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# BABY BOOMER CAREGIVERS IN THE WORKFORCE: DO THEY FARE BETTER OR WORSE THAN THEIR PREDECESSORS?

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**Baby Boomer caregivers in the workforce: Do they fare better or worse than their predecessors**

**Abstract**

Since the 1960's there have been substantial increases in women's labor force attachment. Meanwhile, increases in life expectancy and a shifting focus to care in community settings have increased the odds of becoming a caregiver. In light of these changes and the unpaid leave policies introduced in the 1990s to reduce this role strain, it is important to assess whether the labor market outcomes of caregivers have changed over time. We explored the impact of caregiving on women's labor force outcomes and whether this effect was different for women in the Baby Boomer generation versus women born in the pre-World War II years. Using data from the American National Longitudinal Surveys of Young Women and Mature Women, we followed two cohorts of pre-retirement aged women at similar points in their careers. We used pooled and fixed-effects regressions and found that intensive informal caregiving was negatively associated with labor force participation for both pre-Baby Boomers and Baby Boomers. Further, the caregiving effects were not significantly different across cohorts. Caregiving was not significantly associated with the hours worked or wages. This study provides a first step in establishing that caregiving labor market penalties have persisted over time, despite the introduction of offsetting policies.

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# Introduction

Since the 1960's there have been dramatic shifts in women's labor force outcomes in the United States, with women of the Baby Boomer generation exhibiting stronger labor market attachment as well as higher wages in a wider range of jobs than previous cohorts (Blau and Kahn 2000; Shank 1988; Toossi, 2002). In tandem with these changes, increasing life expectancy and a shifting focus to the provision of health care in community settings have increased the odds of becoming an informal caregiver to chronically ill family members or friends, thereby adding further demands on the time of Baby Boomer women (Harrington-Meyer and Parker 2011; Robinson et al. 1995). Acknowledging the importance of women being able to balance their roles as both employees and caregivers, the U.S. government passed the *Family and Medical Leave Act* and the *National Family Caregiver Support Program* in 1993 and 2000, respectively. In light of these substantial shifts in labor market and caregiving trends along with the legislative efforts in place to reduce this role strain, it is important to assess whether the labor market outcomes of caregivers are improving, or instead have remained stagnant or diminished.

Existing literature has established that caregiving, especially intensive caregiving, has a disproportionate impact on women's labor force outcomes (e.g. Carmichael and Charles 2003a,b; Crespo 2006; Heitmueller 2007; Lilly et al. 2010; Van Houtven et al. 2013). Female caregivers have been found to have lower labor force participation rates, and in some cases lower wages and work hours (Heitmueller and Inglis 2007; Johnson and Lo Sasso 2000), than non-caregivers. Studies looking at the labor market outcomes of caregivers have independently focused on different cohorts of women, but none of these studies has directly tested whether these outcomes have changed significantly across different cohorts.

In this paper, we fill this gap in the literature by exploring whether advances in women's labor

force attachment and outcomes have been experienced to the same degree amongst caregiving women. In particular, we pose the question: what is the impact of caregiving on middle aged women's labor force participation, wages, and hours of work, and is this effect different for women in the Baby Boomer generation (i.e. born in 1943-1953) versus their predecessors born in the pre-World War II years (i.e. born in 1927-1937)? We explore these issues using data from the American National Longitudinal Surveys of Young Women and Mature Women.

## Background and Previous Research

A life-course approach to caregiving is a way of conceptualizing caregiving as a trajectory over a woman's life course, so that each caregiving experience is examined in light of other concurrent, past, and future roles and events (Robinson et al. 1995). A key aspect of this approach is that social changes can lead to changes in individuals' life experiences. Changes in cultural norms, social policies, employment opportunities, family composition, and demographic trends, therefore, can all have an important influence on both women's employment outcomes and caregiving experiences (Robinson et al. 1995). So much of the interest in the soon-to-be retired Baby Boomer generation arose because Baby Boomer women have had markedly different experiences than their predecessors in all these realms (Hartmann and English 2009; Johnson and Lo Sasso 2006). Below we outline some of the significant differences between Baby Boomers and earlier cohorts with respect to women's labor market outcomes, caregiving roles, and the institutions surrounding working caregivers. We then provide an overview of the existing literature on caregiving and labor market outcomes.

## Changes in Women's Labor Market Outcomes

A number of studies have documented that Baby Boomer households tend to be better off in terms of income and wealth than prior adult cohorts were at similar ages (e.g. Easterlin et al. 1993; Finke et al. 2006). These gains are often attributed to the much higher labor force participation rates of Baby Boomer women, relative to earlier cohorts. Between 1950 and 2000, the labor force participation rate of women in the United States increased from 34% to 60%, while the share of women in the labor force grew from 30% to 47% (Toossi 2002). The greatest acceleration in these rates occurred in the mid-1960s and 1970s, when Baby Boomer women began to enter the labor force (Shank 1988). In addition to the growth in participation, women have experienced increases in wages as well as some diminishment of the gender wage gap in recent decades (Avellar and Smock 2003). In the United States, these wage gains were most substantial between 1978 and 1999, with women's weekly full-time earnings increasing from 61% to 76.5% of men's earnings (Blau and Kahn 2000). These wage gains have, in large part, been attributable to women increasingly taking on employment in formerly male-dominated professions (Blau and Kahn 2000; Percheski 2008). Blau and Kahn (2000) demonstrate that while some of the increase may be due to within-cohort improvements over time, there have also been significant improvements in the gender wage gap experienced between pre-Baby Boomers and later cohorts.

## Changes in Informal Caregiving

Informal care is provided to family or friends with chronic illness or disability. It is heterogeneous in nature and can encompass both skilled and unskilled help to family members or friends. Shifts in demographic and family structure characteristics between Baby Boomers and their predecessors have led to important changes in the nature of informal caregiving. Life expectancy increases have

implied that more recent cohorts are more likely to take on a caregiver role for elderly parents and relatives (Robinson et al. 1995). Indeed, studies looking at caregiving trends of different cohorts of pre-Baby Boomer women have found that this is the case, with successive cohorts becoming increasingly likely to become caregivers (Moen et al. 1994; Robinson et al. 1995). These studies also found that later cohorts were significantly more likely to be providing parental caregiving, to report multiple caregiving spells, and to report providing care to two or more people at the same time (Robinson et al. 1995). Changes in family structure for Baby Boomers, however, would lead one to question whether these trends would continue, given the greater number of siblings, lower rates of marriage, and lower number of children of Baby Boomers relative to earlier cohorts (Easterlin et al. 1993; Robinson et al. 2009). Baby Boomers have also experienced a growth in non-traditional families, given the higher rates of divorce and remarriage than previous cohorts (Robinson et al. 2013). Aside from the handful of studies that explore these trends for multiple cohorts of pre-Baby Boomer women (Brody et al. 1983; Moen et al., 1994; Robinson et al. 1995), there is scarce evidence surrounding how the Baby Boomer cohort has fared relative to these earlier cohorts when it comes to caregiving trends.

## Institutional Changes for Working Caregivers

From the 1980s onwards, a number of institutional changes have taken place across the United States potentially impacting both the burden associated with caregiving, as well as the ability of individuals to balance work with caregiving. In 1984, Medicare and Medicaid altered their reimbursement structures creating incentives for shorter hospital stays (Harrington-Meyer and Parker 2011). This created an influx of early discharges into the community, which Estes (1989) estimated shifted 21 million days of caregiving work from hospitals to families in the five years after these changes.

