isr.umich.edu/ for additional information on the HRS.

sample as a whole and separately for those women who ever provided care during the sample period and those who did not. The average age of our respondents is 52, and 83 percent are married. While 41 percent of the sample has just a high school education, 24 percent attended some college, and 19 percent have college degrees. The differences by caregiving status in these demographic variables are small, and the only significant difference is by race, with whites being two percentage points less likely to provide care. Perhaps surprisingly, across all economic variables, including income and wealth, and job characteristics, such as whether the women are covered by their own employer-provided insurance or have access to a pension at their current job, the samples of caregivers and non-caregivers are statistically indistinguishable. The groups do differ significantly, however, in terms of family structure and parental need. The women who become caregivers have more living parents and parents-in-law and fewer siblings, and sisters in particular, at baseline.

Those providing care at some point in the survey are slightly less likely to be working at some point, but the difference is neither economically not statistically significant. Caregivers and non-caregivers are equally likely to be working at their first interview, and the same proportion of both groups report working full-time at baseline. Over the time period covered by our data, the labor force participation rate for women 50-55 hovers just below 75 percent while that for women 45-50 is between 75 and 80 percent depending on year. Among the women in our sample, 81 percent work at some point over the 20 year period in which we observe them, which is slightly higher than national statistics, though only 68 percent are working when they are first interviewed.

Those employed also appear to be in jobs that are representative at least in terms of the benefits available. Fifty-one percent of our sample has health insurance on the job compared to national averages of 55 percent (Kaiser Family Foundation, http://files.kff.org/attachment/ehbs-2014-abstract-summary-of-findings). At baseline, those providing care are more likely to have employer-provided health insurance and pensions, but again, these differences are not significantly different from zero.

The descriptive results in Table 1 appear to belie the standard economic intuition that the women who choose to care for a parent or in-law would be those that have a lower opportunity cost than the women who choose not to provide care. In terms of education, income, wealth, and baseline employment and job characteristics, these groups are statistically indistinguishable. Selection into caregiving on unobservables remains possible, of course, so a careful econometric analysis is still necessary. Yet the fact that selection is not apparent in any observable work-related

differences is interesting. It is also apparent from Table 1 that selection is occurring on the basis of family composition and parental need. As these characteristics are plausibly orthogonal to labor force attachment except through their effect on caregiving, they represent a set of potential instruments for caregiving that we exploit in our regression analysis below.

Caregiving in our sample is defined as an affirmative response to the question:

Did you (or your husband / wife / partner) spend a total of 100 or more hours (since the previous wave / in the last two years) helping your (parents / mother / father) with basic personal activities like dressing, eating and bathing?"

The 1992 and 1994 interviews asked about assistance provided over the previous 12 months while later interviews asked about care in the time between waves or the previous two years.[6] Similarly, in all interview waves except 1994, respondents were asked to report caregiving that exceeded a total of 100 hours. In 1994 the cut-off point was 50 hours. We see an expected spike in the likelihood of caregiving in 1994 (not shown). We have not yet corrected the data for the difference in left censoring.

The mean number of hours among those providing care is approximately 670 over two years. The caregiving question asks about care since the previous interview, but not when the care began or ended. We thus do not know the period of time over which the 670 hours were distributed. It could be over as much as two years, or simply over an intensive month wherein a parent, perhaps recovering from something like hip replacement surgery, required around-the -clock care. For those who report providing care in several waves, we can assume that the care was continuous when care was provided in both the proceeding and subsequent waves.[7] If care is provided for two years, the burden is approximately 28 hours per month or more than 6 hours per week, a significant amount. If, however, it is shorter, for a period of say 6 months, then the amount is nearly 26 hours per week, a substantial burden in terms of time.

III. Descriptive Analysis

[6] The median time between interviews is two years, so the questions generally refer to caregiving over a period of approximately two years.

[7] Note that in going forward, were we to include spouses, we would have another source of information on the duration and type of care from the interview of the spouse. For survey respondents who receive personal care, we can observe the number of interviews in which care is received and also the number of hours in a "typical" month between interviews.

Here we examine the probabilities of transitioning into and out of caregiving. In each of these cases we focus on the "cost" of providing care in terms of reduced labor market activity. We ask how hours of work are reduced (including complete departures from the labor market), whether eligibility / availability of benefits change, and what characteristics of the respondent, her family, or her job are associated with these changes.

