

The Unintended Consequences of Informal Child Care
Subsidies for Older Women's Retirement Security

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Online Appendix

Online Appendix A

Imputed Government Payments for Childcare

This appendix describes how I construct government payments for child care for each grandmother in the HRS sample. I first select the sample of women age 18-50 with at least one child under six from the American Community Survey (ACS). I calculated directly the level of subsidy for each individual using the policy rules in her state and year, based on reported income and family size. Specifically, I predict each mother i 's subsidy as a function of her family income, family size, and number of children under age 6 for each state s and year t

$$Subsidy_i = f_{st}(income_i, family\ size_i, number\ of\ children\ under\ age\ 6_i)$$

The subsidy is calculated differently in every state, and also sometimes differently within a state in different years. I calculate a separate net subsidy by the count of children under 6, up to four children, so each mother has four values: $Subsidy_{i,K=k}$, where $k \in 1, 2, 3, 4$. Note that $Subsidy_i$ is usually a nonlinear function of family size and income. Several states compute the family copay as a percent of income, in which case the relationship between income and copay is linear, but most use a step function or a more complex calculation. Furthermore, the copay is not a linear function of the number of children under six in care. In some states parent copays are determined per child and so total net subsidy is the per-child net subsidy times the number of children in care, while in other states parent copays are determined per family and are either flat with number of children in care or rise less than one-for-one. Additionally, that reimbursement rates vary by the age distribution of children in care, and this variation differs by state and over time, which is an additional source of nonlinearity.

Having simulated a range of individual subsidy values for every state, I calculate an average subsidy for 144 separate demographic cells within a state and year. These cells are determined by the following mother characteristics: age in 6 categories, education level in 4 categories, race in 3 categories, and marital status in two categories. As before, I calculate a separate subsidy amount by number of children under 6. An average cell subsidy is simply an unweighted average of individual subsidies of all the members of the cell:

$$\overline{CellSubsidy}_{f,k} = \frac{1}{N} \sum_{i=1}^N Subsidy_{i,k}, i \in (age = a; race = r; ed = e; marsat = m)$$

The average cell subsidy is therefore a highly non-linear function of the cell characteristics. Next, I match average cell subsidies to the HRS grandmother-daughter sample using cell characteristics. In the HRS, I am able to identify to which cell each daughter belongs, given her age, race, education level and marital status. For state, I use the state in which the grandmother resides when she first enters the study. I match each HRS daughter with her cell average subsidy and the number of children under six she has:

$$Subsidy_{fk} = \overline{CellSubsidy}_{fk}$$

Finally, the predicted payment to an HRS grandmother depends on the number of daughters with children under six she has, as well as each daughter's individual characteristics. As the predicted subsidy is determined at each individual daughter level, the net potential payment to a grandmother is the sum of each of her individual daughter's predicted subsidy amounts.

$$\widehat{Payment}_{fst} = \sum_{d=1}^D Subsidy_{fk}$$

where D indexes the daughters. For example, a grandmother with two daughters who each have a child under six will have a predicted payment which is the sum of the two daughters' cell average subsidies.

A.1 Construction of Key Subsidy Components

Reimbursement Rate The reimbursement rate is reported per child and depends on age in months, as well as provider type and hours of care. The analysis uses the lowest reimbursed legally unregulated informal in-home rate to capture what a state is likely to pay a grandmother for providing care.³⁸

To obtain average monthly reimbursement rates for a given family, I again use the ACS to calculate the typical age distribution, in months, of children in four family groups: families with one child under six, with two children under six, with three children under six, and with four children under six. Using these typical profiles, I calculate reimbursement rate for each family type, using the corresponding age distribution at the state-year level, by provider type. Reimbursement rates are reported in hourly, daily, weekly or monthly, for full-time or part-time care, which varies by state. I standardize by coding separately, for each state, a monthly rate for full time care, as well as an hourly rate for full time and part time care.³⁹

Parent Copayment In most cases, families who receive subsidies have to pay for some amount of the child care costs out of pocket. Parent copayment determination varies state by state, but is always a function of family income and family size. Copayment schedules vary greatly across states. The copayment may be per child, or determined at the family level regardless of the number of children in care; it may be a percentage of the child care costs, a percentage of family income, or a flat dollar amount that increases stepwise with family income. Some states impose a minimum copayment, while others allow a copayment of zero for very low-income families. I calculate a monthly and hourly family copayment directly for each family in the ACS sample using reported income and family size. In states where the copay is calculated as a percentage of childcare costs, I approximate the cost of center provision by using the highest reimbursed center rate and the costs of informal care by the informal reimbursement rate.

Eligibility Eligibility for each individual in the ACS is calculated as a binary indicator if the family falls below the eligibility threshold based on income and family size. At the demographic group level, this becomes the share of families in that demographic cell who are eligible for child-care subsidies based on state rules.⁴⁰ However, the subsidy estimate itself similarly captures this dimensions as well, since ineligible members get assigned a subsidy value of zero dollars. The cell average subsidy captures heterogeneity based on eligibility as well as copay amount.

³⁸Many states specify a relative rate, which is usually the lowest. For states that do not specify a relative rate, but place no restrictions on legally unregulated providers the lowest reimbursed rate is used. States that explicitly do not subsidize relative care, or that place restrictions on legally unregulated providers, are coded as not reimbursing relatives

³⁹Full-time care is assumed to be 8 hours per day, five days per week, and part-time care is 3 hours per day, 5 days per week.

⁴⁰In practice, eligibility does not imply a positive value of subsidies, as the family copay burden may be greater than the value of the reimbursement rate.

