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Article

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Kathryn Anne Edwards and Jeffrey B. Wenger

Parents with an Unemployed Adult Child: Consumption, Income, and Savings Effects

Abstract

The risk of labor market, health, and asset-value shocks comprise profound retirement savings challenges for older workers. Parents, however, may experience added risk if their children experience adverse labor market shocks. Prior research has shown that parents support their children financially through an unemployment spell. In this paper, we also provide evidence of financial support from parents and investigate if this financial support is accompanied by adjustments to parental consumption, income, or savings behavior. With longitudinal data on mothers and children from the Panel Study of Income Dynamics, we use within-mother variation in behavior to identify the effect of a child's labor market shock on parent outcomes. We find evidence of a decline in consumption, an increase in labor supply, and a decrease retirement savings, though the results are heterogenous among mothers. Our results point to aggregate inefficiencies and inequities that may result from family risk sharing.

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1 Introduction

Families often serve as the first line of defense against adverse events — for example, spouses enter the labor force or increase their hours of work when a partner is laid-off (Cullen and Gruber, 2000), grandparents provide child care or loans when a child is sick (Bianchi et al., 2010), and parents respond to the economic needs of their children through various forms of assistance, such as offering co-residence or sending money (Wiemers, 2014; Kaplan, 2012; McGarry, 2016; Edwards, 2017). It is generally assumed, either explicitly or implicitly, that the providers of assistance are not made worse off by helping their family members, if for no other reason than they willingly elect to do so.

Past research explores the motivations for family assistance, especially between parents and children. Parents are either altruistically motivated or they are motivated by exchange and give to a child in the current period in order to receive from the child in the future. In the former, a child's consumption enters the parents utility function, and the latter, a parent's future consumption and thereby utility is higher.¹ However, the voluntary aspect of the provision of family assistance does not make it costless. And critically, individual utility optimization does not guarantee an efficient allocation of risk or an equitable distribution of insurance in an economy.

In this paper, we directly approach the potential costs, inefficiencies, and inequities of aiding family members. We examine parental behavior in the year that an adult, non-residential child experiences an unemployment spell. Using the 1985-2013 waves of the Panel Study on Income Dynamics, a longitudinal dataset that allows for parent-child linkages across households within the same wave of the survey, we measure the concurrent changes to the parent's consumption, income, and savings during child's unemployment. Due to quality concerns in the matching process, we examine mothers only. However, all but one outcome is measure on the household-level. For this reason, we describe our results as parent behavior, though it is captured through mothers.

Given that we can observe mothers over long periods, we regress an adult child's unemployment on parents' outcomes and include mother, year, and mother-age fixed effects, which control for unobserved individual, time-period and life-cycle characteristics of the mothers that could be correlated with job loss of the children. Identification comes from within-mother variation in outcomes and the incidence of a child's unemployment spell.

Our analysis includes four classes of dependent variables that attempt to quantify the flow of financial assistance to children and any concurrent changes in parents' outcomes. Specifically, we examine the effect of a child's unemployment on the following parental behaviors: assistance to children (measured in reported cash transfers), consumption (measured in household food consumption), income (measured in labor supply and program participation), and savings (measured in savings rates and asset values). We do, however, find results in each category, though they vary by the age and situation of the parent.

We corroborate the findings of previous studies and show that parents are more likely to send a cash transfer to a child if they have an unemployed child. Separately, and not conditional on transfer sending, we find large drops in usual household food consumption,

¹ There are numerous papers discussing, debating, and demonstrating altruism and exchange motives in both theory and empirics, starting with Becker (1974). Examples can be found in Cox (1990), Rosenzweig and Wolpin (1994), Altonji et al. (1997) and more recently McGarry (2016). A discussion of the motives can be found in Bianchi et al. (2010).

labor supply increases, but little change in program participation in Social Security and food stamps (Supplemental Nutrition Assistance, or SNAP), or savings in the year of a child's spell. We then look for heterogeneous effects based on the age and work status of the mother, as well as the nature of the unemployment spell of the child, and find that the main results are driven by younger, working-age mothers, who additionally reduce savings in the year of a child's spell.

The myriad measures examined here are still only partial measures of the extent of financial assistance provided to unemployed workers by parents and the effect it has on parents, as it is limited by what we observe in the survey. The array of significant changes to parent behavior detected in our study, however, suggests that the costs incurred providing family assistance and the effects of risk bearing may be large. A parent who willingly changes her behavior in order to help a child, though it may be optimal from the point of view of her utility, may still be suboptimal in the distribution and cost of risk in the economy. Given the state of financial insecurity among the working-age population and retirement security of the near-retired population, suboptimal distribution of risk is a large concern.

2 Data

The Panel Study of Income Dynamics (PSID) is a 1968-representative sample of 5000 households in the U.S. that were surveyed annually survey from 1968-1996 and biennially since 1997. It follows original sample members, their descendants, and co-resident relatives over time. The PSID sample grows every year as children of the respondents move out and form their own households, which are added to the panel. This unique sampling frame enables us to see detailed information on parents and their non-resident children concurrently for long periods of time. While the level of detail afforded by family lineage is a key advantage to using the PSID, it has two major caveats relevant for our analysis.

First, while members of the original 1968 sample and their biological descendants are continuously followed, family members of those descendants are not. For example, a woman moves out of her parents house (in the PSID sample), gets married, and has a child. Her child, partner, and self are in the PSID. Her husband's parents are not. If she gets divorced and moves out, she and her child remain in the PSID, but her ex-husband does not. In general, a divorce or partner dissolution in which a non-sample member moves from the house means that that member will be omitted in the future survey. We therefore miss parent-child relationships of divorced or separated parents who are not living with the member of the household that is biologically linked to the original PSID sample. This is a larger issue for fathers, since mothers are considerably more likely to maintain custody of children.

In addition, the PSID does not collect equal amounts of information on everyone in the household. The full household roster is asked a set of basic demographic and status questions, but detailed information, such as labor supply, is only gathered about the head in early waves and only heads and spouses in later waves. If an adult moves in with a family member, the move is observed, but the detail is lost. Hence, we cannot detect if a worker became unemployed and moved back in with family because he will no longer be a head of household, and will not report the prior year's labor force information. Hence, our analysis excludes any study of co-residence.

2.1 Mothers

From the full PSID sample, we create an analytical sample of 38,004 person-year observations of mothers matched to independently living adult children between 1985-2013. Details of the matching process, including matching rates and a comparison of dependent and covariate variables across matched and unmatched mothers, are discussed in Appendix B. Our analysis relies on mother-child pairs only. We are able to match mothers at a much higher rate than fathers, and most of the matched fathers were in households with previously matched mothers. Hence, the only excluded parents from our sample are single, custodial fathers and divorced, non-custodial fathers. The former makes up a very small share of the population² and there is prior evidence that divorced fathers are much less likely to provide financial assistance to adult children (Amato et al., 1995). Moreover, with the exception of individual labor supply, all of the dependent variables that we measure are household summaries; we only need to observe one parent to capture any changes to partner behavior.

Table 1 summarizes all of the matched mothers in our sample, together and separated into three age groups: working age (less than 62 years old), the retirement window³ (age 62-70), and retired (older than 70). We will use this grouping in subgroup analysis later in the paper. We divide the sample in this way to acknowledge the differences in financial resources, or sources of financial resources, that individuals have before and after they retire. For example, 70.3 percent of working-age moms self report their current employment status as working, compared to 33.6 percent and 8.2 percent of older mothers. Of course, mothers in our sample are aging over time, and 22 percent transition from one age group to another. For the most part, the age groups are fairly correlated to birth years. Figure 1 is a histogram of the birth years of mothers from the three age groups. The two older mother groups were born much earlier, most between 1915 and 1950. The younger group, on the other hand, have birth years into the 1970s. Older mothers in our sample are not simply older versions of younger mothers, but are a different cohort.

Indeed, we find basic demographic differences between the groups beyond age. Our sample is 77.2 percent white, and just under half have any college experience, at 42.3 percent. But working-age mothers have higher educational attainment than retiring or retired mothers, at 45.3 percent with some college attendance, compared to 25.6 percent and 16.6 percent, respectively. In addition, working-age mothers have a higher share divorced (at 24 percent) compared to older mothers (19.7 percent and 10.5 percent) and a lower share self-reporting to be a housewife (12.1 percent, compared to 14.2 and 17.2 percent). Clearly, it is important to keep in mind the latent cohort differences when interpreting the subgroup results, and important to control for the year of birth of the mother.

The bottom half of Table 1 summarizes the dependent variables that we will use in our analysis.⁴ Respondents in the PSID are usually surveyed in the first few months of the year and asked for summary information about the prior calendar year; the dependent variables are the calendar-year totals. The first group of variables are cash transfers sent and received by the

² The U.S. Census Bureau estimates that from 1970 - 1990, when the adult children in our sample were minors, the share of households with children under 18 that were headed by a single father averaged just under 2 percent (Annual Social and Economic Supplement, 2016).

³ This is defined by Social Security, the early retirement age is 62 years old; and after age 70, there is no longer a financial incentive to delay claiming.

⁴ Appendix A, figures A2 - A13 show the distribution of all of these variables by age of mother.

Table 1 Summary of Mothers, by Age

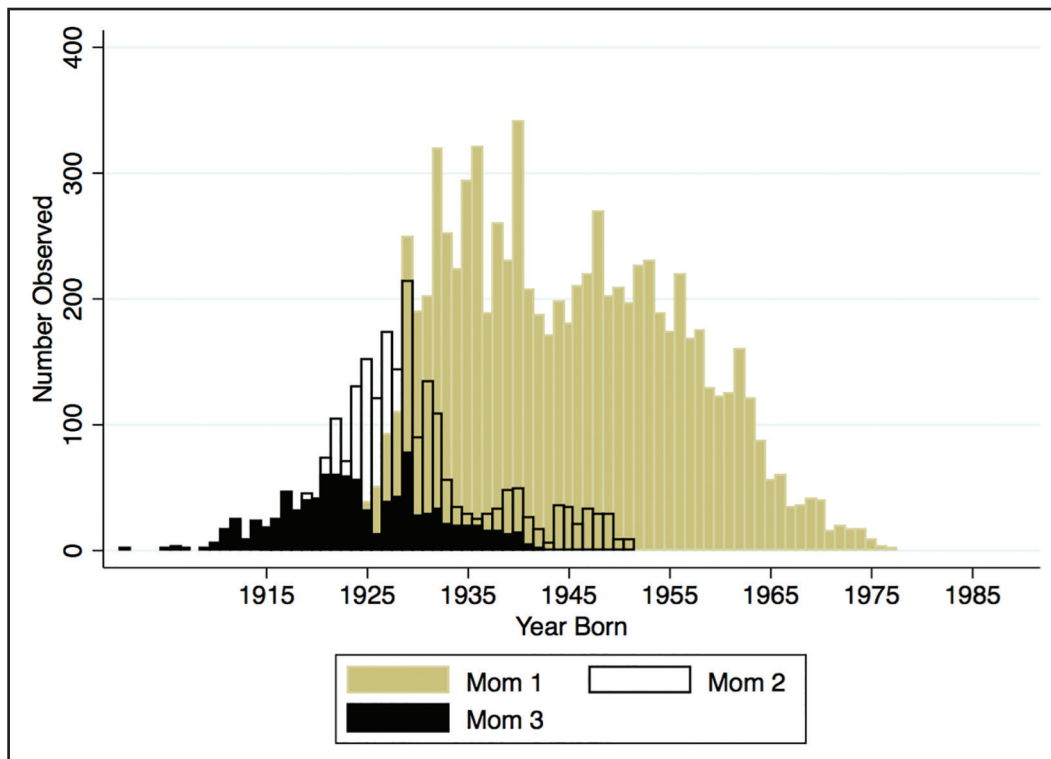
	All N=38004	Moms Age < 62 N=23885	Moms Age 62-70 N=7972	Moms Age >70 N=6147
Age	59.6	50.1	65.7	78.6
White	0.772	0.762	0.851	0.804
Black	0.127	0.133	0.073	0.136
High School or Less	0.575	0.545	0.736	0.834
Some College or More	0.423	0.453	0.256	0.166
Married	0.594	0.659	0.651	0.383
Divorced/Sep.	0.201	0.240	0.197	0.105
Never Married	0.040	0.062	0.012	0.007
Widow	0.165	0.039	0.139	0.506
Disabled	0.044	0.055	0.031	0.028
Housewife	0.136	0.121	0.142	0.172
Working	0.492	0.703	0.336	0.082
Sent Transfer to Kid	0.070	0.085	0.068	0.035
Size of Transfer to Kid	\$329	\$373	\$344	\$206
Received Transfer	0.059	0.069	0.037	0.052
Size of Received Transfer	\$187	\$227	\$101	\$154
Usual Food Consumption	\$7196	\$8060	\$7124	\$5060
Family Size	2.370	2.730	1.890	1.560
Per Capita Food Consumption	\$4808	\$4738	\$5361	\$4430
Hours Per Week	19.8	27.5	10.0	2.3
Weeks Worked	25.0	35.3	17.7	4.7
Receiving SSA Income	0.458	0.138	0.840	0.966
Receiving SNAP	0.070	0.093	0.044	0.032
Contribute to a Pension	0.079	0.122	0.034	0.005
Percent of Income Cont.	0.006	0.009	0.003	0.0003
Ever Contributed to Pension	0.222	0.321	0.149	0.027
Vehicle Value	\$16851	\$18320	\$18972	\$11437
IRA Value	\$65123	\$47195	\$111975	\$73405

Source: Authors' Calculations of PSID data.

household. Heads and wives separately provide estimates of the amount of money they sent to a family member, and their relation to that member.⁵ They also each provide a total of how much they received from family, but do not specify who it was from. We combine transfers sent and received from heads and wives into a household summary measure. For parsimony, we refer to

⁵ This total excludes legal transfers, such as alimony and child support.

Figure 1 Year of Birth of Three Age Groups of Mothers



Source: Author’s Analysis of PSID data, 1985-2013. Mom group 1 are mothers who are age 62 and less, mom group 2 are mothers who are 62-70, and mom group 3 are mothers who are 70 and older. Mothers can transition between groups.

a year in which a positive transfer amount was reported as a single transfer, though it could be multiple disbursements within the year. While they are younger, mothers’ households are net senders of transfers; 8.5 percent of working-age mothers report sending a transfer to a child in a year and 6.9 percent received a transfer. As they age, they become net receivers; only 3.5 percent of older mothers report sending a transfer to a child but 5.2 percent report receiving a transfer. The table also shows the unconditional transfer amounts.

The second group of variables describes usual household food consumption, which combines the monetary value of food stamp benefits with the reported spending on food consumed at and away from home. It is the only consistent measure of consumption in the survey. Total household food consumption declines with age, from \$8060 to \$5060, though per capita food consumption (the household total divided by family size) rises and then falls, from \$4738 for working-age mothers, to \$5361 and then \$4430 for the oldest mothers. These variations could reflect economies of scale in larger households, changes in preferences towards or ability to afford more expensive food, as well as reductions in food consumption overall. However, it likely also reflects a measurement issue. Usual household food consumption is measured over a year, but family size is measured at the time of survey. If the family size changed over the course of the year, the members contributed to consumption, but may not be included in family size, depending on when they exited or entered. For this reason, we show per capita consumption in this summary, but will not use it as a dependent variable in our analysis.

The third group of variables summarizes sources of income, including the total weeks worked in the year, the share of mothers whose household has any Social Security Income,⁶ and the share who receive Food Stamps/Supplemental Nutrition Assistance (SNAP). As expected, compared to retired mothers, working-age mothers work more weeks during the year, at 35.3 weeks, compared to 4.7; have lower shares of Social Security receipt, at 13.8, compared to 96.6; and higher SNAP receipt, at 9.3, compared to 3.2.

Finally, the PSID added in 1999 regular measures of wealth, including individual contributions to pensions or retirement savings accounts, the value of total family wealth and its components. We examine value of vehicles and value of IRAs. 12.2 percent of working-age mothers are contributing to a pension, and contribute an unconditional average of just under 1 percent of their income, while comparatively few retired mothers are currently contributing. However, the course of retirement savings is visible in our sample. Younger mothers, still contributing to their IRA have lower IRA value of \$47,000, mothers around the time they retire have roughly \$112,000 in their IRAs, and retired mothers, who have likely drawn down on their savings, have \$73,000.

In summary, our sample straddles mothers of varying financial resources and flexibility, from younger mothers who are working and contributing to savings, older mothers who are on Social Security income and drawing down their savings, and the mothers who are transitioning between the two states.