In tandem with these changes, however, the 1980s also saw the emergence of modest workplace eldercare supports across the United States, due to both organizational and governmental initiatives (Wagner 2003). As noted above, in 1993 the *Family Medical Leave Act* was passed by Congress. This act provided 12 weeks of unpaid job-protected leave for employees providing care to family members, as long as they worked for an organization with 50 or more employees. In the 10 years that followed, a number of states expanded on this legislation. This was followed, at the federal level, by the *National Family Caregiver Support Program* in 2000, which provided targeted funding to family caregivers, as well as elders (Neal and Wagner 2002). In addition to policies that targeted caregivers directly, the 1980s and 1990s also saw the emergence of policies that impacted caregivers by increasing the amount of publicly funded home and community based services. In 1983, Congress enacted the *Home and Community Based Services* waiver program that allowed states to offer long-term care services not otherwise available through Medicaid. This legislation resulted in many states expanding community-based long-term care services, particularly in the 1990s (Singh 2010). Between 1987 and 1997, spending on waiver programs increased from $451 million to 8.1 billion (Singh, 2010). To the extent that formal care can substitute for some types of informal care duties (Bonsang 2009; Van Houtven and Norton 2004), these policies could have increased informal caregivers′ ability to balance work with care.

## Cohort Differences in Caregiving and Labor Market Outcomes

A significant body of literature has explored the labor force outcomes of caregivers relative to non-caregivers. This literature has largely concluded that caregiving, especially intense care, has a consistently significant negative impact on women's labor force participation (Bolin et al. 2008; Clark et al. 1980; Jacobs et al. 2013; Johnson and Lo Sasso 2000; Johnson and Lo Sasso 2006;

Kingson and O'Grady-LeShane 1993; Lilly et al. 2010; Lilly et al. 2011; Orel et al. 2004; Wakabayashi and Donato 2006). It has also been found to have a negative impact on wages (Carmichael and Charles 2003a,b; Heitmueller and Inglis 2007; Van Houtven et al. 2013; Wakabayashi and Donato 2005) and hours of work (Carmichael et al. 2005; Johnson and Lo Sasso, 2000; Van Houtven et al. 2013). A large portion of these studies have focused either solely on pre-Baby Boomers (Clark 1980; Dentinger and Clarkberg 2002; Johnson and Lo Sasso 2001; Johnson and Lo Sasso 2006; Kingson and O'Grady LeShane 1993; Pavalko and Artis 1997; Ruhm 1996; Wakabayashi and Donato 2006) or Baby Boomers (Lilly et al., 2012; Orel 2004). In some instances, multiple cohorts have been included within one study (e.g. Lilly et al. 2010; Van Houtven et al. 2013), though no attempts have been made in these studies to compare the effect of caregiving on these outcomes across different cohorts.

We identified only two studies that included an analysis of cohort differences on labor market outcomes of caregivers. Moen et al. (1994) looked at four cohorts of white pre-Baby Boomer (b. 1905-1924) women in upstate New York. The authors used bivariate analysis to determine whether the cohorts were significantly different with respect assuming work and caregiving roles and found that the younger cohorts were more likely to be active in both caregiving and work. More recently, Robinson et al. (2009) used data from the 2007 Connecticut Long-Term Care Needs Assessment to explore the likelihood of missing work amongst caregiving women. Using logistic regression, the authors found that caregivers in the Baby Boomer cohort (b. 1946 and later) were twice as likely to miss work compared to those in an older cohort (b. before 1946). While an interesting initial finding, the authors did not compare the outcomes for these individuals at the same point in their careers - at the time of interview, the Baby Boomers were 42 to 60, while the older cohort was 61 years and older. Further, each study was specific to one state and, therefore,

not likely generalizable to the United States. Finally, neither study looked specifically at labor market participation, hours of work, and wages, nor did they control for a comprehensive set of socioeconomic, family, demographic, or job-related factors.

From the above overview, it is evident that despite the significant changes in the labor market, the nature of caregiving, and the institutional structures surrounding both, there is a paucity of studies exploring if and how the relationship between caregiving and labor force outcomes has changed over time. We have indicated that the literature consistently shows intense caregivers fare worse in the labor market. In light of these consistent findings, the U.S. government has attempted to introduce policies to allow caregivers to better balance work and care, but there is no evidence as to whether working caregivers have become more adept at balancing their conflicting roles. In the remainder of this paper, we explore the following research question: is the effect of caregiving on labor force participation, hours of work, and hourly wages different for middle-aged women born in the pre-war years (b. 1927-1937) compared to those in the Baby Boomer generation (b 1943-1953)?

## Methods

To compare whether the association between caregiving and labor force participation, hours of work, and wages has changed over time for women, we compared these associations at similar points in the two cohorts' career paths. Below we outline the data, sample, and methods used to conduct these comparisons.

### Data

With the data being taken at different points in time for each survey, differences in attrition were a potential source of concern. At the beginning of the period of interest for the NLW-MW (1982),

there were 3,542 (70% retention) women with survey responses, while there were 3,049 (59% retention) women at the beginning of the period of interest for the NLS-YW cohort. There was attrition for both surveys, but studies by Zagorsky and Rhoton were conducted towards the end and beginning of our periods of interest assessing the impact of attrition for each survey. For both the NLS-MW and NLS-YW, comparisons between the 1995 waves and another national labor survey, the Current Population Survey (CPS), indicated that the characteristics of similar women still closely matched those in the CPS (Zagorsky and Rhoton 1998a,b).

## Sample

As noted above, to make inferences about changes over time, we needed to follow two cohorts of women at similar points in their careers (i.e. when they were of similar ages) so that any differences that were found could not be attributed to an age effect (Avellar and Smock 2003; Easterlin et al. 1993). For feasibility reasons, we also needed caregiving data to be available in the specified waves. Four waves of the NLS-MW and four waves of the NLS-YW met all of these criteria: 1982, 1984, 1987, and 1989 from the NLS-MW and 1997, 1999, 2001, and 2003 from the NLS-YW. As we only included waves for which there was caregiving data available, this resulted in one NLW-MW wave (1986) being omitted. The use of these waves of data worked well not just from a practical standpoint due to the age overlap and data availability, but also from the perspective that only one cohort of women, the younger cohort, were exposed to the significant changes in institutional supports for working caregivers in the United States.

In Table 1, we provide a comparative overview of the NLS-MW and NLS-YW sub-samples that we used. At the beginning the observation period for each cohort (i.e. 1982 and 1997), the women in both cohorts were of pre-retirement age (i.e. aged 44-54 for the younger women and aged 45-59

9

for the older women), and there are indicators for caregiving status and caregiving intensity. Due to the wider age range of the NLS-MW cohort, we excluded individuals aged 56 to 59 in 1982, to make the NLS-MW sample more comparable with the NLS-YW women. So, our initial samples of each cohort included women aged 44-54 from the NLS-YW and 45-55 from the NLS-MW survey. This implied a slightly older sample of the NLS-MW towards the end of the period in question (i.e. ages 49-60 versus ages 52-62 for the NLW-YS and NLS-MW samples, respectively). We did, however, control for individual age in our regression models. Since the NLS-MW sample included women born between 1927 and 1937, in what follows we refer to those women as the pre-Baby Boomers and to the NLS-YW sample (born between 1943 and 1953) as the Baby Boomer cohort (Sandeen 2008).

