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ABSTRACT

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The number of Americans raising grandchildren has been rising steadily. In this paper, we add to what is known about the implications of this trend by focusing on the economic effects of raising a grandchild. We make use of a unique data set compiled from the Panel Study of Income Dynamics along with its Parent Identification File. Using this nationally representative sample of 3,240 grandparents who are heads of households, we estimate the effect of taking in a grandchild on a grandparent's labor force participation and hours worked. We estimate ordinary and two-stage models that distinguishing between grandparents living only with grandchildren (skipped generation families) and those who also have taken in their own children (three-generation families). The results suggest that caring for grandchildren leads to greater attachment to the labor force, especially in skipped-generation families, for grandfathers, and among married grandparents.

JEL Classification: J13, J14, J22, J26

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It is well known that the structure of families in the United States has been undergoing dramatic changes (Ellwood & Crane, 1990). These include a falling marriage rate and rising rates of divorce and out-of-wedlock birth (Census, 2000). Naturally, these changes have been accompanied by changes in children's living arrangements. Children are now less likely to be living in a two-parent household than they were in 1970, and more likely to be living with one parent, or neither parent (Cherlin & Furstenberg, 1992; Lugaila, 1998). Further, several social forces have limited the ability of many parents to take a principal role in raising their own children: Rising rates of substance abuse, mental illness, HIV and incarceration have made it difficult for a growing number of parents to effectively care for their own children (Burton, 1992; Jendrek, 1994; Minkler & Roe, 1993; Minkler, 1998; Pebley & Rudkin, 1999). All of these changes have combined to make it more likely that American children will be living in households headed by someone other than one of their parents.

One consequence of these changes is that it has become increasingly common for older Americans to take grandchildren into their homes (Hayslip and Kaminski, 2005). Indeed, the likelihood that a child will be living in a household headed by a grandparent has increased from about 1 in 31 children in 1970 to 1 in 18 in 1997 (Bryson & Casper, 1999). Either with or without the child's parent(s) present, grandparents are playing a more central role in raising children with few other options (Kelley, Yorker & Whitley, 1997; Minkler & Roe, 1993; Pebley & Rudkin, 1999).

A growing body of literature has provided insights into the characteristics and consequences of the growing propensity of grandparents to raise grandchildren (e.g. Baydar & Brooks-Gunn, 1998; Ellwood & Crane, 1990; Fuller-Thompson, Minkler & Driver, 1997; Hayslip, Shore, Henderson & Lambert, 1998; Jendrek, 1994; Minkler & Roe, 1993; Pebley &

Rudkin, 1999; Roe & Minkler, 1998; Rutrough & Ofestedal, 1997). While this research has been revealing about a variety of effects of these arrangements for both children and grandparents, there are two areas in which this collective body of research needs to be further strengthened.

First, much of the previous research on implications for grandparents has examined health, emotional or social effects of caring for grandchildren (Bachman & Chase-Lansdale, 2005; Bowers & Myers, 1999; Burton, 1992; Mills, Gomez-Smith & De Leon, 2005; Casper & Bryson, 1998; Haywood, 2001; Lee & Colditz, 2003; Minkler & Fuller-Thompson, 1999, 2005). Less studied is the economic effect of caring for grandchildren. Some evidence related to employment comes from Musil, Shrader and Mutikani (2000), but they focus on the coping mechanisms provided by employment. Clearly, caring for a grandchild could also impose substantial, unexpected financial burdens (Casper & Bryson, 1998; Bachman & Chase-Lansdale, 2005). Second, as Hayslip and Kaminski (2005) make clear, much of the research on custodial grandparents relies on samples unlikely to be representative of the population of grandparents, custodial or otherwise.

In this paper, we attempt to contribute to the literature in this area by extending what is known about the consequences of taking in grandchildren, focusing on important aspects of the economic implications of this decision. To do so we examine the relationship between living with grandchildren and work among older Americans who maintain their own households. We use data from the Panel Study of Income Dynamics (PSID) and its Parent Information File (PIF), which allow us to link younger Americans with their parents and their parents' parents. Consequently, we have constructed a nationally representative panel dataset that provides information on grandparents who maintain their own home and their grandchildren, regardless of

whether grandchildren live in a grandparents' household. These data can provide us with a more complete understanding of the direct or resource costs that grandparents incur when deciding to take grandchildren into their homes.

We view this is important not only because of its relevance to previous research, but also because of the substantial policy importance of this topic. As changes in welfare and foster care policies encourage grandparents to raise children when parents cannot, understanding these costs is vital to shaping good policy decisions.

Background:

There are approximately 56 million grandparents in the U.S. (Census Bureau, 2006), and about three-fourths of all adults will become grandparents in their lifetime (Giarrusso, Silverstein and Bengston, 1996). The Census Bureau (2006) estimated that among the 56 million grandparents about 2.4 million grandparents report raising a grandchild under 18. Census Bureau data provide a variety of basic facts about custodial grandparents: 1.7 million of these 2.4 million grandparents are married; Fully 1.4 million of these custodial grandparents are also in the labor force, and; Custodial grandparents care for 4.1 million children live in their grandparents' homes (Census Bureau, 2006).

The Census Bureau (2006) also indicates that 920,000 grandparents were responsible for caring for their grandchildren for at least five years. Other evidence illustrates that many more had responsibility for grandchildren for shorter periods. Using data from the National Survey of Families and Households (NSFH), Fuller-Thomson, Minkler and Driver (1997) estimate that 10.8% of all grandparents had primary responsibility for raising a grandchild for at least 6 months (with many engaged in far longer commitments). Clearly, grandparents play an important role in raising America's children.

Central to the story of the prevalence of grandparents raising grandchildren is the role of race. African American grandparents are about 1.8 times more likely than their white, non-Hispanic peers to take grandchildren into their homes, even after controlling for a host of other factors (Cherlin & Furstenberg, 1992; Fuller-Thompson, Minkler & Driver, 1997; Fields, 2003). About 12% of all African American children lived with their grandparents, compared to 8% of the general population (Heywood, 2001). African American grandparents ae especially likely to serve as the only caregivers for the grandchildren with whom they live.