2.2 Unemployed Adult Children

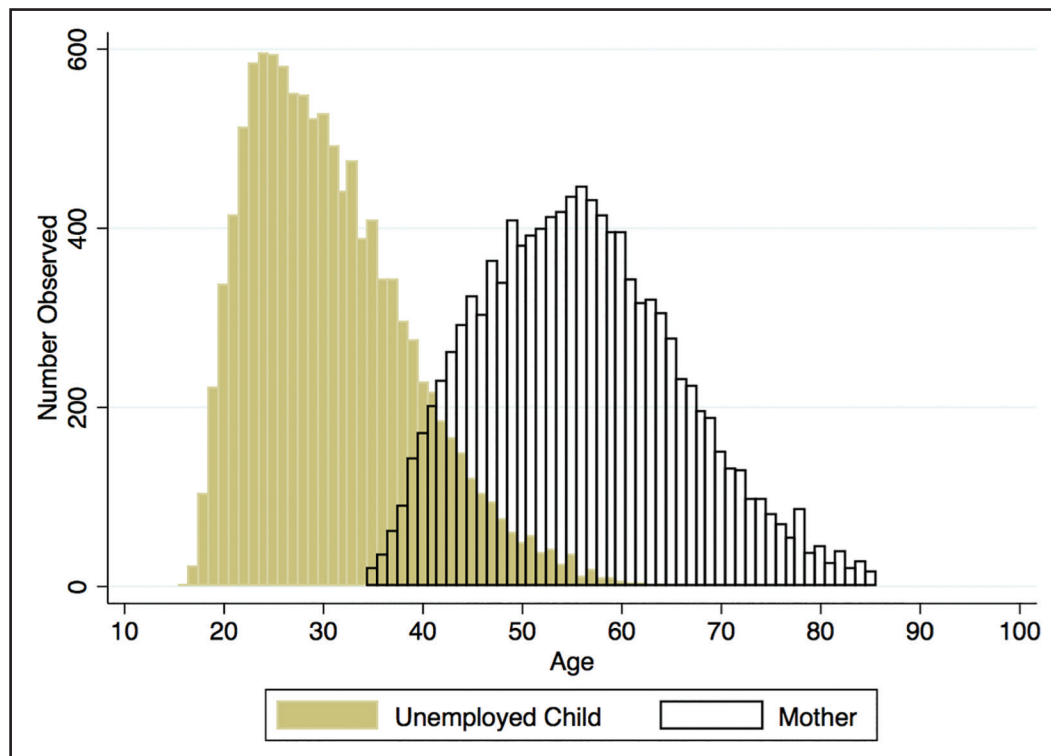
We define an unemployment spell as a calendar year in which the child was unemployed for at least one week.⁷ We further restrict unemployment spells not to be concurrent with the final year of schooling, to avoid anticipated unemployment spells. Figure 2 shows the distribution of ages of unemployed adult children in our sample the year they experienced a non-entry unemployment spell and the distribution of the age of their mothers in that year. Unemployment peaks between the ages of 24-33, and then gradually declines among older workers; half of spells occur before age 30. For mothers, unemployment among children is centered around a peak at age 57, occurring as early as 40 and as late as age 85.⁸

The demographic characteristics of unemployed adult children matched to mothers in our sample, as well as characteristics of the spell, are summarized in Table 2 for all unemployed adult children, and grouped by the age of their mother. The average age of unemployed children is 32.2, with a nearly even split of men and women, though the child's average age increases with the age of the mothers, from 28.8 years old to 44.9. Similar to mother's age predicting the sources and scope of financial resources available to her, child's age is indicative of the needs and constraints of her household. For example, although marriage rates are similar for each set of unemployed children, the share with children of their own at home drops from 67.6 percent to 49.3 percent. In addition, 50.2 percent of unemployed children of working-age mothers have

⁶ The PSID varies in its collection of information regarding Social Security income, asking about individual receipt in some years and family receipt in others. We use household-level summaries in all years for consistency, but that means we cannot identify the recipient within the household for most years of the survey.

⁷ We use the term spell for parsimony; it could in fact be multiple spells within the annual total.

⁸ Appendix Figure A1 shows Figure 2 as a scatter plot of the age of mothers matched with the age of their unemployed adult child, which shows the same concentration between 20-30 among children and 40-60 among mothers.

Figure 2 Age of Unemployed Child and Matched Mothers

Source: Author's Analysis of PSID data, 1985-2013. Not included in unemployed children and individuals whose unemployment coincided with final year of schooling.

more education than their mother, but this increases to 63.1 percent for the oldest mothers. Hence, the relative position of mothers to children is different among the three groups.

We also examine events that are concurrent with the year of the child's unemployment spell that could lead to financial assistance from parents. Self-reporting of disability joint with an unemployment spell is rare, with less than one percent of spells for children or working-age and retiring mothers, and 1.9 percent of spells for children of the oldest mothers. More common is the concurrent reporting of a new child in the unemployed household in the year of a spell, averaging 11.1 percent of spells for children of working-age mothers and 4.1 percent for children of oldest mothers. Also more common is for a child's unemployment to coincide with that child's divorce, averaging 10.1 percent of spells, and fairly consistent across the age groups. Due to the timing of the survey window, we can only identify that both events (unemployment and birth/divorce) occurred within the same calendar year and not which preceded the other, and it could be the case that the unemployment spell is prompted by the birth of a new child or divorce. Finally, 30.8 percent of unemployment spells occur within the year that a sibling is also unemployed; this share varies less by age of mom, from 30.9 percent, to 31.7 percent, to 28.5 percent.

To understand more about the nature of the child's unemployment, we also examine the characteristics of the spell itself. First, we show the reason given for the spell. The PSID varies in who was administered the question eliciting the reason for unemployment; in certain years the head had to be unemployed at the time of the survey, in other years not. Hence, the categories include that the spell was associated with displacement, either layoff or firm closing; the spell was voluntary; or, the nature of the spell is not known. Of the known spells, a roughly even

Table 2 Summary of Adult Children in the Year of Unemployment, by Age of Mother

	All N=9236	With Moms Age <62 N=6259	With Moms Age 62-70 N=2066	With Moms Age >70 N=911
Age	32.2	28.8	37.1	44.9
Female	0.509	0.517	0.488	0.501
Male	0.491	0.483	0.512	0.499
With Minors	0.727	0.771	0.672	0.543
Married	0.464	0.450	0.494	0.488
Same State	0.821	0.832	0.809	0.774
Kid more educated than mother	0.541	0.502	0.620	0.631
Concurrent w/disability	0.006	0.004	0.010	0.019
Concurrent w/new child	0.097	0.111	0.080	0.041
Concurrent w/divorce	0.101	0.104	0.100	0.085
Concurrent w/sibling unemp.	0.308	0.309	0.317	0.285
Displaced	0.277	0.278	0.279	0.261
Layoff	0.187	0.194	0.181	0.154
Firm Closing	0.044	0.420	0.054	0.041
Voluntary	0.261	0.291	0.216	0.153
Not Known	0.477	0.446	0.518	0.595
Worked FT previously	0.592	0.576	0.617	0.643
Unemp. Spell <26 weeks	0.728	0.741	0.716	0.661
Remain in LF after spell	0.758	0.761	0.760	0.737

Source: Authors' Calculations of PSID data.

amount are associated with displacement (27.7 percent) and voluntary (26.1 percent), however, nearly half are not known (47.7 percent). Moreover, displacement rates are similar whatever the age of mom, but voluntary unemployment is less likely among older adults of older mothers, falling to 15.1 percent, and not known rising to 59.5 percent. Because such a large number of spells are not associated with a known reason, we do not feature these divisions in the main results, although displacement has a much stronger exogeneity argument. Instead, we discuss them in our subgroup analysis.

Recall that our definition of unemployment excludes spells that are associated with school exit. In the bottom of table 2, we show whether the individual was employed in full-year work (40 or more weeks employed) in the year prior to the spell. The majority of unemployed children were employed more than 40 weeks the year prior to the spell (59.2 percent), which rises with the age of the worker to 64.3 percent for the oldest group. Once unemployed, the majority experience a spell of less than 26 weeks, the maximum number of weeks that unemployment insurance benefits are available. The proportion with shorter unemployment spells falls with age, from 74.1 percent of spells for younger to 66.1 percent for older. We are also able to observe labor force participation in the year following the spell. For all age groups, labor

force attachment is high; 75.8 percent remain in the labor force in the year following an spell of unemployment. Hence, the majority of unemployed children in our sample are full-time, full-year workers who experience a short spell and then return to work in the following year. In summary, unemployed children have similar demographic variation as their mothers do, but their spells and labor force attachment is comparatively much more uniform.

3 Empirical Model

Our estimation strategy can be generalized in the following way. Given parent p , in year t , with child c :

$$Y_{pt} = X_{pt}\beta_p + X_{ct}\beta_c + \gamma UC_{ct} + \theta_p + \mu_t + \varepsilon_{pt} \quad (1)$$

Where Y_{pt} is the parents' outcome of interest, X_{pt} is a set of parental covariates, X_{ct} is a set of child covariates, θ_p is individual (parent) fixed-effect and μ_t is calendar year fixed-effect.⁹ Our model relies on within-person variation in Y_{pt} , identified from UC_{ct} , a dummy variable equal to one if the mother had an adult child who was unemployed for at least one week in year t . We test four groups of dependent variables: transfers, income, consumption and saving. We operationalize these outcomes in a number of ways. For transfers we measure both the real dollar amount and a dummy for transfers sent to children or received from family by the mother's household; income is measured through the mother's labor supply, as well as the mother's household labor supply, and program income from Social Security and Supplemental Nutrition Assistance; consumption is measured by usual household food consumption in dollars and logs; and savings includes the mother's individual contributions to retirement savings and household IRA and vehicle wealth.

Given the use of individual fixed effect for the mother, we include in X_{pt} changes in mothers' observed marital status, self-reported disability, unemployment rate in her state, retirement status, work status, age fixed effects, and a dummy variable for any unemployment in the mother's household, experienced by either herself or by her partner or spouse. X_{ct} is a vector of child characteristics that may be related to parental assistance outside of unemployment, specifically, dummies for if a child got married, divorced, had a child, or became disabled.

The identifying assumption of equation (1) is that UC_{ct} is exogenous. That is a strong assumption, for two primary reasons. First, the availability of assistance from parents could prompt unemployment among children. We cannot account for this directly, but we can measure the extent to which behavioral changes in parents are induced before or after the spell, in effect testing for pre-trends. The model in equation (1) can be expanded to UC_{ct}^j ,

$$Y_{pt} = X_{pt}'\beta_p + X_{ct}'\beta_c + \sum_{j=1}^J \gamma_j UC_{ct}^j + \theta_p + \varepsilon_{pt}, \quad (2)$$

Where j are the years before or after the spell in $j=0$ and $j \in [-3,3]$. Hence, the estimates of γ_j capture the time path of the dependent variable in the years preceding and following an adult child's reported unemployment. This method of identification—event study with fixed effects—is

⁹ This paper takes the perspective of the parent – viewing mother's outcomes and mother fixed-effects. For an examination from the child's perspective with child fixed effects, see Edwards (2017).

similar to studies of wages before and after displacement (Stevens, 1997) as well as outcomes before and after hospitalization (Dobkin et al., 2018).

The second issue with the exogeneity assumption of UC_{ct} is that parents likely have a belief, or prediction, of their child's unemployment probability. Parental fixed effects control for any time-invariant aspect of this, but not for updated or evolving opinions. To the extent that this is occurring, then the interpretation of γ changes, ranging from the response to a fully exogenous income shock to the child's household, to a perfectly anticipated income reduction to the child's household. Our model cannot determine how random a child's spell is to parents, and where in the range of potential interpretation γ lies. We can, however, investigate how the estimated γ varies by the nature of the unemployment spell of the child, such as those who indicate that their unemployment was the result of displacement versus a voluntary quit. We will test differences in our analysis among these and other subgroups. As we present results, and in particular subgroup results, we will be careful to note the strength of identification and assumption of exogeneity. Yet, whatever behavioral changes are induced among parents are still informative to understanding the cost of risk bearing.

4 Results

In this section we present the results of equation (1) on the full sample of mothers for the categories of dependent variables: financial assistance, consumption, income, savings. We then discuss the results across all categories for key subgroups of mothers and children. The data support myriad dependent variables, or forms of dependent variables; we present only select results in the paper and omit those in which we did not have significant findings, but are careful to note those omissions, and include those results in the appendix.

4.1 Financial Assistance

We first estimate equation (1) when Y_{pt} are measures of financial assistance from mother to child. Prior literature has established that parents send financial assistance to their children in certain instances, including unemployment (Cox and Way, 2011, Edwards, 2017); we want to confirm that finding within our sample before examining other outcomes. We use two measures of transfers in Y_{pt} , presented in Table 3: the first as a dummy variable for any transfer sending, and the second as the real dollar amount of the transfer. The estimated γ when transfers are a dummy variable in column 1 is 0.018 (.004), or a 1.8 percentage-point increase off of a mean rate of 7.0 percent, a 25 percent increase in the probability of sending a transfer. In column 2, we show similar estimates when Y_{pt} is the dollar amount of the transfer sent; the results are comparable to the first regression. There is a large and precisely estimated coefficient for the total population of mothers, at \$77.844 (25.561). Off of a mean of \$329, this is equivalent to a 22 percent increase in the amount of transfers sent to a child in the year of a child's unemployment spell.

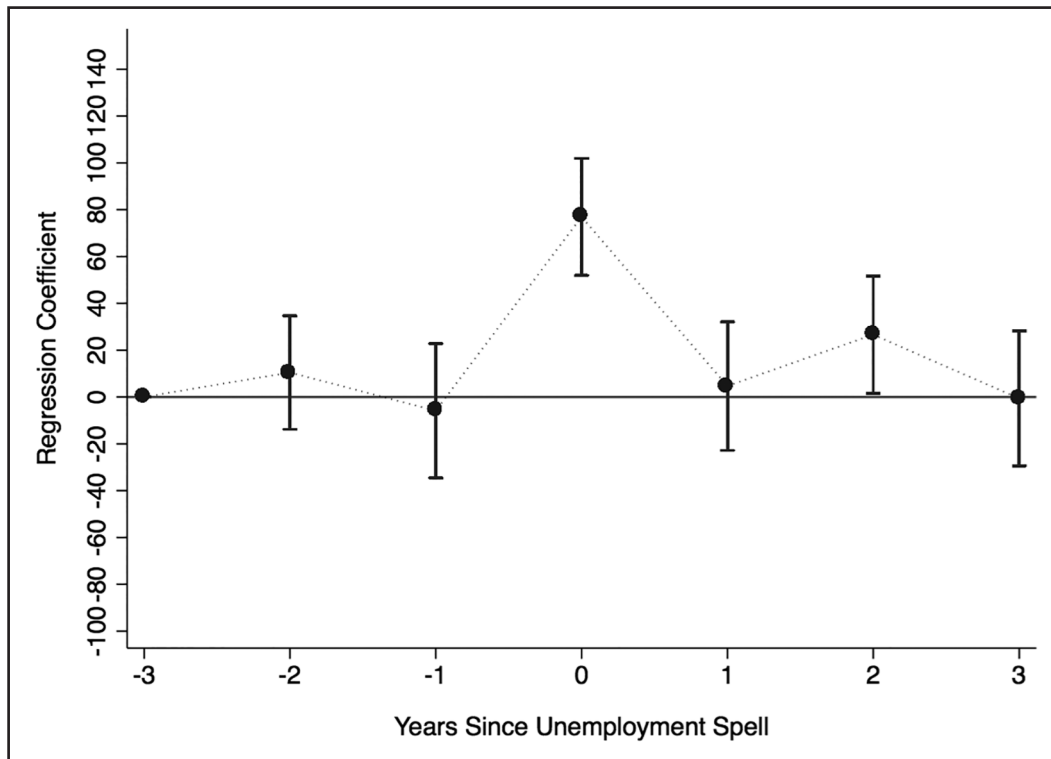
In Figure 3, we show the coefficient estimates for the parental transfer dependent variable when UC_{ct} is the time-path before and after unemployment, the event study from equation (2). The markers are the point estimate of the regression coefficient and the bars are the standard errors; three years, the omitted variable, is zero. The transfer amount dependent variable shows

Table 3 Results from Regressions of Mother Outcomes on Child Unemployment Indicator

	Transfer Sent (Dummy)	Transfer Sent (\$Gross)	Household Food (\$ Amount)	Household Food (Log)	Weeks Employed (Mother)	Hours Per Week (Mother)	Any SSA Income (Dummy)
Unemp Kid	0.018*** 0.004	77.844** 25.561	-254.938*** 49.384	-0.041*** 0.008	0.381* 0.162	0.058 0.147	0.005 0.004
<i>Child Controls</i>							
Kid Becomes Disabled	0.01 0.01	161.373** 49.679	-308.218* 121.156	-0.098*** 0.029	0.37 0.531	0.117 0.471	-0.007 0.014
Kid Gets Married	0.002 0.005	0.8 30.644	-109.291 59.779	-0.011 0.009	0.064 0.203	-0.205 0.186	-0.006 0.005
Kid Gets Divorced	0.013* 0.006	61.477 36.015	-134.710* 68.247	-0.007 0.012	-0.295 0.255	0.036 0.226	-0.005 0.006
Kid has a Kid	0.005 0.004	-41.116 29.435	-53.981 51.688	-0.014 0.008	-0.011 0.176	-0.04 0.163	-0.011** 0.004
<i>Mother Controls</i>							
Unemp in Mom's HH	0.002 0.01	-56.296 45.474	-157.894 119.293	-0.051* 0.021	-4.905*** 0.527	-0.156 0.503	-0.026* 0.011
Partnered	0.015 0.033	-79.924 194.591	1547.280** 591.443	0.239** 0.088	-12.269*** 2.659	-12.377*** 2.313	0.216*** 0.055
Divorced/Sep	-0.016 0.033	-277.641 190.76	-534.796 592.083	-0.124 0.088	-12.468*** 2.663	-11.433*** 2.309	0.140* 0.054
Never Married	-0.038 0.035	-210.439 197.839	-495.486 625.225	-0.137 0.096	-12.315*** 2.944	-10.293*** 2.579	-0.001 0.059
Widow	0.008 0.033	-70.413 192.926	-468.533 589.159	-0.156 0.088	-13.740*** 2.672	-13.465*** 2.316	0.176** 0.057
Housewife	-0.006 0.007	-22.637 46.773	183.568 103.427	0.013 0.018	-11.304*** 0.526	-7.795*** 0.493	0.060*** 0.009
Retired	-0.007 0.007	-16.409 47.842	171.941 105.568	0.013 0.019	-12.652*** 0.547	-8.492*** 0.516	0.127*** 0.011
Disabled	-0.01 0.007	12.67 43.044	-248.956* 124.087	-0.082** 0.026	-12.416*** 0.603	-9.102*** 0.6	0.158*** 0.015
Working	0.016* 0.006	86.076* 37.074	289.249** 95.366	0.027 0.017	17.478*** 0.518	14.749*** 0.501	-0.022* 0.009
State UR	0.001 0.002	-1.744 12.277	-14.385 23.863	-0.005 0.004	-0.201* 0.081	-0.239** 0.077	-0.003 0.003
Year & Age FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Individual FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	38004	38004	38004	34229	38004	38004	38004

Note: Standard errors listed. Table shows result of seven regressions. Year fixed effects refer to the year of the spell, age fixed effects refer to the age of the mother, and individual fixed effects to the mother.