Table 1: Overview of the NLS-MW and NLW-YW Sub-Samples

|  | NLS-MW (Pre-Baby Boomer) | NLS-YW (Baby Boomer) |
|---|---|---|
| Observation Period | 1982-1989 | 1997-2003 |
| Cycles Included | 1982, 1984, 1987, 1989 | 1997, 1999, 2001, 2003 |
| Initial Age Range | 45-55 | 44-54 |
| Final Age Range | 52-62 | 49-60 |
| Birth Year | 1927-1937 | 1943-1953 |
| No. of women LFP regression | 2,300 | 3,129 |
| No. of person-years LFP regression | 7,786 | 10,836 |
| No. of women hours regression | 1,540 | 2,365 |
| No. of person-years hours regression | 3,896 | 6,169 |
| No. of women wage regression | 1,386 | 2,110 |
| No. of person-years wage regression | 3,602 | 5,086 |

We only included women for whom there were at least two observations for our outcome variables. For our labor force participation analysis, this resulted in a total of 2,300 women in the pre-Baby Boomer cohort and 3,129 women in the Baby Boomer cohort. When tabulated as person-years (individual observations multiplied by number of waves in which they appear), this implied a final sample size of 7,786 for the pre-Baby Boomer cohort and 10,836 for the Baby Boomer cohort. For the hours of work analysis, we had a total of 1,540 women in the pre-Baby Boomer cohort and

2,365 women in the Baby Boomer cohort. When tabulated as person-years, the final sample size was 3,896 for the pre-Baby Boomer cohort and 6,169 for the Baby Boomer cohort. Finally, for our wage analysis, there were 1,386 women in the pre-Baby Boomer cohort and 2,110 women in the Baby Boomer cohort. When tabulated as person-years, the final sample size was 3,602 for the pre-Baby Boomer cohort and 5,086 for the Baby Boomer cohort.

## Model and Estimators

We model individual women as having to make trade-offs between time spent in the labor market and time spent on leisure and other activities, in this case informal caregiving. We assume that at some point, women may have a family member or friend with caregiving needs. Given that time is scarce, the individual can reduce the time spent in the labor force, exit the labor market altogether, or decrease the time spent on leisure activities in order to provide informal care (Carmichael and Charles 2003a; Heitmueller 2007; Johnson and Lo Sasso 2000; Pavalko and Artis 1997; Van Houtven et al. 2012). The individual could also increase his or her labor market activity to pay for formal care or for (employment-related) health insurance (Carmichael and Charles, 2003a; Van Houtven et al. 2013). Based on this model, we cannot develop distinct predictions about the association between caregiving and labor force status, but we can hypothesize that caregiving, economic, family, demographic, health and occupational factors may be important determinants of labor force participation and outcomes. Below, we outline the variables and methods that were used in our analysis.

*Variable Selection and Construction*

The dependent variables we considered were labor force participation, weekly hours of work, and derived hourly wages. For the labor force participation outcome, we constructed a binary variable

indicating whether the woman identified her labor force status as currently employed or not. Some women indicated that they were not working, but still reported that they worked some hours for pay in the previous week. We included these women in the employed category. For employed women, we calculated the number of hours worked per week by summing two variables indicating the usual hours worked per week at the individual's main and other jobs. We took the natural log of the hours worked because of the variable's skewed distribution. Finally, for the wage variable, we derived an hourly wage from the individual's annual wage-based inflation-adjusted income (in 2003 dollars) and the hours worked per week multiplied by 52 weeks. Due to the skewed distribution here, we also took the natural log of this variable.

The independent variables of interest related to informal caregiving. The NLS-MW and NLS-YW collect information on both in-home and out-of-home caregiving, specifically asking whether care was provided to chronically ill or disabled household members or family and friends outside the household. Although information on both in-home and out-of-home caregiving was available across some waves of data, information on in-home caregiving was missing from the 1984 wave of data. This implied that there was not enough power to explore fixed-effects models using in-home caregiving for the pre-Baby Boomer cohort. As such, our base case analysis uses dummy variables indicating the intensity of out-of-home caregiving as a proxy for overall caregiving intensity.

Based on previous work on intensive caregiving thresholds (Berecki-Gisolf 2008; Carmichael and Charles 2003; Colombo et al. 2011; Ettner 1995; Jacobs et al., 2013; Lilly et al. 2010; Lilly et al. 2011), we identified intensive caregiving as those providing 15 or more hours of weekly care outside the home. We created dummy variables indicating whether the individual was a non-intensive caregiver (i.e. provided 0-14.9 hours of weekly care), an intensive caregiver (i.e. provided 15 or more hours of weekly care), or a non-caregiver (reference category). Out-of-home caregiving

accounted for 73%-80% of caregivers in the data cycles for which we had information pertaining to in- and out-of home caregiving, with in-home caregivers comprising the remaining 20%-27%. To determine whether the inclusion of in-home caregiving impacted our results, we ran alternate models with all caregivers (in- and out-of-home) for the waves where the data were available and compared these results to models in which we only included out-of-home caregivers.

In our labor force participation equation, we included additional demographic controls: age and its square, a dummy variable for marital status, and a dummy variable indicating whether the individual was living in the South. We also included some household level characteristics to control for other potential burdens (i.e. a dummy indicating children under 18 years of age living in the home) or sources of support (i.e. the total number of household members). Socioeconomic controls included the woman's educational attainment (i.e. dummies for less than high school, high school, some college, and college) as well as household income in 2003 dollars (i.e. dummies for less than $15,000, $15,000 to $30,000, $30,000 to $50,000, $50,000 to $74,000, and $75,000 and over). Finally, we included a control for the women's health status with a dummy indicating whether she had any health limitations that might influence her ability to work, as well as a similar control indicating whether her husband had a health limitation that might impact his ability to work. While self-rated health and chronic conditions were available for some waves, we did not have this data consistently for the Baby Boomer cohort. We ran alternate models that included self-rated health using the waves for which the variable was available and found that there were no significant differences in our outcomes of interest. Finally, our models also included wave dummies to take into account time trends, as recessions were experienced in certain years (e.g. 1982 and 2001) and likely impacted labor market outcomes (NBER 2012).

For our hours of work and wage equations, we also included additional occupation-specific vari-

ables indicating the job classification for the individual's main job. We included dummies for whether the individual worked in a managerial, professional, clerical, service-related, or technical/trade/labor position. In alternate specifications we also included controls for union status, though this was not available in all waves.

*Estimation Strategy*

We adopt a similar approach to Avellar and Smock (2003) in their assessment of cohort differences in the motherhood wage penalty. We used two estimation strategies: a pooled regression approach and a panel fixed-effects approach to control for unobserved heterogeneity. First, we pooled the data from each cohort and conducted our analysis treating each observation as unique. In this model, women were compared not just to each other, but also to themselves at other points in time (Avellar and Smock 2003). For this model, we took into account the clustered nature of the data (i.e. that observations were not independent of each other) by calculating Huber/White standard errors, which are robust to within cluster correlation (Rogers 1993).

For our labor force participation equation, we estimated a logistic regression function, specified as follows:

$$Prob(LFP) = f(\alpha_1 + \alpha_2 CG + \alpha_3 X_L + \epsilon > 0)$$

where the probability that a woman is in the labor market is a function of her caregiving (CG) intensity, and a vector of exogenous variables (XL), including age, marital status, geographic factors, education, family characteristics, and household income.

For our hours of work and wage equations, we estimated Ordinary Least Squares models, as follows:

$$Ln(H|H > 0) = \quad \alpha_1 + \alpha_2 CG + \alpha_3 X_H + \epsilon$$

$$Ln(W|H > 0) = \quad \alpha_1 + \alpha_2 CG + \alpha_3 X_W + \epsilon$$

where, conditional on being a labor force participant, the logged hours (H) and logged wages (W) are a function of out-of-home caregiving intensity, other exogenous factors including age, marital status, geographic factors, education, family characteristics, household income, and job characteristics.