Some analysts have suggested that this may in part be due to the fact that grandmothers have historically held surrogate parent roles in the African American community, and hence had traditionally played more important roles than their white counterparts (Pebley & Rudkin, 1999; Taylor, Chatters & Jackson, 1993). But, socioeconomic differences also likely play a role. Poor mothers are more likely to be single, and have problems with substance abuse or crime and hence may be more likely to call on grandparents to care for their children. Since poverty rates are more than twice as high for blacks than whites (Census Bureau, 2002), black grandparents may be placed in the position of having to care for grandchildren more often. There is a strong association between poverty and the need for grandparents to raise grandchildren. Grandparents who took in grandchildren were poor at a higher rate than the population of older Americans in general (Casper & Bryson, 1998). This was especially true for households headed by grandmothers, where no parent of the child was present: For whom Casper and Bryson (1998) reported a mean household income of $19,750, compared to $61,632 for households with both grandparents and a parent present.

The fact that grandparents raising grandchildren are more likely to be poor unmarried females suggests that this family structure arises out of need, not choice (Bowers & Myers, 1999;

Hayslip, Shore, Henderson, & Lambert., 1998; Jendrek, 1994). Indeed, the evidence suggests that grandparents undertake the role of parent when their grandchildren's home circumstances deteriorate (Kelley et al., 1997; Pebley & Rudkin, 1999).

Not surprisingly then, several studies have drawn attention to some major negative consequences of parenting grandchildren, including: stress and mental or physical illness (Baydar & Brooks-Gunn, 1998; Lee, Colditz, Berkman & Kawachi, 2003; Minkler & Fuller-Thompson, 1999), social isolation, and changes in lifestyle or reduction in life satisfaction (Bowers & Myers,1999; Burton & Bengtson, 1985; Shore & Hayslip, 1994).

While the health and social consequences of taking in grandchildren have been studied extensively, there has been much less work examining potential economic consequences. Beyond the Census Bureau estimates referred to above, Rutrough and Ofstedal (1997) provide some evidence that grandparents who lived with only their grandchildren were more likely to work than grandparents who also had the children's parents living with them. Casper and Bryson (1998) also found that grandfathers were more likely to work than grandmothers.

In this paper we hope to build upon these studies to develop a fuller sense of the relationship between the decision to take in a grandchild and time subsequently spent in the labor market. We do so because the labor market is the principal mechanism through which American families acquire income, and it is an important source of social connection and support. It is clear from previous research that grandparent caregivers are socioeconomically disadvantaged. Part of this may be due to the possibility that caring for grandchildren limits ability to devote time to the labor market. Or, it may be that caring for grandchildren requires grandparents to spend down savings or other forms of wealth. If so, caring for grandchildren may serve to reinforce social stratification.

Caring for and supervising children requires time and money. Since many grandparents pressed into duty caring for grandchildren have relatively low incomes and many are unmarried, these are often resources in short supply. Low income grandparents may not have the money to pay for others to supervise grandchildren while they are at work. Unmarried grandparents don't have spouses with whom they can balance work schedules to ensure an adult is home with grandchildren. Hence, many grandparents put in this position may be left with few opportunities but to spend less time in the labor market, perhaps making a bad economic situation worse.

Our aim is to examine how raising grandchildren affects two primary labor market outcomes: labor force participation and the total number of hours worked for those in the labor market. To do so, we compare the labor market experiences of grandparents who are raising grandchildren, with those who are not, conditional on a variety of socioeconomic and other characteristics. We limit our focus to grandparents who maintain a household; thus excluding those living in institutions or in a household headed by someone else, such as one of their own children. This limitation is both conceptually and empirically important. We wish to understand the behavior of grandparents who might participate in the labor market, and those not living independently are less likely to have the physical or cognitive capacity to do so.

We seek to answer several research questions guided by the proposition that caring for grandchildren is both labor- and resource-intensive. Taking in grandchildren can drastically alter the amount of time available for work or leisure and place grandparents under financial stress. We examine first whether taking in one or more grandchildren affects the labor force behavior of non-retired grandparents. Then, temporarily restricting our analysis to those employed, we examine whether caring for grandchildren affects the number of hours devoted to the labor market. With new responsibilities, at once, grandparents must accommodate the new demands on

their financial resources, and supervise and nurture a child. They must decide how to balance paid work with childrearing.

Because of the importance of race and socioeconomic status in shaping decisions about caring for grandchildren and in shaping labor market outcomes, we include in our models controls for race and ethnicity, accumulated wealth and work experience. We also control for whether or not a grandparent was married or living with a spouse.

We examine these effects separately for grandmothers and grandfathers, and for married and unmarried grandparents, since individuals' determinations about market or household production are shaped by social mores, opportunity costs and the availability of intra-household substitutes. For example, the social norms for older Americans likely place heavier demands on women to care for children. Or the caregiving responsibility might place strains especially on unmarried grandparents with no spouse available to help supervise or nurture grandchildren.

Further, as we describe below, we estimate a series of ordinary and hierarchical models to address the possibility of potential endogeneity of the decision to take grandchildren into one's home (or to be asked to do so). There are many ways in which this endogeneity might manifest. For example, grandparents who are in relatively robust health and are most likely to work may be those more inclined to take grandchildren into their care. Or, it could be that grandparents from families with lower socioeconomic status may have both poorer work histories or prospects (Chalfie, 1994) and a greater likelihood that they will be called upon to parent the child of one of their own troubled children.

In any case, it is likely that one needs to be careful in attributing cause to observed differences in labor market behavior between grandparents who have taken a grandchild into their homes and those who have not. Below, we describe our strategy to describe differences

between these groups of grandparents, and to try to identify the effects of caring for grandchildren on labor market behaviors.

Data and Methods:

In order to better understand the economic effects of the decision to take in a grandchild, we use data from the Panel Study of Income Dynamics (PSID). The PSID is a nationally representative longitudinal study of U.S. families. Interviews began in 1968, with around 5,000 families. Interviews with these original families and all families that formed from them took place annually between 1968 and 1997. Since 1997, interviews have been conducted biennially. Currently, approximately 8,000 families are surveyed.

In this study, we make use of the core set of information on these families, along with supplementary data from the Parental Identification File (PIF). We use the PIF to link all children in the PSID sample with their parents. We then link those parents with their own parents, thereby identifying grandparents of children in the sample, regardless of whether or not they resided in the same household. Next, we restrict our sample to PSID sample members who had at least one dependent grandchild *and* who maintained their own households.