Caregiving and Work Transitions: In Table 2, we stack our data with one observation for each respondent-year and then examine the likelihood of transitioning into or out of caregiving between time t and t+1. We report both the number of such transitions (the top number in each cell) and the percent. We find nearly an equal number of transitions into and out of caregiving with 1,163 movements from not caregiving to caregiving and 1,053 in the other direction. Because the vast majority of respondents are not providing care at any given time, the probability of transiting to caregiving is small, with just 6 percent of those not caregiving at time t doing so at time t+1. Conversely, the movement out of caregiving, while similar in absolute terms, is a large fraction of those actually providing care. Among the 1,569 observations in the caregiving state at time t, just 33 percent continue to provide care at time t+1. Time in the HRS is measured in two year periods, so the high number transiting out across periods could still have provided care for a relatively long period of calendar time.

In terms of our analysis, the large number of transitions allows us to examine changes in labor market characteristics coincident (or nearly so) with the commencement or cessation of caring. In Table 3, we examine concurrent changes in labor force participation. We find that, among those who were working prior to initiating a caregiving spell—i.e. moving from not caregiving to caregiving—79 percent continue working when they begin caregiving, and 21 percent exit the labor force. Interestingly, these figures are similar to those for individuals who did not make any transition into or out of caregiving. Among individuals who did not provide care in either time t or time t+1, 81 percent of those employed at time t remained employed at t+1. At the end of caregiving spell, we find that just 9 percent of those who were not working while they provided care re-enter the labor force.

In Table 4 we look at the length of a spell of caregiving. As noted above, our measure of elapsed time is imperfect because our measure of whether the respondent is providing care is taken at a point in time and measured just once every two years. We therefore report the amount of care

as the number of interviews in which caregiving is reported. Note that these need not be consecutive waves. We see that 56 percent of caregivers report providing care at only a single interview, meaning that they provide care for up to two years. Still, many women provide care for a much longer period. Twenty-six percent report providing care at 2 interviews, 11 percent at 3 interviews, and 7 percent at 4 or more interviews. In the second column, we take the longest number of consecutive reports for each women (excluding those with zero reports) and show the distribution of the length of the longest spell measured in interviews. The results suggest that much of the caregiving takes place in consecutive interviews.

Table 5 further breaks down the distribution of transitions and caregiving spells. Over the interviews we observe, we find a large number of transitions between states. Although 19 percent of the sample never alters their caregiving / work status, 24 percent of the sample experiences one transition, 20 percent experiencing two, and 37 percent experiencing three or more transitions. On the distribution of caregiving spells, defined as consecutive reports of caregiving, we find that 81 percent of caregivers experience only a single spell, meaning that nearly a fifth have multiple, distinct instances of caregiving. Though we find that, for most caregivers, 66 percent, the duration of their longest caregiving spell is a single interview, we caution that this could still represent up to two years of care provision. And much longer durations are also common: 23 percent of caregivers are seen providing care at two consecutive interviews, and 11 percent provide care for three or more consecutive interviews.

We are particularly interested in learning whether women who began caregiving were initially working, and if so, whether they left employment or continued with both responsibilities. Similarly, for those who left the caregiving state, we ask if they begin employment, continue with employment, or simply find other uses for their time. Because the women in our sample are in their 50s, and approaching retirement age, they may not re-enter the labor market if they had been out for a period of time.

In Table 6 we divide the categories further to examine changes in both working and caregiving. We divide the sample into four groups at time t: working only, caregiving only, both working and caregiving, and doing neither, and examine the probability of being in any of those states in the following period. While we saw that transitions out of caregiving were common, other transitions are far less so. Eighty-six percent of those who are neither working nor caregiving remain in the state in the subsequent period. Eight percent of these women begin work (either

alone or in concert with caregiving) and 5 percent were just providing care. Among those who are working only at time t, continuing in that mode is again the most likely outcome: 76 percent continue to be working only at the next wave, 17 percent stop work and do not provide care, 5 percent add caregiving to their work status, and just 1 percent stop work and take up caregiving instead. In contrast, among those who were caregiving only at time t, only 30 percent continue in this state with 60 percent stopping providing care but are not taking up employment, 6 percent moving to work only and just 4 percent adding work to the caregiving tasks. Finally for those both working and caregiving, the largest percentage, 53 percent stops providing care and is working only on the next period. Twenty-five percent continue to do both and 15 percent do neither. Seven percent stop working but continue to provide care.

The movement out of caregiving does not necessarily indicate that the parent no longer needs care but could instead indicate a transition to formal care wherein the respondent turns to work to finance the cost of such care. Alternatively, it could indicate that a sibling or other individual has stepped in to provide informal support.