We then estimated our models using across-person fixed-effects models. The intent of these models was to control for time-*in*variant unobserved heterogeneity. These models allowed us to control for any unmeasured personal characteristics that remained stable over time, such as the propensity of more ambitious women to be in the labor force or for certain women to be more likely to become caregivers (Avellar and Smock 2003; Johnson and Lo Sasso 2000; Van Houtven et al. 2013). This ensured that we are not confounding our results in the case that caregiving women systematically differed in some unobservable way from non-caregivers (Avellar and Smock 2003). In these models, we were able to account for the fact that a woman's previous experiences may have influenced the choices and decisions she made in future periods. These models were specified as follows:

$$(LFP_{it} - \overline{LFP}_l) = \quad (CG_{it} - \overline{CG}_l)\alpha_1 + (x_{it} - \overline{x_l})\alpha_2 + (\epsilon_{it} - \bar{\epsilon}_l)$$

$$(Ln(H)_{it} - \overline{LN(H)}_l) = \quad (CG_{it} - \overline{CG}_l)\alpha_1 + (x_{it} - \overline{x_l})\alpha_2 + (\epsilon_{it} - \bar{\epsilon}_l)$$

$$(Ln(W)_{it} - \overline{LN(W)}_l) = \quad (CG_{it} - \overline{CG}_l)\alpha_1 + (x_{it} - \overline{x_l})\alpha_2 + (\epsilon_{it} - \bar{\epsilon}_l)$$

15

For these models, a few factors should be kept in mind. First, the fixed-effects only control for time-invariant factors. Any unmeasured individual-level characteristics that changed over time would introduce bias into the model. Second, these models rely on changes over time for identification. Any factors that do not change over time (e.g. women who are out of the labor market for the entire period) would be dropped from the model.

To determine whether there were significant differences between the two cohorts with respect to the caregiving and other explanatory variables, we stacked both datasets together and included a dummy for individuals in the Baby Boomer cohort. We then interacted this dummy cohort variable with all the explanatory variables in each respective model and tested for the statistical significance of these interaction terms.

The models we specified above did not explicitly take into account the potential for selection bias in our hours and wages equations or for endogeneity in any of the equations. Accounting for unobserved heterogeneity could counter these sources of bias to the extent that selection into the labor market and caregiving were due to time-invariant individual factors (Van Houtven et al. 2013). We discuss the implications of not explicitly addressing these concerns in the Limitations section below.

Stata SE v.12 was used for all statistical analysis. For all standard error and coefficient estimations, techniques accounting for clustering and weighting were integrated using pre-estimation commands.

# Results

## Descriptive Results

In Table 1 we present a descriptive overview of our sample. We first present the weighted proportions and means for each characteristic in our models by cohort for each cohort's last year of observation (i.e. 1989 for the pre-Baby Boomers and 2003 for the Baby Boomers). We also present the results of chi-square tests and t-tests indicating whether a given characteristic was significantly different across the two cohorts.

Overall, there were a number of significant differences across the two cohorts. There was a significant increase in the proportion of women participating in the labor force (52% versus 70% of Baby Boomers). Women in the labor market also earned more on average and worked more hours in the Baby Boomer cohort. Our sample seemed to experience these differences in part due to the significant shift in the types of jobs the women had. Baby Boomer women were much more likely to be in professional jobs and less likely to be in service jobs than their predecessors. For our caregiving variables, there was a decline in caregiving out of the home (from 18% to 13%) as well as in the home (from 7% to 4%) implying an overall decline caregiving (from 25% to 17%). The proportion of women providing intensive out-of-home care was identical across the two cohorts (4%), while those providing less intensive care decreased across the cohorts, though this difference was not significant. We did not have data on the intensity of in-home caregiving across both cohorts.

There were also some significant differences with respect to the demographic characteristics of our two cohorts. Though they started at similar ages, by the last wave, there was a three-year age difference between the two cohorts due to our need to drop one wave of the NLS-MW. The pre-Baby Boomers were on average 57 years of age versus 54 years for the Baby Boomers. As expected, we

Table 2: Descriptive Overview of Pre-Baby Boomer and Baby Boomer Women, Aged 49-62

| | Pre-Baby Boomers | | Baby Boomers | | Sig. Cohort Diff |
| | Mean | SE | Mean | SE | |
|---|---|---|---|---|---|
| Working | 52% | 0.01 | 70% | 0.01 | *** |
| Caregiving | | | | | |
|     All caregivers | 25% | 0.01 | 17% | 0.01 | |
|     In-home | 7% | 0.01 | 4% | 0 | *** |
|     Out-of-home | 18% | 0.01 | 13% | 0.01 | *** |
|       Less intense out-of-home care | 13% | 0.01 | 9% | 0.01 | |
|       Intense out-of-home care | 4% | 0 | 4% | 0 | |
| Age | 57.23 | 0.07 | 54.01 | 0.06 | *** |
| Married | 71% | 0.01 | 65% | 0.01 | *** |
| Widowed | 11% | 0.01 | 5% | 0 | *** |
| Divorced/Separated | 14% | 0.01 | 23% | 0.01 | *** |
| Never married | 4% | 0 | 8% | 0.01 | *** |
| South | 33% | 0.01 | 35% | 0.01 | |
| Education less than hs | 25% | 0.01 | 10% | 0.01 | *** |
| Education hs | 45% | 0.01 | 37% | 0.01 | *** |
| Education some college | 17% | 0.01 | 24% | 0.01 | *** |
| Education College or more | 14% | 0.01 | 30% | 0.01 | *** |
| Number of hs members | 2.42 | 0.03 | 2.62 | 0.03 | *** |
| Children under 18 in home | 13% | 0.01 | 19% | 0.01 | *** |
| Health limitation | 31% | 0.01 | 23% | 0.01 | *** |
| Husband health limitation | 17% | 0.01 | 8% | 0.01 | *** |
| Household income < $15,000 | 14% | 0.01 | 24% | 0.01 | *** |
| Household income $15,000-$30,000 | 20% | 0.01 | 11% | 0.01 | *** |
| Household income $30,000-$50,000 | 23% | 0.01 | 14% | 0.01 | *** |
| Household income $50,000-$75,000 | 23% | 0.01 | 16% | 0.01 | *** |
| Household income ≥$75,000 | 20% | 0.01 | 35% | 0.01 | *** |
| Conditional on working==1 | | | | | |
|     Wage | $14.03 | 0.57 | $17.37 | 0.89 | *** |
|     Workhours | 29.12 | 0.57 | 39 | 0.3 | *** |
|     Occupation - Managerial | 12% | 0.01 | 13% | 0.01 | ** |
|     Occupation - Professional | 16% | 0.01 | 36% | 0.01 | *** |
|     Occupation - Clerical | 35% | 0.02 | 26% | 0.01 | *** |
|     Occupation - Services | 24% | 0.01 | 17% | 0.01 | *** |
|     Occupation - Trades/Labor/Technical | 13% | 0.01 | 8% | 0.01 | *** |

† p<0.10, * p< .05, ** p < .001, *** p < .001
Source: 1989 NLS-MW and 2003 NLW-YW

a lower proportion of women who were married in Baby Boomers, but higher rates of divorce and women who never married. Baby Boomer women also had a higher number of household members and children under 18 in the household. This was not the case, however, when we restricted the two cohorts to the same age range in the last waves (i.e. age 52 to 60), implying that the slightly younger age of the Baby Boomers might account for these differences. We saw significantly higher educational attainment and household income in our Baby Boomer cohort as well. Finally, the respondents' and their husbands were more likely to have identified health limitations in the pre-Baby Boomer cohort, even when we conducted this analysis so that the age range was identical across both waves.