We make use of data collected in survey years 1994, 1997, 1999 and 2001. We pool data from each of these four survey years to construct our analytical file, which includes a total of 7,940 observations on 3,240 grandparents. The unit of analysis in our data set is the grandparent, including grandmothers and grandfathers, both married and unmarried. In the analytical sample, all observations are on non-institutionalized biological grandparents who have at least one non-institutionalized, live, dependent grandchild under 18 years old. By dependent, we mean the child is living as a dependent in someone's household (e.g., a parent, grandparent or someone else). We focus only on biological grandparents because we anticipate the intergenerational

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family and financial obligations to be stronger for this group. In practice, this distinction is unimportant, since nearly all grandparents we identify raising grandchildren are biologically related.

We believe these data provide a key advantage over all other data sets previously examined to study the effects of taking in grandchildren. It is the first attempt to use the PSID to address the research questions pertinent to the well-being of grandparents who raise grandchildren. By making use of the features of PIF, we are able to identify a nationally representative sample of care-giving grandparents, as well as those not providing care for their grandchildren, differentiating the presence of the second-generation parents. We defined a care-giving grandparent as one who is either the head (or spouse of the head) of a household in which a grandchild lives. This excludes grandparents who live separately from, but occasionally or even regularly care for their grandchildren while the children's parents are at work.

This dataset has unique advantages over other datasets previously used to study the well-being of grandparents. The initial studies on the topic relied on administrative datasets or convenience samples, limiting the extent that conclusions could be related to the broader population. More recent studies have relied on larger, nationally representative samples, but have their own limitations. For example, the Health Retirement Survey, a large-scale national survey, provides no information on persons younger than 51, though a large fraction of grandparents are younger than this. The National Survey of Families and Households permits comparisons of caregiving and noncaregiving grandparents, but results generated are not comparable with other studies because it does not distinguish between grandparents who care for grandchildren in families where the second generation is also present and those where the grandparents are the only adults in the household.

So, the PSID provides broad and relatively detailed information about the experiences of grandparents raising grandchildren, as well as the experience of those who live separately from their grandchildren. Using these data, our first aim is simply to describe grandparents who care for grandchildren. Since nationally representative samples of caregiving grandparents are rare, an important task for us is to characterize and compare grandparents who live with their grandchildren and those who do not.

Our empirical strategy is to estimate models of the following form:

$$L_{it} = \alpha + \beta_1 X_{it} + \beta_2 G_{it} + \beta_3 M_{it} + \beta_4 (G_{it} * M_{it}) + \alpha_t + \varepsilon_{it}$$

Where L_{it} measures labor market behavior of grandparents, defined separately as: labor force participation among non-retired grandparents; and the number of hours worked in the past twelve months, conditional on employment. We identify labor force participants based on a response to a standard question on main activity in the week prior to the survey. This question is modeled after that used by the U.S. Bureau of Labor Statistics to measure unemployment monthly using the Current Population Survey. We identify respondents as labor force participants if they respond that they were currently working, actively looking for work, on maternity or sick leave or on lay-off. We identify respondents not participating in the labor force as those who were not in any of these categories, and who were not retired. The measure of hours worked is the product of responses to questions about the number of weeks worked in the previous year, and the number of hours per week usually worked.

X_{it} is a vector of individual characteristics known to affect labor market behavior. These include factors such as race, age, and education. It also includes wealth accumulated to date (including savings, IRAs, pension value and home equity). Wealth is an important determinant of retirement and work behavior among older Americans.

The independent variable of particular interest is G_{it}, a dummy variable equal to one if individual i had taken in a grandchild in year t. M_{it} measures whether or not the grandparent is married in year t. The interaction term between these two variables allows us to test the hypothesis that taking in grandchildren has different effects on the labor supply behavior of unmarried grandparents than on those who are married.

We estimate these models separately for men and women. We do so not only because labor force behavior varies by gender, but also because care of grandchildren is likely to place different demands on grandmothers and grandfathers. Further we distinguish between grandparents who maintained their own homes and had live-in grandchildren, either with or without the grandchildren's parents in the grandparents' homes. Grandparents in the former situation, referred to below as three-generation families, are likely to face a different set of demands than grandparents in the latter situation, referred to below as skipped-generation families. Grandparents in three-generation families may have less day-to-day responsibility for care or may expect the child's parent(s) to contribute resources to the household. Grandparents in skipped-generation families are more likely to be responsible for both the daily care and financial support of their grandchildren.

In all models we estimate standard errors in the manner suggested by Huber and White (Huber, 1967; White, 1980, 1982). These standard errors are robust to arbitrary patterns of serial correlation. Bertrand, Duflo and Mullainathan (2004) suggest this strategy as a straightforward and effective way to draw inference on time-variant interventions in panel data with a limited number of time periods.

To attempt to control for unobserved heterogeneity between grandparents who take in grandchildren and those who do not (or between families where such arrangements are necessary

and those where they are not), we employ a two-stage least square (2SLS) estimator in which we model the decision to care for a grandchild as a function of teenage birthrates in the state, the relative leniency and generosity of state kinship foster care arrangements and the incarceration rate for prisoners in the state. To measure teenage fertility we make use of data on birth rates to girls between the ages of 15 and 19, obtained from the National Vital Statistics Reports. We obtained information on the stringency of licensing requirements for kinship care and of the generosity of reimbursement rates from the Urban Institute (Jantz, Geen, Bess, Andrew & Russell, 2002; Leos-Urbel, Bess, & Geen, 1999). The policy instruments are derived from features of states' kinship foster care policies. States vary in the extent to which they encourage family members to assume guardianship for children in foster care. They do this through differences in licensing requirements for guardianship and foster care expenses. We collect the information on state incarceration rates for prisoners under federal and state jurisdiction (per 100,000 residents) from the U.S. Bureau of Justice Statistics Finally, we also instrument using individual-level information on the number of dependent grandchildren and the number of adult children (separately) a grandparent has.

We expect both the state- and individual-level variables to provide exogenous, predictive information on the likelihood a grandparent takes a grandchild into his or her home: Teen pregnancy rates and incarceration rates are related to the risk a grandparent would be needed to care for a grandchild; Foster care policy affects the barriers and incentives faced by grandparents who might do so; We expect the likelihood of taking in a grandchild to rise with the number of grandchildren, since the number who might need such care rises proportionately, and; The chances of taking in a grandchild should fall with the number of children a grandparent has, since other family members (aunts or uncles) could also assume care for a child. We anticipate

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none of these to be directly related to a grandparent's labor market behavior.