Figure 3 Coefficient Estimates, Regression of Transfers Sent to Child on Child’s Unemployment



Source: Author’s Analysis of PSID data, 1985-2013. Figure shows coefficient estimates from a regression of the dollar amount of transfers sent to children in a year on the time path of an unemployment spell.

a spike in the year of the spell, but the years outside the spell are not positive. Hence, there is little evidence that parents pre-finance spells or may continue to assist even after the spell is completed.¹⁰

To further understand the financial flows between parents and children, we also examine whether unemployed children effected the probability of mothers *receiving* a transfer, rather than sending one. There was no significantly estimated effect (neither decrease or increase), for either measure of transfers.¹¹

Our finding that parents are more likely to send a transfer to a child in the year they experience an unemployment spell corroborates similar results in previous studies. One short-coming of the results presented here is that they are likely not exhaustive of the total financial assistance sent from parents to children; the transfer themselves may be an underreporting of cash assistance, and by definition exclude any cohabiting or any in-kind transfers. Regardless, they do establish that parents financially assist unemployed children and that that assistance does not precede spells, providing support for exogeneity in the unemployment spell. We can turn to our research question, how this assistance is financed, and if we can observe any change in behavior.

10 The exact coefficients (and errors) are: two years prior, 10.3 (24.1); one year prior, -5.8 (28.6); year of, 76.8 (25.0); one year following, 4.6 (27.4); two years following, 26.5 (25.0); three years following, -0.9 (28.8). The dummy transfer amount event study looks similar; those coefficient estimates can be found in Appendix Table 3.

11 Results in Appendix Table 1.

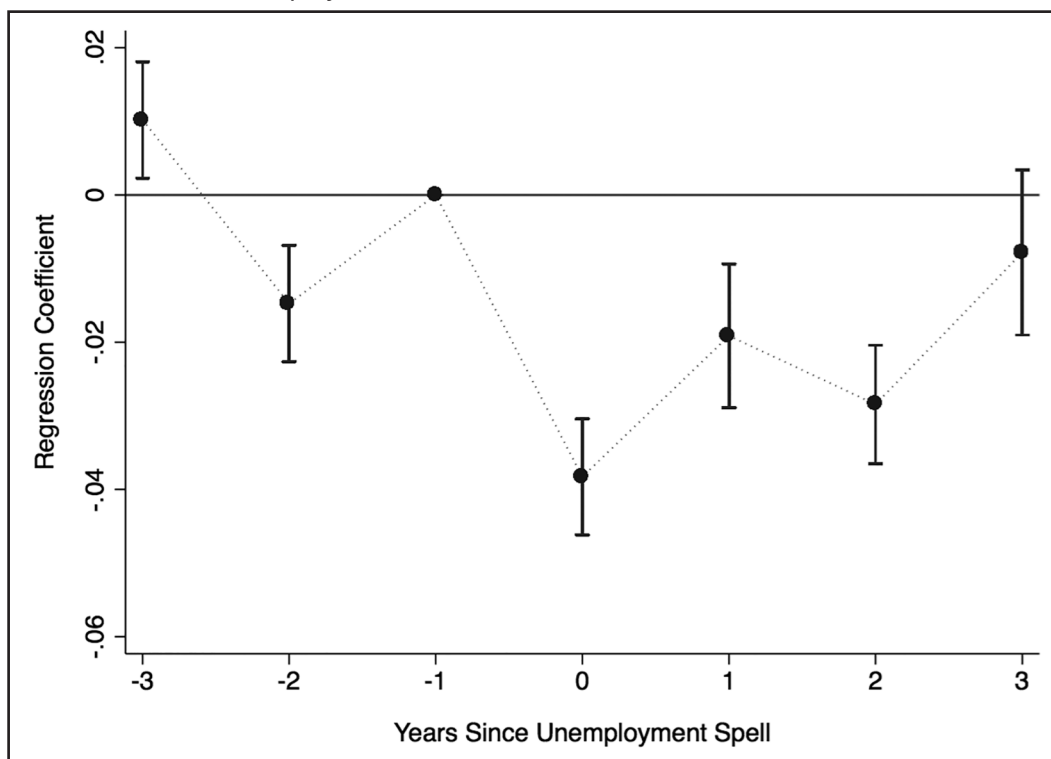
4.2 Effect on Consumption

Consumption is the most basic measure of welfare, and it is also an adjustment that all individuals, even those on a fixed income, can make in response to an income shock. Most accounting of consumption and household expenditures are not captured in the PSID and, in the years when more consumption measures are available, they are not measured frequently or consistently, save annual household spending on food. Although this it only measures part of total household consumption, food consumption has been used in prior studies to proxy for overall consumption, notably in the Gruber (1997) study of the consumption smoothing effects of unemployment insurance.

In the third and fourth columns of Table 3, we estimate equation (1) when the dependent variable Y_{pt} is the annual food consumption in 2014 dollars and in log. For both forms of the dependent variable, the main effect is negative and precisely estimated, at $-\$254.958$ (49.384) in dollars, and $-.041$ (.008) in log. Given mean household annual food consumption of $\$7196$, this is an estimated decline in consumption of 3.5 percent.

Figure 4 shows the event study coefficients for the log dependent variable. Consumption declines in the year of the spell; the decline persists for the two years following before regaining its former level.¹² A sustained drop in consumption in mothers' households after the spell has

Figure 4 Coefficient Estimates, Regression of Log Household Food Consumption on Child's Unemployment



Source: Author's Analysis of PSID data, 1985-2013. Figure shows coefficient estimates from a regression of the household's usual log food consumption in a year on the time path of an unemployment spell.

12 The exact coefficients (and errors) are: three years prior, 0.01 (0.011); two years prior, -0.016 (0.008); year prior omitted; year of, -0.039 (0.008); one year following, -0.020 (0.01); two years following, -0.028 (0.008); three years following, -0.006 (0.011). The dollar amount event study looks similar; those coefficient estimates can be found in Appendix Table 3.

ended could reflect either a continued need for assistance or a change in expectations about future need. Our estimates cannot comment further on which is the case. Regardless, a drop in consumption among a parent's household associated with an adult child's unemployment is a major finding, contributing to our understanding of how risk and income shocks are absorbed across family networks, to the extent that consumption shocks are shared across households.

4.3 Effect on Income Behavior

There are two measures of income behavior in the PSID that we can examine through the empirical framework in equation (1). Labor supply, as measured through the weeks worked per year and hours worked per week; and program participation in Social Security and SNAP. Asset and dividends, such as from the sale of a car, we consider dis-saving, rather than income, and discuss in that section.

The coefficient estimates from equation (1) when Y_{pt} is mothers' total weeks employed in a year are presented in Table 3. As noted previously, an average of 49.2 percent of mothers are working in any given year. In the fifth column of Table 3, we test the individual reported weeks employed by the mother. The coefficient estimate of γ on child's unemployment is a 0.381 increase in the number of weeks worked, on a base mean of 25.0 weeks, or 1.5 percent. This is a small though precisely estimated increase in labor supply in the year a child experiences unemployment. However, we do not find that there is an increase in the usual hours worked per week, in the subsequent column, which shows an imprecise point estimate of 0.058 (0.147).

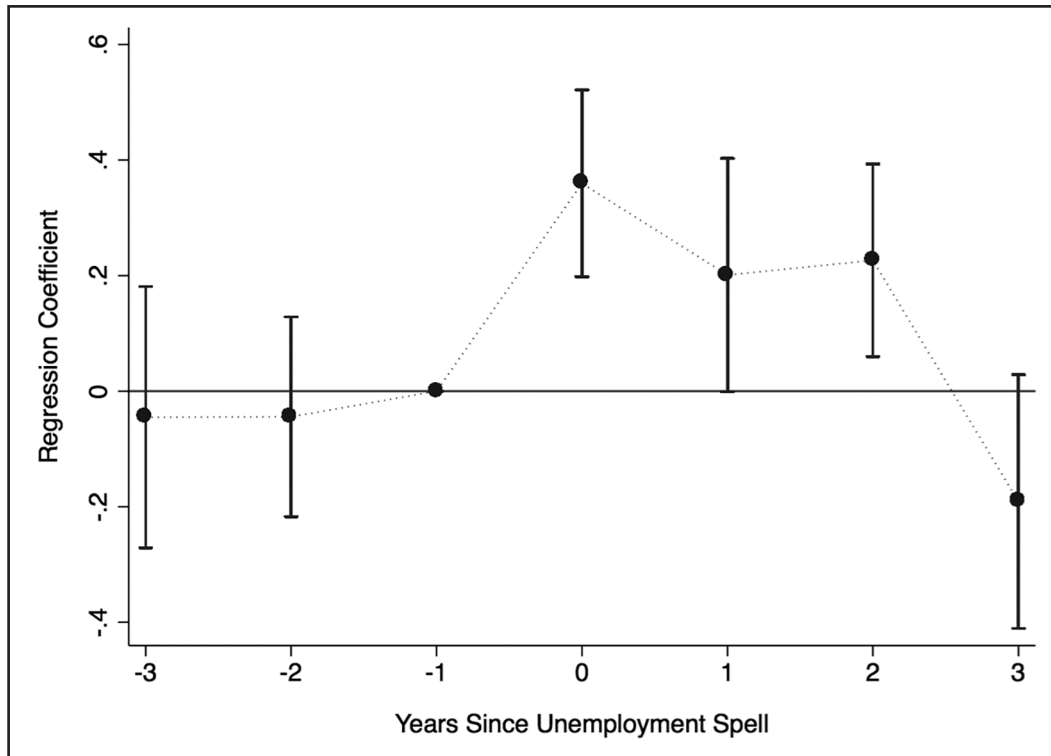
We offer a few explanations of why weeks would adjust upward, but hours would not. First, they are measured differently. The survey asks for the number of weeks employed in the prior year, as well as the usual hours worked per week. The former is an accounting of time while the latter is not. Second, there may be less of a margin to adjust hours per week, either because it is not compensated or it is not feasible. A salaried employee, for example, may increase their earned income by taking less time off, but likely would see no earnings return to working longer hours. Workers in our sample are mostly at full-time hours. Conditional on working, 42 percent of mothers in our sample report working exactly forty hours per week and an additional 21 percent report working more than 40 hours. By comparison, conditional on working, half of mothers report working fewer than 48 weeks in the year prior.¹³ To further understand the labor supply effects, we also examined the weeks worked per year and usual hours worked summed over the household (that is, including partner labor supply), as well as the weeks vacation taken in the prior year. None yielded any significant results for the full sample.¹⁴

In Figure 5, we present the coefficients from the event study in equation (2) for the total weeks employed of mothers to determine if the increase in labor supply precedes the unemployment spell or persists following. There is no increase in weeks employed in the years leading up to a child's unemployment spell, a large increase in the year of the spell, and noisy

¹³ A histogram of usual hours per week for working mothers can be found in figure A7 of the Appendix. A histogram of weeks employed in the prior year can be found in A6.

¹⁴ Results presented in Appendix Table 1.

Figure 5 Coefficient Estimates, Regression of Mother’s Annual Weeks Employed on Child’s Unemployment



Source: Author’s Analysis of PSID data, 1985-2013. Figure shows coefficient estimates from a regression of the weeks employed in a year on the time path of an unemployment spell.

estimates of the years following, though they weakly suggest that weeks worked remains high relative to the years prior to the child’s spell.¹⁵

The second income behavior we examine is from program participation in Social Security or SNAP. The margins by which mothers and their households can alter their behavior in order to increase income via either program is very small, given the eligibility constraints and observed claiming behavior. Individuals may not claim Social Security retirement benefits until age 62, the Early Retirement Age (ERA), and most claim by age 70. Individuals of any age can apply for Social Security disability benefits, if they demonstrate they have previously worked but can no longer. In our sample, we measure household Social Security income, which would capture receipt for retirement or disability of any household member. The coefficient estimates from equation (1) when Y_{pt} is a dummy for any Social Security income are presented in the final column of Table 3. The result is positive, but imprecise, at 0.005 (0.004).

The other program, SNAP, has income-based eligibility requirements. To increase SNAP in the year of a child’s unemployment, a mother would have to have been eligible but not claiming household benefits until the year of the child’s spell, a very small margin. In addition, average SNAP receipt in our sample is low, at 7.0 percent. We do not find any significant results.¹⁶

15 The exact coefficients (and errors) are: three years prior, -0.045 (0.226); two years prior, -0.044 (0.172); year prior omitted; year of, 0.359 (0.161); one year following, 0.200 (0.201); two years following, 0.226 (0.166); three years following, -0.191 (0.219). The coefficient estimates for hours per week can be found in Appendix Table 3.

16 Results presented in Appendix Table 1.

4.4 Effect on Savings

The last set of behaviors that we examine is savings. Savings variables were measured in each wave beginning in 1999, and take two forms. First, there is a measure of retirement savings contributions; the PSID asks what percent of income is put towards a pension. Second, there are measures of asset values of components of total wealth: home equity, debt, stock, farm or business income, other real estate, IRAs, and vehicles. For these regressions, we add to equation (1) a five-knot linear spline controlling for total household wealth.

To start, Table 4 shows the coefficient estimates when Y_{pt} is the unconditional percentage of income contributed to retirement savings. We find there is an imprecisely estimated decrease in savings rates of -0.068 (0.047), off a sample mean of 0.6 percent. In Figure 6, we present the coefficients from the event study in equation (2) for the percentage of income contributed to retirement savings. None of the coefficients are precise, though they show a pattern year-of-spell only decline.¹⁷

Next, we examine asset values of mothers' households in the year of child's unemployment spell. Although the PSID has seven asset measures, we present results for two: vehicle value and IRA value. Very few mothers have any farm/business income or real estate outside of a primary home; the distribution of both are highly skewed. The results for stock value, debt, and home equity were imprecise and insignificant. They also may not logically be expected to respond to unemployment of a child. Stocks are reasonably liquid, but few mothers report any stock assets, and may be constrained in selling based on the value at the time relative to when purchased. Mothers may take on debt if they are not borrowing constrained and can afford the interest. And home equity is not a reasonably liquid asset, especially relative to a vehicle or an IRA.¹⁸

The coefficient estimates when Y_{pt} is vehicle value are presented in the second column of Table 4. We find an imprecisely estimated decline in vehicle value of $-\$324.56$ (262.568). However, in Figure 7, we show the coefficient estimates from the event study of equation (2); the decline in vehicle value does not precede a child's unemployment, but decreases, significantly estimated at $-\$567.436$ (275.268), in the two years following, before returning to the baseline level.¹⁹ A decline in vehicle value does not necessarily indicate that a car was sold; it could also be the case that a decline in vehicle value is capturing that parents have transferred ownership of a car, perhaps to their children. The post-spell decline in vehicle value is the only instance in which there is no significant result in the year of the spell, only following. Although it could be the case that changes to this asset have a lagged adjustment period, it could also be spurious; we will test whether the subgroups illustrate which is the case. Finally, in the last column of Table 4, we show the estimates of equation (1) when Y_{pt} is the total value of IRAs. The results are imprecise, at $-\$387.872$ (1666.556).