Online Appendix B

Appendix Figures and Tables

Online Appendix Figure 1: Maximum Reimbursement Rate for 2 Children in Care, by Care Type

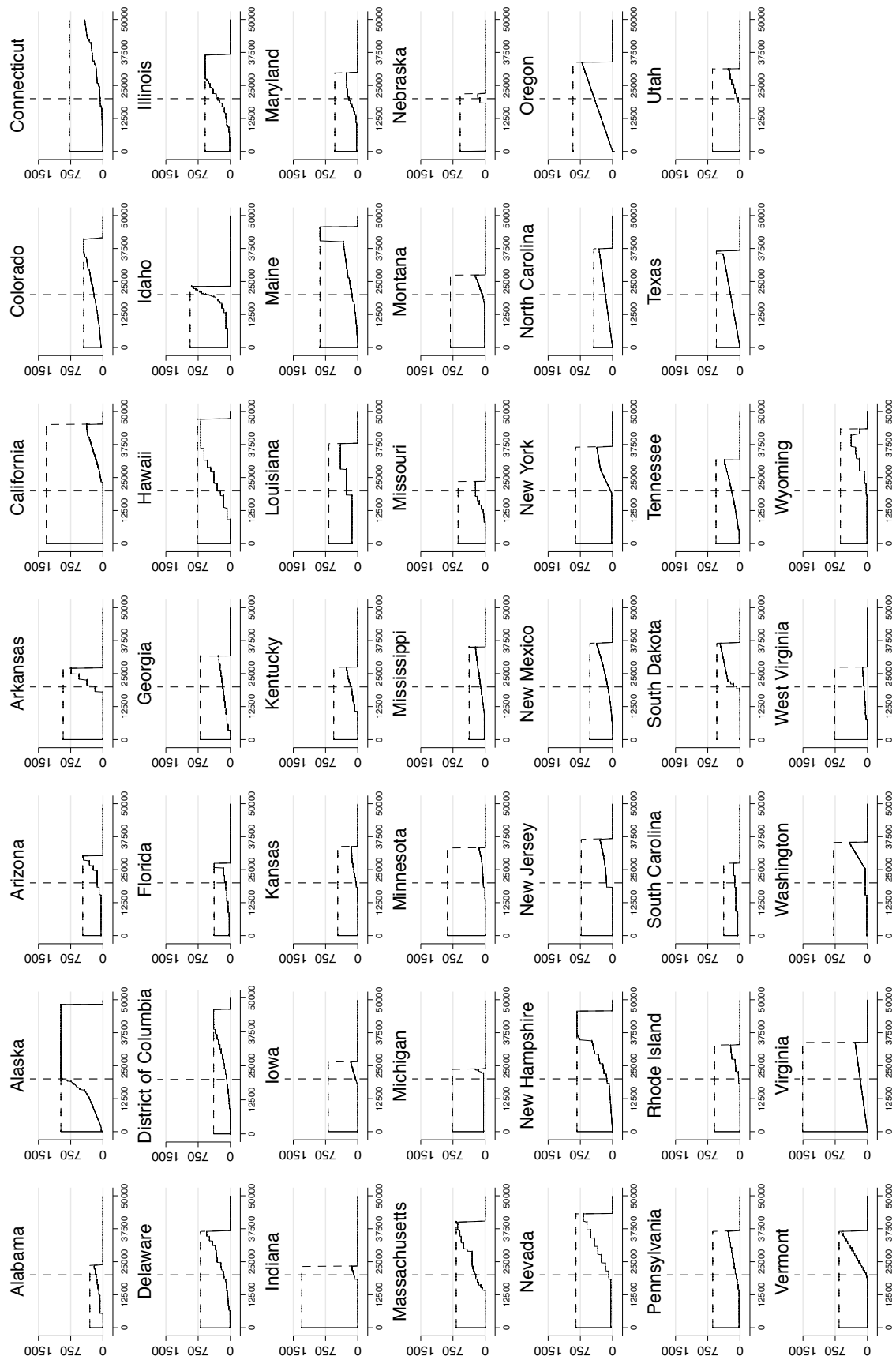


— Relative Rate - - - - Center Rate

Source: Author Calculations from CCDF Administrative Database (Minton et al., 2014)

Notes: The horizontal axis reports years between 2006 and 2014 and the vertical axis reports monthly dollar values. All values reported in 2012 dollars.

Online Appendix Figure 2: Monthly Copay for a Family of 3, By Income



— Family Copay - - - - - Relative Reimbursement Rate

Source: Author Calculations from CCDF Administrative Database (Minton et al., 2014)

Notes: The horizontal axis reports annual income and the vertical axis reports monthly dollar values. Horizontal dotted line reports national poverty rate for a 3 person family. All values reported in 2012 dollars.

Online Appendix Table 1: Eligibility, Income Cutoffs and Reim-bursement Rates by State and Year⁴²

| State | | 2008 | 2010 | 2014 | 2014 |
|------------------------|--------------------|------|------|------|------|
| Alabama | % Elig | 0.16 | 0.19 | 0.20 | 0.19 |
| | Income Cutoff (\$) | 2059 | 2123 | 2048 | 2090 |
| | R Rate (\$) | 333 | 322 | 307 | 296 |
| Alaska | % Elig | 0.36 | 0.4 | 0.44 | 0.43 |
| | Income Cutoff | 4267 | 4303 | 4616 | 4454 |
| | R Rate | 1061 | 1025 | 978 | 943 |
| Arizona | % Elig | 0.21 | 0.25 | 0.26 | 0.25 |
| | Income Cutoff | 2648 | 2694 | 2641 | 2654 |
| | R Rate | 511 | 494 | 471 | 455 |
| Arkansas | % Elig | 0.23 | 0.22 | 0.24 | 0.23 |
| | Income Cutoff | 2845 | 2420 | 2531 | 2442 |
| | R Rate | 1003 | 970 | 0 | 0 |
| California | % Elig | 0.35 | 0.38 | 0.34 | 0.33 |
| | Income Cutoff | 4173 | 4033 | 3590 | 3464 |
| | R Rate | 1431 | 1383 | 879 | 848 |
| Colorado | % Elig | 0.3 | 0.35 | 0.25 | 0.34 |
| | Income Cutoff | 3631 | 3674 | 2620 | 3544 |
| | R Rate | 483 | 467 | 401 | 520 |
| Connecticut | % Elig | 0.3 | 0.44 | 0.34 | 0.34 |
| | Income Cutoff | 3604 | 4647 | 3644 | 3564 |
| | R Rate | 847 | 819 | 781 | 982 |
| Delaware | % Elig | | 0.31 | 0.31 | 0.31 |
| | Income Cutoff | | 3265 | 3175 | 3216 |
| | R Rate | | 727 | 0 | 0 |
| DC | % Elig | | 0.38 | 0.37 | 0.36 |
| | Income Cutoff | | 4082 | 3893 | 3756 |
| | R Rate | | 410 | 391 | 405 |
| Florida | % Elig | 0.19 | 0.22 | 0.23 | 0.22 |
| | Income Cutoff | 2376 | 2449 | 2435 | 2420 |
| | R Rate | 409 | 396 | 377 | 364 |
| Georgia | % Elig | 0.2 | 0.26 | 0.23 | 0.21 |
| | Income Cutoff | 2450 | 2825 | 2394 | 2310 |
| | R Rate | 762 | 736 | 702 | 677 |
| Hawaii | % Elig | 0.36 | 0.39 | 0.38 | 0.37 |
| | Income Cutoff | 4348 | 4202 | 4007 | 3866 |
| | R Rate | 1052 | 802 | 765 | 738 |
| Idaho | % Elig | 0.17 | 0.19 | 0.19 | 0.19 |
| | Income Cutoff | 2139 | 2067 | 2026 | 2090 |
| | R Rate | 1019 | 984 | 939 | 906 |
| Illinois | % Elig | 0.26 | 0.31 | 0.28 | 0.28 |
| | Income Cutoff | 3169 | 3265 | 2960 | 2984 |
| | R Rate | 612 | 617 | 667 | 673 |
| Continued on next page | | | | | |