We use this 2SLS strategy to attempt to limit any effects of omitted variables, rather than exploiting the panel features of our data and estimating within-grandparent effects of caring for grandchildren on labor force behavior. This was necessary because of the very small amount of inter-temporal variation in caregiving among grandparents.

Results：

In Table 1 we present descriptive statistics for the sample of grandparents from the PSID. Based on the full panel, we estimate that in any year, 7.6% of grandparents have a grandchild living in their home. The majority of these also have at least one of the grandchild's parents living with them. This estimate of 7.6% is just a bit higher than the 5% implied by the Census Bureau's estimate of 2.4 million grandparents raising grandchildren out of an estimated 56 million grandparents. Our estimate from the PSID is lower than the 10.8% reported for the NSFH sample (Fuller-Thomson et al., 1997), but their number is an estimate of lifetime prevalence of caring for grandchildren.

In terms of basic demographic characteristics of the grandparents in our sample, the mean age was 60, and nearly 60% of living grandparents were grandmothers. In total 71.7% of grandparents had spouses present at home. About 10% of grandparents in the sample were African American, while 1 percent was Latino. The low representation of Latinos in the sample is a legacy of the original sampling in 1968, when Latinos were a smaller portion of the population than today, as well as the decision by the PSID to drop the Latino over-sample because of financial reasons. The educational attainment of the sample is comparable to that of older Americans, in general. Twenty three point one percent of the sample had dropped out of high school, compared to Census-reported rates of approximately 18% of 55-64 year olds and

26% of 65 to 74 year olds (U.S. Census Bureau, 2000). The majority completed high school, but the plurality obtained nothing beyond a high school diploma. Nearly 48% of grandparents worked for pay, averaging 1,009 hours per year, or nearly 25 weeks. Finally, grandparents reported a mean net wealth (shared with a spouse, if applicable) of $380,811.

As a first step to understand the relationship between caring for grandchildren and employment outcomes, consider differences in average characteristics between grandparents who have taken in grandchildren, and those who live separately from their grandchildren. We present these characteristics in Table 2. In the first column, we present means for grandparents who live independently, without grandchildren in their homes. In the second column, we present mean characteristics of all grandparents who have taken grandchildren into their homes, regardless of whether or not the grandchildren's parents are also in the home. We present characteristics of grandparents in three-generation and skipped-generation families in the last third and fourth columns. We provide two tests of differences in characteristics by status as a grandparent caregiver. First, we test whether each group of care-giving grandparents is significantly different from grandparents living on their own. We do this for all grandparents raising grandchildren, and then separately for three generation and skipped generation families. When there are differences in these pair-wise tests that are statistically significant at the 5 percent level, this is indicated in the relevant row/column. Then, we test whether the characteristics of grandparents heading three generation families (Column 3) are significantly different from those heading skipped generation families (Column 4). We report p-values from these tests in Column 5.

The results in Table 2 make it clear that grandparents who have taken grandchildren into their homes are younger, more likely to be female and black, and less likely to be married. These are all consistent with Census findings (Census, 2000). Further, grandparents who provide

primary care for their grandchildren are somewhat less educated than other grandparents. More than one third of such grandparents are high school dropouts, and just about 6% finished college: Both substantially different from grandparents who have not taken in grandchildren.

Given the educational and demographic differences between grandparents who do and do not have primary care responsibilities for their grandchildren, it is not surprising that their economic circumstances differ, too. Grandparents with grandchildren in their homes are more likely to work and work longer hours. Finally, the net wealth of grandparents with grandchildren in the home is less than one-third that of other grandparents.

It is important to recognize that there are both important similarities and differences between grandparents in three-generation and skipped-generation families. Both groups are much more likely than the general population of grandparents to be younger, black, have lower levels of education, and have accumulated less wealth. But grandparents in three-generation families are substantially younger than those in skipped-generation families. This is likely because the grandchildren's parents are themselves likely to be quite young and perhaps have never established their own households. Accordingly, grandparents in three-generation families are relatively healthy, and more likely to work than are other groups of grandparents.

Next, to understand whether observed differences in labor market behaviors are due to new demands placed on grandparents who decide to take a grandchild into their homes, we examine the association between inter-temporal differences in grandparents' labor force behaviors and whether or not they accepted a grandchild into their home. Using all pairs of consecutive survey years, we identified grandparents who did not have a grandchild in the home in either year, and grandparents who had a grandchild move into their home between survey years.

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In Table 3, we present mean changes in labor force participation rates for grandmothers and grandfathers who took in grandchildren between survey years, and those who did not. Clearly, grandparents who had a grandchild move into their home were more likely to participate in the labor force – likely due to the relative youth of these grandparents. Note also that among those who did not take in a grandchild, labor force participation rates fell at comparable rates for both men and women. A decline in the labor force participation rate is to be expected over time as more grandparents retire with each passing year.

Among those that did take in a grandchild, however, labor force participation rates change in different ways for grandfathers and grandmothers. Labor force participation rates decline more slowly for these grandfathers than they do for grandmothers. One explanation for this may be that grandfathers in this position postpone retirement. An alternative explanation is that because of their age, these men are less likely to retire, and their labor force participation rates change less as a result. Among grandmothers, however, labor force participation rates drop much faster among those who took in a grandchild. This may be because grandmothers are most likely to take lead responsibility for child care, and adjust their time in the labor market accordingly. Among those who do work, hours worked declined much more substantially for grandmothers who took in a grandchild than for any other group.

We next turn our attention to the multivariate models of labor market behavior of grandparents. In Table 4, we present results of our basic models of labor force participation, for grandfathers and grandmothers separately. In each case, we first present results from models in which we do not distinguish between grandparents in three-generation and skipped-generation families (Model I). In Model II we compare grandparents in three-generation families to those with no grandchildren present (dropping those in skipped-generation families). In Model III we

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compare those in skipped-generation families to grandparents living by themselves (dropping those in three-generation families).

The results in column 1 and 4 suggest that, on average, both grandfathers and grandmothers who have taken a grandchild into their homes do not change their labor force behavior substantially, and this is true both for those who are married and those who are not. It is important to recognize, though, that for both men and women, the results presented in columns 1 and 4 obscure important differences between grandparents in three-generation and skipped-generation families.