*Changes in Employment Characteristics***:** Although the assumption of caregiving duties may not result in wholesale departures from the labor market, other dimensions related to work may be affected. In Table 7, we examine the associated changes in wages, hours worked, and health insurance and pension coverage that occur at the time of caregiving and work status transitions between times t and t+1.

As Table 7 shows, among those initially working, there is a decline in hours over time across categories as we would expect with the aging of the sample and the fall in labor market participation beginning in the mid to late 50s (in the column labeled "All"). Weekly hours worked among all outcome groups fell by 6.37. Among those who are working at time t, 76 percent are still working only but weekly hours decline by 0.71 hours. Those who continue to work but take up caregiving have a fall in hours of 2.26, a fall approximately three times as great as those who do not take-up caregiving. With a mean level of 36.6 hours per week, a 2.26 drop is equivalent to 7 percent. Perhaps even more telling, 66 percent were working full time (defined at 35 hours or more) in time t and just 62 percent are working full time after caregiving. Mean hours of care provided by those who continue to work is 508, spread over as much as a two year period. This corresponds to roughly 5 hours per week which is over twice the fall in hours worked, indicating

that these women must also be cutting back on hours of leisure or home production. It is also worth noting that the number of hours of care supplied by those who are both working and providing care is approximately two-thirds of that provided by those who leave work completely. In terms of benefits, those who leave the labor market completely were less likely to have a pension or to have employer provided health insurance and had lower earnings than those who keep their job—$27,100 versus $32,300, a difference of 20 percent. The opportunity cost of a departure from the labor force could thus be seen as less costly for the women who choose to exit the labor force at the onset of a caregiving spell.

The second group of interest is those who are providing care and not working. We look to see whether a cessation of caregiving is associated with labor market entry. Among those who are caregiving only 6 percent exit to work only and 4 percent combine work and caregiving. Among the former, hours worked in the second period is 23 hours per week, while those who move to both work *and* caregiving are actually working more, 27.5 hours (although the difference is not statistically significant).

For those who were both working and caregiving, among those who cease caregiving and remain working, hours decrease only marginally (0.61 hours per week) less than the change in hours for those who were only working over both periods. (Recall that the decline in hours for this group was 0.71.) Those who switched to working only or remained working and caregiving had substantially higher earnings than those who switched to caregiving only. These results suggest that the opportunity cost of time is an important factor in the caregiving decision.

In Table 8, we take a longer view and look at changes in these variables over a 20 year period from initial work / caregiving arrangement to the status at the end of the sample window for those who ever provided care and those who did not. In 2010, we find that many more of the non-caregivers, 77 percent, are neither working nor providing care, compared to only 68 percent of the caregivers. At the same time, roughly the same number of caregivers and non-caregivers remain in the labor force. Yet while labor force participation is similar between the two groups, among those who are working, many fewer caregivers are working full-time—32 percent versus 43 percent of non-caregivers—and earnings among caregivers is significantly lower—$25,000 versus the $30,800 average among non-caregivers. In spite of these differences, job characteristics between the groups, in terms of employer-provided insurance and pensions, are not statistically different. Moreover, the two groups have similar household income and assets. From the table it

is clear that caregiving has affected the labor market outcomes of caregivers. However, despite the burden of caregiving, it is not obvious that the long-term financial well-being of caregivers is any lower than that of non-caregivers.

IV. Regression Analyses

Tables 7 and 8 illustrated a number of changes associated with caregiving. Here we focus on changes in labor force participation and earnings, and we turn to a regression analysis to control for as many factors as possible. Our regression controls include age and age squared; dummy variables for different levels of education attainment; the interaction of age and these education dummies to allow for changes over time in the importance / prevalence of various levels of schooling; indicators for race, ethnicity, and poor health; number of children, spousal earnings; other non-labor income; household assets; and dummy variables for each survey year.

In estimating the effect of caregiving on these outcomes, it is obvious that caregiving is not exogenous (e.g. a daughter does not invest heavily in a job because she knows she will likely need to leave employment to care for an elderly parent) so we employ a Two-Stage Least Squares strategy. We use indicators for whether the mother, father, mother-in-law and father-in-law need help with personal care, the number of siblings, and number of sisters as well as siblings-in-law and sisters-in-law. These variables should likely all affect the probability a respondent will provide care for a parent / parent-in-law, but ought not to have a direct effect on labor market behavior. Our R-squared (F-statistic) for the first stage is 0.14 (79). Need of the parents / parents-in-law are important predictors as are the number of sisters and number of sisters-in-law. The total number of siblings has no effect when the number of sisters is included.