Online Appendix Table 1 – continued from previous page

| First column | Second column | 2008 | 2010 | 2014 | 2014 |
|------------------------|---------------|------|------|------|------|
| Indiana | % Elig | 0.16 | 0.19 | 0.2 | 0.19 |
| | Income Cutoff | 2050 | 2074 | 2046 | 2055 |
| | R Rate | 1276 | 1365 | 1302 | 1256 |
| Iowa | % Elig | 0.19 | 0.22 | 0.22 | 0.22 |
| | Income Cutoff | 2355 | 2368 | 2320 | 2340 |
| | R Rate | 749 | 724 | 691 | 666 |
| Kansas | % Elig | 0.25 | 0.28 | 0.29 | 0.28 |
| | Income Cutoff | 3004 | 3020 | 2981 | 2994 |
| | R Rate | 509 | 491 | 469 | 452 |
| Kentucky | % Elig | 0.19 | 0.22 | 0.22 | 0.17 |
| | Income Cutoff | 2436 | 2449 | 2364 | 1825 |
| | R Rate | 609 | 588 | 561 | 542 |
| Louisiana | % Elig | 0.28 | 0.32 | 0.27 | 0.24 |
| | Income Cutoff | 3252 | 3379 | 2823 | 2506 |
| | R Rate | 731 | 706 | 673 | 650 |
| Maine | % Elig | 0.32 | 0.38 | 0.37 | 0.38 |
| | Income Cutoff | 3748 | 4081 | 3939 | 4006 |
| | R Rate | 985 | 920 | 891 | 904 |
| Maryland | % Elig | 0.22 | 0.24 | 0.24 | 0.23 |
| | Income Cutoff | 2767 | 2674 | 2550 | 2460 |
| | R Rate | 563 | 560 | 534 | 515 |
| Massachusetts | % Elig | 0.28 | 0.34 | 0.34 | 0.34 |
| | Income Cutoff | 3386 | 3593 | 3576 | 3557 |
| | R Rate | 333 | 706 | 673 | 686 |
| Michigan | % Elig | 0.17 | 0.19 | 0.19 | 0.18 |
| | Income Cutoff | 2203 | 2129 | 2031 | 1959 |
| | R Rate | 822 | 798 | 761 | 735 |
| Minnesota | % Elig | 0.24 | 0.28 | 0.28 | 0.26 |
| | Income Cutoff | 2870 | 2969 | 2886 | 2827 |
| | R Rate | 955 | 923 | 364 | 0 |
| Mississippi | % Elig | 0.27 | 0.3 | 0.29 | 0.28 |
| | Income Cutoff | 3229 | 3121 | 2976 | 2872 |
| | R Rate | 402 | 389 | 371 | 358 |
| Missouri | % Elig | 0.16 | 0.19 | 0.19 | 0.18 |
| | Income Cutoff | 2060 | 2097 | 2000 | 1984 |
| | R Rate | 682 | 659 | 629 | 606 |
| Montana | % Elig | 0.19 | 0.22 | 0.22 | 0.22 |
| | Income Cutoff | 2376 | 2449 | 2336 | 2414 |
| | R Rate | 767 | 850 | 810 | 798 |
| Nebraska | % Elig | 0.15 | 0.17 | 0.18 | 0.19 |
| | Income Cutoff | 1925 | 1959 | 1892 | 2057 |
| | R Rate | 633 | 612 | 584 | 563 |
| Nevada | % Elig | 0.3 | 0.36 | 0.36 | 0.34 |
| | Income Cutoff | 3653 | 3856 | 3789 | 3591 |
| Continued on next page | | | | | |

