



National Poverty Center Working Paper Series

#11 – 12

April 2011

**The Effect of Unemployment on Household Composition and
Doubling Up**

Emily E. Wiemers, University of Michigan

This paper is available online at the National Poverty Center Working Paper Series index at:

http://www.npc.umich.edu/publications/working_papers/

This project was supported by the National Poverty Center (NPC) using funds received from the U.S. Census Bureau, Housing and Household Economics Statistics Division through contract number 50YABC266059/TO002. The opinions and conclusions expressed herein are solely those of the authors and should not be construed as representing the opinions or policy of the NPC or of any agency of the Federal government.

The Effect of Unemployment on Household Composition and Doubling Up

Emily E. Wiemers*

January 2011

Mail: Institute for Social Research
University of Michigan
426 Thompson Street, Ann Arbor, MI 48106
E-mail: ewiemers@umich.edu
Phone: (401) 450-5327
Fax: (734) 936-3809

Abstract

Doubling up with family and friends is one way in which individuals and families can cope with job loss but there is little work on how prevalent this form of resource sharing is and to what extent families use co-residence to weather a spell of unemployment. This project uses data from the Survey of Income and Program Participation to provide some of the first evidence on the relationship between household composition and unemployment across working ages. I show that households with at least one unemployed person are fifty percent more likely to be doubled up than households in which no one is unemployed. Using the transitions in living arrangements and employment status in the SIPP panels, I find that individuals who become unemployed are twice as likely to move in with others but that they are 25 percent less likely to have others move in with them. I further show that young adults are the most likely to move in with others when they become unemployed but that middle aged adults also seem to use co-residence as a way to weather spells of unemployment. Moving into shared living arrangements in response to unemployment is not evenly spread across SES; it is most prevalent among the lowest and highest SES individuals. The issue of how families change household composition to weather bad economic times is especially relevant as unemployment rates remain historically high. Because family composition interacts in important ways with benefit receipt, understanding how families alter living arrangements to respond to bad economic conditions has important implications for the effectiveness of programs designed to alleviate poverty.

*This project was supported by the National Poverty Center (NPC) using funds received from the U.S. Census Bureau, Housing and Household Economics Statistics Division through contract number 50YABC266059/TO002. The opinions and conclusions expressed herein are solely those of the author(s) and should not be construed as representing the opinions or policy of the NPC or of any agency of the Federal government. All errors are my own. I am also grateful for funding from the National Institute on Aging through grant AG000221-17.

When facing a period of unemployment, families rely on a variety of mechanisms to help maintain well-being and consumption. Some sources of additional support, including public benefit programs and family transfers, have been studied extensively (see Blank and Card, 1991; Altonji, Hayashi and Kotlikoff, 1992, 1996, 1997; Dynarski and Gruber, 1997; Gruber, 1997; Cullen and Gruber, 2000; Browning and Crossley, 2001; Haider and McGarry, 2006 among many others). Changing household composition, or doubling up, is another mechanism that families may use to smooth consumption during a period of unemployment. Although changes in living arrangements have been studied in the context of particular types of households (mainly the elderly, young adults, and households with children), and in response to policy changes such as welfare reform in 1996, few studies have taken a broad look at the relationship between unemployment and changes in household composition. Doubling up can take many forms; young adults who had previously left home may return to their parents' home, older adults may move in with their adult children, single parents may move in with parents or grandparents, and families may move in with other related or unrelated individuals. In the current economic downturn, anecdotal stories about households doubling up to save on expenses have been plentiful and yet little is known about why families double up and how doubling up affects income, consumption, and well-being.

Changes in employment status are likely to be positively related to changes in living arrangements through several mechanisms. Becoming unemployed lowers income and families may use shared living arrangements to access in-kind transfers. Shared living arrangements facilitate transfers of items such as food, shelter, and household goods but also allow for greater returns to scale in household production. In addition to lowering income, unemployment lowers barriers to moving making it easier for children to return to their parental home or siblings to move in together. However, for some groups, unemployment may be negatively related to doubling up. For young adult children living with parents, a spell of unemployment for one parent may make staying at home less comfortable and may induce the young adult child to leave home. In addition, for people with specialized skills or people living in a particularly weak labor market, seeking work in more distant labor markets may necessitate moving out of shared living arrangements.

In this paper I examine the relationship between doubling up and unemployment for working

age adults empirically using the Survey of Income and Program Participation [SIPP]. In a pooled cross sectional analysis, I find that having a household member who is unemployed increases the probability of being doubled up by 50 percent. This paper also exploits the SIPP panel structure and estimates transition rates to doubled up living arrangements. I find that becoming unemployed doubles the probability that you move in with another household but that it reduces the probability of having someone move in with you by 25 percent. This paper explores how the effect of unemployment on living arrangements varies by marital status, age, and education. The results suggest that single, younger adults are the most likely to move in with others in response to unemployment. However, even middle age adults seem to respond to unemployment through shared living arrangements. The results stratified by educational attainment reveal a quite interesting pattern. Although doubling up is much more prevalent among those from lower SES groups, the relationship between unemployment and moving in with others is the strongest for individuals without a high school diploma and for individuals who have completed college. The results suggest many "boomerang children" are young, well-educated adults who move back in with their parents when they experience unemployment but that the very poor also use co-residence as a form of resource sharing.

This paper proceeds as follows: section one shows the connections to the existing literature; section two describes the prevalence of doubling up among households and individuals overall in the SIPP, breaking out particular subgroups of interest such as adult children co-residing with parents and three generation households; section three outlines the sample used to study transitions in living arrangements; section four describes the empirical strategy and the main results showing the relationship between unemployment and transitions to doubling up; section five discusses the findings and the results of additional analyses; and section six concludes.

1 Related Literature

Much of the literature on resource sharing and transfers among family members has abstracted from decisions about household formation and dissolution, and has instead focused on households that remain stable over time (Altonji, Hayashi and Kotlikoff, 1992, 1996, 1997). However,

there is evidence that changes in household composition are an important mechanism through which families adjust to economic conditions (Costa, 1999; McGarry and Schoeni, 2000 on the elderly; London and Fairlie (2006) on young children; Kaplan (2009) on young adults; and Haider and McGarry (2006) more generally). Anecdotal stories about job losses suggest that families live in multi-family homes to weather bad labor market shocks, and the phenomenon of "boomerang children", who return home after a period of independence, suggests that co-residence among families members is an important way to smooth consumption.¹ The interest in living arrangements stems from evidence on the effect of different arrangements on well-being, particularly on the well-being of children, which suggests that children from one-parent households have worse outcomes in terms of education and family formation than children from two-parent households, households with step-parents, or multi-generational households (McLanahan and Sandefur, 1994; Seltzer, 1994; DeLeire and Kalil, 2002).

Much of the evidence on the relationship between economic circumstances and living arrangements has focused either on young adults, or on the elderly. Studies of young adults focus on the effect of the income of the child in determining home leaving, although notably Manacorda and Moretti (2006) focus on how the income of the parent affects co-residence. The evidence points toward privacy being a normal good for young adults and their parents although the evidence is not conclusive. Several studies suggest that increases in parental income are associated with increases in co-residence (Ermisch, 1999; Manacorda and Moretti, 2006). Past studies, particularly Kaplan (2008) and McElroy (1985) find that there is value of returning to the parental home in the form of insurance against bad shocks. By examining the effect of the expansion of the Social Security System and economic growth in the 20th century on the living arrangements of the elderly, several studies show that the increases in resources available to the elderly enabled more of them to live independently (Schwartz, Danziger and Smolensky, 1984; Costa, 1999; McGarry and Schoeni, 2000; among others). These studies also point toward privacy being a normal good.