In Table 9, we begin by showing the factors correlated with the provision of care to an elderly parent. The strongest predictor of the provision of care is parental need. The coefficients on variables denoting that a parent needs help are all significant.[8] Each sister decreases the probability of providing care, but additional siblings, as a whole, do not, again providing evidence that daughters are the primary caregivers. Higher (non-labor) income respondents and white respondents are also less likely to provide care. Relative to those who never complete high school

[8] We view these results with a grain of salt as individuals who are not providing care to a parent may be hesitant to admit that the parent needs care. Similarly, a parent who does not have access to care may manage on her own, while a parent who has a child who can provide help on occasion, will come to rely on this assistance. The direction of causality may thus be suspect.

(the omitted category), more education women provide more care to their parents and in-laws though this effect declines with age. Among the groups who completed high school, there is no further difference by educational attainment.

Table 10 shows the estimated coefficients for the effect of caregiving on employment. In simple OLS regressions, caregiving reduces the probability of being employed by 2.3 percent on a mean probability of 47.3 percent. When we use 2SLS the effect increases by approximately 50 percent to 5.7 percent. Our finding of 2SLS estimates that are larger in magnitude than the OLS estimates (though not statistically) is at odds with our intuition that OLS would overstate the magnitude of caregiving's effect on work. The conventional story is that women who go on to provide care were those who were less attached to the labor force to begin with. These women would have worked less even absent caregiving responsibilities, and in fact, it is their weak attachment to the labor force that leads them to become caregivers. This line of reasoning would suggest that OLS estimates would be biased upwards and therefore should be smaller than 2SLS estimates, contrary to what we find.

Because we have multiple observations per respondent, we can use a fixed effects analysis and control for unobserved characteristics of the respondent (and similarly parent) that are fixed over time. These could be the degree of affection or altruism towards the parent or taste for caregiving. Note that the effects here are identified off only those who change caregiving status over time; there are 958 such women in our sample. When we use a fixed effects specification, the coefficient estimates are quite similar to the ordinary least squares estimates. Using both fixed effects and 2SLS leads to a more than doubling of the effect.

We repeat the same set of analyses for the earnings in Table 11 for just those observations in which the respondent is reportedly working. In simple OLS analysis, caregiving reduces earnings by just 1 percent and the estimated effect is not significantly different from zero. Using instrumental variables substantially increases the magnitude of the effect to 10 percent, but again the effect is not significant. We also do not find a significant response of labor market earnings to caregiving in a fixed effects regression.

Conclusion

We have found that caregiving is relatively common. Forty-one percent of our sample of women in their 50s and early 60s with living parents or parents-in-law are observed to provide care at least

once during the period. The average number of hours of such care is 670. These large numbers suggest that caregiving could have an effect in the labor market. However, we find only small effects of caregiving on work and little evidence that caregiving reduces earnings.

There is still much work to do in obtaining a fuller picture of caregiving behavior and its impact on other economic activities. In going forward, we will examine differences in the caregiving behaviors or men and women, and differences in patterns of caregiving to spouses relative to caregiving to parents.

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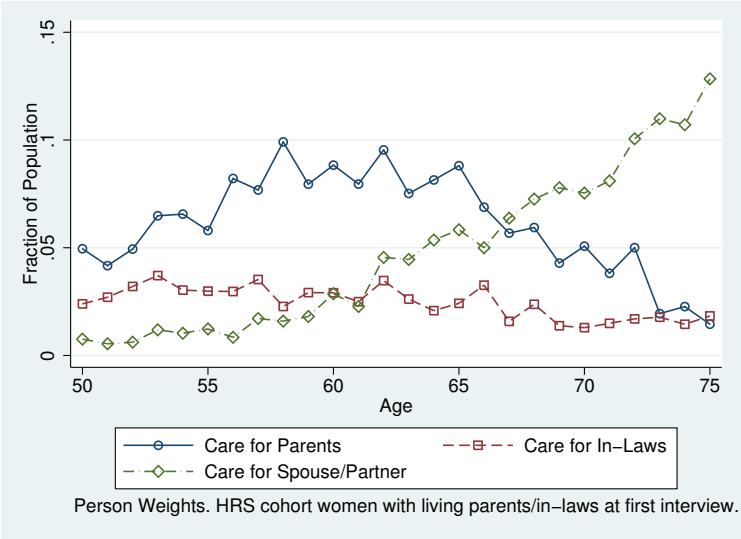


Figure 1: Fraction of HRS Cohort Providing Care, by Age and Type of Care
Notes: The sample for this figure differs slightly from the sample used in the remainder of the paper. It includes all observations for women from the HRS cohort who had living parents or parents-in-law at their 1992 interview regardless of the number of interviews given or whether the respondent was providing care at the 1992 interview.