In Table 3, we present a similar descriptive overview of the out-of-home caregivers versus non-caregivers, again presenting the results of chi-square and t-tests to test for significant differences across the two cohorts. Within each cohort, we also ran chi-square and t-tests to determine whether there were significant differences between the out-of-home caregivers and non-caregivers.

We found a similar proportion of each cohort in employment as with the whole sample, with both caregiving and non-caregiving Baby Boomers more likely to be working than pre-Baby Boomers. While the hours per week worked were significantly different for each cohort, we did not find significant differences between cohorts in the wages or the proportion of women in managerial and professional jobs for caregiving women. Amongst women providing out-of-home care, we found that just under 30% of pre-Baby Boomers were providing 15 or more hours of weekly care outside the home versus 24% of Baby Boomers, though this difference was not statistically significant. The differences in other characteristics between the cohorts were quite similar to the overall sample.

When we looked at within-cohort differences between caregivers and non-caregivers, we found that for both the pre-Baby Boomers and Baby Boomers, caregivers were more likely to be married.

Table 3: Descriptive Overview of Pre-Baby Boomer and Baby Boomer Women, Aged 49-62

| | Non-Caregivers | | | | | Out-of-home-Caregivers | | | | | Sig. CG Diff Pre-BB | Sig. CG Diff BB |
| | Pre-Baby Boomers | | Baby Boomers | | Sig. Cohort Diff | Pre-Baby Boomers | | Baby Boomers | | Sig. Cohort Diff | | |
| | Mean | SE | Mean | SE | | Mean | SE | Mean | SE | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Working | 53% | 0.01 | 67% | 0.03 | *** | 45% | 0.03 | 67% | 0.03 | *** | ** | |
| Out-of-home Caregiving | | | | | | | | | | | | |
| Less intense out-of-home care | | | | | | 76% | 0.02 | 71% | 0.03 | | | |
| Intense out-of-home care | | | | | | 24% | 0.02 | 29% | 0.03 | | | |
| Age | 57.21 | 0.08 | 54.13 | 0.07 | *** | 57.26 | 0.18 | 54.27 | 0.18 | *** | | |
| Married | 71% | 0.01 | 64% | 0.01 | *** | 76% | 0.02 | 71% | 0.03 | | † | ** |
| Widowed | 12% | 0.01 | 5% | 0 | *** | 9% | 0.02 | 3% | 0.01 | *** | | |
| Divorced/Separated | 13% | 0.01 | 24% | 0.01 | *** | 13% | 0.02 | 19% | 0.02 | * | | † |
| Never married | 4% | 0 | 8% | 0.01 | *** | 2% | 0.01 | 7% | 0.01 | ** | | |
| South | 33% | 0.01 | 35% | 0.01 | | 35% | 0.03 | 34% | 0.03 | | | |
| Education less than hs | 26% | 0.01 | 9% | 0.01 | | 17% | 0.02 | 10% | 0.02 | * | ** | |
| Education hs | 44% | 0.01 | 37% | 0.01 | *** | 48% | 0.03 | 33% | 0.03 | *** | | |
| Education some college | 16% | 0.01 | 24% | 0.01 | | 17% | 0.02 | 27% | 0.03 | ** | | |
| Education College or more | 14% | 0.01 | 30% | 0.01 | *** | 17% | 0.02 | 30% | 0.03 | *** | | |
| Number of hs members | 2.43 | 0.03 | 2.62 | 0.03 | *** | 2.39 | 0.06 | 2.62 | 0.07 | ** | | |
| Children under 18 in home | 13% | 0.01 | 19% | 0.01 | *** | 12% | 0.02 | 19% | 0.02 | * | | |
| Health limitation | 31% | 0.01 | 22% | 0.01 | *** | 29% | 0.03 | 24% | 0.02 | | | |
| Husband health limitation | 19% | 0.01 | 8% | 0.01 | *** | 19% | 0.02 | 12% | 0.02 | * | | * |
| Household income < $15,000 | 14% | 0.01 | 25% | 0.01 | *** | 15% | 0.02 | 20% | 0.02 | † | | † |
| Household income $15,000-$30,000 | 20% | 0.01 | 11% | 0.01 | *** | 18% | 0.02 | 11% | 0.02 | * | | |
| Household income $30,000-$50,000 | 23% | 0.01 | 13% | 0.01 | *** | 21% | 0.02 | 16% | 0.02 | | | |
| Household income $50,000-$75,000 | 23% | 0.01 | 16% | 0.01 | *** | 22% | 0.03 | 16% | 0.02 | † | | |
| Household income ≥$75,000 | 19% | 0.01 | 35% | 0.01 | *** | 24% | 0.03 | 37% | 0.03 | ** | † | |
| Conditional on working==1 | | | | | | | | | | | | |
| Wage | $ 13.80 | 0.51 | $ 17.22 | 1 | ** | $15.43 | 2.41 | $ 18.41 | 0.98 | | | |
| Workhours | 29.64 | 0.6 | 27.24 | 0.46 | *** | 26.7 | 1.45 | 38.2 | 0.91 | *** | | † |
| Occupation - Managerial | 13% | 0.01 | 13% | 0.01 | ** | 10% | 0.03 | 17% | 0.03 | | | |
| Occupation - Professional | 16% | 0.01 | 36% | 0.01 | | 16% | 0.03 | 38% | 0.04 | | | |
| Occupation - Clerical | 34% | 0.02 | 27% | 0.01 | | 38% | 0.04 | 20% | 0.03 | ** | | |
| Occupation - Services | 24% | 0.02 | 17% | 0.01 | *** | 25% | 0.04 | 19% | 0.03 | * | | |
| Occupation - Trades/Labor/Technical | 13% | 0.01 | 8% | 0.01 | *** | 11% | 0.03 | 6% | 0.02 | | † | |

† p<0.10, * p < .05, ** p < .001, *** p < .001
Source: 1989 NLS-MW and 2003 NLW-YW

Amongst the pre-Baby Boomers, caregivers were less likely to be working, but this was not the case with Baby Boomers. Baby Boomer caregivers, meanwhile, worked significantly more hours than non-caregivers (38 hours versus 27 hours). Pre-Baby Boomer caregivers were less likely to have less than high school education and more likely to have household incomes over $75,000 than non-caregivers, while Baby Boomer caregivers were less likely to have a household income less than $15,000 than non-caregivers.

## Multivariate Results

In Tables 4, 5, and 6 we present the results of our pooled and panel fixed-effects multivariate analyses for the labor force participation, hours of work, and wages, respectively.