Grandfathers who live in three-generation families are more likely to be in the labor force than are grandfathers who live separately from their grandchildren – and this is especially true if the grandmother is not present. The labor force participation rate for unmarried grandfathers that raise grandchildren in three-generation families is about 17% higher than those who do not raise grandchildren. Conversely, unmarried grandfathers in skipped-generation families are about 29% less likely to work. This is consistent with the possibility that in skipped-generation settings unmarried grandfathers are more pressed to provide day-to-day care for the grandchild, and this competes with employment demands. Unmarried grandfathers may focus more on market work when others who can supervise the child are in the household, while withdrawing from the labor market when no other caregivers are available in the household.

More evidence on this is provided by the fact that when grandmothers are in the home, this pattern for grandfathers disappears. With the benefit of a grandmother's presence, grandfathers do not change their labor force behavior. For grandmothers, we find that the relationship between having a grandchild in the home and labor market participation differs depending on whether or not the second generation is present. We find no significant change in

labor force participation rates of grandmothers in three-generation families, regardless of whether or not the grandmother is married. However, we find a significant increase in labor force participation rates among married grandmothers in skipped-generation families. Perhaps because the grandchildren's parents are not present to contribute resources, grandmothers in such situations are more likely to seek work outside the home to help support the grandchild. That we do not observe the same response among unmarried grandmothers suggests either that the lack of a second adult in the household to watch the grandchildren limits the extent to which a grandmother can work, or that grandmothers in such circumstances are especially likely to supplement income from transfer programs like Temporary Assistance for Needy Families.

Table 5 provides further evidence of the burdens grandmothers shoulder. In this table, we turn our attention to establishing the relationship between taking in a grandchild and the number of hours devoted annually to work in the labor market, conditional on working at least some hours. In columns 1 and 4 we present results from models in which the dependent variable is the number of hours a grandparent worked in the 12 months prior to the interview, conditional on being employed for pay at any time during that period. For grandfathers, there is no significant relationship between caring for grandchildren and the number of hours worked. For grandmothers, however, if a grandchild is in the house unmarried women appear to work fewer hours while married women work more. We estimate unmarried women reduce their hours by 257 hours per year – the equivalent of reducing a 40-hour workweek to a 35-hour workweek. At the same time, we estimate that grandmothers who have a spouse in the home will work 420 hours more per year than their unmarried peers – in fact the net effect would mean such grandmothers would work more hours than comparable women who had not taken a grandchild into their homes.

In the remaining columns of Table 5, we present results from models in which we compare, separately, grandparents in three-generation and skipped generation families, to grandparents living on their own. Again, it appears that taking in a grandchild had no affect on the hours grandfathers who work devote to the labor market. For grandmothers, it appears that those who are married and in three-generation families work substantially more if a grandchild is in the house. Among those in skipped-generation families, though, we do not see this increase in hours, even with a spouse present. This is to be expected since women in such families have fewer other adults to call on to supervise grandchildren.

Next, we consider the question of whether these relationships between caring for grandchildren and labor market behavior provide some insight into causal relationships. In Table 6 we summarize our 2SLS estimation of the relationship between caring for grandchildren and labor force participation and work. We present coefficients and standard errors on the key measures of grandparents' family structure, for Models I, II, and III, along with tests of the joint significance of instruments in the first stage; the p-value of the Hausman test of the endogoneity of caring for grandchildren (the null hypothesis is that caring for grandchildren exogenous to decisions about labor market participation and work hours), and; tests of the over-identifying restrictions in each case (the null hypothesis is that all instruments are exogenous to labor market outcomes).

In general the 2SLS results are consistent with the ordinary estimates presented in Tables 4 and 5. This is mainly because they provide little evidence that the decision to take in a grandchild is endogenous. Consequently, on the whole the ordinary estimates are preferred. In the first stage estimation, the instruments were jointly significant in most models, the exception being skipped-generation families. While the instruments are predictive, the high p-values

reported for the Hausman test provides evidence that caring for a grandchild is not endogenous here.

The 2SLS results provide further evidence that unmarried grandfathers who raise grandchildren are less likely to participate in the labor force. We find that grandparents in three-generation families are less likely to participate in the labor force than are grandparents not living with grandchildren. We also find that for grandparents in skipped-generation families, unmarried grandfathers who raise grandchildren are significantly less likely to participate in the labor force than those who live independently, but we find no similar change in labor force behavior for married grandfathers and grandmothers. For hours of work, we still find no statistically significant effects for grandfathers. However, grandmothers with a spouse present who raise grandchildren work longer hours than those who do not, especially in three-generation families.

Discussion：

Summary:

In this paper, we have provided a detailed depiction of the demographic and economic characteristics of grandparents who are increasingly being called upon to provide care for children with few other options. As with earlier studies, we have found that care-giving grandparents are more commonly black, have lower incomes and have accumulated less wealth.

We have also identified an important distinction between two groups of care-giving grandparents: those in three-generation and those in skipped-generation families. On average, grandparents in three-generation families, who have both their children and their children's children in their households, are about a decade younger than grandparents living independent lives. However, grandparents in skipped generation families are very similar in age to

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independent-living grandparents. This age difference between three- and skipped-generation grandparents explains part of the differences in self-reported health and labor force participation between the two groups.

This age difference suggests that grandparents in skipped-generation families may face particular pressure. Even as they do not have members of the second generation to help with child-rearing, they are also older and frailer, limiting opportunities in the labor market. Of course, the absence of the second generation also means that such grandparents likely rely less on the earnings of the grandchildren's parents to pay for expenses. Not surprisingly then, we find that married grandparents in skipped-generation families are especially likely to increase rates of labor force participation, compared to similar grandparents living independently.

We have also found evidence that the labor force participation rates of grandparents who take in a grandchild differ in important ways from grandparents who live independently. Further, these differences vary substantially by the presence of a spouse or second-generation parents. Again, we find that those in skipped-generation families are much more likely to adjust their behaviors in the labor force. This is especially true for grandfathers, who saw very large increases in the rate of labor force participation if they lived in skipped-generation families *and* were married. Perhaps surprisingly, grandfathers who were unmarried and in skipped-generation families participated in the labor market at a significantly lower rate. Despite this, it is important to recognize that it is grandmothers who exhibit the most substantial changes in labor market behavior in response to the presence of a grandchild.

This fact that grandmothers respond most substantially to the presence of a grandchild in the home, along with the substantial association of race and income with the burden of caring for grandchildren comport with the explanations of that this phenomenon is rooted in inequalities.