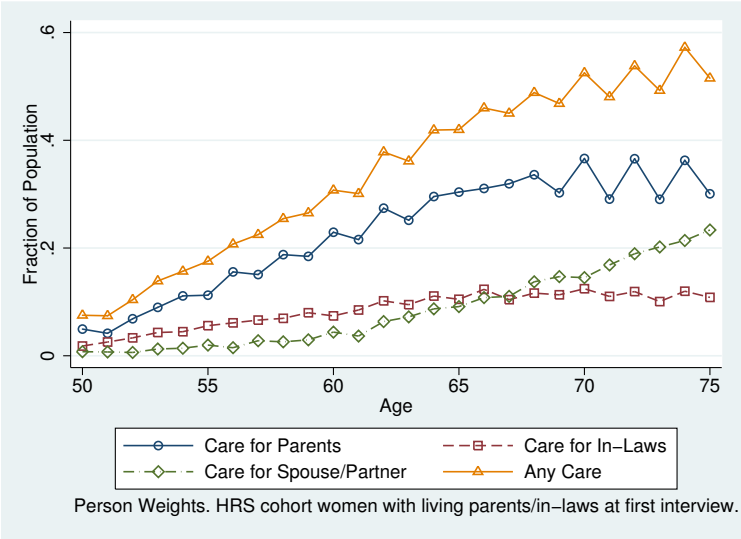


Figure 2: Fraction of HRS Cohort Ever Observed Providing Care, by Age and Type of Care
Notes: The sample for this figure differs slightly from the sample used in the remainder of the paper. It includes all observations for women from the HRS cohort who had living parents or parents-in-law at their 1992 interview regardless of the number of interviews given or whether the respondent was providing care at the 1992 interview.

Table 1: Summary Statistics

	All		Not Providing Care		Providing Care	
	Mean	(Std. Err.)	Mean	(Std. Err.)	Mean	(Std. Err.)
Demographics						
Age (baseline)	52.0	(0.12)	52.1	(0.16)	51.8	(0.18)
Married (baseline)	0.83	(0.0078)	0.84	(0.0099)	0.82	(0.012)
White	0.90	(0.0063)	0.91	(0.0079)	0.88**	(0.010)
Hispanic	0.052	(0.0046)	0.055	(0.0062)	0.047	(0.0068)
High School Education	0.41	(0.010)	0.40	(0.013)	0.42	(0.016)
Some College	0.24	(0.0089)	0.24	(0.012)	0.25	(0.014)
College+	0.19	(0.0082)	0.19	(0.011)	0.19	(0.013)
Number of Interviews	10	(0)	10	(0)	10	(0)
Income and Wealth (1,000s)						
Household Income (baseline)	90.7	(1.69)	90.3	(2.23)	91.2	(2.60)
Mean Earnings (conditional)	30.2	(0.61)	29.9	(0.73)	30.6	(1.06)
Time Spent In Poverty (%)	0.061	(0.0035)	0.061	(0.0045)	0.060	(0.0057)
Assets (baseline)	392.9	(15.0)	384.4	(18.1)	405.2	(25.7)
Assets Excl. Housing (baseline)	277.0	(14.0)	268.5	(16.5)	289.1	(24.5)
Provides Care						
Ever	0.41	(0.010)	0	(0)	1	(0)
At Baseline	0	(0)	0	(0)	0	(0)
Fraction of Interviews	0.072	(0.0023)	0	(0)	0.17***	(0.0035)
Mean Hours (conditional)	669.6	(29.5)	.	(.)	669.6	(29.5)
Works						
Ever	0.81	(0.0082)	0.81	(0.011)	0.80	(0.013)
At Baseline	0.68	(0.0097)	0.68	(0.013)	0.68	(0.015)
Fraction of Interviews	0.47	(0.0073)	0.48	(0.0096)	0.47	(0.011)

Mean Hours (conditional)	33.1	(0.28)	33.1	(0.37)	33.1	(0.42)
Baseline Job Characteristics for Workers						
Full-time	0.71	(0.012)	0.71	(0.015)	0.71	(0.018)
EPHI Covers Self	0.51	(0.013)	0.50	(0.017)	0.53	(0.020)
EPHI Covers Spouse/Partner	0.26	(0.012)	0.27	(0.016)	0.26	(0.019)
Pension	0.54	(0.013)	0.53	(0.017)	0.56	(0.019)
Living Relatives at Baseline						
Mother	0.70	(0.0096)	0.62	(0.013)	0.81***	(0.013)
Father	0.33	(0.0098)	0.30	(0.013)	0.37***	(0.016)
Mother-in-Law	0.56	(0.011)	0.54	(0.015)	0.58**	(0.017)
Father-in-Law	0.21	(0.0092)	0.20	(0.012)	0.23*	(0.015)
Siblings	2.83	(0.049)	2.92	(0.066)	2.71*	(0.072)
Siblings-in-Law	2.76	(0.052)	2.82	(0.068)	2.67	(0.079)
Sisters	1.47	(0.032)	1.55	(0.043)	1.35***	(0.048)
Sisters-in-Law	1.44	(0.033)	1.46	(0.043)	1.40	(0.051)
Number of Observations	2325		1367		958	