While income seems to be positively related to independent living arrangements, evidence

¹"Facing a Financial Pinch, and Moving In With Mom and Dad," New York Times, March 2010; "Cramped quarters : As children postpone their departure, households get larger," The Economist, September 2010; "Doubling Up in Recession Strained Quarters," New York Times, December 2010

of a relationship between living arrangements and unemployment is more mixed. Much of the literature in this area focuses on the effect of state level unemployment rates on living arrangements. London and Fairlie (2006) examine the relationship between the living arrangements of children and state unemployment rates in both the Current Population Survey (CPS) and the SIPP. Using SIPP data, they find that the probability of children living in shared living arrangements increases with the unemployment rate, consistent with doubling up, although the effects are not large. Haider and McGarry (2006) find co-residence to be an important mechanism of resource sharing among the poor. However, they do not find a systematic relationship between living arrangements and state unemployment rates in the CPS. Examining only the living arrangements of young adults, Card and Lemieux (1997) and Matsudaira (2010) find much larger effects of local market conditions. They use aggregate data from the US and Canada to estimate the effect of labor market conditions on living arrangements, school enrollment, and work effort of young adults. Both studies show that that improving local demand conditions lowers the probability of living at home for young adults but that higher costs of housing raise these probabilities. However, these studies are unable to distinguish between young adults remaining in the parental home until later ages and young adults returning home after a period of independence.

This study most closely resembles Kaplan (2009) and Wiemers (2009) who relate individual unemployment and local labor market conditions to individual transitions in living arrangements. Kaplan (2009) examines whether less well-educated youth are more likely to return to the parental home after a change in employment status. He uses monthly data on employment and living arrangements from the National Longitudinal Survey of Youth and finds that the hazard of moving back home in a given month increases by about 70 percent when a young adult moves from employment to non-employment. In my own previous work (Wiemers, 2009), I find evidence that local labor market conditions affect home leaving decisions of young adults and that economic expansions increase the probability of young adults leaving home.

This project proceeds along similar lines to these two studies which suggest that the labor market is important in understanding individual changes in living arrangements. The paper provides some of the first evidence on the relationship between living arrangements and unemployment

across working ages. I use the large sample sizes in the SIPP to examine two relatively rare events: unemployment and doubling up. In addition, I exploit the high frequency employment and living arrangement data in the SIPP to better examine the contemporaneous effect of unemployment on doubling up while capturing some arrangements that may only last for a short period of time.

2 Data and Descriptive Statistics

I use the 1996, 2001, 2004, and 2008 SIPP panels. Each SIPP panel is nationally representative sample of the civilian noninstitutionalized population of the US and lasts between 2.5 and 4 years. People selected into the sample are interviewed every four months. The SIPP is a series of longitudinal surveys—within each panel, an original sample member who moves to a new address will be interviewed at the new address. In addition, the individuals with whom they reside at the new address are interviewed as long as they continue living with respondents from the first interview. I restrict my use of the 1996 panel to Waves 10-12 covering the period after 1998 when welfare reform had been fully implemented. I do so to avoid interactions with changes in the rules for living arrangements associated with the switch from AFDC to TANF. I use the first three waves of the 2008 panel. The SIPP is useful for studying living arrangements, particularly arrangements that may not be long lasting because of its high frequency of data collection. Some type of living arrangements appear to be rather short-term. Kaplan (2009) finds a high frequency of short transitions into and out of the parental home for young, high-school educated workers.

2.1 Doubling Up in SIPP

In this analysis I classify households according to whether they are co-residing with other related or unrelated individuals. The SIPP classifies families and individuals by their relationship to the household reference person. The SIPP classifies families in three subgroups. The first is a primary family which contains the household reference person and all of his or her relatives. The second is a related subfamily which contains a primary family and another nuclear family related to but not including the household reference person. The third is an unrelated subfamily which contains

a primary family and a nuclear family not related to the household reference person. In addition the SIPP classifies primary and secondary individuals. A primary individual is a person living alone. A secondary individual is a non-household reference person who is not related to any other people in the household. I use these classifications as the basis for counting doubled up households.²

I identify three specific types of doubled up households: household containing adult children, three generation households, and household with cohabiting partners. I count households as living with an adult child if the child is age 25 or over. The age cutoff of 25 is consistent with the classification used in the Pew Report on multi-generational households and allows me to compare rates of doubling up with the American Community Survey (Pew Research Center, 2010). Some of these households would be classified as related subfamily households, particularly if they contain an older adult co-residing with the family of their adult child. However, other would not. For example, households containing a 25 year old child in a nuclear family would not be classified as a related subfamily in the SIPP.

Most three generation households will be classified in the SIPP as containing a related subfamily. However, since these households are of particular interest, I separately identify them using the person identifiers of mothers and fathers in the survey. If an individual is a mother or father of someone in the household and has a mother or father in the household, the household is considered a three generation household.

I separately count households containing a cohabiting partner. I count these households because they may differ from other doubled up households in many dimensions and I exclude households from the analysis that would be classified as doubled up solely because they contain an unmarried partner. I use the code describing the relationship to household reference person. My count is likely an undercount because I do not count those unmarried partners who are not in a relationship with the household reference person. In future work I will use an inferred definition of cohabiting partners to better identify these households. It is unclear whether cohabitation is a resource sharing arrangement or whether it is more of a quasi-marriage arrangement. Because of

²I do not count households with foster children as doubled up families.

this ambiguity, in what follows, households doubled up only because they contain an unmarried partner are not counted as doubled up.³

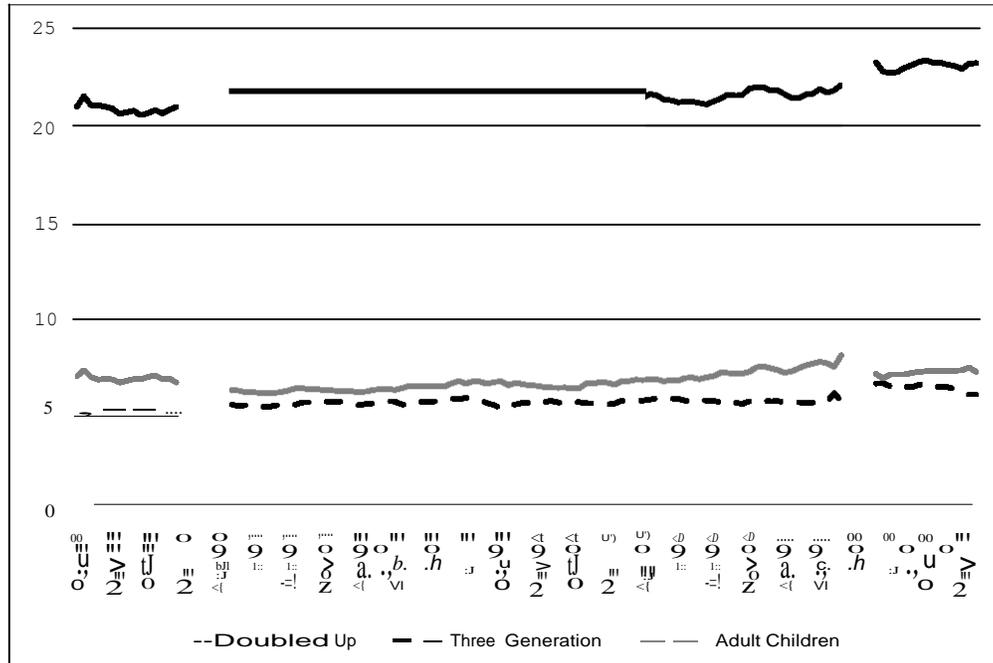
Figure 1 shows the fraction of individuals living in a shared living arrangement over time.⁴ Each individual in a doubled up household is counted as doubled up. The black line shows the fraction of individuals in doubled up households. The fraction of individuals in doubled up households grows slightly over time, increasing most in the 2008 panel. These increases are consistent with the increases noted using the American Community Survey (Pew Research Center, 2010). The series is relatively smooth between panels. Figure 1 also describes particular subgroups of doubled up households. It shows the fraction of individuals living in a household living with adult children and the fraction living in a three generation household. These are exclusive categories—three generation households contain adult children but are only included in the count of three generation households. The grey line shows the fraction of individuals living in a household containing an adult child, which increases from about 6 percent to over 7 percent, with most of the increase occurring after 2004. The black dashed line shows the fraction of individuals living in three generation households, which is relatively constant over time—a little over 5 percent—though slightly higher in the 2008 panel. In all regressions I include panel, year, and calendar month effect to control for any deterioration over time within a panel in the fraction of individuals in doubled up households.

Figure 2 shows the fraction of individuals who live in a doubled up living arrangement by the age of the individual. The age distribution of individuals living in doubled up households shows that young people are the group most likely to live in a doubled up household. Over 25 percent of young adults age 18 to 34 live in a doubled up household. About twenty percent of adults in their fifties and sixties—some likely the parents of the younger individuals—live in a doubled up household. Adults in the middle age groups are the least likely to live in a doubled up household, although even among these groups the fraction living in such households is about 15 percent. About 25 percent of the oldest adults live in a doubled up arrangement—likely a care-

³All analyses have been conducted including and excluding unmarried partners. Including unmarried partners make the regression results slightly smaller but do not change the substantive conclusions.