¹⁷ The exact coefficients (and errors) are: six year prior, 0.040 (0.057); four years prior, -0.024 (0.047); two years prior omitted; year of spell, -0.061 (0.046); two years following, 0.021 (0.081); four years following, 0.014 (0.056); six years following 0.002 (0.062).

¹⁸ Results for stock, debt, home equity, as well as a dummy for any retirement saving, are presented in Appendix Table 2.

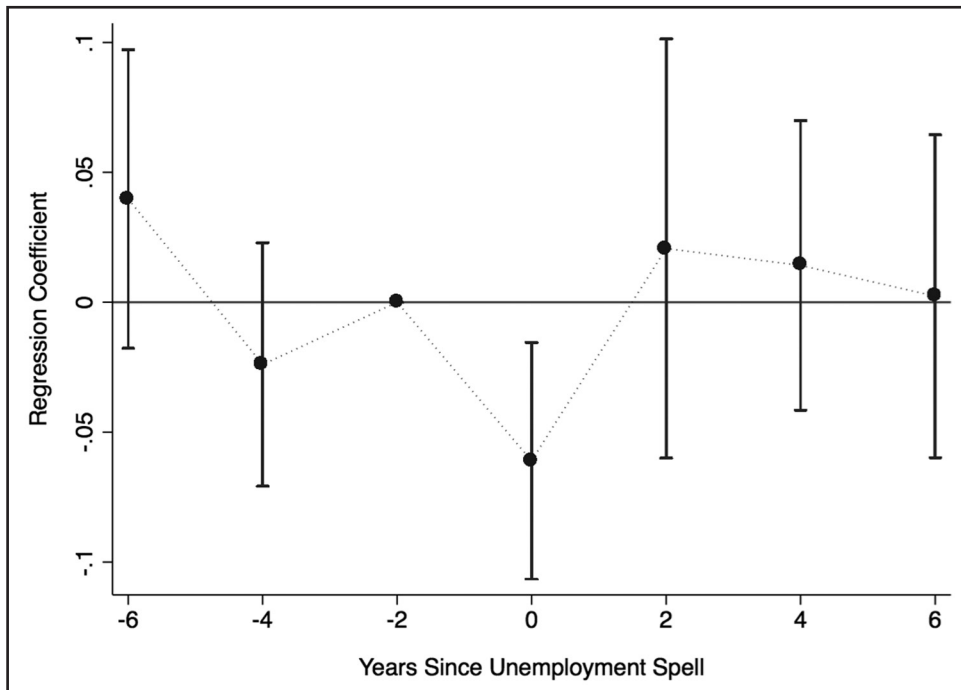
¹⁹ The exact coefficients (and errors) are: six years prior, 453.998 (316.475); four years prior, 145.156 (270.109); two years prior omitted; year of spell, -309.049 (277.631); two years following, -567.436 (275.268); four years following, -23.906 (289.482); six years following, 87.327 (291.876).

Table 4 Results from Regressions of Mother Outcomes on Child Unemployment Indicator

	Pension Contribution (% of Income)	Vehicle Value (\$2014)	IRA Value (\$2014)
Unemp Kid	-0.068 0.047	-324.563 262.568	-387.872 1666.556
<i>Child Controls</i>			
Kid Becomes Disabled	-0.003 0.058	1717.893** 611.554	1631.081 2654.777
Kid Gets Married	0.002 0.063	-112.215 300.458	962.456 1980.751
Kid Gets Divorced	-0.094 0.077	-383.548 383.252	20.523 2217.627
Kid has a Kid	0.105 0.08	-446.334 298.492	5370.715** 2024.437
<i>Mother Controls</i>			
Unemp in Mom's HH	-0.094 0.082	-1622.824** 577.93	1000.027 3088.12
Partnered	-0.285 0.595	3859.902 2141.153	11016.97 7492.575
Divorced/Sep	-0.093 0.581	-2437.866 2141.41	6749.43 8072.114
Never Married	-0.352 0.61	-3098.082 2311.693	780.111 7908.116
Widow	-0.31 0.584	-204.695 2143.12	9720.645 8716.811
Housewife	0.051 0.067	-536.347 467.173	2804.476 2348.523
Retired	-0.119 0.085	366.979 504.991	4932.375 3314.999
Disabled	-0.058 0.07	-1329.250* 568.876	1959.008 2281.954
Working	0.459*** 0.074	534.206 381.758	194.166 1922.142
State UR	-0.038* 0.018	-143.787 117.922	302.133 727.644
Year & Age FE	Yes	Yes	Yes
Individual FE	Yes	Yes	Yes
N	15242	15242	15242

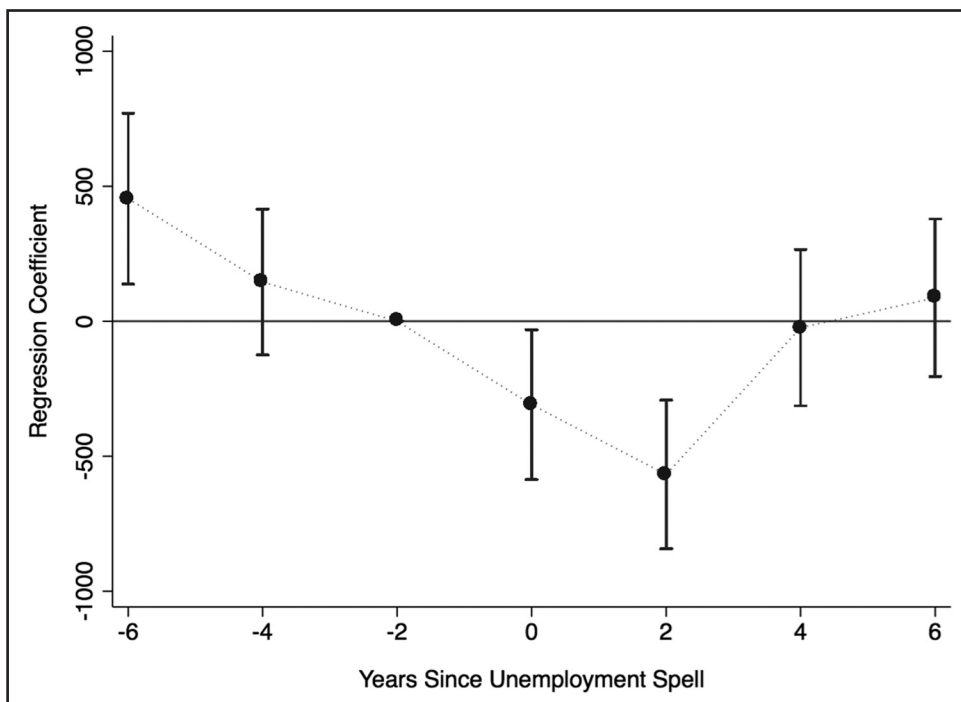
Note: Standard errors listed.

Figure 6 Coefficient Estimates, Regression of Mother’s Average Pension Contribution Share on Child’s Unemployment



Source: Author’s Analysis of PSID data, 1999-2013. Figure shows coefficient estimates from a regression of the average share of income contributed to a retirement account in a year on the time path of an unemployment spell. In 1999, survey became biennial, hence the years are now spaced two years apart.

Figure 7 Coefficient Estimates, Regression of Mother’s Vehicle Value on Child’s Unemployment



Source: Author’s Analysis of PSID data, 1999-2013. Figure shows coefficient estimates from a regression of total household vehicle value on the time path of an unemployment spell. In 1999, survey became biennial, hence the years are now spaced two years apart.

4.5 Subgroup Analysis

In the previous sections of results, we estimate the effect of having an unemployed child on various dependent variables for the full sample of mothers. In this section of results, we examine those previously estimated effects across key subgroups of unemployed children and their mothers. For both, we introduce the division in the treatment effect by substituting the single dummy U_{ct} of child’s unemployment with a vector UC_{ct} . For example, to investigate how the main effect varies by the reason of unemployment, we execute:

$$Y_{pt} = X_{pt}'\beta + X_{ct}'\beta_c + \gamma_D UC_{ct}^D + \gamma_V UC_{ct}^V + \gamma_N UC_{ct}^N + \theta_p + \varepsilon_{pt}. \tag{3}$$

In the top half of Tables 5 and 6, we present estimates when UC_{ct} spans reason for the child’s unemployment, the labor supply before the spell, the duration of the spell, and the labor supply after the spell. We show this for each of the key dependent variables.

Table 5 Select Results from Regressions of Mothers’ Outcomes on Child Unemployment Indicator, Varied by Spell Features and Mother Characteristics

	Transfer Sent (Dummy)	Transfer Sent (\$Gross)	Household Food (\$ Amount)	Household Food (Log)	Weeks Employed (Mother)
<i>Reason for Unemp</i>					
Displacement	0.019*** 0.006	86.210* 36.494	-190.796** 69.549	-0.028* 0.012	-0.078 0.257
Voluntary	0.017** 0.006	35.41 36.196	-131.6 71.192	-0.023 0.012	0.071 0.238
Not known	0.010* 0.004	47.341 24.793	-262.672*** 58.801	-0.040*** 0.01	0.39 0.201
<i>Labor Supply Before Spell</i>					
In school	0.038* 0.015	187.329* 95.266	-133.68 194.206	0.005 0.026	0.619 0.582
Working	0.011* 0.005	39.251 29.879	-285.200*** 69.609	-0.044*** 0.012	0.714** 0.247
(Re)Entry spell	0.004 0.008	55.131 52.553	-288.043** 108.125	-0.045** 0.015	0.37 0.343
<i>Duration of Spell</i>					
Less than 4 weeks	0.017** 0.006	94.530* 37.698	-93.074 69.33	-0.008 0.012	0.062 0.245
5-25 weeks	0.011** 0.004	28.208 26.664	-294.660*** 58.99	-0.046*** 0.009	0.339 0.194
26 weeks or more	0.014* 0.005	58.766 29.979	-76.398 73.282	-0.026 0.014	0.075 0.269
<i>Labor Supply After Spell</i>					
Remain in LF	0.018*** 0.004	60.214* 25.463	-194.352*** 50.509	-0.029*** 0.008	0.148 0.169
Exit LF	0.011* 0.005	90.714** 34.527	-347.161*** 75.984	-0.063*** 0.015	0.746** 0.277

(Continued)

Table 5 (Continued)

	Transfer Sent (Dummy)	Transfer Sent (\$Gross)	Household Food (\$ Amount)	Household Food (Log)	Weeks Employed (Mother)
<i>Age of Mother</i>					
<62 years old	0.021***	66.791*	-256.571***	-0.039***	0.483*
	0.005	31.312	59.32	0.009	0.194
62 - 70 years old	0.012	136.393**	-247.805*	-0.027	0.179
	0.006	44.884	101.821	0.018	0.346
>70 years old	0.007	38.614	-248.701	-0.075*	0.066
	0.008	49.404	130.059	0.032	0.434
<i>Mother's Work Status</i>					
Working Mom	0.027***	86.807*	-258.895***	-0.036***	1.910***
	0.006	36.356	65.471	0.01	0.224
Not Working Mom	0.009*	70.251*	-216.301**	-0.043***	0.480*
	0.004	32.47	68.409	0.012	0.244
<i>Number of Kids Unemp</i>					
Multiple	0.011	6.737	-363.215***	-0.054**	-0.135
	0.007	38.719	106.97	0.018	0.394
Single	0.019***	86.070**	-240.929***	-0.039***	0.442**
	0.004	26.642	50.591	0.008	0.164

Standard errors listed. The regressions shown include but do not show estimates for child covariates (marital status, disability status, birth of a child) and mother's household covariates (presence of an unemployment member, marital status, disability status, employment status, and local unemployment rate).

Table 6 Select Results from Regressions of Mothers' Outcomes on Child Unemployment Indicator, Varied by Spell Features and Mother Characteristics

	Hours Per Week (Mother)	Any SSA Income (Dummy)	Pension Contribution (% of Income)	Vehicle Value (\$2014)	IRA Value (\$2014)
<i>Reason for Unemp</i>					
Displacement	-0.085	0.006	-0.016	-609.951	873.839
	0.222	0.006	0.081	411.754	2483.971
Voluntary	0.166	0.004	-0.009	496.037	1885.715
	0.223	0.006	0.077	521.466	2708.635
Not known	0.042	0.002	-0.078	-234.815	-882.662
	0.183	0.005	0.05	288.635	1859.501
<i>Labor Supply Before Spell</i>					
In school	-0.191	-0.005	0.062	-965.514	-2413.764
	0.593	0.015	0.162	958.416	5344.529
Working	0.271	0.007	-0.121*	-167.978	-1454.786
	0.224	0.007	0.056	388.189	2528.836

(Continued)

Table 6 (Continued)

	Hours Per Week (Mother)	Any SSA Income (Dummy)	Pension Contribution (% of Income)	Vehicle Value (\$2014)	IRA Value (\$2014)
(Re)Entry spell	0.013 0.331	-0.003 0.007	-0.079 0.082	-599.676 453.678	1211.68 2603.126
<i>Duration of Spell</i>					
Less than 4 weeks	-0.081 0.223	0.006 0.006	-0.063 0.072	-848.764 460.423	-1927.471 2801.018
5 - 25 weeks	0.156 0.177	0.006 0.005	-0.078 0.052	-67.61 300.077	-81.938 1829.726
26 weeks or more	-0.036 0.246	0.004 0.007	0.035 0.061	-636.967 351.531	-249.583 2172.317
<i>Labor Supply After Spell</i>					
Remain in LF	0.08 0.152	0.007 0.005	-0.042 0.049	-457.824 278.039	63.698 1821.423
Exit LF	-0.12 0.254	0.003 0.007	-0.085 0.063	125.597 390.191	-201.137 2112.369
<i>Age of Mother</i>					
<62 years old	-0.034 0.181	0.011* 0.005	-0.136* 0.062	-629.627* 323.912	1193.747 1938.567
62 - 70 years old	0.247 0.295	-0.013 0.011	0.09 0.103	59.071 589.662	-11955.068** 4364.769
>70 years old	0.328 0.353	-0.002 0.01	0.024 0.033	756.538 501.562	4062.347 3578.795
<i>Mother's Work Status</i>					
Working Mom	1.103*** 0.225	0.034 0.078	-0.008 0.005	-1791.323 1974.127	-270.684 350.927
Not Working Mom	-0.114 0.200	0.153* 0.068	0.007 0.006	-928.61 2767.183	-330.582 350.957
<i>Number of Kids Unemp</i>					
Multiple	-0.264 0.338	0.009 0.01	0.025 0.082	-67.433 605.542	968.341 3121.918
Single	0.097 0.149	0.005 0.004	-0.076 0.048	-347.493 270.376	-508.813 1702.294

Standard errors listed. The regressions shown include but do not show estimates for child covariates (marital status, disability status, birth of a child) and mother's household covariates (presence of an unemployment member, marital status, disability status, employment status, and local unemployment rate).

4.5.1 Subgroups of Child Spells

In any empirical study of unemployment, endogeneity is a large concern. The unemployment of the child and the mother behavior that we measure may be correlated. We control for mother fixed effects, an exhaustive list of mother and parent covariates, as well as year and age-of-

mother fixed effects. Examining spells separately by the reason for unemployment allows us to compare more exogenous spells (displacement) and less exogenous (voluntary) spells. In this, we have both more and less reason to be concerned. Displacement is associated with the largest increase in the probability of sending a transfer to a child at 0.019 (0.006) and only precisely estimated increase in the size of the transfer at \$86.210 (36.494). It is also associated with large drops in food consumption in both dollars $-\$190.796$ (69.549) and log -0.028 (0.012). Moreover, there is also a precisely estimated increase in the probability of sending a transfer for voluntary spells at 0.017 (0.006); and precise estimates for which the spell is not known for transfers, 0.010 (0.004) and food consumption, $-\$262.672$ (58.801) and -0.040 (0.010). However, there are no precise estimates on displacement, voluntary, or not known spells for the remaining variables of weeks employed in a year or (see Table 6) hours per week, SSA income, pension contribution, vehicle value, or IRA value.

In other words, mothers evince a similar response, at least in terms of transfers, for both more exogenous (displacement) and more endogenous (voluntary) unemployment, and similar effects on food consumption whether we restrict to more exogenous spells (displacement) or not (not known). This is evidence that parents respond to the decline in income of the child, whether it is a shock or not.