Household weights. Asterisks indicate significant differences between first two columns.

* p<.1, ** p<.05, *** p<.01

Notes: "EPHI Covers Self" means that the respondent is covered by employer-provided health insurance from their current job. That is, they have access to EPHI from their current job, and they choose to purchase it. "EPHI Covers Spouse/Partner" means that the respondent's spouse or partner is covered by insurance from the respondent's current job.

Table 2: Transitions

Time t / Time t+1	Not Caregiving	Caregiving
Not Caregiving	18,193	1,163
	(0.94)	(0.06)
Caregiving	1,053	516
	(0.67)	(0.33)

Table 3: Transitions

Time t / Time t+1	Not Caregiving	Caregiving
Not Caregiving		
Work (t+1) | Working (t)	0.81	0.79
Work (t+1) | Not Working (t)	0.09	0.10
Caregiving		
Work (t+1) | Working (t)	0.79	0.78
Work (t+1) | Not Working (t)	0.09	0.09

Household weights.

Table 4: Transitions

Number of Interviews Providing Care	Fraction of Caregivers	Mean Duration of Longest Spell
1	0.56	1.0
2	0.26	1.6
3	0.11	2.4
4	0.04	3.1
5	0.02	3.9
6	0.01	5.9
7	0.00	7.0
8	0.00	5.0

Notes: Spell durations are measured in terms of the number of consecutive interviews at which the respondent was observed providing care.

Table 5: Transitions

Fraction of Interviews in Each State	
Neither	0.49
Work Only	0.44
Caregiving Only	0.04
Both	0.03
Number of Transitions	
0	0.19
1	0.24
2	0.20
3	0.19
4	0.11
5	0.05
6	0.02
7	0.00
8	0.00
Number of Caregiving Spells	
1 Spell	0.81
2 Spells	0.17
3 Spells	0.02
4 Spells	0.00
Duration of Longest Spell	
1 Interview	0.66
2 Interviews	0.23
3 Interviews	0.07
4+ Interviews	0.04
Mean Spell Duration (Interviews)	1.46

Household weights.

Notes: Spell durations are measured in terms of the number of consecutive interviews at which the respondent was observed providing care. Mean spell duration is calculated conditional on having at least one caregiving spell.

Table 6: Transitions

Time t / Time t+1	Neither	Working Only	Caregiving Only	Both
Neither	8,349	784	469	56
	(0.86)	(0.08)	(0.05)	(0.01)
Working Only	1,652	7,388	129	509
	(0.17)	(0.76)	(0.01)	(0.05)
Caregiving Only	490	48	249	31
	(0.60)	(0.06)	(0.30)	(0.04)
Both	116	398	51	184
	(0.15)	(0.53)	(0.07)	(0.25)