⁴The figures in this section pool all individuals in all rotation groups in the waves and SIPP panels described in the data section and weight using individual weights.

Figure 1: Fraction of Individuals in Doubled Up Households

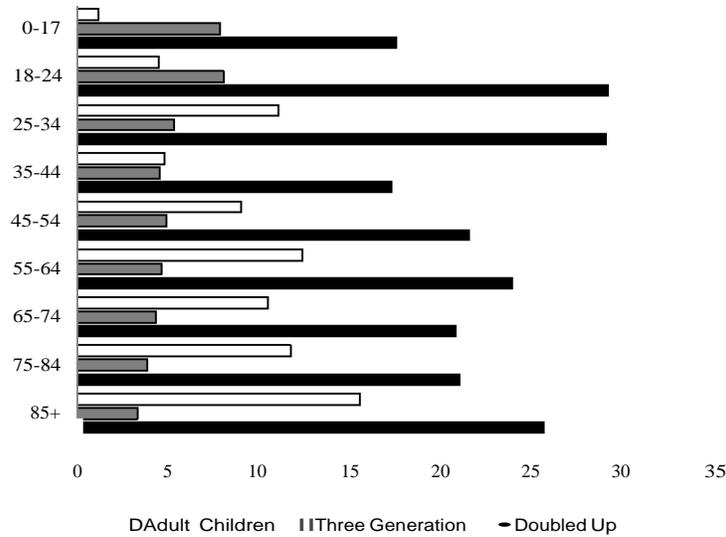


giving arrangement. The type of doubling up also varies with age. Living in a three generation household declines with age. Living with an adult child is most common for young adults, older adults who are approximately the age of their parents, and among the elderly. The fraction of total doubling up accounted for by living with adult children increases with age after age 34.⁵

Figure 3 shows the fraction of individuals who live in a doubled up living arrangement by race and ethnicity. I include one measure of ethnicity in the table. The measure of Hispanic overlaps with race and includes all individuals who describe their origin as Hispanic. Overall, whites are the least likely to live in a doubled up household-non-whites are about 12 percentage points more likely to be doubled up than whites. In every category whites are also less likely to be doubled up. Hispanics have the highest incidence of doubling up and of three generation households with 35 percent doubled up and almost 12 percent living in three generation families. Three generation families are particularly unusual for whites-the fraction of whites living in three

⁵The overall fraction, and the age distribution of multi-generational living arrangements is very close to that outlined in the Pew Center Report on multi-generational households that uses data from the American Community Survey (Pew Research Center, 2010).

Figure 2: Doubling Up by Age



generation households is about half that of non-whites.

Figure 4 shows the fraction of individuals who live in a doubled up living arrangement by educational attainment. Children under the age of 15 are not included in the figure. Individuals with higher education levels are less likely to live in doubled up living arrangements. Individuals with less than a high school education are nearly twice as likely as those with a college degree to be doubled up. The fraction of individuals living in three generation households decreases with educational attainment—living in a three generation households is extremely rare (only about 2 percent) for individuals with a college education. The fraction of doubled up households that are households containing an adult child is about 40 percent for individuals with a high school degree or more but these households make up only about 30 percent of the total of doubled up households for those with less than a high school degree.

Finally, Figure 5 shows the fraction of individuals who live in doubled up living arrangements by marital status. Children under the age of 15 are not included in the figure. Doubling up is much more common for people who are unmarried than for people who are married. Living with adult

Figure 3: Living Arrangements by Race/Ethnicity (%)

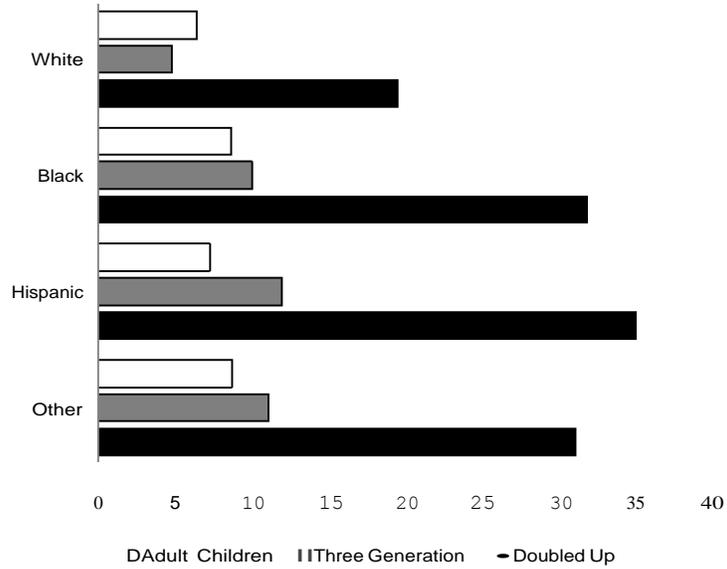
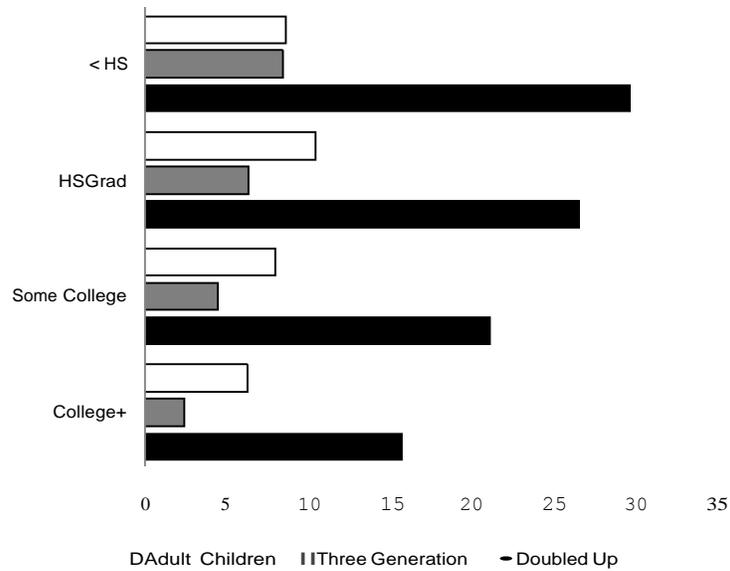
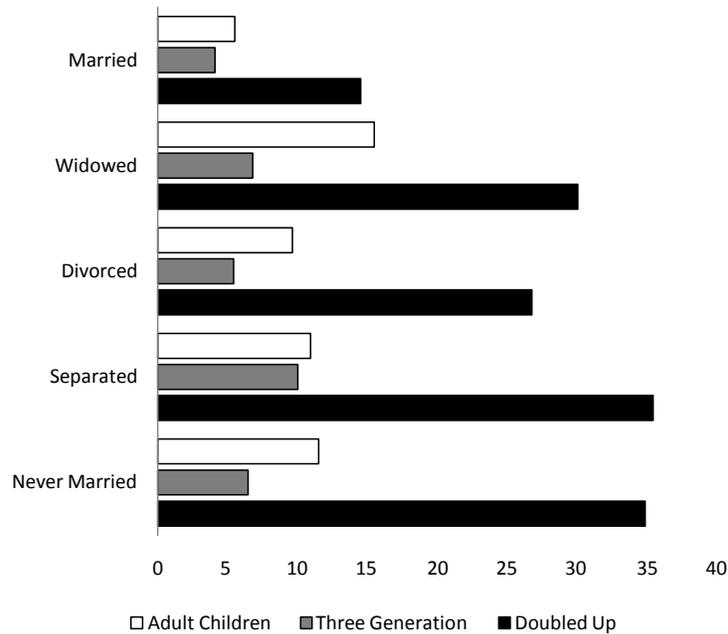


Figure 4: Living Arrangements by Educational Attainment(%)



children is most common for widows—this is likely older widows who are receiving care from their adult children. While living with adult children is less common for married individuals than for unmarried individuals, this living arrangement accounts for about 40 percent of all doubling up among the married. Living in a three generation household is the most common for those who are separated—likely because recently separated adults may move in with their parents for a period after their separation.