To further understand this, we look at the labor supply of the child in the year before the spell. A key note: in the main results, we excluded spells that were coincidental with school exit. We add them here so that, rather than compare spells with probable variations in endogeneity, compare spells with *certain* variation in anticipation. School exit is known to the mother, whereas a child that had been working becoming unemployed, for whatever reason, is likely less anticipated. Interestingly, the estimate on transfers is largest for these anticipated spells, at 0.038 (0.015) and \$187.329 (95.266), but no other dependent variable has precise estimates. This could suggest that mothers assist their children in unemployment regardless of why the spell occurred, but the changes in other behavior are associated with spells that were not anticipated.

Indeed, we compare school exit spells with those preceded by work, or no work, labeled here as entry, though it could be re-entry. Spells that follow at least a year of working show an increase in the probability of transfer sending at 0.011 (0.005), decline in food at $-\$285.200$ (69.609) and -0.044 (0.012), an increase in weeks employed at 0.714 (0.247), and (see Table 6) a decrease in pension contribution at -0.121 (0.056). Comparatively, (re)entry spells have a decline in consumption at $-\$288.043$ (108.125) and -0.045 (0.015), but no other precisely estimated concurrent changes to mother behavior. This is more significant variation than we see by examining spells of different duration, less than 4 week, 5 – 25 weeks, or 26 weeks or more. Transfers are more likely regardless, and the only significant estimates are the decline in food consumption associated with mid-length spells; none of the rest of the dependent variables show precision across spell length. Most surprisingly, the amount of transfers sent are not even precise for particularly long spells.

Finally, we examine the result of the spell, whether it was followed by a year in which the child remained in the labor force, or if the spell preceded an exit from the labor force. The increase in sending a transfer is slightly larger if the child remains in the labor force at 0.018 (0.004) compared to 0.011 (0.005), but the size of the increase is slightly larger for labor force exit at \$90.714 (34.527) compared to \$60.214 (25.463). The decline in food is smaller for spells followed by continued laborforce participation, at $-\$194.352$ (50.509) and -0.029 (0.008),

compared to $-\$347.161$ (75.984) and -0.063 (0.015). However, we place less of an emphasis on exact point estimate than we do on direction and precision; regardless of labor force decisions following a spell, we document an increase in financial assistance and decline in consumption in the year of the spell. This is in contrast to labor supply. The increase in mother's labor supply is precisely estimated for spells associated with child labor force exit, at 0.746 (0.277), but not with child labor force participation, at 0.148 (0.169).

Taken together, the comparisons of the coefficient estimates of subgroups of child spells present a more textured understanding of the main effects presented previously. In general, the increase in financial assistance is mostly insensitive to the type or nature of spells; mothers are more likely to help their children regardless. Response to an exogenous shock seems identical to the response to an endogenous one, similarly anticipated versus not.

But the secondary effects show more dispersion. The next most consistent estimates are the corresponding decline in household food consumption, but there is not a precisely estimated decline for spells that are voluntary or spells coincidental with schoolexit. This would suggest that the decline in food consumption that we identify is associated with more exogenous and less anticipated shocks. On the other hand, the increase in mother's employment is only precise when the spell was preceded by employment. Yet, we cannot make the same type of comparison to potential exogenous responses, since there is no discernible increase in weeks worked associated with displaced spells. Arguably the more interesting estimate is the large increase in mother's labor force when spells are associated with child's labor force exit, as it could indicate, not at all investigated further in this analysis, an intrafamily, inter-household labor supply decision. The remaining dependent variables are little informed by the subgroup analysis based on the nature of spell, only one, pension contribution, has any precisely estimated effect.

4.5.2 Subgroups of Mothers

In the bottom half of Tables 5 and 6, we present estimates when UC_{ct} spans the varying ages of the mom, work status of the mom, and how many kids she has unemployed in that year. For younger mothers, there is a precisely estimated increase in transfer sending at 0.021 (0.005) and size of transfer sent at $\$66.791$ (31.312). Similarly, there is a precisely estimated decline in food consumption at $-\$256.571$ (59.32) and -0.039 (0.009). Mothers in the retirement window show an increase in transfer size $\$136.393$ (44.884), but not a precisely estimated increase in the probability of sending a transfer; they also show a decrease in food consumption $-\$247.805$ (101.821), but not log food consumption. Retired mothers, on the other hand, have only a measured decline in log consumption -0.075 (0.032). As noted previously, cash transfers are but one form of financial assistance, just as food consumption is only part of total consumption, and they are what we observe in our survey. Nonetheless it is of note that there is some form of increase in transfer sending among working-age and retiring mothers, but not retired mothers; yet consumption, with similarly limited observation, significantly declines in some form among all mothers. We cannot say if this is inconsistent or the result of limited measurement.

For the remaining dependent variables, the patterns of precision in results vary with age. Younger mothers have the only precisely estimated increase in weeks worked at 0.483 (0.194), (see Table 6) increase in having any Social Security income at 0.011 (0.005), decrease in retirement savings rates at -0.136 (0.062), and decrease in vehicle value at $-\$629.627$ (323.912).

Given their subsample means, this reflects a 1.4 percent increase in labor supply, an 11.8 percent increase in likelihood of household Social Security income, a 15.1 percent decline in retirement savings rates, and a 3.4 percent decline in vehicle value. Our interpretation is that younger mothers, who are more likely to be working and therefore more likely to be saving, have more margins to adjust their behavior than older mothers, who are retiring or retired. Yet, the increase in the likelihood of household Social Security income is surprising. Given that we measure any Social Security income in the household, an increase could happen through either claiming benefits, or the addition to the household of a member already receiving Social Security income. The former, given the age of the mother, would have to imply an increase in Disability claims, as they are not old enough to claim Old Age Insurance.

To further investigate, we show in the next set of rows how the main results vary by the work status of the mother. Again, there is consistently estimated increase in financial assistance and decline in food consumption regardless of mother's work status. The labor supply results show an increase in weeks worked for *both* working and non-working mothers, the former increasing 1.910 (0.224) weeks, or 4.5 percent, and the latter 0.480 (0.244) weeks. This is evidence that the unemployment spell of a child is associated with an increase in labor supply of mothers on both the intensive and extensive margins, though the latter is likely temporary. Working mothers also show an increase in usual hours worked, at 1.103 (0.225), but non-working moms show no significant change in usual hours, at 0.114 (.200). Given the scope of measurement between total weeks worked and usual hours worked, we conclude that there is support for the conclusion that working mother have a sustained increase in labor supply, but that non-working mothers, though with some measurable increase, do not become re-attached to the labor force.

Social Security increases, on the other hand, appear to be driven by non-working mothers; the estimate of the likelihood of household income from Social Security is 0.153 (0.068), compared to the imprecise 0.034 (0.078) for working moms. Like in the previous section of subgroup results in which we found that mother's labor supply increase is larger when children exit the labor force, further investigation of the increase in Social Security income to non-working mothers is outside the scope of this paper, but worth future study.

In terms of saving, we noted that the decline in retirement savings is large and significant for younger mothers, as is the decline in vehicle assets. However, IRA value only significantly declines for retirement age mothers at $-\$11955$ (4364). This is quite a large estimate; though mean IRA value is highest for that age group, at $\$111,975$, it still implies a decline of just under 10 percent. Again, we interpret the point estimate cautiously and put more emphasis on the direction. From the age subgroups, we can summarize that mothers decrease their retirement savings when their adult child becomes unemployed, either in their contributions or in the amount saved. However, none of these findings vary with work status, which we would expect, especially for pension saving rates.

Finally, we separate mothers by whether they have one or multiple children unemployed in the same year. Mothers with only one child who is unemployed or mothers with multiple children but only one unemployed at the time are conflated here. The increase in transfers is associated with a single unemployed child, whether measured in likelihood at 0.019 (0.004) or in size at $\$86.070$ (26.472), potentially suggesting that mothers only financially support a single child. Yet, the decline in consumption, however measured, is much larger for mothers

with multiplied unemployed children, at $-\$363.215$ (106.970) and -0.054 (0.018), compared to $-\$240.929$ (50.591) and -0.039 (0.008). Last, the increase in labor supply is similarly only positive and precisely estimated for mothers with a single child unemployed at 0.442 (0.164).

Like the differences across the types of unemployment spells, these mother-subgroup estimates add much to the understanding of our findings, though they speak less to identification and more to consistency. The increase in transfer assistance and the decrease in consumption are the most common results. The increase in labor supply depends on the situation of the mother, but is consistently estimated for the groups we expect, namely younger mothers and working mothers, with some indication that non-working mothers increase their labor supply as well. The savings results are less consistently estimated, and produce precision for some groups, such as the decline in savings rates among younger mothers and decline in IRA value among retirement-age mothers, but do not for others that we would expect, such as working mothers.

5 Robustness

Our results rely on a basic specification: using the longitudinal nature of the PSID to leverage individual fixed effects and identify the effect of unemployment on within-mother differences in the dependent variable. In Table 7, we decompose that specification. In the first column, we regress the dependent variable on a dummy for child's unemployment without any controls. This can be read as the mean of the dependent variable among mothers in the year of the child's spell. We then add, successively, individual fixed effects, year and age fixed effects, mother controls, and child controls. The difference between the first and second columns can be read as, what do mothers look like in the year their child is unemployed, and is this different from other periods. The difference between the remaining columns is to test if anything else could be occurring that could explain that difference.

The trends in Table 7 echo what the subgroup analysis evinced—the most consistently estimated effects on mothers are the increase in sending a transfer, a decline in consumption, and an increase in labor supply, when measured through weeks. For the likelihood of sending a transfers and log consumption, the estimate is precise throughout, and similar in size and direction. For the amount of transfers and food, the estimate is not precise without individual fixed effects; this would make sense, as dollar amount of food and transfers has high, and skewed, variation. Interestingly, both measures of labor supply are negative in the first column and then positive, and in the case of weeks, and precise, once fixed effects are added. This suggests that mothers with an unemployed child work less than those who do not have an unemployed child, though it is higher than usual.

In the final two columns, we examine subsets of mothers—only those who ever have a child become unemployed, and only those who are ever observed sending financial assistance to children, in effect, reducing the sample to only affected mothers, or only mothers who are potentially more salient to be affected. There is little difference between the full specification and the sample restricted to mothers who ever have a child experience a spell. This is likely due to the fact that 84.2 percent of mothers have an unemployed child at some point, and our full sample only reduces to $N=30,372$ person years, from $N=38,004$. However, in the final column, we see large differences when the sample is reduced to the 35.8 percent of mothers who are ever

Table 7 Main Coefficient Estimates, Adjusted by Sequential Addition of Controls

	No Controls	Individual Fixed Effects	Year and Age Controls	Mother Controls	Child Controls	Ever Unemp Only	Ever Xfer Only
Transfer Sent (Dummy)	0.013*** 0.003	0.020*** 0.003	0.018*** 0.003	0.018*** 0.004	0.018*** 0.004	0.018*** 0.004	0.041*** 0.009
Transfer Sent (\$ Amount)	8.53 19.649	87.052*** 22.081	67.379** 22.875	76.464** 25.563	77.561** 25.559	77.364** 25.675	169.893** 60.202
Household Food (\$ Amount)	86.449 130.911	-331.010* 160.788	-287.719*** 47.062	-257.769*** 49.334	-254.045*** 49.415	-254.947*** 49.453	-363.754*** 73.565
Household Food (Log)	-0.100*** 0.008	-0.039*** 0.008	-0.047*** 0.008	-0.041*** 0.008	-0.041*** 0.008	-0.041*** 0.008	-0.046*** 0.012
Weeks worked	-0.589* 0.272	0.613* 0.241	-0.136 0.217	0.379* 0.162	0.380* 0.162	0.371* 0.162	0.659** 0.237
Hours per week	-0.521* 0.171	0.699*** 0.205	0.062 0.189	0.052 0.147	0.058 0.147	0.058 0.147	0.159 0.236
Any SSA income	-0.033*** 0.006	-0.026*** 0.006	0.002 0.004	0.005 0.004	0.005 0.004	0.005 0.004	0.005 0.007
Pension cont.	-0.177*** 0.045	-0.034 0.039	-0.062 0.04	-0.066 0.047	-0.068 0.047	-0.07 0.047	-0.099 0.084
Vehicle value	-2918.407*** 281.631	-458.103* 225.372	-411.898 233.06	-335.144 264.927	-324.563 265.048	-318.569 266.08	-660.155 384.992
IRA value	-10093.551*** 1892.288	1809.03 1432.179	73.393 1481.23	-289.506 1660.82	-387.872 1666.556	-345.395 1667.105	-1367.046 2873.747

Note: Standard errors listed. Each coefficient estimate is from a separate regression, with dependent variable indicated by row and regression controls indicated by column.

observed sending a transfer, or $N=15,234$. The coefficient estimates on transfer sending double, to 0.041 (0.009) and \$169.893 (60.202), food consumption are slightly larger, at $-\$363.754$ (73.565) and -0.046 (0.012), and labor supply increases from weeks worked also double, to 0.659 (0.237). Among mothers who are more willing to financially aid their children *in general*, there is a large behavioral response associated with a child's unemployment. However, their response is consistent with prior estimates, in that the most robust effects are for consumption and labor supply, but not savings.

As a separate robustness exercise, and a simple test of internal validity of our findings, is to examine if the estimates are compatible across categories. That is, assuming a simple budget constraint:

$$0 = I_t + A_t - C_t - S_t - T_t,$$

Where in a given period income and assets net of consumption, savings, and transfers is zero, any change to one component is equaled by a change in another component, so that the remainder is still zero.

This equation does not hold in our findings. When looking at the mean effect for mothers of all ages, and including only precise estimates, we find transfers to children increase by \$78, consumption on food decreases by \$255, and labor supply increases by 1.9 days. The gap is larger for working-age moms, who transfer \$67 but drop food consumption by \$257, work 2.5 more days that year, and reduce retirement savings by 15.1 percent. Clearly, point estimates should be interpreted with caution, and greater emphasis placed on the direction, rather than size of the estimate. Yet aside from estimate precision, the increase in income and declines in consumption, savings, and assets are not similar in size to the transfers given to children in our analysis; this has (at least) two possible explanations.

First, our categories are only partially measured. For example, using reported estimates of cash transfers sent to children in a year likely misses most forms of in-kind assistance, including the direct purchase of goods and services or non-monetary gifts, such as buying food or paying rent for a child, co-financing arrangements, such as giving a child access to a credit that the parent pays for, and the provision of services, such child care or transportation.²⁰ It is possible that parents report the cash equivalent of that assistance in response to the survey question about sending money to children, but we have no means for assuming whether they do or do not; yet, given the regular under-reporting of transfers (Meyer et al., 2009) it is unlikely that all transfers are fully captured. Partial measurements across categories likely explains why our simple budget constraint test did not equal out. However, we cannot say more about this within our data.

A second, and not exclusive, explanation is that parental adjustments in behavior to income, consumption, and savings do not only account for the financial exigencies of sending transfers *in one period*, but also the updated expectations of future need, or increased risk going forward. The estimates from the event study in equation (2) that are presented graphically in figures 2-6 show to what extent the single-period change in behavior persists in the years following an unemployment spell. Although transfer coefficient estimates return to zero in the year immediately following a child's unemployment spell, food consumption, weeks employed, savings rates, and vehicle value all have post-spell changes in the 1-2 years following. The difference in post-spell behavior may be interpreted as risk-adjusting behavior, rather than financing behavior.

6 Discussion

In this paper, we examine the transfer, income, consumption, and savings behavior of mothers in the year that an adult child experiences an unemployment spell. The broad conclusion is that a child's unemployment is associated with significantly altered mother's behavior in sending of transfers, food consumption, and labor supply, and for certain groups, retirement savings contributions. It speaks to the strength of the PSID that analysis of a large set of dependent variables is supported. However, we note throughout that these we are only able to opera-

²⁰ As noted previously, our study excludes co-residence as a transfer *and* co-resident unemployed children.

tionalize dependent variables to a certain degree, and each broad category can only be partly represented. We also note, as many others have, that the PSID itself has numerous sample issues, including attrition (Zabel, 1998; Fitzgerald, 2011). For this reason, we acknowledge that our investigation, as a first step, is suited to the PSID, but that follow-up analysis for a particular category, such as savings, be conducted in a separate, more focused dataset.

We are cautious in assigning causality to our results. Within the numerous specifications and subgroups we examine, the most fitting exogeneity test—no pre-trend in the event study and significance for displaced spells only—is not met by any of our dependent variables. Transfer sending and food decreases are significantly estimated for non-displaced spells, while labor supply is not significantly estimated for displaced (or any reason subgroup) of spells. However, a looser test, with significance for unanticipated spells only, is met by labor supply and partially met by food consumption. But, we are also cautious in dismissing causality. As a researcher, we examine the behavior and reasoning mothers and children report to the survey, but cannot assume that this is what mothers and children report to each other. If we think of the shock to the mother as being random and unanticipated unemployment of a child, it is not necessarily the case that that is only true if the unemployment was also random and unanticipated to the child. We conclude that the causal relationship among our findings is not strong, but also not clear. It is likely that we are picking up both exogenous and endogenous response of mothers, and do not have a sufficient means to differentiate them. Still, the key finding is that there *are* large changes in mothers' labor market, consumption and savings behavior in the year of a child's spell.