Online Appendix Table 1 – continued from previous page

| First column | Second column | 2008 | 2010 | 2014 | 2014 |
|----------------|---------------|------|------|------|------|
| | R Rate | 926 | 894 | 853 | 823 |
| New Hampshire | % Elig | 0.25 | 0.38 | 0.38 | 0.38 |
| | Income Cutoff | 3048 | 4082 | 3999 | 4033 |
| | R Rate | 1041 | 870 | 911 | 889 |
| New Jersey | % Elig | 0.26 | 0.31 | 0.31 | 0.31 |
| | Income Cutoff | 3188 | 3265 | 3151 | 3205 |
| | R Rate | 723 | 763 | 727 | 710 |
| New Mexico | % Elig | 0.27 | 0.31 | 0.31 | 0.31 |
| | Income Cutoff | 3228 | 3265 | 3223 | 3236 |
| | R Rate | 577 | 552 | 531 | 533 |
| New York | % Elig | 0.28 | 0.31 | 0.31 | 0.31 |
| | Income Cutoff | 3248 | 3265 | 3223 | 3237 |
| | R Rate | 933 | 902 | 886 | 855 |
| North Carolina | % Elig | 0.28 | 0.31 | 0.34 | 0.33 |
| | Income Cutoff | 3384 | 3341 | 3641 | 3409 |
| | R Rate | 471 | 455 | 217 | 0 |
| North Dakota | % Elig | 0.22 | 0.24 | 0.25 | 0.46 |
| | Income Cutoff | 2727 | 2635 | 2600 | 4839 |
| | R Rate | 0 | 0 | 592 | 571 |
| Ohio | % Elig | 0.26 | 0.22 | 0.19 | 0.18 |
| | Income Cutoff | 3089 | 2449 | 1970 | 2029 |
| | R Rate | 0 | 0 | 0 | 0 |
| Oklahoma | % Elig | 0.28 | 0.3 | 0.29 | 0.28 |
| | Income Cutoff | 3238 | 3130 | 2985 | 2880 |
| | R Rate | 0 | 0 | 0 | 0 |
| Oregon | % Elig | 0.25 | 0.28 | 0.29 | 0.29 |
| | Income Cutoff | 3005 | 3020 | 3004 | 3004 |
| | R Rate | 1003 | 969 | 924 | 987 |
| Pennsylvania | % Elig | 0.27 | 0.31 | 0.31 | 0.31 |
| | Income Cutoff | 3228 | 3265 | 3223 | 3237 |
| | R Rate | 690 | 666 | 588 | 521 |
| Rhode Island | % Elig | 0.24 | 0.27 | 0.28 | 0.28 |
| | Income Cutoff | 2923 | 2939 | 2900 | 2913 |
| | R Rate | 643 | 621 | 592 | 572 |
| South Carolina | % Elig | 0.19 | 0.22 | 0.23 | 0.22 |
| | Income Cutoff | 2436 | 2449 | 2381 | 2411 |
| | R Rate | 414 | 400 | 382 | 368 |
| South Dakota | % Elig | 0.28 | 0.31 | 0.27 | 0.27 |
| | Income Cutoff | 3248 | 3265 | 2841 | 2841 |
| | R Rate | 565 | 565 | 557 | 568 |
| Tennessee | % Elig | 0.22 | 0.26 | 0.26 | 0.25 |
| | Income Cutoff | 2721 | 2826 | 2714 | 2647 |
| | R Rate | 605 | 584 | 557 | 538 |
| Texas | % Elig | 0.19 | 0.31 | 0.31 | 0.31 |

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Online Appendix Table 1 – continued from previous page

| First column | Second column | 2008 | 2010 | 2014 | 2014 |
|---------------|---------------|------|------|------|------|
| | Income Cutoff | 2376 | 3265 | 3247 | 3215 |
| | R Rate | 596 | 576 | 550 | 530 |
| Utah | % Elig | 0.25 | 0.26 | 0.27 | 0.24 |
| | Income Cutoff | 2995 | 2791 | 2790 | 2625 |
| | R Rate | 695 | 672 | 603 | 544 |
| Vermont | % Elig | | 0.31 | 0.3 | 0.31 |
| | Income Cutoff | | 3263 | 3112 | 3236 |
| | R Rate | | 693 | 660 | 637 |
| Virginia | % Elig | 0.24 | 0.28 | 0.28 | 0.28 |
| | Income Cutoff | 2950 | 3020 | 2911 | 2964 |
| | R Rate | 1924 | 1506 | 1324 | 1278 |
| Washington | % Elig | 0.26 | 0.3 | 0.29 | 0.31 |
| | Income Cutoff | 3169 | 3164 | 3002 | 3237 |
| | R Rate | 852 | 823 | 785 | 787 |
| West Virginia | % Elig | 0.19 | 0.22 | 0.23 | 0.22 |
| | Income Cutoff | 2406 | 2449 | 2399 | 2392 |
| | R Rate | 828 | 800 | 763 | 736 |
| Wisconsin | % Elig | 0.25 | 0.28 | 0.29 | 0.29 |
| | Income Cutoff | 3004 | 3020 | 3003 | 3004 |
| | R Rate | 0 | 0 | 0 | 0 |
| Wyoming | % Elig | | 0.36 | 0.34 | 0.27 |
| | Income Cutoff | | 3877 | 3626 | 2832 |
| | R Rate | | 659 | 623 | 596 |

⁴²Notes: The table reports eligibility rates, income cutoffs and relative reimbursement rate (R Rate) by state and year for a family of 3 with 2 children under six. Eligibility rates are calculated for the fixed ACS population of women age 18-50 with two children under six, income cutoffs are reported for a family of 3 and the reimbursement rate is calculated as the monthly rate for 2 children in care.

Online Appendix Table 2: Characteristics of Married and Unmarried Child Care Assistance Recipients

| | Married (1) | Not Married (2) | P-value of difference (3) |
|---|----------------|--------------------|---------------------------------|
| All SIPP mothers with children under 6 | | | |
| Any child care assistance | 0.013 | 0.160 | 0.000 |
| SIPP mothers with children under 6 who receive child care assistance | | | |
| Age | 28.3 | 27.0 | 0.106 |
| Education | | | |
| less than hs | 0.21 | 0.14 | 0.189 |
| high school degree | 0.70 | 0.83 | 0.023 |
| BA degree | 0.08 | 0.02 | 0.021 |
| BA plus | 0.04 | 0.01 | 0.000 |
| Race& Ethnicity | | | |
| white non-hispanic | 0.43 | 0.38 | 0.427 |
| black non-hispanic | 0.26 | 0.45 | 0.012 |
| hispanic | 0.31 | 0.18 | 0.033 |
| Has health insurance | 0.41 | 0.17 | 0.000 |
| Household Characteristics | | | |
| Dwelling owned by household | 0.37 | 0.15 | 0.000 |
| Household earnings | 3134 | 1775 | 0.000 |

Notes: The sample in the first panel consists of all women age 18-50 with at least one child under six in the 2008 Panel of the Survey of Income and Program Participation (SIPP) (N=6,175). The sample in the second panel is limited to women who report receiving childcare assistance in 2008 (N=353). The columns further split the sample into married and unmarried mothers. The third column reports the p-value from a t-test of the difference in means between the married and unmarried columns. All tabulations were done using SIPP sample weights.