Table 7: Transitions

Time t / Time t+1	Neither	Working Only	Caregiving Only	Both	All
Neither					
Number of Observations	8349	784	469	56	9658
Mean weekly hours worked (t)	0	0	0	0	0
Mean change in hours	0	25.5	0	22.9	2.09
Fraction working full-time (t)	.	.	.	.	.
Fraction working full-time (t+1)	.	0.28	.	0.28	0.28
Mean earnings in previous year (t)	1941.9	9904.7	2285.9	8518.9	2644.0
Mean change in earnings	-1730.7	-140.2	-1506.6	-2858.9	-1595.8
Mean annual hours of care (t+1)	0	0	676.5	972.9	39.2
Fraction with pension (t)	.	.	.	.	.
Fraction with pension (t+1)	.	0.10	.	0.12	0.10
Fraction with own EPHI (t)	0.16	0.17	0.18	0.26	0.16
Fraction with own EPHI (t+1)	0.14	0.23	0.19	0.28	0.15
Working Only					
Number of Observations	1652	7388	129	509	9678
Mean weekly hours worked (t)	30.7	35.0	31.2	36.6	34.3
Mean change in hours	-30.7	-0.71	-31.2	-2.26	-6.37
Fraction working full-time (t)	0.49	0.65	0.48	0.66	0.62
Fraction working full-time (t+1)	.	0.62	.	0.62	0.62
Mean earnings in previous year (t)	23930.9	31981.0	27118.2	32280.9	30537.7
Mean change in earnings	-11532.7	-346.5	-13051.4	867.2	-2389.6
Mean annual hours of care (t+1)	0	0	786.6	508.1	36.5
Fraction with pension (t)	0.40	0.52	0.46	0.54	0.50
Fraction with pension (t+1)	.	0.52	.	0.55	0.52
Fraction with own EPHI (t)	0.44	0.52	0.46	0.58	0.51
Fraction with own EPHI (t+1)	0.24	0.53	0.28	0.57	0.48
Caregiving Only					
Number of Observations	490	48	249	31	818
Mean weekly hours worked (t)	0	0	0	0	0
Mean change in hours	0	22.9	0	27.5	2.00
Fraction working full-time (t)	.	.	.	.	.
Fraction working full-time (t+1)	.	0.27	.	0.27	0.27
Mean earnings in previous year (t)	3503.2	5934.1	952.1	6234.8	2925.5
Mean change in earnings	-3307.0	1343.0	-837.9	1922.3	-2112.0
Mean annual hours of care (t+1)	0	0	1141.2	1047.5	394.5
Fraction with pension (t)	.	.	.	.	.
Fraction with pension (t+1)	.	0.12	.	0.24	0.16
Fraction with own EPHI (t)	0.19	0.22	0.18	0.28	0.19

Fraction with own EPHI (t+1)	0.17	0.23	0.15	0.21	0.17
Both					
Number of Observations	116	398	51	184	749
Mean weekly hours worked (t)	28.2	34.3	29.8	36.1	33.5
Mean change in hours	-28.2	-0.61	-29.8	-1.52	-7.02
Fraction working full-time (t)	0.45	0.61	0.45	0.67	0.59
Fraction working full-time (t+1)	.	0.56	.	0.62	0.58
Mean earnings in previous year (t)	20873.4	30988.3	25310.0	31437.9	29216.1
Mean change in earnings	-10444.9	2511.4	-16141.8	-2167.7	-1779.8
Mean annual hours of care (t+1)	0	0	859.7	825.9	255.8
Fraction with pension (t)	0.42	0.53	0.31	0.54	0.50
Fraction with pension (t+1)	.	0.53	.	0.52	0.52
Fraction with own EPHI (t)	0.37	0.59	0.36	0.59	0.54
Fraction with own EPHI (t+1)	0.23	0.57	0.20	0.58	0.50
All					
Number of Observations	10607	8618	898	780	20903
Mean weekly hours worked (t)	4.92	31.5	5.78	32.6	16.8
Mean change in hours	-4.92	1.80	-5.78	0.64	-2.06
Fraction working full-time (t)	0.49	0.64	0.47	0.66	0.62
Fraction working full-time (t+1)	.	0.59	.	0.58	0.59
Mean earnings in previous year (t)	5627.2	29739.6	6512.1	29499.4	16380.6
Mean change in earnings	-3418.1	-187.2	-3663.7	-63.0	-1987.8
Mean annual hours of care (t+1)	0	0	836.8	635.5	60.1
Fraction with pension (t)	0.40	0.52	0.42	0.54	0.50
Fraction with pension (t+1)	.	0.48	.	0.50	0.48
Fraction with own EPHI (t)	0.21	0.49	0.22	0.55	0.33
Fraction with own EPHI (t+1)	0.16	0.50	0.19	0.54	0.31

Household weights.