Despite the estimated effects on mothers, we do not undertake a welfare analysis, beyond showing a drop in food consumption. We simply assume that changes in behavior are offset by the utility gained by having children with higher welfare. It is an open question whether a sense of familial obligation, altruism, or an exchange relationship is the underlying motivation for transfers and subsequent changes in parental behavior. Regardless of motivation, it is clear that mothers are likely to help their children, and they are likely to make changes to their consumption, income, or savings in order to, or as they, do so.

Welfare of the mother, however, does not translate into the optimal distribution of risk. Our results suggest potential sources of sub-optimality. First, parents are bearing, and paying for, the labor market risk of their children as they themselves enter a time period associated with higher risk—the risk of retirement insecurity. We show that younger mothers reduce their retirement savings contributions and decrease their vehicle asset value in the year of a child's spell. Both are tantamount to reductions, even if marginal, in their own retirement security. It is not clear that this is efficient bearing of labor market risk across the economy, and our results call for further research into the aggregate consequences of the risk sharing we demonstrate, either on labor or credit markets of young workers or outcomes in retirement of their parents.

However, risk sharing to this degree could be suboptimal in numerous other ways. Distributionally, family risk sharing caps the insurance of one family member by the wealth of another, or conversely, the wealth of one family member by the risk of another. This has numerous implications. First, it is logically the case that if a person's insurance is capped by her parents' income, then the most under-insured are those with the most upward income mobility. A worker who earns twice as much as her parents has less insurance than a worker who earns half

as much as her parents. Second, unemployment risk is not distributed randomly in either the income or wealth distributions, meaning that risk may concentrate among those families with less means to face it. Those differences raise both efficiency and equity concerns.

Our paper makes the novel contribution in identifying the concurrent changes in parents behavior in the year of a child's spell. It motivates further research on the incidence and consequences of risk sharing more generally, both to the individuals insured and the individuals insuring, as well as aggregate risk distributions.

Data and materials

The dataset analysed in the current study is from publicly available data published by the Institute for Social Research at the University of Michigan. Analytic file used to create sample and results are available from the corresponding author.

Competing interest

The authors declare that they have no competing interests.

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Contributions

KE cleaned and generated analytic data set, KE and JW jointly analyzed data, KE and JW jointly wrote manuscript, both authors read and approved final manuscript.

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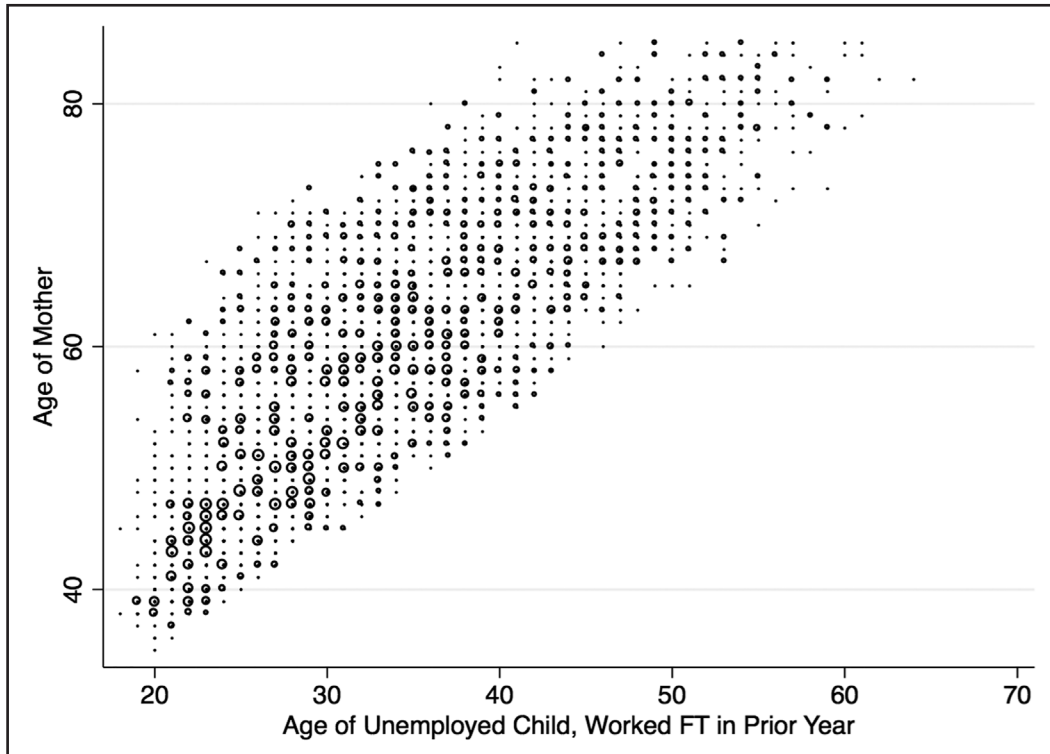
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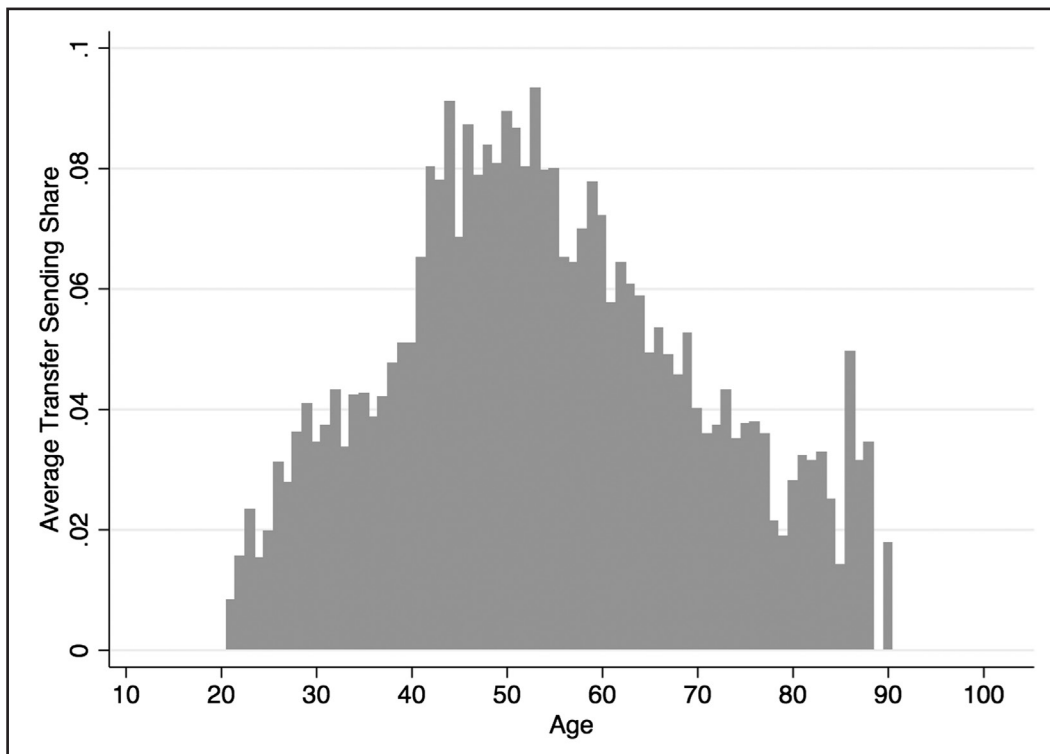
Appendix A: Figures and Tables

Figure A1 Age Pairs of Mother and Unemployed Child



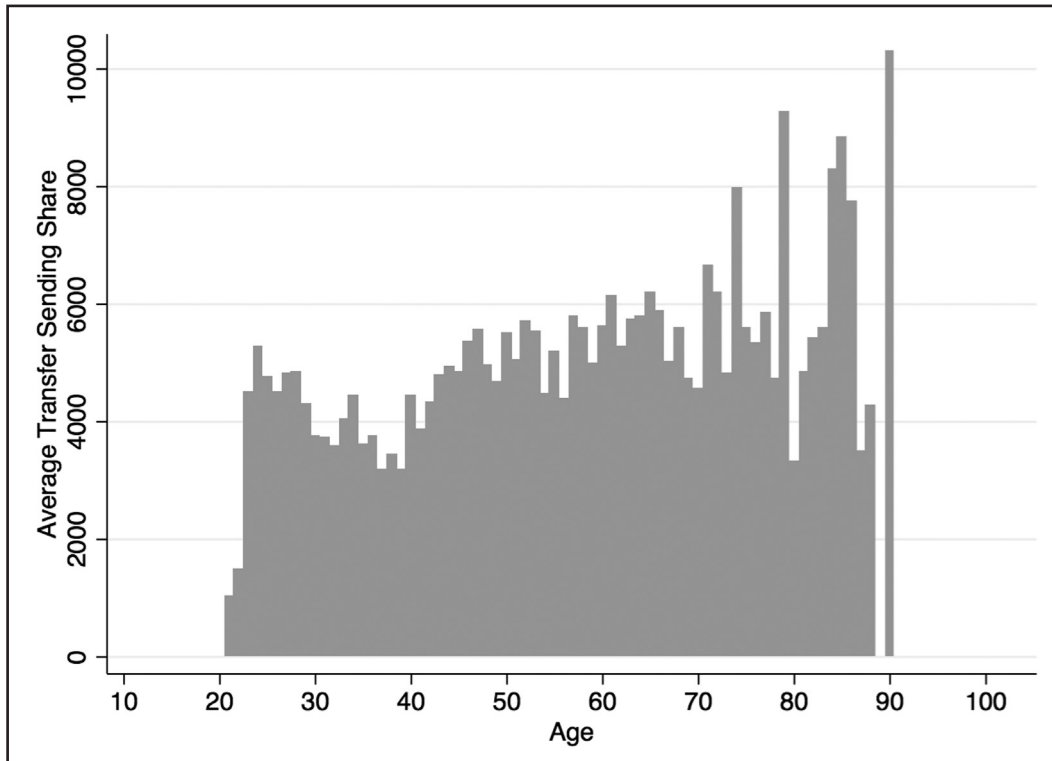
Source: Author’s Analysis of PSID data, 1985-2013.

Figure A2 Share of Mothers Reporting a Transfer Sent to a Child, Average by Age



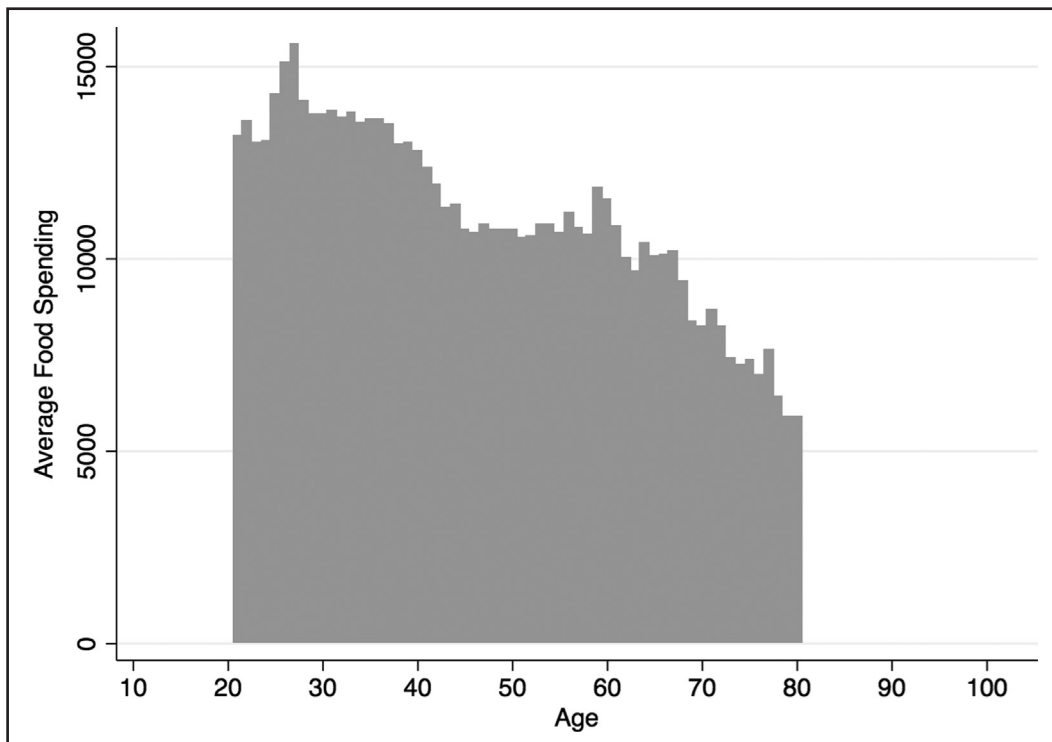
Source: Author’s Analysis of PSID data, 1985-2013.

Figure A3 Size of Reported Transfers Sent to a Child, Average by Age



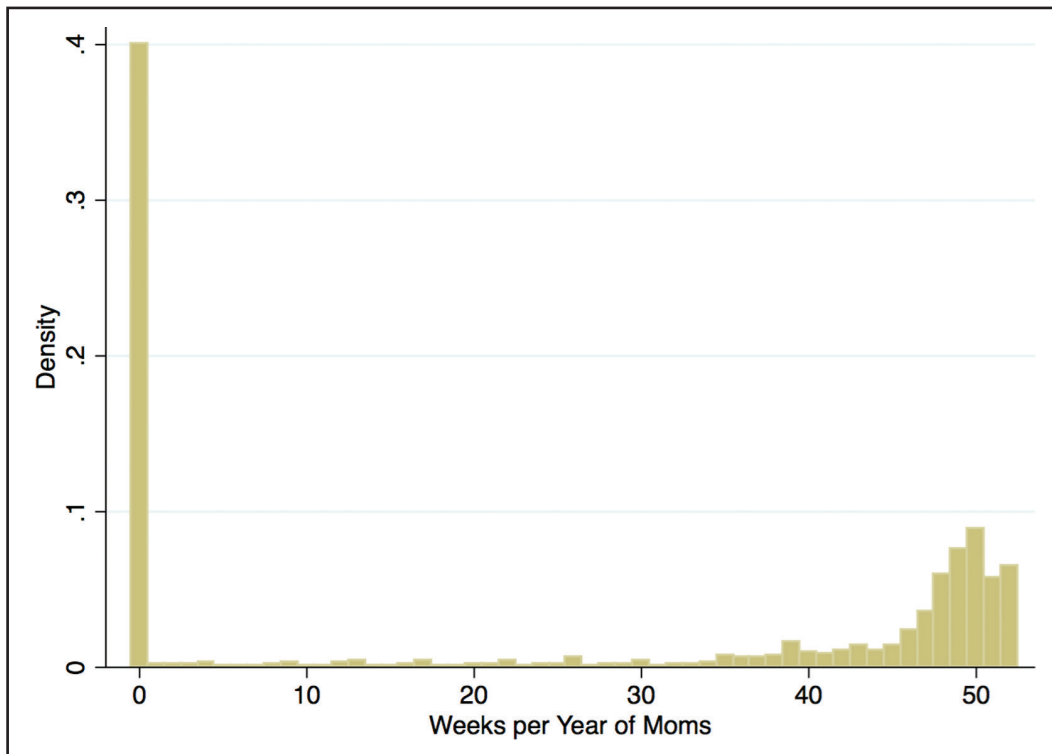
Source: Author's Analysis of PSID data, 1985-2013. Transfers shown in \$2014

Figure A4 Usual Household Food Consumption, Average by Age



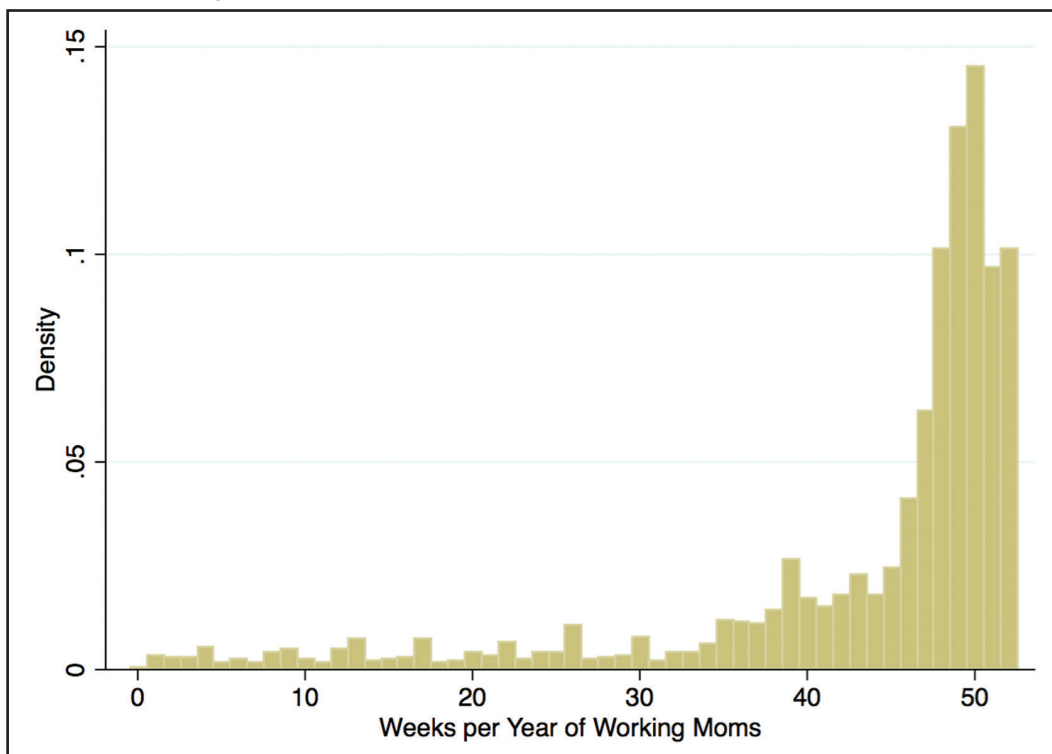
Source: Author's Analysis of PSID data, 1985-2013.