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The families with the least power and fewest resources are most often put in this position. And within these families, women appear to make the most substantial accommodation and sacrifice.

Implications:

The present findings have a number of important implications for how we view the private and social consequences of grandparents' decisions about whether to bring a grandchild into their homes. First, the large magnitude of differences in labor market outcomes between those living with a grandchild, and those not – and the importance of the presence of other adults on those effects – suggests that the costs associated with raising grandchildren are substantial. Other than the social costs on caregiving grandparents previous researchers have found, the resource costs and time commitment they are confronted with are established. The shift toward work for married grandfathers and for grandmothers is suggestive of substantial resource costs associated with raising children. At the same time, the shift away from work for unmarried grandparents without the second-generation present suggests that caregiving is time intensive.

Further present findings raise some concern that the resource requirements associated with caring for grandchildren are especially taxing on the most economically vulnerable groups of grandparents. In particular, the job of raising a grandchild is most likely to be asked of a grandparent who is African American, woman and not married.

The burdens placed on grandparents in this position can also have consequences beyond the family. The well-being of children and grandparents are established concerns of several social programs, including federal and state public income assistance programs and child welfare (e.g. Foster Care). As a consequence, it may be wise to coordinate across programs or align program objectives. For example, while placement of a child into a grandparent's home may be desirable from the perspective of child welfare, it may be desirable for states to amend TANF

work requirements to reflect the grandparent's new responsibilities. Similarly, it may be desirable to increase grandparent caregivers' eligibility to foster care payments, especially for those who raise grandchildren in an informal base or who do not have custody of the grandchildren.

Additionally, when not eligible for Medicaid and State Children's Health Insurance Program (SCHIP), grandchildren and grandparents run the risk of being outside the health insurance system. Employment-based insurance that grandparents obtain on the job usually does not cover their grandchildren. For those not currently working and under 65 years old, or for unmarried women who withdraw from the labor market to provide child care to their grandchildren, grandparents are left uninsured if they cannot afford private health insurance and do not meet eligibility criteria for Medicaid or SCHIP.

A final implication is relevant for future research in this area. It is important to recognize that the relative youth of grandparents in three-generation households means that data sets derived from surveys of older Americans may not capture the entire population of grandparents. Even in well designed surveys that seek to provide insight into labor market behavior and retirement, and which also ask about grandchildren, failure to include relatively young persons in the sampling frame can result in an inability to draw conclusions about a substantial portion of the population of grandparents.

Limitations and Future Research:

While we have found that grandparents who take grandchildren into their homes differ from those who do not in ways that are known to affect economic outcomes, we still find important differences in labor force participation and hours worked between these groups even when conditioning on observed characteristics. However, we expect that additional and

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unobservable characteristics of families are important determinants of the chances that grandparents are called in to care for grandchildren. In this paper, we have attempted to circumvent the problems such factors pose in the estimation of the effects of caring for grandchildren on labor force behavior. Our results suggest that some of the conditional differences in labor market outcomes between grandparents who do and those who do not care for grandchildren cannot wholly be attributed to the presence of grandchildren in the house. However, we expect that further efforts to better identify this relationship will be useful in providing more insight into the labor market implications of grandparents' decisions to care for their grandchildren.

In our future research, we will investigate the effects of raising grandchildren on grandparents' wealth accumulation and retirement decisions. These outcomes are also relevant to the longer-term economic or financial plans of grandparents as an older cohort of the population. We also plan to better model the process leading up to the decision/need for grandparents to raise grandchildren. For example, we will investigate how the age of grandchildren under grandparents' care could affect grandparents' advantages and decisions in accommodating them. Older school-age children would need more direct economic means though younger infants or babies might need more in-home supervision. Better understanding this process is important both to help explain the trend, and to help identify economic and other implications of raising grandchildren.

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Table 1

Descriptive Statistics on PSID Sample of Grandparents

Age	**60.116**
	0.169
Black (1, yes; 0, no)	**0.097**
	0.004
Hispanic (1, yes; 0, no)	**0.009**
	0.002
High school dropout (1, yes; 0, no)	**0.231**
	0.007
High school graduate (1, yes; 0, no)	**0.427**
	0.008
Attended college, no degree (1, yes; 0, no)	**0.177**
	0.006
Earned college degree (1, yes; 0, no)	**0.165**
	0.006
Self-rated health (excellent)(1, yes; 0, no)	**0.136**
	0.006
Self-rated health (very good)(1, yes; 0, no)	**0.291**
	0.008
Self-rated health (good)(1, yes; 0, no)	**0.326**
	0.008
Self-rated health (fair)(1, yes; 0, no)	**0.17**
	0.006
Mean Wealth	**$380,810.26**
	17,277.13
Labor Force Participation Rate	**0.475**
	0.008
Hours Worked (year)	**1,008.94**
	18.039
Observations	**7,940**

Standard errors in italics

Table 2

Characteristics of Grandparents By Presence of Grandchildren in Home

	Column							
	1	2		3		4		H_0:
	No Grandchild in Home	Grandchild in Home[a]		Three-Generation Famiy[b]		Skipped-Generation Family[c]		$\mu_{Column 3} = \mu_{Column 4}$ (p-value)
	-1	2		3		4		
Age	61	52	**	49	**	57	**	< 0.001
	0.171	0.642		0.752		1.020		
Black (1, yes; 0, no)	0.077	0.359	**	0.349	**	0.375	**	0.646
	0.004	0.027		0.034		0.045		
Hispanic (1, yes; 0, no)	0.008	0.026		0.02		0.036		0.522
	0.002	0.011		0.012		0.022		
High school dropout (1, yes; 0, no)	0.221	0.358	**	0.333	**	0.402	**	0.255
	0.007	0.029		0.037		0.048		
High school graduate (1, yes; 0, no)	0.426	0.444		0.442		0.447		0.936
	0.008	0.031		0.039		0.049		
Attended college, no degree (1, yes; 0, no)	0.181	0.133	**	0.161		0.087	**	0.062
	0.007	0.021		0.029		0.027		
Earned college degree (1, yes; 0, no)	0.173	0.064	**	0.064	**	0.064	**	1
	0.007	0.016		0.022		0.024		
Self-rated health (excellent) (1, yes; 0, no)	0.14	0.084	**	0.102		0.053	**	0.103
	0.006	0.016		0.024		0.018		
Self-rated health (very good) (1, yes; 0, no)	0.296	0.229	**	0.235		0.218		0.757
	0.008	0.027		0.034		0.044		
Self-rated health (good) (1, yes; 0, no)	0.321	0.398	**	0.411	**	0.377		0.576
	0.008	0.03		0.039		0.046		
Self-rated health (fair) (1, yes; 0, no)	0.168	0.207		0.17		0.27	**	0.049
	0.006	0.024		0.027		0.043		
Wealth	399,667	133,499	**	153,746	**	99,062	**	0.219
	18,443.56	26,861.31		41,508.16		15,620.97		
Labor force participation	0.464	0.621	**	0.677	**	0.527		0.014
	0.009	0.029		0.036		0.049		
Annual hours worked	992	1232	**	1359	**	1017		0.015
	18.523	74.562		100.752		98.62		