Figure 5: Living Arrangements by Marital Status (%)



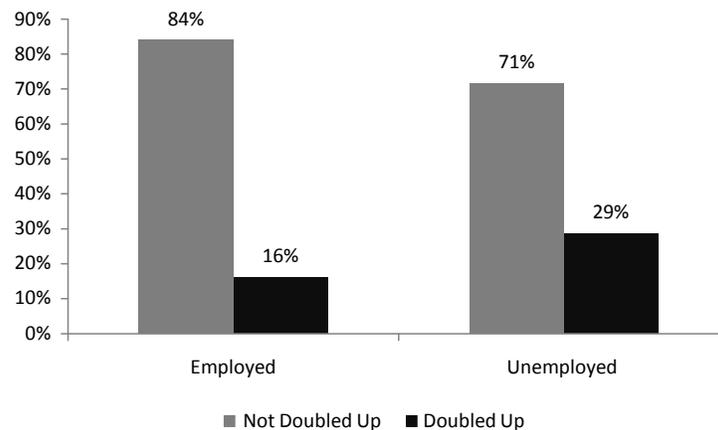
Characteristics associated with lower SES such as being unmarried and having less education are associated with higher probabilities of doubling up. However, doubling up is not rare even among those with a college education with almost 15 percent of these individuals being doubled up. The form that doubling up takes does differ by SES with adult children making up a larger proportion of total doubling up for those with at least a high school education than for those with less than a high school degree. Living with adult children is common across social classes—it is not a phenomenon of only the rich or the poor. Other arrangements, such as living in a three generation household are much more common among non-whites and among those who are less

well-educated.

2.2 Household Doubling Up and Unemployment

Examining the relationship between doubling up and unemployment is complicated by the fact that employment is an individual characteristic while doubling up is a characteristic of the household. To look at the simple correlation between unemployment and doubling up, I generate a household level variable for unemployment and examine the relationship between living in a doubled up living arrangement and having at least one unemployed individual in the household. Figure 6 shows the fraction of households who are doubled up separated by whether the household contains at least one unemployed person. The figure includes only households that have at least one individual in the labor force.⁶ Nearly twice as many households are doubled up among household containing at least one unemployed person than among households where none of the members is unemployed.

Figure 6: Doubling Up by Household Unemployment (%)



⁶This figure pools all households in all rotation groups in the waves and SIPP panels described in the data section and weights using household weights.

Table 1 shows the relationship between household doubling up and household unemployment in a multivariate regression. I regress whether a household is doubled up on whether the household has at least one unemployed member along with a variety of other household characteristics including maximum and minimum educational attainment of adults in the household, age of the youngest household member, age of the oldest household member, race of the household holder, household size, and whether the household is headed by a female. In addition, I include dummy variables for calendar month, calendar year, and SIPP panel. Because there is a worry about seam bias in unemployment reporting and because employment status is imputed for individuals who are not in the household in the fourth reference month, I report regressions which include all months and regressions which only include household observations in the fourth reference month. The first column of Table 1 shows the results using all months, the second column shows the results using only the fourth reference month. In each case households are pooled across waves and panels. Standard errors are clustered at the level of the sample unit identifier to control for correlation in the error term across original family unit members and across family units over time.⁷

These results show that households with an unemployed household member are seven percentage points more likely to be doubled up than households in which no one is unemployed. Compared to the mean level of doubling up (15 percent), households with at least one person unemployed are almost 50 percent more likely to be doubled up than households where none of the members is unemployed even after controlling for characteristics like race and education that are correlated with unemployment and doubling up. There are no differences in the results using only the fourth reference month and the results using all reference months. The magnitude of the coefficient is large and suggests that unemployment and doubling up are related. However, this cross sectional analysis comes with several caveats. Most importantly, using the SIPP as a set of cross sections does not allow us to determine the direction of the relationship between unemployment and doubling up. I cannot distinguish between individuals being more likely to become unemployed because they are already living with others and individuals moving in with others when

⁷Regression results are unweighted. Weighting using household weights does not change the size, sign, or statistical significance of results.

Table 1: OLS Regression of Household Doubled Up and Household Unemployment

	Doubled Up	
	(1) OLS	(2) OLS
<i>Mean Dependent Variable</i> (s.e)		.1517 (.00002)
Hhld Unemp	0.070 (0.002)**	0.071 (0.002)**
Female Headed Hhld	0.118 (0.002)**	0.118 (0.002)**
Min Age Hhld	-0.006 (0.000)**	-0.006 (0.000)**
Max Age Hhld	0.012 (0.000)**	0.012 (0.000)**
Hhld out Labor Force	-0.112 (0.002)**	-0.112 (0.002)**
Min Educ < HS		
Min Educ = HS	0.015 (0.003)**	0.015 (0.003)**
Min Educ Some College	-0.040 (0.003)**	-0.041 (0.003)**
Min Educ College Grad	-0.056 (0.004)**	-0.056 (0.004)**
White		
Black	0.053 (0.003)**	0.052 (0.003)**
Other	0.060 (0.004)**	0.059 (0.004)**
Hhld Size	0.020 (0.001)**	0.019 (0.001)**
Constant	-0.310 (0.006)**	-0.310 (0.006)**
Observations	3291071	824896

Maximum education, panel, year, and month fixed effects are also included.

Robust standard errors in parentheses.

* significant at 5%; ** significant at 1%

they become unemployed. Even if the direction of the relationship were clear, people who know that they can move in with others when times are bad may be more willing to take a job with an unstable employment trajectory or a job where many spells of unemployment are expected. This descriptive analysis shows a strong relationship between unemployment and doubling up in the cross section but does not show that becoming unemployed increases the probability of doubling up.

3 Transitions in Living Arrangements in SIPP

3.1 Sample

While Table 1 shows us that doubling up is more common among households with unemployed members, using the panel in the SIPP allows me to explore whether individuals move to doubled up living arrangements when they become unemployed. To examine this question, I consider the relationship between changes in employment status and changes in household composition for individuals over time. Looking at the relationship between transitions to doubled up living arrangements and unemployment is complicated because transitions in employment status and living arrangements are only observed for original sample individuals. The employment transitions of all potential people with whom an individual could double up are not observed. I cannot simply regress the change in the unemployment status of all household members between t and $t+1$ on the whether or not the household becomes doubled up between t and $t+1$ because of the unobserved transitions in employment status for people not in the SIPP sample. Those individuals who move in because they are unemployed will be observed, but those who become unemployed and do not move into a SIPP household will not be observed. If unemployed people are more likely to move in with others, these unobserved spells of unemployment that do not result in doubling up will bias the estimates of the effect of unemployment on doubling up away from zero. These unobserved transitions are present in almost every survey—there is a missing data problem inherent in the question—and it is almost impossible to imagine a set of following rules or a set of questions about individuals not present in the survey that could eliminate this problem.

To get around this missing data problem and to look at the relationship between transitions in living arrangements and transitions in employment status, I estimate two relationships. I examine the employment status and living arrangement transitions of original SIPP panel members. These individuals will be followed regardless of their employment status and living arrangements. First, I examine how becoming unemployed affects the probability that original SIPP sample members move into households with others. I measure moving in with others using information on who owns or rents the residence. Individuals who I count as "moving in with others", make a transition to a doubled up living arrangement AND live in a household in $t+1$ that is owned by someone who is not in their household at time t .⁸ Second, I examine the receiving families. I estimate the relationship between the characteristics of SIPP sample members and the probability that original SIPP sample members receive a new person in the household. Again, having others move in with you is measured using information on who owns or rents the residence. Individuals who I classify as "having someone move in with them", make a transition to a doubled up household AND live in a household in $t+1$ that is owned by an individual who also lives in the household in time t . Everyone who is already doubled up is not at risk, but all other original SIPP members are at risk of moving in with another household and at risk of having someone move in with them. In the first case, I examine the relationship between the characteristics of the original SIPP sample members and the probability that they move in with other individuals and become doubled up. In the second case, I examine the relationship between the characteristics of the original SIPP sample members and the probability that someone moves in with them and they become doubled up.