Figure A5 Histogram of Mother’s Weeks Employed Per Year



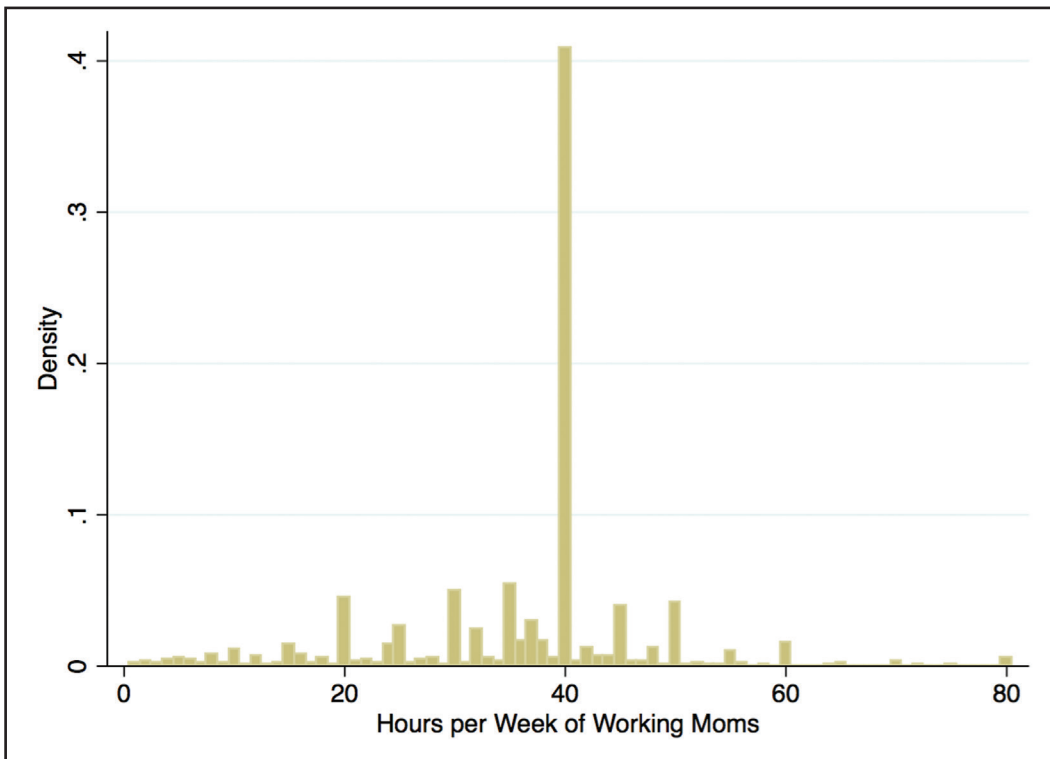
Source: Author’s Analysis of PSID data, 1985-2013. Figure shows the weeks worked per year for all mothers in the sample, including non-working mothers.

Figure A6 Histogram of Mother’s Weeks Employed Per Year, Conditional on Positive Weeks



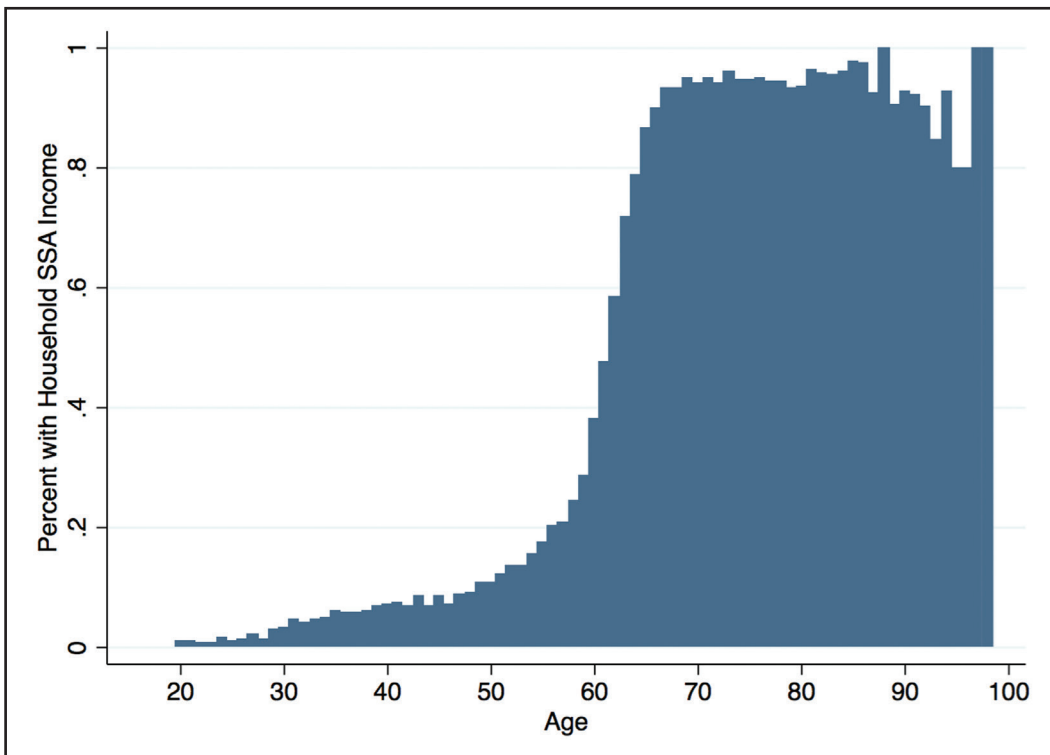
Source: Author’s Analysis of PSID data, 1985-2013. Figure shows the weeks worked per year for all mothers in the sample, excluding any mothers who did not work in a year.

Figure A7 Histogram of Mother’s Hours per Week, Conditional on Positive Hours



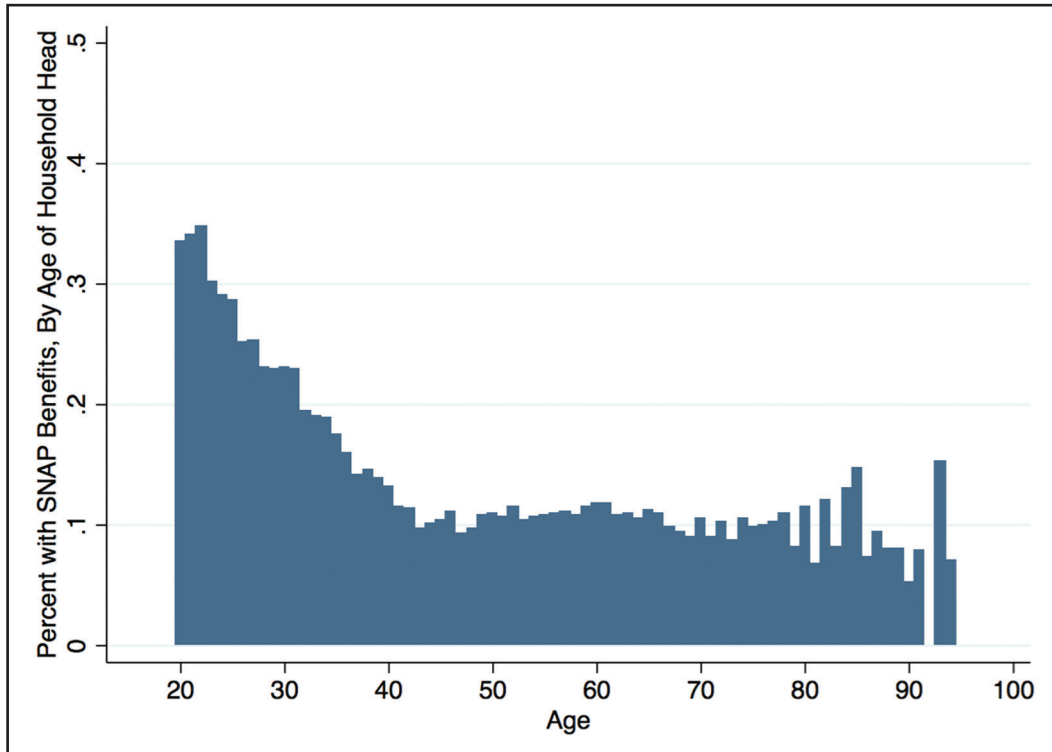
Source: Author’s Analysis of PSID data, 1985-2013. Figure shows the usual hours worked per week for all mothers in the sample, excluding any mothers who did not work in a year.

Figure A8 Share of Individuals in Households with Social Security Income, by Age



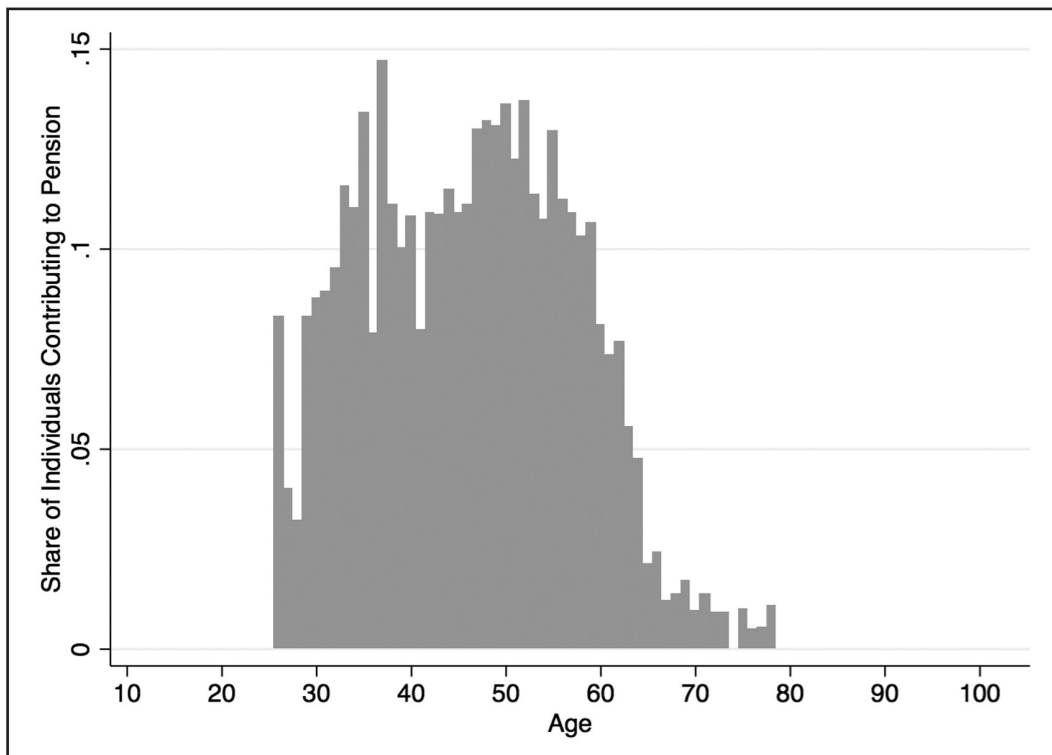
Source: Author’s Analysis of PSID data, 1985-2013. Given variable construction, figure indicates if individual is in a household with SSA income, not necessarily receiving SSA income themselves.

Figure A9 Share of Individuals in Households with SNAP Benefits, by Age



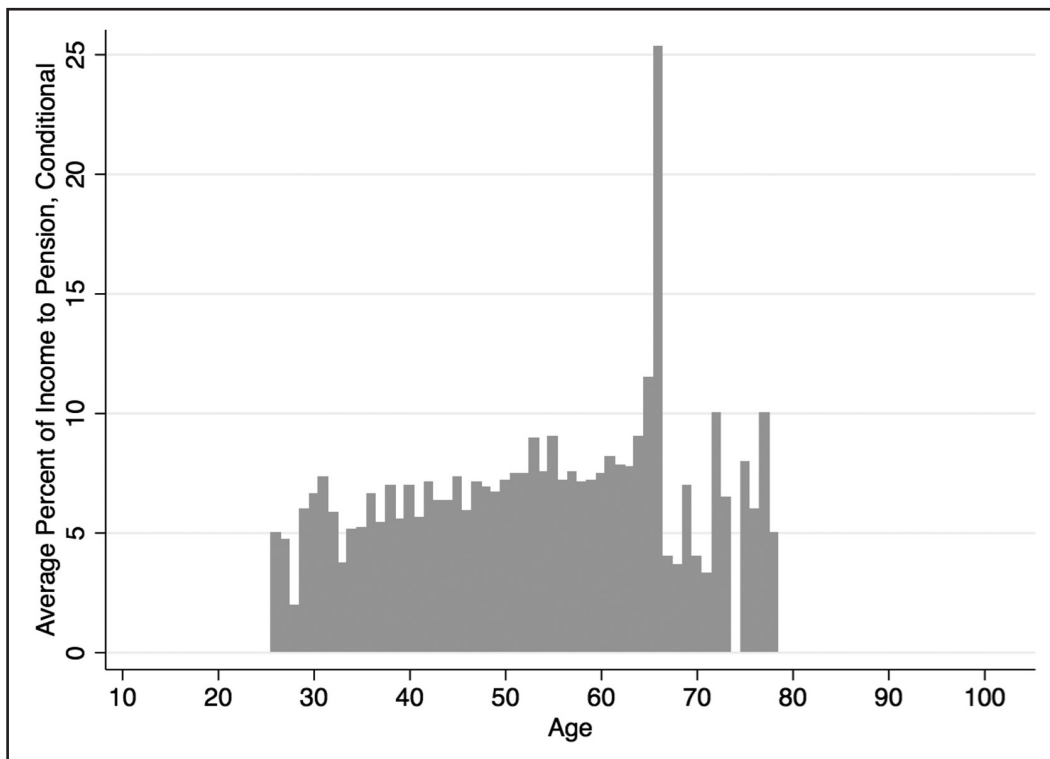
Source: Author’s Analysis of PSID data, 1985-2013.

Figure A10 Share of Individuals Contributing to Pension, by Age



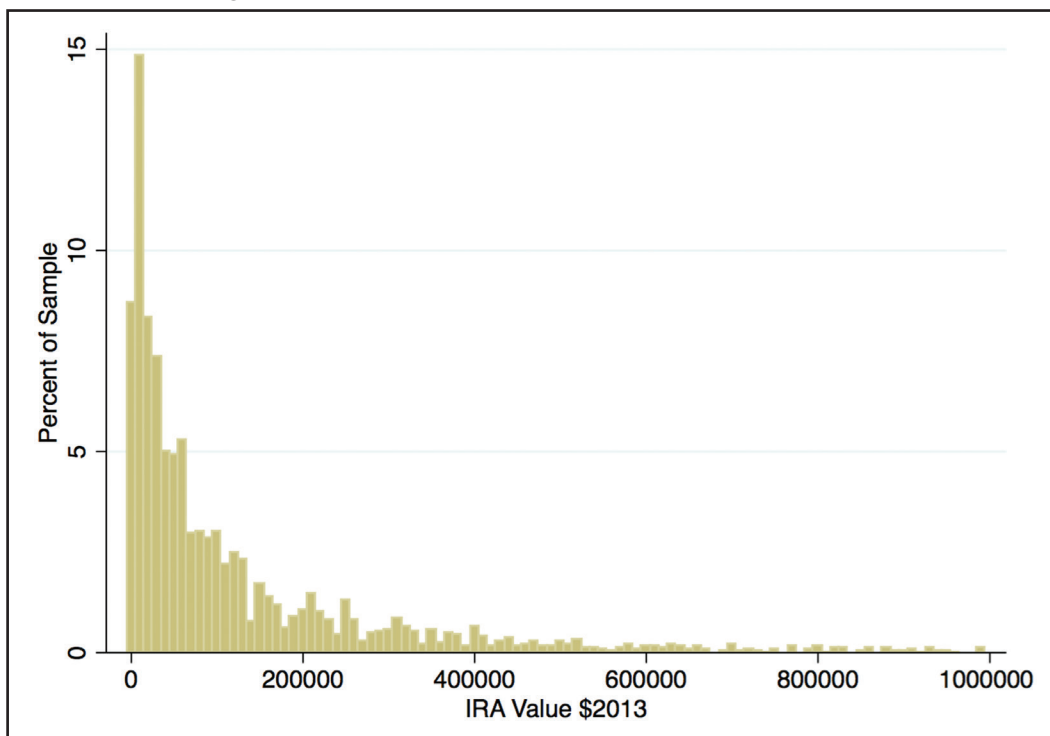
Source: Author’s Analysis of PSID data, 1999-2013.