In Table 4, we see that in the pooled model, there was a negative and significant association between providing intense out-of-home care and being a labor force participant. Even when we accounted for unobserved heterogeneity with the fixed effects models, caregiving remained consistently significant. The magnitude of the caregiving intensity effects changed in the fixed-effects models, increasing from -0.98 to -0.84 for pre-Baby Boomers and decreasing from -0.99 to -1.04 for Baby Boomers. Though the effect was slightly larger for the Baby Boomers, neither the pooled nor the fixed effects model exhibited significant cohort differences in the effect of high intensity caregiving. There was a significant cohort difference in the effect of less intensive caregiving, though this difference was no longer significant once we account for unobserved heterogeneity, and the coefficients were not significant in either cohort. When we used a dummy lumping all out-of-home caregivers together in our model (not shown), the results were similar with respect to significance, though the effect was weaker than intensive caregiving out-of home (-0.32 and -0.34 for the fixed effect pre-Baby Boomer and Baby Boomer models, respectively). Similar results were found when

Table 4: Pooled and Fixed-Effects Logistic Regression of Labor Force Participation for Pre-Baby Boomer and Baby Boomer Women[a]

| | Pooled Regression | | | | | | | Fixed Effects Regression | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Pre-Baby Boomer | | | Baby Boomer | | | | Pre-Baby Boomer | | | Baby Boomer | | | |
| Employed | Coef. | Std. | Sig. | Coef. | Std. | Sig | Sig Cohort Dif | Coef. | Std. | Sig | Coef. | Std. | Sig | Sig Cohort Dif |
| Out of Home CG Intensity | | | | | | | | | | | | | | |
| Non-caregiver (Ref) | | | | | | | | | | | | | | |
| 0-14.9 hours | -0.07 | 0.07 | | 0.12 | 0.09 | | * | -0.28 | 0.14 | * | 0 | 0.17 | | |
| 15 plus hours | -0.98 | 0.13 | *** | -0.99 | 0.12 | *** | | -0.84 | 0.23 | *** | -1.04 | 0.25 | *** | |
| Age | 0.47 | 0.15 | *** | 0.39 | 0.17 | * | | 1.55 | 0.35 | *** | 0.81 | 0.33 | * | ** |
| Age squared | 0 | 0 | *** | 0 | 0 | ** | | -0.02 | 0 | *** | -0.01 | 0 | ** | ** |
| Marital status | | | | | | | | | | | | | | |
| Married (Ref) | | | | | | | | | | | | | | |
| Widowed | 0.941 | 0.094 | *** | 0.34 | 0.12 | ** | *** | 0.73 | 0.33 | * | -0.17 | 0.45 | | † |
| Divorced/separated | 1.213 | 0.084 | *** | 0.64 | 0.07 | *** | *** | 1.21 | 0.33 | *** | 0.35 | 0.26 | | * |
| Never married | 0.916 | 0.139 | *** | 0.41 | 0.09 | *** | ** | 1.38 | 1.35 | | 14.54 | 561.4 | | |
| Lives in South | 0.08 | 0.054 | | -0.08 | 0.05 | | † | -0.01 | 0.38 | | -1.24 | 0.69 | † | |
| Education | | | | | | | | | | | | | | |
| Less than HS | | | | | | | | | | | | | | |
| HS | 0.288 | 0.064 | *** | 0.52 | 0.08 | *** | ** | 0.25 | 0.29 | | -0.97 | 1.19 | | |
| Some college | 0.382 | 0.09 | *** | 0.56 | 0.09 | *** | | -0.08 | 0.38 | | 0.94 | 1.81 | | |
| College | 0.209 | 0.093 | * | 0.42 | 0.09 | *** | ** | -0.05 | 0.49 | | -11.83 | 2273.05 | | |
| Number of household members | -0.107 | 0.022 | *** | -0.11 | 0.02 | *** | | -0.04 | 0.06 | | -0.03 | 0.06 | | |
| Children under 18 | 0.028 | 0.074 | | -0.15 | 0.07 | * | | 0.03 | 0.17 | | -0.07 | 0.17 | | |
| Health limit | -1.231 | 0.057 | *** | -1.77 | 0.06 | *** | *** | -0.77 | 0.14 | *** | -1.04 | 0.14 | *** | |
| Husband Health limit | 0.395 | 0.073 | *** | 0.27 | 0.09 | ** | | 0.37 | 0.18 | * | 0.11 | 0.22 | | |
| Household income | | | | | | | | | | | | | | |
| <$15,000 | | | | | | | | | | | | | | |
| $15-30,000 | 1.164 | 0.082 | *** | 0.79 | 0.08 | *** | * | 0.49 | 0.16 | ** | 0.53 | 0.16 | *** | |
| $30-50,000 | 1.162 | 0.083 | *** | 1.16 | 0.08 | *** | | 0.56 | 0.18 | *** | 0.73 | 0.16 | *** | |
| $50-75,000 | 1.293 | 0.091 | *** | 1.35 | 0.08 | *** | | 0.5 | 0.19 | ** | 0.68 | 0.17 | *** | |
| $75000+ | 1.435 | 0.097 | *** | 1.36 | 0.07 | *** | | 0.68 | 0.23 | ** | 0.74 | 0.16 | *** | |
| N | 7786 | | | 10836 | | | 16445 | 2740 | | | 3099 | | | 4827 |
| n | | | | | | | | 739 | | | 826 | | | 1439 |
| Chi-square | 1493 | | | 2408 | | | 3137 | 215 | | | 327 | | | 484.63 |

† p <0.10, * p < .05, ** p < .001, *** p < .001

a. Regressions include wave dummies

Source: 1982, 1984, 1987, and 1989 NLS-MW and 1997, 1999, 2001, and 2003 NLW-YW

Table 5: Pooled and Fixed-Effects OLS Regression of Logged Weekly Hours Worked of Pre-Baby Boomer and Baby Boomer Women[a]

| | Pooled Regression | | | | | | | Fixed-Effects Model | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | Pre-Baby Boomer | | | Baby Boomer | | | | Pre-Baby Boomer | | | Baby Boomer | | | |
| Working Hours | Coef. | Std. | Sig | Coef. | Std. | Sig | Sig Cohort Dif | Coef. | Std. | Sig | Coef. | Std. | Sig | Sig Cohort Dif |
| Out of Home CG Intensity | | | | | | | | | | | | | | |
| Non-caregiver (Ref) | | | | | | | | | | | | | | |
| 0-14.9 hours | -0.06 | 0.02 | *** | -0.06 | 0.02 | *** | | -0.02 | 0.02 | | 0.01 | 0.02 | | |
| 15 plus hours | -0.13 | 0.04 | *** | -0.07 | 0.03 | * | | -0.03 | 0.04 | | 0.01 | 0.03 | | |
| Age | 0.12 | 0.04 | ** | 0.02 | 0.03 | | † | 0.18 | 0.04 | *** | 0.11 | 0.03 | *** | |
| Age squared | 0 | 0 | *** | 0 | 0 | | † | 0 | 0 | | 0 | 0 | ** | |
| Marital status | | | | | | | | | | | | | | |
| Married (Ref) | | | | | | | | | | | | | | |
| Widowed | 0.1 | 0.02 | *** | 0.1 | 0.03 | *** | | 0.08 | 0.04 | † | -0.07 | 0.05 | | * |
| Divorced/separated | 0.21 | 0.02 | *** | 0.12 | 0.01 | *** | *** | 0.15 | 0.04 | *** | 0.05 | 0.03 | * | † |
| Never married | 0.2 | 0.03 | *** | 0.08 | 0.02 | *** | *** | 0.16 | 0.23 | | 0.16 | 0.13 | | |
| Lives in South | 0.06 | 0.01 | *** | 0.03 | 0.01 | ** | † | 0.02 | 0.06 | | -0.08 | 0.06 | | |
| Education | | | | | | | | | | | | | | |
| Less than HS (Ref) | | | | | | | | | | | | | | |
| HS | 0.06 | 0.02 | *** | 0 | 0.02 | | * | 0.05 | 0.04 | | 0.07 | 0.23 | | |
| Some college | 0.04 | 0.02 | | -0.01 | 0.02 | | | 0.05 | 0.05 | | 0.1 | 0.25 | | |
| College | 0.02 | 0.03 | | 0.01 | 0.02 | | | -0.05 | 0.07 | | 0.27 | 0.29 | | |
| Number of household members | 0 | 0.01 | | -0.02 | 0 | *** | * | 0 | 0.01 | | 0 | 0.01 | | |
| Children under 18 | -0.04 | 0.02 | * | -0.04 | 0.01 | ** | | 0.01 | 0.02 | | -0.02 | 0.02 | | |
| Health limit | -0.08 | 0.02 | *** | -0.13 | 0.02 | *** | * | -0.04 | 0.02 | * | -0.02 | 0.02 | | |
| Husband Health limit | 0.06 | 0.02 | ** | 0.02 | 0.02 | | | 0.02 | 0.02 | | 0 | 0.02 | | |
| Household income | | | | | | | | | | | | | | |
| <$15,000 (Ref) | | | | | | | | | | | | | | |
| $15-30,000 | 0.19 | 0.02 | *** | 0.05 | 0.02 | * | *** | 0.02 | 0.02 | | 0.07 | 0.02 | *** | † |
| $30-50,000 | 0.21 | 0.02 | *** | 0.08 | 0.02 | *** | *** | 0.06 | 0.02 | ** | 0.08 | 0.02 | *** | |
| $50-75,000 | 0.19 | 0.02 | *** | 0.1 | 0.02 | *** | ** | 0.08 | 0.03 | ** | 0.06 | 0.02 | ** | |
| $75000+ | 0.23 | 0.03 | *** | 0.13 | 0.02 | *** | ** | 0.1 | 0.03 | *** | 0.09 | 0.02 | *** | |
| Occupation | | | | | | | | | | | | | | |
| Managerial (Ref) | | | | | | | | | | | | | | |
| Professional | -0.08 | 0.03 | ** | -0.05 | 0.02 | ** | | -0.09 | 0.03 | ** | 0.01 | 0.03 | | * |
| Clerical | -0.13 | 0.03 | *** | -0.08 | 0.02 | *** | | -0.09 | 0.03 | ** | 0 | 0.03 | | * |
| Services | -0.25 | 0.03 | *** | -0.09 | 0.02 | *** | *** | -0.14 | 0.03 | *** | 0.01 | 0.03 | | ** |
| Technical/Trades/Labor | -0.02 | 0.03 | | -0.03 | 0.02 | | | -0.1 | 0.04 | ** | 0 | 0.04 | | * |
| N | 3896 | | | 6169 | | | 10,065 | 3896 | | | 6169 | | | 10,065 |
| n | | | | | | | | 1540 | | | 2365 | | | 3,905 |
| F-stat | 22.7 | | | 14.92 | | | 22.78 | 3.6 | | | 3.18 | | | 3.08 |