The analytic sample includes all original sample individuals who are age 25 or older in the SIPP and who are not doubled up in time t . I restrict my analysis to individuals over 25 because it is the age cut-off that I use in counting households containing adult children as doubled up. The age cut-off of 25 also allows me to abstract from decisions about attending college because most people have completed their education by age 25.⁹ I include only original sample members

⁸In SIPP data, the owner or renter can change from wave to wave for people who jointly own or rent the house. I account for this by checking the full household roster in time t for the owner or primary renter in $t+1$, I do not rely on the household being owned or rented by a different individual in the two time periods.

⁹Since Kaplan(2009) finds effects of unemployment among younger, high school educated adults, in future drafts I will test the sensitivity of results to this assumption.

because other individuals will not be followed if they move. I keep all observations for the same individual as long as they meet the above characteristics. To avoid spurious transitions resulting from seam bias in unemployment reporting, I include only the fourth reference month. In future drafts I plan to include measures of employment that span the four month reporting range to test the sensitivity of the results to using only the fourth reference month employment transitions. The final sample contains 248,992 individuals averaging 3.23 observations per person. Table 2 shows the characteristics of the sample. The sample, on average, is 50 years old, 85 percent of the sample is white, and 70 percent is married. About 40 percent of the sample has a high school education or less and about 60 percent has at least some college. Slightly more than half of the sample is female.

Table 2: Summary Statistics

Variable	Weighted Means
Age	49.70
Female	0.53
Race	
White	0.85
Black	0.09
Other	0.05
Marital Status	
Married	0.69
Widowed	0.07
Divorced	0.11
Separated	0.02
Never Married	0.11
Education	
Less than HS	0.10
HS Diploma or GED	0.28
Some College	0.32
College or More	0.29
Unemployment Measures	
Unemployed in Current Week	3.65
Unemployed for Entire Month	1.40
Doubling Up	
Move in with Others	0.002
Others Move in with You	0.012
N	804251

Weighted using the SIPP individual weights.

3.2 Unemployment Measures

I use two measures of unemployment. I use a contemporaneous measure of unemployment (employment status in the last week of the fourth reference month) and an employment measure that covers the entire reference month. The weekly measure uses the last week in the reference month and counts people as employed who have a job and are either working or absent without pay but not on layoff, counts people as unemployed if they do not have a job or do have a job but are absent without pay because of a layoff, and counts people as out of the labor force if they do not have a job but are not looking or on layoff. The monthly employment status measure counts people as employed if they had at least one paid job in the month, counts people as unemployed if they have not have a paid job because they are unable to find work or on layoff, and counts people as out of the labor force if they do not have a paid job for other reasons.¹⁰ Table 2 shows the means of the two measures of unemployment that I consider.¹¹

Becoming unemployed leads to a large decline in monthly income. On average, people who become unemployed experience a \$1000 decline in monthly household income. Table 3 shows the decline in real monthly household income associated with an individual experiencing unemployment.¹² For those who are unemployed for the whole wave, the declines in income associated with unemployment are smaller, likely because some of the spells started in the prior wave. The mean change in income for those who do not become unemployed, using the monthly measure, is also smaller because this group includes any individual who had a job at any time during the month and so includes individuals who experienced short unemployment spells.

¹⁰I exclude all people with imputed employment status to avoid spurious transitions.

¹¹I have looked at the rates of unemployment over time implied by both measures of unemployment using the entire SIPP sample including all reference months. The contemporaneous measure of unemployment generates similar monthly unemployment estimates to CPS monthly unemployment statistics. The entire wave measure of unemployment is more restrictive in that it only includes only people who have not had a job all month among the unemployed so it produces much lower estimates of unemployment. I use both measures to test the sensitivity of my results to using a broad and a restrictive definition of unemployment.

¹²Table 3 is weighted using individual weights in time t+1 to account for attrition as described below. Unweighted means and means weighted with time t individual weights are similar.

Table 3: Changes in Monthly Income by Employment Status (\$)

Measure of Unemployment	Change in Income	
	Employed	Unemployed
Unemployed in Current Week	34.34	-1403.74
Unemployed for Whole Month	18.37	-988.44

3.3 Transitions to Doubling Up

Most individuals who are doubled up are observed from the beginning of the panel in a doubled up living arrangement. However, there are about 10,000 observations (about 1 percent) in which individuals move into a doubled up household. I split this sample of people who become doubled up into two groups: individuals who move in and individuals with whom someone else moves in. The number of people who transition to doubling up because they move in to a new household is 1874 compared with 9726 who double up because someone moves in with them. The sample of those who move in should be smaller as these are likely to be smaller households moving in with a larger household (like young adults moving back home with parents) but there is also more attrition among the movers out than among people who do not move. I use weights to account for attrition. In the tables in this section, I weight individual characteristics using the individual weights in time $t+1$.¹³ In Table 4, I compare the characteristics of individuals in these two groups and individuals who do not become doubled up at all.¹⁴ Those who move to a doubled up living arrangement are generally younger, less well-educated and more non-white than those who remain in a traditional family structure. The differences in marital status between groups shows that those who move in with others are about half as likely to be married and twice as likely to be never married, divorced, or separated than those people with whom others move in and those individuals who remain not doubled up. The differences in the living arrangements of individuals prior to becoming doubled up echo the differences in marital status. Those who move in with others are about 40 percent more likely to come from being single or single with kids than

¹³I have estimated regressions in sections 4 and 5 using individual weights in time $t+1$ to account for the attrition and results do not change. Unweighted regressions are reported.

¹⁴Table 4 is weighted using time $t+1$ individual weights. Unweighted means and those using time t weights are similar.

Table 4: Characteristics of Individuals who Become Doubled Up

Time t Characteristics	Move in t+1	Not Doubled Up Time t	
		Someone Moves in t+1	Not Doubled Up t+1
Age	41*	47*	50
Female	50%*	54%*	53%
Education			
Less than HS	15%*	16%*	10%
HS Diploma or GED	31%*	30%*	28%
Some College	37%*	33%	32%
College or More	16%*	21%*	29%
Race			
White	76%*	80%*	85%
Black	16%*	13%*	10%
Other	7%*	7%*	5%
Marital Status t			
Married	37%*	65%*	70%
Widowed	7%*	6%	7%
Divorced	20%*	13%*	11%
Separated	6%*	3%*	2%
Never Married	30%	13%*	10%
Living Arrangements t			
Single	41%*	20%	20%
Married	13%*	25%*	32%
Single with Kids	13%*	9%*	6%
Married with Kids	20%*	38%	37%

* Denotes significant differences at 5% between move in (someone moves in) and those who remain not doubled up.

the other two groups. Those who have someone move in with them look quite similar to those who do not become doubled up in terms of living arrangements prior to someone moving in. In particular, they are equally likely to be single or married with kids.

Table 5 shows the fraction of individuals who become unemployed among those who do not double up, who have someone move in with them, and who move in with others.¹⁵ Overall transitions to unemployment are small but they are five times higher among those who move in with others than among those who do not double up. Using the weekly measure of unemployment, ten percent of individuals who move in with someone else become unemployed during the month compared to only two percent of individuals who remain not doubled up. Becoming unemployed using the weekly measure is about 40 percent higher among those who have someone move in with them than among individuals who do not double up. Using the monthly measure of unemployment, individuals who move in with others are four times more likely to have become unemployed but there are not differences between those who do not double up and those who have someone move in with them. This table does not include employment transitions of the spouse for married couples. Given the large differences in marital status between the groups outlined above, in results not shown, I use employment transitions of the husband for married women and recalculate Table 5. The results do not change qualitatively.

Table 5: Unemployment of Individuals who Become Doubled Up

Not Doubled Up Time t	Become Unemployed t+1
<i>Panel A. Weekly Unemployment Measure</i>	
Not Doubled Up t+1	1.72
Someone Moves in t+1	2.87
Move in t+1	9.96
<i>Panel B. Monthly Unemployment Measure</i>	
Not Doubled Up t+1	0.50
Someone Moves in t+1	0.67
Move in t+1	2.34

¹⁵This table includes only individuals who are employed at time t. It is weighted using time t+1 individual weights. Unweighted means and those using time t weights are similar.