Online Appendix Table 3: Predicted and Actual Eligibility: SIPP

| | Receive Childcare Assistance (%) | | | |
|-----------------------|----------------------------------|--------------------------------|--------------------------------|--------------------------------|
| | IV (1) | RF (2) | IV (3) | RF (4) |
| Predicted Eligibility | 0.243*** (0.021) [0.020] | 0.234*** (0.022) [0.021] | 0.114*** (0.014) [0.014] | 0.114*** (0.014) [0.014] |
| Observations | 27,494 | 27,494 | 27088 | 27088 |
| Dep var mean | 0.065 | 0.065 | 0.065 | 0.065 |
| F-Statistic | 4869 | | 1560722 | |

Notes: Each cell in the table comes from a separate regression. Data in Panel 1 are from the 2008 SIPP. The independent variable imputed eligibility for child care subsidies and the dependant variable is reported subsidy receipt. In columns 1 and 2, eligibility is imputed using mother demographic characteristics and in columns 3 and 4 eligibility is imputed using daughter income. "IV" columns refer to models that instrument for imputed eligibility with simulated eligibility, and "RF" columns refer to models that use the simulated measure as the dependent variable. F-statistics from the first stage regression of the imputed treatment variable on the simulated treatment variable are reported at the bottom of the table. All columns include state and year fixed effects, and state specific linear trends. Standard errors clustered at the state level are in parentheses, and bootstrapped standard errors, accounting for the use of generated regressors, are reported in brackets. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Online Appendix Table 4: Childcare Subsidies and Proximity to Grandchildren

| | Contemporaneous | | | | At First Observation | | | |
|---|--------------------------------|--------------------------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| | GK w/in 10 miles | | GK nearby | | GK w/in 10 miles | | GK nearby | |
| | IV (1) | RF (2) | IV (3) | RF (4) | IV (5) | RF (6) | IV (7) | RF (8) |
| Panel 1: Monthly Rate for Full Time Care | | | | | | | | |
| Monthly Subsidy (\$100) | 0.034*** (0.010) [0.010] | 0.033*** (0.012) [0.010] | 0.025* (0.014) [0.011] | 0.024 (0.016) [0.011] | 0.009 (0.010) [0.011] | 0.008 (0.011) [0.011] | 0.004 (0.010) [0.011] | 0.002 (0.011) [0.011] |
| F-Statistic | 904 | | 904 | | 904 | | 904 | |
| Panel 2: Hourly Rate for Full Time Care | | | | | | | | |
| Hourly Subsidy (\$1) | 0.053*** (0.014) [0.016] | 0.053*** (0.016) [0.016] | 0.035* (0.020) [0.017] | 0.034 (0.023) [0.017] | 0.024 (0.018) [0.019] | 0.022 (0.021) [0.020] | 0.010 (0.019) [0.019] | 0.008 (0.021) [0.019] |
| F-Statistic | 927 | | 927 | | 927 | | 927 | |
| N | 4639 | 4639 | 4639 | 4639 | 4639 | 4639 | 4639 | 4639 |
| Dep var Mean | 0.40 | 0.40 | 0.48 | 0.48 | 0.56 | 0.56 | 0.70 | 0.70 |

Notes: Each cell in the table comes from a separate regression of the outcome variable on grandmother subsidy in a pooled cross-section of female HRS respondents who have grandchildren under six in survey waves 2006-2014. "IV" columns refer to models that instrument for imputed subsidy with simulated subsidy, and "RF" columns refer to models that use the simulated measure as the dependent variable. Columns 1-4 consider contemporaneous (same wave) proximity to grandchildren. Columns 5-8 reports proximity to grandchildren as reported in the first wave a grandmother appears in the HRS sample (not the first time she appears in the study sample). The dependent variable in columns 1,2,5 and 6 is a binary indicator for having any grandchildren (from daughters) within 10 miles (including co-resident grandchildren). The dependent variable in columns 3,4,7 and 8 is a binary indicator for having any grandchildren (from daughters) "nearby" (including co-resident grandchildren). All columns control for grandmother characteristics including: age, age squared, foreign born, education, race, number of children, total number of grandchildren, number of living parents. All columns include state and year fixed effects, a state linear trend and a control for the subsidy rate for center care. F-statistics from the first stage regression of the imputed subsidy on simulated subsidy are reported below the estimates in IV columns. Standard errors clustered at the state level are in parentheses, and bootstrapped standard errors, accounting for the use of generated regressors, are reported in brackets. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Online Appendix Table 5: The Effect of Child Care Subsidies on Caregiving- Sensitivity Analysis