Standard errors in italics
*** Significantly different from grandparents with no grandchildren in the home at the 5 % level.*

[a] Includes all grandparents who have taken a grandchild into their homes.
[b] Includes grandparents who have taken a grandchild into their homes, *with* the child's parent(s) present.
[c] Includes grandparents who have taken a grandchild into their homes, *without* the child's parent(s) present.

Table 3

Changes in Labor Force Participation for Grandparents who Did/Did Not Take in a Grandchild:
By Gender of Grandparent

Gender		Initial Year	Subsequent Year
Male	*No Grandchild in Home in Initial or Subsequent Year*	0.536	0.474
	Took in Grandchild Between Initial and Subsequent Years	0.878	0.84
Female	*No Grandchild in Home in Initial or Subsequent Year*	0.452	0.399
	Took in Grandchild Between Initial and Subsequent Years	0.649	0.504

Table 4

Effects of Taking-In a Grandchild on Granparents' Labor Force Participation: By Gender

Variable	Male			Female		
	Model I	Model II	Model III	Model I	Model II	Model III
Grandchild in home (1, yes; 0, no)	-0.031	0.171	-0.294	-0.051	-0.04	-0.092
	[0.096]	[0.086]**	[0.086]***	[0.045]	[0.046]	[0.106]
Spouse present (1, yes; 0, no)	-0.077	-0.076	-0.076	-0.202	-0.203	-0.201
	[0.031]**	[0.031]**	[0.032]**	[0.022]***	[0.022]***	[0.022]***
Grandchild in home & Spouse present	0.042	-0.167	0.314	0.093	-0.024	0.262
	[0.104]	[0.100]*	[0.107]***	[0.070]	[0.086]	[0.123]**
Spouse working (1, yes; 0, no)	0.174	0.175	0.175	0.154	0.16	0.15
	[0.024]***	[0.025]***	[0.025]***	[0.027]***	[0.027]***	[0.027]***
Age	-0.017	-0.02	-0.019	0.016	0.014	0.013
	[0.010]*	[0.010]**	[0.010]*	[0.008]**	[0.008]*	[0.009]
Age squared	-0.00008	-0.00006	-0.00006	-0.0003	-0.0003	-0.0003
	[.000077]	[.00008]	[.00008]	[.00007]***	[.00007]***	[.00007]***
Black (1, yes; 0, no)	-0.034	-0.039	-0.041	0.052	0.055	0.041
	[0.039]	[0.042]	[0.042]	[0.028]*	[0.028]*	[0.030]
Hispanic (1, yes; 0, no)	0.168	0.165	0.182	0.009	-0.084	-0.017
	[0.079]**	[0.081]**	[0.086]**	[0.132]	[0.142]	[0.147]
High school graduate (1, yes; 0, no)	0.016	0.021	0.007	0.053	0.048	0.043
	[0.026]	[0.027]	[0.027]	[0.023]**	[0.023]**	[0.023]*
Attended college, no degree (1, yes; 0, no)	0.048	0.054	0.033	0.101	0.095	0.095
	[0.032]	[0.033]	[0.033]	[0.030]***	[0.030]***	[0.031]***
Earned college degree (1, yes; 0, no)	0.111	0.12	0.101	0.094	0.087	0.078
	[0.030]***	[0.030]***	[0.031]***	[0.033]***	[0.034]***	[0.034]**
Self-rated health (excellent) (1, yes; 0, no)	0.388	0.385	0.368	0.348	0.349	0.341
	[0.043]***	[0.043]***	[0.044]***	[0.044]***	[0.044]***	[0.045]***
Self-rated health (Very good) (1, yes; 0, no)	0.373	0.371	0.355	0.327	0.332	0.314
	[0.039]***	[0.039]***	[0.039]***	[0.037]***	[0.036]***	[0.038]***
Self-rated health (good) (1, yes; 0, no)	0.441	0.446	0.425	0.315	0.322	0.304
	[0.038]***	[0.039]***	[0.039]***	[0.035]***	[0.035]***	[0.037]***
Self-rated health (fair) (1, yes; 0, no)	0.226	0.22	0.207	0.204	0.202	0.188
	[0.040]***	[0.041]***	[0.041]***	[0.037]***	[0.037]***	[0.039]***
State unemployment rate	-0.016	-0.015	-0.016	-0.017	-0.017	-0.017
	[0.010]*	[0.010]	[0.010]*	[0.009]*	[0.009]*	[0.009]*
Logged wealth	0.006	0.005	0.007	0.007	0.007	0.007
	[0.004]	[0.004]	[0.004]*	[0.003]**	[0.003]**	[0.003]**
Constant	1.474	1.556	1.578	0.407	0.493	0.537
	[0.302]***	[0.299]***	[0.327]***	[0.247]*	[0.251]**	[0.270]**
Observations	1,905	1,838	1,835	2,892	2,777	2,653
R-squared	0.46	0.46	0.45	0.33	0.34	0.33

Models estimated using ordinary least squares. Robust standard errors in brackets
* significant at 10%; ** significant at 5%; *** significant at 1%

Model I: Full sample
Model II: Restricted to sample with no grandchildren present and those in three-generation families
Model III: Restricted to sample with no grandchildren present and those in skipped-generation families

Models also include time fixed effects.