4 Empirical Strategy and Main Results

This study proceeds along similar lines to Kaplan (2009) and Wiemers (2009) relating changes in individual employment status to changes in living arrangements. As outlined in Section 3.1, I am interested in transitions to doubled up living arrangements. I estimate the relationship between the individual characteristics of SIPP sample members and the probability that they become doubled up by joining another household. I separately estimate the relationship between the individual characteristics of SIPP sample members and the probability that they become doubled up because they receive an additional household member. I estimate equations in the form of:

$$\Pr(\text{Double Up})_{it} = \beta_1 \text{Employment Transitions}_{it} + \beta_2 X_{it} + \text{month}_t + \text{year}_t + \text{panel}_t + E_{it} \quad (1)$$

where I regress changes in living arrangements between time t and time $t+1$ on changes in employment status between t and $t+1$, controlling for individual characteristics such as educational attainment, gender, race, and age group as well as month, year, and panel fixed effects. I run this regression separately first using moving in with another household to become doubled up as the measure of doubling up and second using having someone else move in with you to become doubled up as the measure of doubling up.¹⁶

Using only the characteristics of the original SIPP sample individuals is important in accounting for the missing data problem outlined above. However, because I do not include the characteristics of the individuals with whom a SIPP sample person moves in, I must be cautious in interpreting the coefficients. Any correlation between the characteristics of the SIPP individual moving in and the person with whom the SIPP individual moves in will be picked up in the estimated coefficients. Particularly with the time invariant characteristics such as educational attainment and race, I do not want to interpret the coefficients estimated in equation (1) as causal. I include these coefficients to control for time invariant characteristics that are correlated with employment status and doubling up. The employment transitions suffer from the same caveat. However, while the

¹⁶I have estimated (1) using a full set of employment transitions and using just an dummy variable for becoming unemployed. The results are very similar. I report the results using the dummy variable. Standard errors are clustered at the level of the sample unit identifier.

likelihood of experiencing a spell of unemployment is likely correlated among people who choose to live together, the realization of unemployment is likely far less correlated. There are certainly some cases in which a father and son get laid off from the same plant but these cases are unlikely to be the norm. In future work, I plan on using an instrumental variable approach linking Mass Layoff Statistics from the Bureau of Labor Statistics to individual unemployment using industry, age, gender, and race. This approach will allow me to separate the plant closure effects across the family outlined above.

4.1 Main Results–OLS

Table 6 shows the results of estimating (1). Columns 1 and 2 show the results of moving in with others and columns 3 and 4 shows the results of receiving a mover. The first column in each group shows the results using the weekly measure of unemployment and the second column in the group shows the results using the monthly measure of unemployment. The results in columns 1 and 2 show that becoming unemployed triples the probability that you move in with another household. The coefficient is the same regardless of the measure of unemployment used. Column 3 shows that becoming unemployed also increases the probability that someone moves in with you by about fifty percent. However, if I use the more restrictive measure of unemployment the coefficient drops to zero. The demographic controls point in the expected direction; both moving in and receiving a mover is associated with having less education and being non-whites. These coefficients come with the caveat outlined above that they include any correlation in demographic characteristics among movers in and those with whom they move in. Young adults age 25-34 are the most likely to move in with others. However, young adults, and adults age 45 to 54 are the most likely to have someone move in with them. People who are married are less likely to move in with others but others are more likely to move in with married individuals. Women are less likely to move in with others and more likely to have others move in with them.

Table 6: OLS Regression of Becoming Unemployed on Living Arrangement Transitions

Unemployed	Move in t+1		Someone moves in t+1	
	Current Week	Whole Month	Current Week	Whole Month
<i>Mean Dependent Variable</i> (s.e)		.002 (.00005)		0.012 (0.0001)
Become Unemployed	0.00593*** (0.00145)	0.00548*** (0.00181)	0.00568*** (0.00144)	0.000197 (0.00240)
Less than HS	—	—	—	—
HS Diploma or GED	-0.000760*** (0.000244)	-0.000846*** (0.000243)	-0.00503*** (0.000590)	-0.00494*** (0.000586)
Some College	-0.000877*** (0.000247)	-0.000934*** (0.000246)	-0.00611*** (0.000598)	-0.00593*** (0.000596)
College or More	-0.00221*** (0.000240)	-0.00218*** (0.000240)	-0.00972*** (0.000614)	-0.00957*** (0.000611)
White	—	—	—	—
Black	0.000286 (0.000251)	0.000322 (0.000249)	0.00205*** (0.000604)	0.00208*** (0.000601)
Other	0.00117*** (0.000344)	0.000962*** (0.000333)	0.00494*** (0.000831)	0.00492*** (0.000833)
Married	—	—	—	—
Widowed	0.00196*** (0.000230)	0.00189*** (0.000226)	-0.0125** (0.00566)	-0.00967* (0.00545)
Divorced	0.00333*** (0.000238)	0.00326*** (0.000234)	-0.00408 (0.00455)	0.000768 (0.00442)
Separated	0.00581*** (0.000734)	0.00565*** (0.000727)	-0.0185*** (0.00487)	-0.0133*** (0.00477)
Never Married	0.00419*** (0.000306)	0.00416*** (0.000302)	-0.00440 (0.00702)	0.00385 (0.00679)
Age 25-34	—	—	—	—
Age 35-44	-0.00342*** (0.000248)	-0.00330*** (0.000243)	-0.000712 (0.000457)	-0.000657 (0.000454)
Age 45-54	-0.00401*** (0.000247)	-0.00388*** (0.000242)	0.00221*** (0.000515)	0.00230*** (0.000513)
Age 55-65	-0.00425*** (0.000252)	-0.00409*** (0.000247)	-0.000224 (0.000547)	-0.000186 (0.000544)
Age 65-74	-0.00471*** (0.000249)	-0.00454*** (0.000246)	-0.00524*** (0.000547)	-0.00507*** (0.000546)
Age 75-84	-0.00434*** (0.000280)	-0.00416*** (0.000278)	-0.00867*** (0.000578)	-0.00865*** (0.000570)
Age 85+	-0.00172** (0.000740)	-0.00159** (0.000737)	-0.00844*** (0.00106)	-0.00835*** (0.00106)
Female	-0.000216** (0.000100)	-0.000247** (9.92e-05)	0.000571*** (0.000163)	0.000626*** (0.000167)
Constant	0.00598*** (0.000465)	0.00591*** (0.000458)	0.0123*** (0.00101)	0.0118*** (0.00100)
Observations	772,685	756,421	780,166	763,747

Robust standard errors in parentheses. * significant at 5%; ** significant at 1%
Year, month, and panel fixed effects are also included.

4.2 Main Results—Fixed Effects

The models shown in Table 6 include race, education, age, marital status, and gender; observable characteristics about individuals that affect the probability that they will move in with someone (or have someone move in with them) and the probability that they become unemployed. However, there are likely other observable and unobservable characteristics that I have not controlled for. In particular, individuals with closer family networks may have more unstable work trajectories because they know they can rely on family members. If this is true, the coefficient on becoming unemployed is biased upwards in (1). To control for unobserved characteristics that may affect the probability that a person experiences a job loss and the probability that they move in with friends or family, I estimate the following model with individual fixed effects:

$$\Pr(\text{Double Up})_{it} = \beta_1 \text{Unemployed}_{it} + \beta_2 \text{age}_{it} + \text{month}_t + \text{year}_t + \text{panel}_t + \alpha_i + E_{it} \quad (2)$$

where α_i is a fixed effect for individuals. I regress changes in living arrangements between time $t-1$ and time t on employment status, controlling for month, year, panel, and individual fixed effects.¹⁷ Individual fixed effects control for any time invariant characteristic that affects unemployment and doubling up. I run this regression separately first using moving in with another household to become doubled up as the measure of doubling up and second using having someone else move in with you to become doubled up as the measure of doubling up. Table 7 shows the results from estimating (2). The results for moving in with others show that including individual fixed effects decreases the coefficient on being unemployed by about half but it remains statistically and economically significant. Using both unemployment in the current week and unemployment in the current month, being unemployed approximately doubles the probability of moving in with others. Including individual fixed effects in the regressions for having someone move in with you changes the results substantially. Controlling for individual characteristics using fixed effects changes the sign of the coefficients, although the results using the weekly measure of unemployment are not statistically significant. After controlling for individual fixed effects, be-

¹⁷Standard errors are clustered at the level of the sample unit identifier.

ing unemployed *reduces* the probability of others moving into the household by 25 percent. The results from (2) show that the coefficients estimated in (1) were biased upwards, particularly for the outcome of having someone move in with you.