† p<0.10, * p < .05, ** p < .001, *** p < .001
a. Regressions include wave dummies
Source: 1982, 1984, 1987, and 1989 NLS-MW and 1997, 1999, 2001, and 2003 NLW-YW

Table 6: Pooled and Fixed-Effects OLS Regression of Logged Hourly Wages of Pre-Baby Boomer and Baby Boomer Women[a]

| | Out of Home Caregiver | | | | | | | Out of Home Caregiver | | | | | | |
| | Pooled MW | | | Pooled YW | | | | FE MW | | | FE YW | | | |
| Wage | Coef. | Std. | Sig | Coef. | Std. | Sig | Sig Cohort Dif | Coef. | Std. | Sig | Coef. | Std. | Sig | Sig Cohort Dif |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Out of Home CG Intensity | | | | | | | | | | | | | | |
| Non-caregiver (Ref) | | | | | | | | | | | | | | |
| 0-14.9 hours | 0.01 | 0.03 | | 0.04 | 0.03 | | | 0 | 0.03 | | -0.02 | 0.04 | | |
| 15 plus hours | -0.11 | 0.06 | † | 0.05 | 0.07 | | † | -0.07 | 0.06 | | 0.03 | 0.07 | | |
| Age | 0.07 | 0.06 | | 0.01 | 0.06 | | | 0.19 | 0.08 | * | 0.07 | 0.08 | | |
| Age squared | 0 | 0 | | 0 | 0 | | | 0 | 0 | *** | 0 | 0 | | |
| Marital status | | | | | | | *** | | | | | | | |
| Married (Ref) | | | | | | | | | | | | | | |
| Widowed | 0.37 | 0.04 | *** | 0.17 | 0.05 | *** | ** | 0.17 | 0.07 | * | -0.06 | 0.1 | | † |
| Divorced/separated | 0.44 | 0.03 | *** | 0.23 | 0.03 | *** | *** | 0.1 | 0.07 | | 0.11 | 0.06 | † | |
| Never married | 0.51 | 0.05 | *** | 0.13 | 0.04 | *** | *** | 0.01 | 0.38 | | 0.27 | 0.28 | | |
| Lives in South | -0.01 | 0.02 | | -0.04 | 0.02 | * | | -0.09 | 0.11 | | -0.15 | 0.13 | | |
| Education | | | | | | | | | | | | | | |
| Less than HS (Ref) | | | | | | | | | | | | | | |
| HS | 0.09 | 0.03 | *** | 0.2 | 0.04 | *** | * | -0.07 | 0.07 | | 0.14 | 0.48 | | |
| Some college | 0.12 | 0.04 | ** | 0.3 | 0.04 | *** | ** | -0.07 | 0.08 | | 0.02 | 0.52 | | |
| College | 0.19 | 0.04 | *** | 0.43 | 0.04 | *** | *** | -0.15 | 0.11 | | -0.04 | 0.6 | | |
| Number of household members | -0.04 | 0.01 | *** | -0.07 | 0.01 | *** | ** | -0.03 | 0.01 | * | -0.01 | 0.01 | | |
| Children under 18 | 0 | 0.03 | | 0.04 | 0.03 | | | -0.02 | 0.03 | | 0.04 | 0.04 | | |
| Health limit | -0.13 | 0.03 | *** | -0.11 | 0.03 | *** | | 0 | 0.03 | | -0.03 | 0.04 | | |
| Husband Health limit | 0.12 | 0.03 | *** | 0.04 | 0.04 | | | 0.1 | 0.04 | ** | -0.11 | 0.05 | * | *** |
| Household income | | | | | | | | | | | | | | |
| < $15,000 (Ref) | | | | | | | | | | | | | | |
| $15-30,000 | 0.57 | 0.04 | *** | 0.78 | 0.05 | *** | *** | 0.42 | 0.04 | *** | 0.81 | 0.06 | *** | *** |
| $30-50,000 | 0.85 | 0.04 | *** | 1.07 | 0.05 | *** | *** | 0.56 | 0.04 | *** | 1 | 0.06 | *** | *** |
| $50-75,000 | 1.01 | 0.04 | *** | 1.25 | 0.05 | *** | *** | 0.66 | 0.05 | *** | 1.11 | 0.07 | *** | *** |
| $75000+ | 1.22 | 0.04 | *** | 1.52 | 0.05 | *** | *** | 0.73 | 0.05 | *** | 1.16 | 0.07 | *** | *** |
| Occupation | | | | | | | | | | | | | | |
| Managerial (Ref) | | | | | | | | | | | | | | |
| Professional | 0.05 | 0.05 | | -0.01 | 0.03 | | | 0.05 | 0.06 | | 0.15 | 0.06 | ** | |
| Clerical | -0.14 | 0.04 | *** | -0.16 | 0.03 | *** | | 0.04 | 0.05 | | 0.09 | 0.06 | | |
| Services | -0.35 | 0.04 | *** | -0.24 | 0.04 | *** | † | -0.01 | 0.05 | | 0.04 | 0.08 | | |
| Technical/Trades/Labor | -0.22 | 0.05 | *** | -0.25 | 0.04 | *** | | 0.01 | 0.07 | | 0.11 | 0.08 | | |
| N | 3602 | | | 5086 | | | 8688 | 3602 | | | 5086 | | | 8688 |
| n | | | | | | | | 1386 | | | 2110 | | | 3496 |
| F-stat | 83.05 | | | 95.21 | | | 95.86 | 11.84 | | | 17.29 | | | 12.78 |

† p<0.10, * p < .05, ** p < .001, *** p < .001
a. Regressions include wave dummies
Source: 1982, 1984, 1987, and 1989 NLS-MW and 1997, 1999, 2001, and 2003 NLW-YW

we looked at waves for which we had data on all (in- and out-of-home) caregivers, with the coefficient for overall caregiving exhibiting a similar magnitude as overall out-of-home caregiving (-0.31 for the fixed-effect Baby Boomer model).