Table 8: Transitions

	Non-Caregivers			Caregivers		
	1992	2010	Difference	1992	2010	Difference
Demographics						
Age	52.1	70.3	18.2	51.8	70.1	18.2
Married	0.84	0.65	-0.20	0.82	0.66	-0.17
White	0.91	0.91	0	0.88	0.89	0
Hispanic	0.055	0.054	0	0.047	0.043	0
Education	12.7	12.7	0	12.9	12.9	0
Income and Wealth (1,000s)						
Household Income	90.3	64.6	-27.9	91.2	64.6	-28.7
Earnings (conditional)	33.0	30.8	-3.35	35.7	25.0	-12.7**
In Poverty (%)	.	0.071	.	.	0.051	.
Assets	384.4	580.8	186.6	405.2	572.1	156.7
Assets Excl. Housing	268.5	412.3	136.3	289.1	399.5	101.2
Work and Caregiving						
Neither	0.32	0.77	0.45	0.32	0.68	0.36***
Working Only	0.68	0.23	-0.45	0.68	0.21	-0.47
Caregiving Only	0	0	0	0	0.079	0.079***
Both	0	0	0	0	0.031	0.031***
Job Characteristics for Workers						
Full-time	0.71	0.43	-0.32	0.71	0.32	-0.43*
EPHI Covers Self	0.50	0.36	-0.099	0.53	0.35	-0.12
EPHI Covers Spouse/Partner	0.27	0.17	-0.071	0.26	0.095	-0.15
Pension	0.53	0.29	-0.18	0.56	0.30	-0.22
Living Relatives						
Mother	0.62	0.14	-0.48	0.81	0.14	-0.67***
Father	0.30	0.030	-0.27	0.37	0.034	-0.34***
Mother-in-Law	0.54	0.059	-0.50	0.58	0.082	-0.51
Father-in-Law	0.20	0.0065	-0.21	0.23	0.010	-0.26**
Siblings	2.92	2.71	-0.20	2.71	2.44	-0.26
Siblings-in-Law	2.82	2.49	-0.33	2.67	2.38	-0.41
Sisters	1.55	1.46	-0.078	1.35	1.24	-0.11
Sisters-in-Law	1.46	1.31	-0.13	1.40	1.21	-0.23**

Household weights.

Table 9: Caregiving 0/1 First Stage Regression

	OLS Caregiving 0/1	
Age	0.0083***	(0.0028)
Age Squared	-0.000065***	(0.000023)
High School	0.10**	(0.045)
Some College	0.12**	(0.051)
College+	0.10**	(0.050)
Age * High School	-0.0013*	(0.00072)
Age * Some College	-0.0017**	(0.00080)
Age * College+	-0.0015*	(0.00079)
White	-0.017***	(0.0064)
Hispanic	-0.013	(0.0092)
Fair/Poor Health	0.0063	(0.0060)
Number of Children	-0.0015	(0.0013)
Spouse Earnings	0.000028	(0.000052)
Household Non-labor Income	-0.000031*	(0.000018)
Assets	0.00000054	(0.0000017)
Instruments		
Mother Needs Help	0.27***	(0.013)
Father Needs Help	0.15***	(0.020)
Mother-in-law Needs Help	0.13***	(0.013)
Father-in-law Needs Help	0.10***	(0.023)
Number of Living Siblings	0.0019	(0.0018)
Number of Living Sisters	-0.0087***	(0.0027)
Number of Living Siblings-in-law	0.00040	(0.0018)
Number of Living Sisters-in-law	-0.0038	(0.0031)
N	19815	
adj. R^2	0.141	
F Statistic	79.12	
Mean of Dependent Variable	0.0815	

Standard errors clustered by individual in parentheses.
* p<.1, ** p<.05, *** p<.01

Notes: Model also includes wave dummies. Assets and incomes are in $1,000s.

Table 10: Work 0/1

	OLS Work 0/1	2SLS Work 0/1	FE Work 0/1	FE-IV Work 0/1
Caregiving	-0.0230	-0.0567	-0.0216*	-0.0581
	(0.01)	(0.05)	(0.01)	(0.04)
N	22962	19809	22962	19787
adj. R^2	0.204	0.197	0.183	0.057
Mean of Dependent Variable	0.473	0.449	0.473	0.449

Standard errors clustered by individual in parentheses.

* p<.1, ** p<.05, *** p<.01

Notes: models also include age, age squared, education, age * education, 1(white), 1(hispanic), 1(bad health), number of children, spouse income, household non-labor income, household assets, and wave dummies. Instruments for caregiving are indicators for whether mother, father, mother-in-law, and father-in-law need help with personal care, number of siblings and number of sisters of respondent and spouse/partner.

Table 11: Earnings (Conditional on Working)

	OLS Earnings	2SLS Earnings	FE Earnings	FE-IV Earnings
Caregiving	-369.0	-3023.7	-605.2	-4190.3
	(1115.98)	(4061.13)	(996.57)	(4254.62)
N	10853	8897	10853	8681
adj. R^2	0.156	0.152	0.032	-0.186
Mean of Dependent Variable	29294.5	28877.4	29294.5	28877.4

Standard errors clustered by individual in parentheses.

* p<.1, ** p<.05, *** p<.01

Notes: models also include age, age squared, education, age * education, 1(white), 1(hispanic), 1(bad health), number of children, spouse income, household non-labor income, household assets, and wave dummies. Instruments for caregiving are indicators for whether mother, father, mother-in-law, and father-in-law need help with personal care, number of siblings and number of sisters of respondent and spouse/partner.