Families who are closer emotionally or geographically may be more likely to experience unemployment and experience doubling up. This correlation may explain why the coefficients on unemployment in the regression of moving in with others and the regression of others moving in with you were reduced in the fixed effects estimation. The correlation in unemployment across families is also likely important. The probability of becoming unemployed is likely correlated across extended families. The fixed effect controls for that part of the correlation that is time invariant. In the results from estimating (1) on the probability that others move in with you, the coefficient on unemployment may have been biased upwards by the unobserved correlation in employment status within the extended family—it may have been capturing the unemployment of the person who moved in.

The fixed effect regressions may still be biased because of any time invariant correlation in the probability of unemployment across an extended family or across groups of friends. To use an example cited earlier, fathers and sons who work in the same plant have a fixed correlation in becoming unemployed but also face similar transitory shocks in employment status. Using fixed effects does not control for these changes in the correlation in unemployment over time. In future drafts I intend to address this problem by using an instrumental variable approach to predict individual unemployment. I have collected data from the Bureau of Labor Statistics on unemployment resulting from plant closures on a monthly basis across geographic Census Divisions and on a monthly basis at national level across individual characteristics such as race, gender, and age. Using predicted probabilities based on age and gender would address some of the concerns about changes in the correlation of unemployment risk across families over time. More generally, these data allow me to use an exogenous measure of unemployment to predict individual unemployment.

Table 7: Fixed Effects Regression of Becoming Unemployed on Living Arrangement Transitions

Unemployed	Move in t+1		Someone moves in t+1	
	Current Week	Whole Month	Current Week	Whole Month
<i>Mean Dependent Variable (s.e)</i>		.002 (.00005)		0.012 (0.0001)
Become Unemployed	0.003*** (0.0008)	0.0025** (0.001)	-0.001 (0.001)	-0.003** (0.0017)
Observations	772,685	756,421	780,166	763,747

Robust standard errors in parentheses. * significant at 5%; ** significant at 1%
Age, as well as year, month, and panel fixed effects are also included.

5 Heterogeneity in Doubling up and Unemployment

The results outlined above include all original sample individuals in the SIPP and look at the relationship between their individual characteristics and their transitions in living arrangements. This section outlines some of the differences in the effect of unemployment on doubling up across marital status, age group, and educational attainment. Differences by marital status are interesting in the SIPP because the data allow me to explore the effect of husband's and wife's unemployment on living arrangements separately. Age differences in doubling up overall, as shown in Figure 2 and in Table 6, are large and exploring the differences in moving in and having someone move in by age allows us to make some inference about who is moving in with whom. Finally, differences in the effect of unemployment on living arrangements by educational attainment allow me to explore whether these shared living arrangements are used differently across SES. All results reported in this section use the weekly measure of unemployment and are estimated using (2) with individual fixed effects. As before standard errors are clustered at the level of the sample unit identifier.

5.1 Marital Status and Unemployment

A nice design feature of the SIPP sample is that many married couples are also both original SIPP sample members. This design feature allows me to look at single people and married people separately and to estimate the effect of own unemployment and spousal unemployment for married

couples on moving in with another family. If couples make decisions together I would expect that an unemployment spell for one person will affect the other partner. I split my sample of all non-doubled up, SIPP individuals into three groups. The first group is single in two consecutive waves. For this group, I estimate (2) as before. The second group is married to another original SIPP sample member in two consecutive waves. For this group, I estimate (2) but include own employment transitions and the employment transitions of the spouse. I show these results for men and women separately. Members of the final group either experience a marital status transition or are married to a non-original SIPP sample individuals. Because the relevant t and $t+1$ characteristics are not available for the couple, I exclude this group from this part of the analysis. Panel A of Table 8 shows the results for those who move in with others using the weekly measure of unemployment.¹⁸

Table 8: Fixed Effects Regression Becoming Unemployed on Doubling Up by Marital Status

<i>Panel A.</i>	Unemployed Current Week Move in t+1		
	Single	Married Women	Married Men
<i>Mean Dependent Variable</i>	0.004		0.0007
<i>(s.e)</i>	(0.0001)		(0.00004)
Become Unemployed	0.00562** (0.0023)	0.0004 (0.0007)	0.0027*** (0.0011)
Spouse Becomes Unemployed		0.0022** (0.001)	0.0005 (0.00238)
Observations	233,434	253,770	254,786
<i>Panel B.</i>	Someone Moves in t+1		
	Single	Married Women	Married Men
<i>Mean Dependent Variable</i>	.0142		0.010
<i>(s.e)</i>	(0.0002)		(0.0001)
Become Unemployed	-0.004* (0.002)	-.00003 (0.002)	-0.0007 (0.002)
Spouse Becomes Unemployed		-0.001 (0.001)	-0.0004 (0.001)
Observations	235,669	260,346	262,773

Robust standard errors in parentheses.* significant at 5%; ** significant at 1%
Age, as well as year, month, and panel fixed effects are also included.

For the single sample and for the married sample, the magnitude of the coefficient on becoming

¹⁸Results using the monthly measure are qualitatively similar though of slightly smaller magnitude.

unemployed is large and positive as it was in the sample overall. When I split the married sample into men and women I see that it is becoming unemployed for husbands that is important in predicting living arrangements. The size of the coefficient on own unemployment for women and spouse unemployment for men is small and not statistically significant but the coefficient on own unemployment for men and spouse unemployment for women are large and significant. In models with the full employment transitions for both spouses, not reported here, men with wives who remain unemployed for two periods or who exit the labor force between periods are more likely to move in with others. I am exploring these specifications more thoroughly.

Panel B of Table 8 shows the results when I use having someone move in with you as the dependent variable. As in the main results, the magnitude of the coefficients are negative. They imply that becoming unemployed decreases the probability that someone moves in with you by about thirty percent for single people. The effects for the married sample are not statistically different from zero.

5.2 Age Groups and Unemployment

Table 6 shows that the probability of moving in with others and the probability of having others move in with you varies substantially by age. Young adults are the most likely to move in with others and young adults, as well as middle aged adults are the most likely to have others move in with them. Although age is not a time invariant characteristic, in the SIPP sample, people only age by between four months and three years because of the length of the SIPP panels. I include age when estimating (2) but the coefficient on age does not represent moving into a different age group, it only shows the effect of aging by four months. I estimate (2) separately for three broad age groups 25-34, 35-64, and 65+. I include people over 65 because they are still at risk of moving in with others but in this age group, I would not expect own unemployment to have explanatory power. Table 9 shows the coefficient on unemployment separately by age group using the weekly measure of unemployment.

Younger adults who become unemployed are much more likely to double up with others. Panel A shows that the probability of moving in with others almost quadruples. However, the

Table 9: Fixed Effects Regression Becoming Unemployed on Doubling Up by Age Group

<i>Panel A.</i>		Unemployed Current Week Move in t+1		
	Age 25-34	Age 35-64	Age 65+	
<i>Mean Dependent Variable</i> (s.e)	0.003 (0.0001)	0.002 (0.00006)	0.001 (0.0008)	
Become Unemployed	0.0082*** (0.0023)	0.001* (0.0008)	-0.0006 (0.0004)	
Observations	131740	479101	161844	
<i>Panel B.</i>		Someone Moves in t+1		
	Age 25-34	Age 35-64	Age 65+	
<i>Mean Dependent Variable</i> (s.e)	0.011 (0.0003)	0.018 (0.0002)	0.006 (0.0003)	
Become Unemployed	-0.001 (0.0023)	-0.001 (0.001)	-0.0008 (0.003)	
Observations	132672	484610	162884	

Robust standard errors in parentheses. * significant at 5%; ** significant at 1%
Age, as well as year, month, and panel fixed effects are also included.

effect is significant both statistically and economically even for those in middle ages; the probability of moving in with others increases by 50 percent when an individual becomes unemployed. The effect for older adults is negative, small, and not statistically significant. Panel B shows that unemployment decreases the probability that others will move in with you across the age range however the coefficients are never statistically significant. Again, the coefficient on unemployment for those over 65 is much smaller and not statistically significant. In results not shown, the only age group for which unemployment is statistically significant is the age group 45-54 in which unemployment decreases the probability that others move in with you. This is the age group that likely contains some of the parents of the 25-34 year olds who are likely to move in with others when they become unemployed. The results separated by age suggest moving in with parents who are still employed is one way in which young adults weather a spell of unemployment. The results for the oldest age groups provides something of a placebo test—I would worry that individual unemployment was only picking up some other time varying factor if unemployment of the elderly were related to becoming doubled up. The results also show that moving in with others in response to unemployment is not limited to the young.