Table 5

Effects of Taking-In a Grandchild on Working Granparents' Hours Worked: By Gender

	Male			Female		
	Model I	Model II	Model III	Model I	Model II	Model III
Grandchild in home (1, yes; 0, no)	79.9	75.5	227.7	-257.1	-207.6	-384.8
	[259.1]	[261.9]	[187.7]	[152.2]*	[170.3]	[273.7]
Spouse present (1, yes; 0, no)	-33.8	-40.4	-42.7	-229.6	-222.7	-208.9
	[100.4]	[100.7]	[100.4]	[69.6]***	[70.4]***	[70.1]***
Grandchild in home & Spouse present	-22.9	-146.1	0.0	420.4	637.0	267.0
	[297.0]	[329.1]	[0.0]	[184.8]**	[213.5]***	[306.2]
Spouse working (1, yes; 0, no)	-36.9	-30.1	-14.0	-62.4	-68.4	-72.0
	[58.1]	[59.3]	[57.9]	[68.1]	[69.1]	[68.3]
Age	128.1	115.6	115.9	123.0	120.9	118.1
	[38.7]***	[38.3]***	[38.8]***	[32.5]***	[33.0]***	[35.1]***
Age square	-1.5	-1.4	-1.4	-1.4	-1.3	-1.3
	[0.3]***	[0.3]***	[0.3]***	[0.3]***	[0.3]***	[0.3]***
Black (1, yes; 0, no)	52.6	69.7	55.3	-51.1	-103.0	14.0
	[106.3]	[112.2]	[112.9]	[67.9]	[66.1]	[66.1]
Hispanic (1, yes; 0, no)	-168.3	-150.4	-331.4	-91.8	-323.0	-77.3
	[192.5]	[212.9]	[133.9]**	[183.5]	[158.0]**	[217.8]
High school graduate (1, yes; 0, no)	-79.0	-48.8	-88.4	85.1	98.4	56.1
	[81.1]	[82.0]	[82.5]	[57.8]	[56.8]*	[57.1]
Attended college, no degree (1, yes; 0, no)	106.2	133.3	112.7	78.6	82.8	20.7
	[98.6]	[100.1]	[101.6]	[80.8]	[80.2]	[74.0]
Earned college degree (1, yes; 0, no)	138.3	169.2	128.3	51.5	77.9	45.0
	[94.4]	[95.6]*	[96.7]	[84.8]	[85.4]	[87.0]
Logged hourly wage	-145.8	-145.3	-159.1	27.7	20.5	31.1
	[41.8]***	[41.8]***	[38.7]***	[33.3]	[33.5]	[34.6]
Self-rated health (excellent) (1, yes; 0, no)	524.1	512.2	370.5	446.0	496.6	477.1
	[235.5]**	[229.6]**	[194.4]*	[216.3]**	[213.4]**	[224.1]**
Self-rated health (Very good) (1, yes; 0, no)	451.4	426.2	297.5	459.0	533.2	468.5
	[228.8]**	[222.5]*	[188.8]	[208.4]**	[205.8]***	[216.5]**
Self-rated health (good) (1, yes; 0, no)	506.7	492.4	359.1	380.9	443.0	379.5
	[229.0]**	[223.3]**	[187.2]*	[207.1]*	[205.0]**	[215.0]*
Self-rated health (fair) (1, yes; 0, no)	269.7	265.4	60.5	300.8	377.7	325.5
	[238.2]	[233.4]	[197.7]	[211.4]	[209.4]*	[220.0]
State unemployment rate	-35.8	-33.0	-32.0	-23.7	-28.3	-27.1
	[25.8]	[25.8]	[25.8]	[22.1]	[22.2]	[22.1]
Logged wealth	20.4	22.4	25.3	7.3	3.2	5.3
	[10.9]*	[11.0]**	[10.9]**	[7.4]	[7.2]	[7.5]
Constant	-539.4	-199.2	-50.1	-1253.4	-1188.3	-1088.9
	[1,054.8]	[1,037.0]	[1,058.5]	[855.9]	[864.9]	[931.6]
Observations	890	855	848	1,286	1,231	1,149
R-squared	0.26	0.27	0.27	0.14	0.15	0.15

Models estimated using ordinary least squares. Robust standard errors in brackets
* significant at 10%; ** significant at 5%; *** significant at 1%

Model I: Full sample
Model II: Restricted to sample with no grandchildren present and those in three-generation families
Model III: Restricted to sample with no grandchildren present and those in skipped-generation families

Models also include time fixed effects.

Table 6
Summary of 2SLS Estimation of the Effects of Taking in Grandchildren on Labor Force Participation and Hours Worked

Outcome variable: LFP

Independent variable	Males			Females		
	Model I	Model II	Model III	Model I	Model II	Model III
Grandchild in home (1, yes; 0, no)	-1.41	-2.365	-1.732	0.125	0.14	-0.013
	0.493***	0.913***	0.710**	0.249	0.474	0.425
Spouse present (1, yes; 0, no)	-0.120	-0.114	-0.097	-0.176	-0.178	-0.196
	0.038***	0.037***	0.036***	0.025***	0.029***	0.024***
Grandchild in home & Spouse present	1.25	1.878	1.724	-0.179	-0.469	0.245
	0.404***	0.611***	0.638***	0.177	0.210**	0.437
Test of Joint Significance	3.11	1.51	2.40	7.65	3.90	5.49
	p = .0049	p = 0.184	p = 0.035	p< 0.001	p = 0.002	p < 0.001
Hausman Test (p value)	0.293	0.264	0.595	0.764	0.995	0.704
Test of Overidentifying Restrictions (p value)	0.270	0.208	0.128	0.038	0.100	0.103

Outcome variable: Hours worked

Independent variable	Males			Females		
	Model I	Model II	Model III	Model I	Model II	Model III
Grandchild in home (1, yes; 0, no)	-715.456	-1,013.73	-581.84	-496.735	384.93	-980.446
	1066.74	1376.958	2077.487	465.815	857.02	710.142
Spouse present (1, yes; 0, no)	-64.703	-79.454	-68.322	-294.9	-205.893	-244.425
	111.25	112.219	112.057	84.254***	97.311***	81.019***
Grandchild in home & Spouse present	766.642	841.391	1,337.75	1,046.38	1,222.01	1,122.23
	969.358	1210.497	2046.732	345.402***	407.202***	775.938
Test of Joint Significance	3.35	1.95	3.05	6.80	2.97	4.16
	p = 0.003	p = 0.071	p = 0.006	p< 0.001	p = 0.007	p< 0.001
Hausman Test (p value)	0.858	0.795	0.708	0.761	0.139	0.779
Test of Overidentifying Restrictions (p value)	0.711	0.695	0.698	0.022	0.079	<0.001

Numbers below coefficients are standard errors.