| Main Result | | Drop Imputed Hours | | | Drop 1st Obs | | | No Recode | | | Recode to 1 | | | Recode to 99 | | |
|---|--------------------------------|-------------------------------|--------------------------------|--------------------------------|--------------------------------|-------------------------------|------------------------------|------------------------------|--------------------------------|--------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|--|
| IV | RF | IV | RF | IV | RF | IV | RF | IV | RF | IV | RF | IV | RF | IV | RF | |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (11) | (12) | (11) | (12) | |
| Panel 1: Dependent Variables Log Hours | | | | | | | | | | | | | | | | |
| Monthly subsidy (\$100) | 0.051*** (0.018) [0.024] | 0.053** (0.020) [0.023] | 0.065*** (0.012) [0.025] | 0.067*** (0.014) [0.024] | 0.060*** (0.022) [0.027] | 0.061** (0.024) [0.026] | 0.023 (0.043) [0.058] | 0.025 (0.049) [0.056] | 0.152*** (0.050) [0.066] | 0.158*** (0.057) [0.065] | 0.033** (0.015) [0.018] | 0.033** (0.015) [0.018] | 0.033** (0.015) [0.018] | 0.035** (0.016) [0.018] | 0.035** (0.016) [0.018] | |
| F-Statistic | 901.3 | 675.5 | 675.5 | 675.5 | 932.1 | 1026.4 | 901.3 | 901.3 | 901.3 | 901.3 | 901.3 | 901.3 | 901.3 | 901.3 | 901.3 | |
| Hourly subsidy (\$1) | 0.081** (0.032) [0.041] | 0.086** (0.035) [0.040] | 0.098*** (0.022) [0.039] | 0.102*** (0.024) [0.039] | 0.090** (0.035) [0.046] | 0.094** (0.039) [0.045] | 0.086 (0.076) [0.096] | 0.089 (0.086) [0.092] | 0.228** (0.094) [0.111] | 0.238** (0.105) [0.110] | 0.055** (0.024) [0.031] | 0.055** (0.024) [0.031] | 0.055** (0.024) [0.031] | 0.059** (0.026) [0.031] | 0.059** (0.026) [0.031] | |
| F-Statistic | 918.8 | 892.8 | 892.8 | 892.8 | 858.9 | 445.4 | 918.8 | 918.8 | 918.8 | 918.8 | 918.8 | 918.8 | 918.8 | 918.8 | 918.8 | |
| N | 4628 | 4628 | 3828 | 3828 | 4109 | 4109 | 2094 | 2094 | 4628 | 4628 | 4628 | 4628 | 4628 | 4628 | 4628 | |
| Dep var mean | 300.4 | 300.4 | 222.5 | 222.5 | 301.6 | 301.6 | 602.3 | 602.3 | 269.7 | 269.7 | 300.4 | 300.4 | 300.4 | 300.4 | 300.4 | |
| Panel 2: Dependent Variables Raw Hours | | | | | | | | | | | | | | | | |
| Monthly subsidy (\$100) | 18.43* (11.16) [14.34] | 19.56 (11.96) [14.01] | 28.67*** (9.798) [16.70] | 29.54*** (10.79) [16.23] | 17.95 (15.28) [17.58] | 19.07 (16.52) [16.94] | 19.64* (11.03) [14.46] | 20.81* (11.84) [14.14] | 19.70* (11.16) [14.46] | 20.87* (11.96) [14.13] | 17.15 (11.19) [14.24] | 17.15 (11.19) [14.24] | 17.15 (11.19) [14.24] | 18.25 (11.97) [13.91] | 18.25 (11.97) [13.91] | |
| F-Statistic | 901.3 | 675.5 | 675.5 | 675.5 | 932.1 | 901.3 | 901.3 | 901.3 | 901.3 | 901.3 | 901.3 | 901.3 | 901.3 | 901.3 | 901.3 | |
| Hourly subsidy (\$1) | 30.94* (18.26) [22.35] | 32.92* (19.55) [22.12] | 42.48*** (14.40) [24.59] | 44.20*** (15.97) [24.46] | 28.31 (23.75) [26.98] | 30.24 (25.72) [26.48] | 32.59* (18.24) [22.69] | 34.63* (19.56) [22.46] | 32.78* (18.41) [22.66] | 34.83* (19.73) [22.42] | 29.11 (18.14) [22.07] | 29.11 (18.14) [22.07] | 29.11 (18.14) [22.07] | 31.01 (19.41) [21.84] | 31.01 (19.41) [21.84] | |
| F-Statistic | 918.8 | 892.8 | 892.8 | 892.8 | 858.9 | 918.8 | 918.8 | 918.8 | 918.8 | 918.8 | 918.8 | 918.8 | 918.8 | 918.8 | 918.8 | |
| N | 4628 | 4628 | 3828 | 3828 | 4109 | 4109 | 4628 | 4628 | 4628 | 4628 | 4628 | 4628 | 4628 | 4628 | 4628 | |
| Dep var mean | 300.4 | 300.4 | 221.4 | 221.4 | 301.6 | 301.6 | 272.5 | 272.5 | 269.7 | 269.7 | 300.4 | 300.4 | 300.4 | 300.4 | 300.4 | |

Notes: Each cell in the table comes from a separate regression of the outcome variable on grandmother subsidy in a pooled cross-section of female HRS respondents who have grandchildren under six in survey waves 2006-2014. Subs "IV" columns refer to models that instrument for imputed subsidy with simulated subsidy, and "RF" columns refer to models that use the simulated measure as the dependent variable. Panel 1 reports results from specifications for which the dependent variable is reported in logs, and Panel 2 reports results from specifications for which the dependent variable is reported in raw hours. Within each panel, the first row measures grandmother subsidy as the monthly rate for child care in hundreds of dollars averaged over the previous two years and the second row measures grandmother subsidy as the hourly rate for full-time childcare averaged over the last two years. Columns 1-2 repeat the main specification, Columns 3-4 drops observations for which caregiving hours were imputed from a range, and Columns 4-6 drops new entrants in 2010 for whom it is not possible to impute the number grandchildren under six. Columns 7-8 report the results grandchild care dropping the assumption that all grandparents with grandchildren under six provided at least 50 hours of care over the last 2 years (zeros are dropped in the log case). Columns 9-12 test the sensitivity of the analysis to the assumption of 50 hours by recoding to 1 hour or 99 hours. All columns control for grandmother characteristics including: age, age squared, foreign born, education, number of children, total number of grandchildren, number of living parents. All columns also control for state fixed effects, year fixed effects, and state specific linear trends and a control for the subsidy rate for center care. F-statistics from the first stage regression of the imputed subsidy on simulated subsidy are reported below the estimates in IV columns. Standard errors clustered at the state level are in parentheses, and bootstrapped standard errors, accounting for the use of generated regressors, are reported in brackets. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Online Appendix Table 6: Testing the copay assumption