Figure A11 Conditional Share of Income Contributed to a Pension, Average by Age



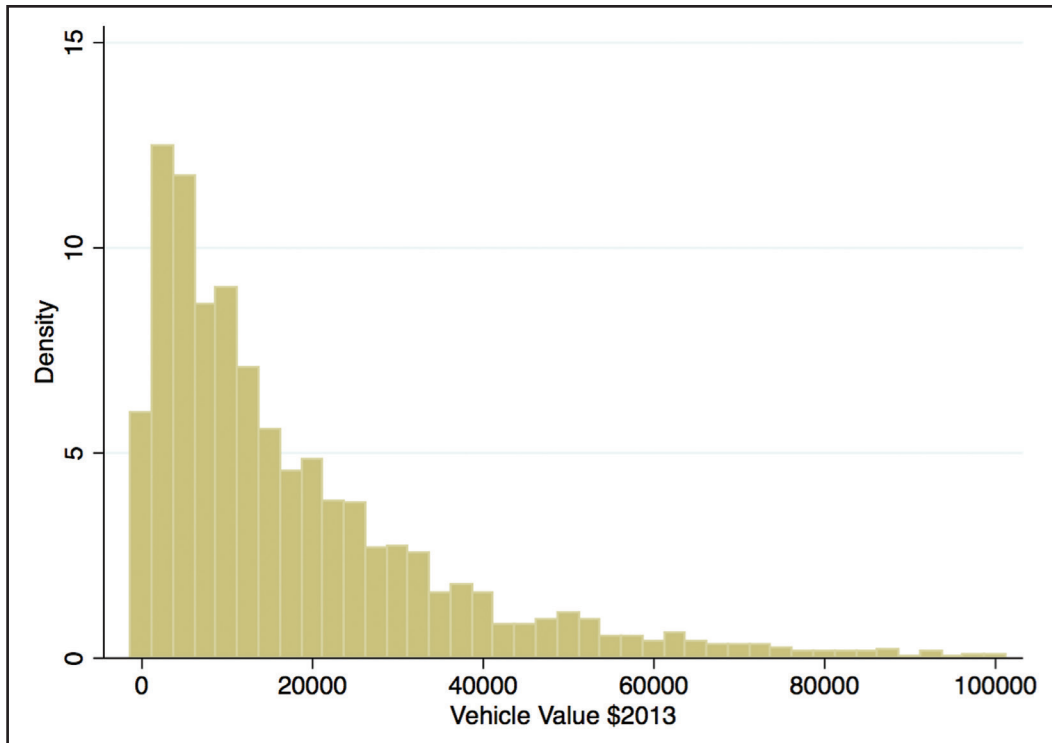
Source: Author’s Analysis of PSID data, 1999-2013. Figure shows the share of income contributed to a pension, conditional on positive contribution.

Figure A12 Histogram of Observed IRA Wealth



Source: Author’s Analysis of PSID data, 1999-2013. Amounts in \$2014

Figure A13 Histogram of Observed Vehicle Wealth



Source: Author's Analysis of PSID data, 1999-2013. Amounts in \$2014

Appendix Table 1 Results from Regressions of Mother Outcomes on Child Unemployment Indicator

	Transfer Received (Dummy)	Transfer Received (\$Gross)	Weeks Employed (Household)	Hours Per Week (Household)	Weeks Vacation (Mother)	Any SNAP Receipt (Dummy)
Unemp Kid	-0.001 0.003	16.741 11.618	0.451 0.256	-0.092 0.244	0.08 0.052	0.004 0.004
<i>Child Controls</i>						
Kid Becomes Disabled	0.004 0.01	8.515 31.008	0.795 0.789	0.424 0.741	0.021 0.127	0 0.013
Kid Gets Married	0.003 0.004	17.838 16.344	-0.039 0.302	-0.013 0.296	0.003 0.067	-0.002 0.004
Kid Gets Divorced	0.004 0.005	3.476 18.068	-0.348 0.381	-0.228 0.368	-0.149* 0.076	0.005 0.006
Kid has a Kid	-0.001 0.003	-13.001 12.989	0.386 0.27	0.171 0.266	-0.046 0.055	-0.007 0.004
<i>Mother Controls</i>						
Unemp in Mom's HH	0.024** 0.009	-0.779 26.533	-7.427*** 0.733	-1.058 0.726	-0.786*** 0.1	0.029* 0.012
Partnered	-0.115* 0.045	-361.963 192.538	-9.535* 3.783	-11.229** 3.975	0.002 0.315	-0.087 0.056
Divorced/Sep	-0.066 0.045	-231.463 199.402	-41.111*** 3.796	-39.362*** 3.961	-0.325 0.315	-0.022 0.056
Never Married	0.024 0.052	-110.843 205.1	-34.216*** 4.042	-31.162*** 4.186	-0.375 0.333	-0.062 0.061
Widow	-0.08 0.045	-292.274 192.238	-27.277*** 3.869	-26.718*** 4.048	-0.064 0.328	-0.062 0.057
Housewife	-0.011 0.007	24.415 25.088	-12.798*** 0.651	-8.938*** 0.639	-0.909*** 0.117	-0.001 0.009
Retired	-0.011 0.008	4.195 26.093	-17.742*** 0.727	-12.619*** 0.7	-1.255*** 0.134	-0.004 0.009
Disabled	0.014 0.011	61.62 37.263	-15.181*** 0.775	-11.382*** 0.781	-0.879*** 0.114	0.027 0.014
Working	-0.024*** 0.007	-38.117 23.627	16.707*** 0.605	14.012*** 0.617	1.187*** 0.109	-0.050*** 0.009
State UR	-0.001 0.001	-3.015 5.378	-0.481** 0.15	-0.460** 0.142	-0.023 0.03	0.004* 0.002
Year & Age FE	Yes	Yes	Yes	Yes	Yes	Yes
Individual FE	Yes	Yes	Yes	Yes	Yes	Yes
N	38004	38004	38004	38004	38004	38004

Note: Standard errors listed. Table shows result of six regressions. Year fixed effects refer to the year of the spell, age fixed effects refer to the age of the mother, and individual fixed effects to the mother.

Appendix Table 2 Results from Regressions of Mother Outcomes on Child Unemployment Indicator

	Pension Contribution (Dummy)	Stock Value (\$2014)	Debt Value (\$2014)	Home Value (\$2014)
Unemp Kid	-0.002 0.005	-1513.996 1666.428	454.556 255.919	1561.479 1403.293
<i>Child Controls</i>				
Kid Becomes Disabled	0 0.008	2626.709 4438.054	1166.494* 520.158	-5197.965 2718.213
Kid Gets Married	0 0.007	789.654 2298.371	19.885 314.955	85.658 1558.143
Kid Gets Divorced	-0.009 0.007	-4895.298 2614.122	389.929 376.085	924.424 1974.571
Kid has a Kid	0.013 0.007	278.443 2205.188	-283.017 286.884	913.566 1607.339
<i>Mother Controls</i>				
Unemp in Mom's HH	-0.018 0.011	70.956 3505.753	339.314 716.126	-350.68 2961.22
Partnered	-0.036 0.049	19356.652 15887.211	-1086.066 2723.026	54720.251*** 14534.935
Divorced/Sep	-0.012 0.049	14333.635 15451.726	-2919.139 2687.231	41898.055** 14323.284
Never Married	-0.042 0.053	10205.989 15374.619	-1909.768 2933.508	7158.833 15570.792
Widow	-0.043 0.049	15397.166 15707.192	-1398.312 2731.242	47426.496** 14577.005
Housewife	0.007 0.006	16.673 2940.404	-570.592 514.792	4878.95 2624.946
Retired	-0.007 0.008	-2265.561 3774.213	-1008.653 536.777	5290.923 2940.598
Disabled	-0.004 0.008	55.829 3601.853	581.966 640.836	-3280.404 3117.021
Working	0.058*** 0.008	-4727.845* 2228.33	-922.344 510.185	768.266 2216.697
State UR	-0.002 0.002	-29.477 898.708	-51.83 124.402	-6495.694*** 779.443
Year & Age FE	Yes	Yes	Yes	Yes
Individual FE	Yes	Yes	Yes	Yes
N	15242	15242	12903	15242

Note: Standard errors listed. Table shows result of four regressions. Year fixed effects refer to the year of the spell, age fixed effects refer to the age of the mother, and individual fixed effects to the mother.

Appendix Table 3 Select Coefficient Estimates from Event Study of Child Unemployment

	Transfer Sent (Dummy)	Household Food (\$ Amount)	Hours Per Week (Mother)	Any SSA Income (Dummy)	IRA Value (\$2014)
Three Years Prior omitted		53.624	0.002	0.002	
		63.071	0.004	0.006	
Two Years Prior	-0.003	-92.137	0.009	0.003	
	0.004	47.369	0.005	0.004	
One Year Prior	0.004				
	0.004				
Year of Spell	0.017***	-247.932***	0.005	0.005	
	0.004	49.094	0.004	0.004	
One Year Following	0.006	-99.408	-0.004	-0.004	
	0.004	58.54	0.005	0.005	
Two Years Following	0.006	-182.690***	-0.003	-0.003	
	0.004	47.453	0.004	0.004	
Three Years Following	0.002	1.45	-0.005	-0.006	
	0.004	62.927	0.006	0.006	
Six Years Prior					-1681.603
					1866.971
Four Years Prior					4238.236**
					1631.711
Two Years Prior					
Year of Spell					-404.534
					1766.55
Two Years Following					-1978.394
					1739.658
Four Years Following					-3165.834
					1954.675
Six Years Following					-473.223
					1936.578
X_{pt} and X_{ct}	Yes	Yes	Yes	Yes	Yes
Age & Year FE	Yes	Yes	Yes	Yes	Yes
Individual FE	Yes	Yes	Yes	Yes	Yes
N	38004	38004	38004	38004	15242

Note: Standard errors listed. Table shows result of five regressions. Year fixed effects refer to the year of the spell, age fixed effects refer to the age of the mother, and individual fixed effects to the mother.

Appendix B: Matching Family Members

Appendix Table B1 details the parent-child matching process. The PSID has 410,524 person-year observations of heads and spouses, which as mentioned, are the set of individuals for whom annual labor force variables are measured. That initial group (i) can be split into two sides of the match (not mutually exclusive), those individuals who have had a mother in the PSID at some point of the survey and whose person number is given (iia) and females who indicate in the survey that they have had a child (iib). Note that this includes each wave that the person was in the PSID for both potential children and potential mothers, down to age zero. Of the 314,200 person-year kids and 172,032 person-year potential mothers, 52,653 observations are matched (iii). When the matched person-year observations are expanded to include all the years the mother was observed (iv), the observations reach 117,843, a match rate of 68.5 percent. That share is not to be interpreted too strictly, as not all mothers are mothers the entire length of the PSID for which they are observed, nor will all individuals with mothers will have mothers alive and living in a separate household for every year the individual is observed.

There are two additional cuts to the matched mother-kid sample. The first is due to question design. Although a measure of money transferred out of the household to family is available in all years of the survey, the recipient type (child, sibling, parent, etc) is not introduced until the 1985 wave, hence the prior years are dropped (iv). Second, we want to see detailed labor force measures of the child in order to identify unemployment spells, meaning the child must be living as a head of household and apart from her mother. For this reason, we drop all mother observations in which the child is not living separately (v). Our sample is thus 38,004 person-years of mothers with independently living children. We do not match fathers, primarily because the mother's observation includes the detailed information for the head of

Appendix Table B1 Sample Drops

Target	PSID Group	N (person-year)
(i.) Individuals with annual labor force measures	Heads and Spouses	410,524
(iia.) Potential children	Person number of mom is given	314,200
(iib.) Potential mothers	Female who indicates she has/had children	172,032
(iii.) Matched observations	(iia.) = (iib.)	52,653
(iv.) Matched Moms	All observations of mother has a matched child	117,843
(v.) Years with transfer recipient info	1985-2013	69,541
(vi.) Kids living separately		38,004

Note: The first drop (iia) reduces the sample to all independently living heads and wives in the PSID whose mother was ever in the sample; the second drop (iib) reduces the all women in the PSID who indicated they had at least one child; these two groups are matched into group (iii). The person-year matches are expanded to any observations of the mother (iv), the matched sample. From the matched sample, (v) reduces the sample to moms who are observed after 1985 and (vi) to those person years in which at least one child who lives in a separate residence.

household, if it is not herself.¹ Given the practice of survey inclusion in the PSID, we are at risk of losing information on male single parents, but that is a very small population.

To show the representativeness of the analytical sample, a comparison of matched mothers, women who indicated that they had children but who were unmatched, and remaining females is shown in Table 2. We limit the age of the compared women to when they are 40-80 years old, since that is approximately the age span of our sample.² Matched mothers are older than unmatched mothers; the average age of matched mothers in column 1 is 62 years old, compared to 51.3 for unmatched mothers and 56.7 for remaining women. Matched mothers are also observed at older ages, the minimum and maximum age at which they are observed in the PSID range on average from 34.9 to 68, compared to 29.6 to 57.8 for unmatched. This makes intuitive sense, matched mothers have independently living children, which makes them older than mothers with children still at home. The age difference between matched and unmatched mothers explains many of the remaining demographic differences between the groups.

Across all three sets of women, there are similar shares of white individuals (74.4, 70.9, 73.8 percent). Matched mothers, however, have less education than unmatched mothers, with 69.6 percent having a high school degree or less, compared to 43.2 percent for unmatched mothers and 37.1 percent for remaining women. This suggests that our sample is not only observed at older ages but also in earlier time periods, relative to the rest of the women in the PSID, and is important for interpreting our results. It is not surprising then that, given that matched mothers are older and observed earlier, 59.6 percent of matched mothers are married, a lower share than the 67.6 percent of unmatched mothers and 44.3 percent of remaining women, but have a much higher share of widows, at 18 percent, compared to 7.4 percent and 10.6 percent. In addition, a much lower share of matched mothers are working (45.6 percent) than unmatched (67.1 percent) and remaining women (58.7 percent).

The bottom half of Appendix Table 1 summarizes the dependent variables used in this analysis. Differences across matched mothers, unmatched mothers, and remaining women can be mostly attributed to age differences.

1 The PSID assigns head and spouse by gender; heads are male and spouses are female, unless a woman is living alone, in which case she can be a head.

2 This slightly reduces the sample of matched mothers from Table 1 by dropping very young and very old mothers.

Appendix Table B2 Summary of Women 40-80 years old in the PSID by child match and motherhood

	Matched Moms N=35919	Unmatched Moms N=27375	Remaining Women N=8791
Age	62.0	51.3	56.7
Min Observed Age	34.9	29.6	35.5
Max Observed Age	68.0	57.8	61.0
White	0.744	0.709	0.738
Black	0.134	0.115	0.104
High School or Less	0.696	0.432	0.371
Some College or More	0.298	0.565	0.604
Married	0.596	0.676	0.443
Divorced/Sep.	0.194	0.196	0.118
Never Married	0.029	0.053	0.333
Widow	0.180	0.074	0.106
Disabled	0.045	0.030	0.062
Housewife	0.145	0.132	0.086
Working	0.456	0.671	0.587
Sent Transfer to Kid	0.072	0.041	0.037
Size of Transfer to Kid	\$336	\$214	\$198
Received Transfer	0.051	0.073	0.059
Size of Received Transfer	\$159	\$287	\$216
Weeks Worked	23.2	33.1	28.6
Weeks Unemployed	1.1	1.6	1.0
Receiving SSA Income	0.510	0.207	0.322
Receiving SNAP	0.061	0.063	0.048
Usual Food Consumption	\$6904	\$9235	\$6576
Contribute to a Pension	0.071	0.110	0.125
Percent of Income Cont.	0.537	0.784	1.025
Ever Contributed to Pension	0.204	0.296	0.283
Vehicle Value	\$17,181	\$18,037	\$16,536
IRA Value	\$69,016	\$40,668	\$62,113

Source: Authors' Calculations of PSID data. Table excludes women who are younger than 40 or older than 80 years old. Matched mothers are linked via family id and person number to a child's observation in at least one wave. Unmatched mothers indicated in survey response that they had at least one child, but was not matched to a separate child observation. Sample weighted using core weights.