Other explanatory variables′ coefficients were in the directions one would expect based on previous research, with a positive and diminishing positive association between age and labor force participation and negative associations between health limitations and working. The only variable with unexpected results was college education in the fixed-effects models, likely due to the limited variation in women′s college status over the time period in question. There were few differences between the two cohorts. Being widowed and being divorced became weaker correlates of women′s labor force participation across cohorts.

In our weekly work hours equations in Table 5, we found that there were some notable differences between the pooled and fixed-effects models. While less and more intensive out-of-home caregiving were significantly and negatively associated with women's work hours in our pooled models, the effect was no longer significant when we accounted for unobserved heterogeneity with fixed-effects. A similar pattern was observed for all out-of-home caregiving and all caregiving (not shown). We did not find a significant cohort difference in the caregiving effects. There were some noteworthy cohort differences for other explanatory variables, however. The positive association between being widowed or divorced and work hours diminished over time, while Baby Boomers in all professions became more likely to work longer hours than the previous cohort of women.

Finally, we found that intensive caregiving was significantly associated with wages for pre-Baby Boomers in the pooled model, but this effect was no longer significant in the fixed-effects model (Table 6). Our specifications with all out-of-home caregiving (not shown) were non-significant and the magnitude of the effect was close to zero. There were not substantial differences between the

two cohorts with respect to most of the other variables, though a husband's health limitations was significantly more likely to negatively impact Baby Boomer wages compared to pre-Baby Boomers.

## Discussion

In this study, we assessed for the first time whether caregiving had a differential effect on the labor market outcomes for pre-Baby Boomers compared to Baby Boomer women. We used pooled and fixed-effects models controlling for unobserved heterogeneity to determine whether labor force participation, weekly hours of work, and wages were significantly associated with caregiving and intense caregiving. Overall, our results indicated that caregiving was negatively associated with labor force participation for both pre-Baby Boomers and Baby Boomers alike. Further, the caregiving effects were *not* significantly different across cohorts. Once we controlled for unobserved heterogeneity, caregiving was not significantly associated with the hours worked or wages of women in either cohort. Broadly, our findings with respect to labor force outcomes of caregivers are in line with existing literature that demonstrates a significant caregiving effect for labor force participation, but not necessarily for wages and hours (Lilly et al. 2010; Lilly et al. 2011).

Our approach also highlighted that time-invariant unobservable factors are not responsible for the negative association between intense out-of-home caregiving and labor force participation. A common concern in labor market analyses of caregivers versus non-caregivers is that individuals with an already weak attachment to the labor market are more likely to become caregivers due to lower opportunity costs (Bolin et al. 2008; Heitmueller 2007; Van Houtven et al. 2013). These factors might, in turn, bias the results and increase the likelihood of a negative association. The relative consistency of the coefficients for intense caregiving across both our pooled and fixed-effects labor force participation models highlights that this is not the case. The difference in the pooled

versus fixed-effects models for our work hours equations, however, highlight that it may be these individual-level factors contributing to caregivers working fewer hours. Alternatively, the latter findings could also be due to the more limited variation in work hours across waves due to a sticky job market.

Our contribution to the literature was to highlight that the labor market penalties experienced by caregivers have not changed significantly over time, despite significant labor market advances and institutional supports being implemented between the two time periods we analyzed. These findings highlight that any potential gains that might have come about due to legislation such as the *Family Medical Leave Act* have been more than offset by other factors contributing to greater caregiver burden. These factors include a growing pool of elderly care recipients and an aggressive shift to the delivery of care in community settings (Estes 1989; Harrington-Meyer and Parker 2011).

## Limitations

There are a number of noteworthy limitations to our study. With respect to the data used, the proxy for caregiving and caregiving intensity used in our base case models captured only out-of-home caregiving due to the fact that in-home caregiving was not captured in all for the NLS-MW (i.e. pre-Baby Boomer) cycles. To run the fixed effects models, we needed a minimum number of cycles of data, so we opted to use the out-of-home proxy instead of using fewer cycles and a better proxy. While we risked losing around 20% of caregivers who potentially provided more intensive care, supplementary analysis suggested that the effect of this decision on our findings was minimal. We ran the pooled models with all (in-home and out of home) caregiving individuals and found very similar results. Further, when we ran fixed effects models for the Baby Boomer cohort with the NLS-YW, the results were similar using all caregivers as they were when we used

out-of-home caregivers. However, it would be expected that we likely underestimated the effect of caregiving on our outcomes if, as previous research indicates, in-home caregiving is more intensive than out-of-home care (Hirst 2005).

Some additional concerns relate to our estimation strategy. There is a potential for selection bias when it comes to the hours and wage equations, as well as endogeneity concerns with all our equations. For the former selection issues, we considered the use of Heckman-like correction techniques, but it is difficult to apply such techniques while also using fixed effects models. As such, we use a similar approach as Van Houtven et al. (2013), controlling for selection into work with the fixed-effects approach. If the characteristics that cause an individual to select into work are time-invariant, then the fixed-effect approach would control for this type of selection. However, if this characteristic varied with time, then the impact of caregiving on hours and wages will also include the impact of selection into work in the caregiving coefficient (Van Houtven et al. 2013).

The second concern with our estimation strategy pertains to modeling potential endogeneity issues. Endogeneity would be a concern in our fixed-effects models if the time-varying error is correlated with time-varying caregiving behavior even after including the fixed effect (Van Houtven et al. 2013). While we considered the possible use of a residual inclusion technique, this would require us to have a valid time-varying instrument across all of our waves, which we did not have. However, Van Houtven et al. (2013) did not find evidence of endogeneity in similar caregiving and labor force outcomes models after controlling for unobserved heterogeneity with individual level fixed-effects, indicating that selection bias may not be an issue if we controlled for permanent unobserved heterogeneity with fixed effects.

Finally, there was not perfect overlap with respect to the ages of the women in the two cohorts. The Baby Boomer cohort was slightly younger than the pre-Baby Boomers, which implies that the

findings of our bivariate analyses could have been impacted by these differences. While not exact, the age ranges were quite close, though, and multivariate analyses controlled for age. As such, we expect the effect of this difference on our main findings to be quite minimal.

## Conclusion

This study has provided an important first step in establishing that caregiving labor market penalties have persisted over time. The *Family Medical Leave Act* remains the only federal legislation aimed at helping informal caregivers to retain employment in the United States. When President Clinton signed it into law in 1993, he stated, "American workers will no longer have to choose between the job they need and the family they love" (Clinton 1993). Subsequent to its enactment, however, caregiving women still had to make this choice, and to the same extent as women who did not have access to this leave. The Baby Boomers who had access to unpaid leaves were not able to more successfully balance caregiving with labour force participation. Our results highlight that despite substantial labor market progress for women on so many fronts, these advances have not been equally experienced by caregiving women.

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