| | Log Hours of Childcare | | | | | |
|---|--------------------------------|--------------------------------|-------------------------------|------------------------------|-----------------------------|-----------------------------|
| | Full Sample | | Any GK 10 Miles | | No GK 10 Miles | |
| | IV (1) | RF (2) | IV (3) | RF (4) | IV (5) | RF (6) |
| Panel 1: Predicted Monthly Rate for Full Time Care | | | | | | |
| Reimbursement Rate (\$100) | 0.050*** (0.017) [0.024] | 0.052*** (0.019) [0.023] | 0.067** (0.032) [0.038] | 0.067* (0.036) [0.037] | 0.000 (0.044) [0.049] | 0.005 (0.052) [0.046] |
| Family Copay (\$100) | -0.052 (0.043) [0.060] | -0.053 (0.045) [0.053] | -0.072 (0.055) [0.078] | -0.073 (0.063) [0.072] | 0.021 (0.071) [0.103] | 0.016 (0.082) [0.091] |
| F-Statistic | 624.9 | | 419.6 | | 98.5 | |
| Panel 2: Predicted Hourly Rate for Full Time Care | | | | | | |
| Reimbursement Rate (\$100) | 0.085*** (0.028) [0.040] | 0.087*** (0.031) [0.039] | 0.112** (0.054) [0.064] | 0.113* (0.061) [0.063] | 0.001 (0.073) [0.082] | 0.008 (0.088) [0.079] |
| Family Copay (\$100) | -0.087 (0.073) [0.101] | -0.089 (0.076) [0.090] | -0.122 (0.093) [0.131] | -0.122 (0.106) [0.121] | 0.035 (0.120) [0.173] | 0.028 (0.139) [0.154] |
| F-Statistic | 624.8 | | 419.6 | | 98.5 | |
| N | 4628 | 4628 | 2608 | 2608 | 2020 | 2020 |
| Dep var mean | 300 | 300 | 364 | 364 | 218 | 218 |

Notes: Each cell in the table comes from a separate regression of the outcome variable on the maximum reimbursement rate for relative caregivers and the family copay obligations in a pooled cross-section of female HRS respondents who have grandchildren under six in survey waves 2006-2014. "IV" columns refer to models that instrument for imputed reimbursement rate and copay with simulated reimbursement rate and copay, and "RF" columns refer to models that use the simulated measures as dependent variable. Imputed and simulated measures are constructed as described in the text. The dependent variable is the natural log of childcare hours over two years. Panel 1 measures the reimbursement rate and family copay as a monthly rate in hundreds of dollars averaged over the previous two years. Panel 2 measures the reimbursement rate and family copay as an hourly rate for full-time childcare averaged over the last two years. Columns 1-2 report results for the full sample of grandmothers with any grandchildren under six from daughters. The sample in columns 3-4 has at least one grandchild under six living within 10 miles, with the the sample in columns 5-6 has no grandchildren under six living within 10 miles. All columns control for grandmother characteristics including: age, age squared, foreign born, education, race, number of children, total number of grandchildren, number of living parents. All columns include state and year fixed effects and a control for the subsidy rate for center care. F-statistics from the first stage regression of the imputed reimbursement rate and copay on simulated reimbursement rate and copay are reported below the estimates in IV columns. Standard errors clustered at the state level are in parentheses, and bootstrapped standard errors, accounting for the use of generated regressors, are reported in brackets. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Online Appendix Table 7: The Effect of Child Care Subsidies on Caregiving - Contemporaneous State of Residence

| | Log Hours of Childcare | | | | | | Any Caregiving | | | |
|---|--------------------------------|--------------------------------|-------------------------------|-------------------------------|------------------------------|------------------------------|-------------------------------|-------------------------------|-----------------------------|-----------------------------|
| | Full Sample | | Any GK 10 Miles | | No GK 10 Miles | | > 100 Hours | | > 1000 Hours | |
| | IV | RF | IV | RF | IV | RF | IV | RF | IV | RF |
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) |
| Panel 1: Predicted Monthly Rate for Full Time Care | | | | | | | | | | |
| Monthly Rate (\$100) | 0.052*** (0.015) [0.023] | 0.055*** (0.016) [0.021] | 0.070** (0.031) [0.038] | 0.071** (0.035) [0.035] | -0.016 (0.040) [0.049] | -0.013 (0.050) [0.045] | 0.025** (0.010) [0.011] | 0.026** (0.011) [0.010] | 0.005 (0.004) [0.006] | 0.006 (0.004) [0.005] |
| F-Statistic | 945.3 | | 1084.5 | | 411.3 | | 979.7 | | 952.0 | |
| Panel 2: Predicted Hourly Rate for Full Time Care | | | | | | | | | | |
| Hourly Rate (\$1) | 0.084*** (0.028) [0.038] | 0.089*** (0.031) [0.034] | 0.107** (0.050) [0.062] | 0.111* (0.057) [0.059] | -0.021 (0.072) [0.086] | -0.015 (0.085) [0.073] | 0.034* (0.020) [0.020] | 0.036 (0.023) [0.018] | 0.010 (0.007) [0.010] | 0.010 (0.008) [0.009] |
| F-Statistic | 1068.0 | | 994.6 | | 808.3 | | 1063.6 | | 1068.0 | |
| N | 4627 | 4627 | 2611 | 2611 | 2016 | 2016 | 4613 | 4613 | 4627 | 4627 |
| Dep var mean | 300 | 300 | 364 | 364 | 217 | 217 | 301 | 301 | 300 | 300 |

Notes: Each cell in the table comes from a separate regression of the outcome variable on grandmother subsidy in a pooled cross-section of female HRS respondents who have grandchildren under six in survey waves 2006-2014. "IV" columns refer to models that instrument for imputed subsidy with simulated subsidy, and "RF" columns refer to models that use the simulated measure as the dependent variable. Imputed and simulated measures are constructed as described in the text, using state of residence in the current wave. The dependent variable in columns 1-5 is the natural log of childcare hours over two years. The dependent variable is a binary indicator for 100 or more hours of care in the last 2 years in columns 7-8 and a binary indicator for 1000 or more hours of care in the last two years in columns 9-10. Panel 1 measures grandmother subsidy as the monthly rate for child care in hundreds of dollars averaged over the previous two years. Panel 2 measures grandmother subsidy as the hourly rate for full-time childcare averaged over the last two years. Columns 1-2 and columns 7-10 report results for the full sample of grandmothers with any grandchildren under six from daughters. The sample in columns 3 and 4 has at least one grandchild under six living within 10 miles, and the the sample in columns 5-6 has no grandchildren under six living within 10 miles. All columns control for grandmother characteristics including: age, age squared, foreign born, education, race, number of children, total number of grandchildren, number of living parents. All columns include state and year fixed effects, state trends, and a control for the subsidy rate for center care. F-statistics from the first stage regression of the imputed subsidy on simulated subsidy are reported below the estimates in IV columns. Standard errors clustered at the state level are in parentheses, and bootstrapped standard errors, accounting for the use of generated regressors, are reported in brackets. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Online Appendix Table 8: Effect of Childcare Subsidies on Grandmother’s Employment and Wealth—Contemporaneous State of Residence

| | Log Earnings | | Working for Pay | | Working for Pay Second Job | | Annual Hours | | Hourly wage rate | | HH Income | | HH Wealth | |
|--------------------|---------------------------------|--------------------------------|---------------------------------|--------------------------------|---------------------------------|---------------------------------|------------------------------|------------------------------|--------------------------------|-------------------------------|-----------------------------|-----------------------------|--------------------------------|--------------------------------|
| | IV (1) | RF (2) | IV (3) | RF (4) | IV (5) | RF (6) | IV (7) | RF (8) | IV (9) | RF (10) | IV (11) | RF (12) | IV (13) | RF (14) |
| Cumulative Subsidy | -0.056*** (0.020) [0.025] | -0.053** (0.020) [0.022] | -0.006*** (0.002) [0.003] | -0.005** (0.002) [0.002] | -0.002*** (0.000) [0.001] | -0.002*** (0.001) [0.001] | -18.78 (11.29) [13.75] | -17.43 (12.35) [12.40] | -0.307** (0.147) [0.238] | -0.287* (0.158) [0.210] | -62.2 (267.8) [389.5] | -59.1 (273.2) [348.7] | 6470.5 (7419.6) [6830.5] | 6147.7 (7675.9) [6243.4] |
| F-Statistic | 1323.3 | | 1332.2 | | 1332.8 | | 1961.1 | | 2111.7 | | 2111.3 | | 1323.3 | |
| N | 5774 | | 5767 | | 5715 | | 2168 | | 2010 | | 5774 | | 5774 | |
| Dep var mean | 11,620 | | 0.40 | | 0.04 | | 1636 | | 19.67 | | 68,979 | | 341,081 | |

Notes: Each cell in the table comes from a separate regression of the outcome variable on cumulative grandmother subsidy in a pooled cross-section of female HRS respondents who have grandchildren under six in survey waves 2006-2014. The independent variable is the total subsidy amount a grandmother is eligible for over years she has grandchildren under six. “IV” columns refer to models that instrument for imputed subsidy with simulated subsidy, and “RF” columns refer to models that use the simulated measure as the dependent variable. Imputed and simulated measures are constructed as described in the text, using state of residence in the current wave. The dependent variable in columns 1 and 2 is the natural log of individual labor earnings, winsorized at the 99th percentile. The dependent variable in columns 3 and 4 is an indicator for if the respondent is current working for pay, and in columns 5 and 6 if working multiple jobs. The dependent variable in columns 7 and 8 is the reported annual hours worked in the last year and in columns 9 and 10 is the current hourly wage rate, conditional on working. The dependent variables in columns 11–14 are household income and wealth. All columns include state and year fixed effects, a state linear trend and a control for the subsidy rate for center care. F-statistics from the first stage regression of the imputed subsidy on simulated subsidy are reported below the estimates in IV columns. Standard errors clustered at the state level are in parentheses, and bootstrapped standard errors, accounting for the use of generated regressors, are reported in brackets. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Online Appendix Table 9: Effect of Childcare Subsidies on Grandmother's Use of Social Insurance and Health—Contemporaneous State of Residence

| | Claim SS Early | | Retired | | Claiming DI | | In Poor Health | | Depression Scale | |
|--------------------|------------------------------|-----------------------------|-------------------------------|------------------------------|-------------------------------|-------------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| | IV (1) | RF (2) | IV (3) | RF (4) | IV (5) | RF (6) | IV (7) | RF (8) | IV (9) | RF (10) |
| Cumulative Subsidy | 0.004* (0.003) [0.003] | 0.004 (0.003) [0.003] | 0.005** (0.002) [0.003] | 0.005* (0.002) [0.003] | 0.005** (0.002) [0.002] | 0.005** (0.002) [0.002] | 0.002 (0.004) [0.003] | 0.002 (0.004) [0.003] | 0.007 (0.014) [0.014] | 0.007 (0.014) [0.012] |
| F-Statistic | 1510.3 | | 1323.3 | | 1323.3 | | 1323.3 | | 1323.3 | |
| N | 4974 | 4974 | 5774 | 5774 | 5774 | 5774 | 5774 | 5774 | 5774 | 5774 |
| Dep var mean | 0.58 | 0.58 | 0.55 | 0.55 | 0.07 | 0.07 | 0.26 | 0.26 | 1.45 | 1.45 |

Notes: Each cell in the table comes from a separate regression of the outcome variable on cumulative grandmother subsidy in a pooled cross-section of female HRS respondents who have grandchildren under six in survey waves 2006-2014. The independent variable is the total subsidy amount a grandmother is eligible for over years she has grandchildren under six. "IV" columns refer to models that instrument for imputed subsidy with simulated subsidy, and "RF" columns refer to models that use the simulated measure as the dependent variable. Imputed and simulated measures are constructed as described in the text, using state of residence in the current wave. The dependent variable in columns 1 and 2 is a indicator for if the respondent reports claiming Social Security prior to full retirement age as determined by their birth year and month. The dependent variable in columns 3 and 4 is an indicator for if the respondent self reports being fully or partially retired. The dependent variable in columns 5 and 6 is an indicator for if the respondent is currently claiming disability benefits, in Columns 7 and 8 is an indicator for if the respondent reports being in poor or fair health, and in columns 9 and 10 is the Center for Epidemiological Studies Depression (CESD) Scale. All columns include state and year fixed effects, a state linear trend and a control for the subsidy rate for center care. F-statistics from the first stage regression of the imputed subsidy on simulated subsidy are reported below the estimates in IV columns. Standard errors clustered at the state level are in parentheses, and bootstrapped standard errors, accounting for the use of generated regressors, are reported in brackets. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.