5.3 Educational Attainment and Unemployment

Figure 4 and Table 6 show that living with others differs substantially by educational attainment. The way in which doubling up differs by educational attainment, which is one measure of SES, is informative about how this mechanism for weathering unemployment is distributed across SES. Panel A of Table 10 shows the coefficient of unemployment on moving in and Panel B shows the coefficients of unemployment on having someone move in separately by educational attainment using the weekly measure of unemployment.

Table 10: Fixed Effects Regression Becoming Unemployed on Doubling Up by Education

<i>Panel A.</i>		Unemployed Current Week Moves in t+1			
	Less than HS	HS Grad	Some College	College Grad	
<i>Mean Dependent Variable (s.e)</i>	0.003 (0.0002)	0.002 (0.0001)	0.0025 (0.0001)	0.0011 (0.00007)	
Become Unemployed	0.005** (0.0025)	0.001 (0.001)	0.001 (0.001)	0.006*** (0.002)	
Observations	82053	221917	249692	219023	
<i>Panel B.</i>		Someone Moves in t+1			
	Less than HS	HS Grad	Some College	College Grad	
<i>Mean Dependent Variable (s.e)</i>	0.016 (0.0004)	0.013 (0.0002)	0.012 (0.0002)	0.008 (0.0002)	
Become Unemployed	0.003 (0.003)	-0.002 (0.002)	-0.003 (0.002)	0.0001 (0.002)	
Observations	83156	224422	252156	220632	

Robust standard errors in parentheses. * significant at 5%; ** significant at 1%
Age, as well as year, month, and panel fixed effects are also included.

The coefficient of unemployment on moving in with others is only large and statistically significant for those with the lowest and those with the highest level of education. The coefficient of unemployment on having someone move in, though never statistically significant, is positive for the least well educated, negative in the middle of the distribution of education, and positive, though small, for those with the most education. These results suggest two patterns of doubling up in response to unemployment. Lower SES individuals who become unemployed double up with others. This is likely a form of resource sharing—to the extent to which they double up with other low SES individuals, it may benefit both parties. The results also point to the "boomerang

kid” phenomenon that has been prevalent in the popular press of late in which college educated young adults move in with their parents. These results suggest that unemployment may be one reason why these young adults choose to move home.¹⁹

6 Conclusions and Directions for Future Work

Stories in 60 Minutes, the New York Times, and Business Week have profiled families moving in together, children returning home to their parents, and individuals taking on unrelated tenants to cope with the weak labor market. A recent Pew Research Center survey found that 13 percent of parents with grown children say that one of their adult sons or daughters has moved back home in the past year and about half of those living with their parents report doing so because of the recession (Pew Research Center, 2009). This paper explores the relationship between doubling up and unemployment in the SIPP. I show a strong relationship in the cross section between having an unemployed person in the household and living in a double up living arrangement. Those with an unemployed household member are fifty percent more likely to live in a double up household. I also exploit the SIPP panel and examine transitions in living arrangements. I show that transitions into unemployment make moving into doubled up living arrangements about twice as likely but decrease the probability of having someone move in with you by 25 percent. I show substantial heterogeneity in the effects. For married couples, it is the employment status of the husband that is most relevant in predicting moving in with others. I also show that while moving in with others in response to unemployment is most common among those age 25-34, it is also important during prime earning years between age 35 and 65. The results that explore differences in the relationship between doubling up and SES are particularly interesting. They show that moving into shared living arrangements during unemployment is most common for the lowest and the highest SES individuals—both groups seem to use shared living arrangements to weather unemployment spells. This paper provides evidence that co-residence with family members and with other unrelated individuals may be an important mechanism that workers use to weather a

¹⁹Note that these results do not speak to the delayed transition to adulthood because young adults must separate from their parents first to be included in the above results.

spell of unemployment.

There are several directions for improving and extending the current work. I have shown that unemployment increases the probability of moving into a doubled up living arrangement. However, a concern in the current analysis is that the unemployment spells that I measure using the SIPP are not unexpected. Using more arguably exogenous changes in employment status would help to address these concerns. In the current version of the paper I use the first spell of unemployment observed in the SIPP panel. However, some of these individuals may have experienced multiple spells of unemployment prior to their inclusion in a SIPP panel. A better measure of unemployment would be to use the first unemployment spell that a person experiences in his or her lifetime, and to use only spells that are due to plant closures or layoffs (Ruhm, 1991; Stevens, 1997; Stephens, 2001, 2002; Charles and Stephens, 2004; Lindo, 2010). The SIPP has some information on employment history and allows for the construction of a measure of unemployment due to slack work conditions which I am planning to use in future drafts. As I have noted in the text, I also intend to use an instrumental variables approach to predict individual unemployment. This approach would solve the problem outlined above but would also allow me to separate some of the correlation in unemployment across families that may vary over time. I have collected data from the Bureau of Labor Statistics on unemployment resulting from plant closures on a monthly basis across geographic Census Divisions and on a monthly basis at national level across individual characteristics such as race, gender, and age. I have matched these data to the SIPP by region and month. I propose to use these Mass Layoffs Data to predict individual unemployment and to use this measure as a exogenous measure of unemployment in estimating equation (2).

In addition, I have not explored the timing of unemployment spells and transitions in shared living arrangements. In the current specification, I measure the effect of unemployment spells during a four month time period on changes in living arrangements over the same period. However, the question of timing is likely an important one. The effect of changes in employment status on living arrangements may be slow to develop—individuals may fully exhaust their own resources before choosing to share housing with others—and the current specification does not address this issue of timing. In future drafts I plan to use an event history analysis which will allow me to

examine the effect of unemployment on living arrangements at various lags (Jacobson, LaLonde, and Sullivan; 1993). In event history analysis, different coefficients are estimated for leads and lags of employment spells. This analysis will allow me to chart the evolution of living arrangements over a spell of unemployment.

Although this paper has shown that moving in with others is important for those who become unemployed, I have no evidence that these shared arrangements allow individuals to maintain well-being. The prevalence of doubling up in response to unemployment among both the lowest and the highest SES groups raises a question of whether the effects on well-being differ by SES. I hope to use the income and program participation data in the SIPP to examine whether individuals who move into shared living arrangements maintain their level of income (either measured in terms of income per adult equivalent or income relative to the poverty line). As an additional measure of well-being, I will examine whether families who double up differ in their use of programs designed to alleviate poverty, in particular the SNAP program, since eligibility for this program is affected by household composition. Gaining a more full understanding of how families cope with unemployment will inform our ideas about how to support these families to mitigate their loss of well-being in tight labor markets.

References

- Altonji, Joseph G., Fumio Hayashi, and Laurence J. Kotlikoff. 1992. "Is the Extended Family Altruistically Linked? Direct Tests Using Micro Data," *American Economic Review*, 82: 1177-1198.
- Altonji, Joseph G., Fumio Hayashi, and Laurence J. Kotlikoff. 1996. "The Effects of Earnings and Wealth on Time and Money Transfers between Parents and Children," In *Sharing the Wealth: Demographic Change and Economic Transfers Between Generations*, Andrew Masson and Goerges Tapinos eds., Oxford: Oxford University Press: 306-357.
- Altonji, Joseph G., Fumio Hayashi, and Laurence J. Kotlikoff. 1997. "Parental Altruism and Intergenerational Transfers: Theory and Evidence," *Journal of Political Economy*, 105(6): 1121-1166.
- Baughman, Reagan, Stacy Dickert-Conlin, and Scott Houser. 2002. "How Well Can We Track Cohabitation Using the SIPP? A Consideration of Direct and Inferred Measures," *Demography*, 39(3): 455-465.
- Blank, Rebecca and Card, David. 1991. "Recent Trends in Insured and Uninsured Unemployment: Is There an Explanation?" *Quarterly Journal of Economics*, 106(4): 1157-1189.
- Browning, Martin and Crossley, Thomas. 2001. "Unemployment insurance benefit levels and consumption changes," *Journal of Public Economics*, 80: 1-23.
- Browning, Martin, Pierre-Andre Chiappori and Arthur Lewbel. 2007. "Estimating Consumption Economics of Scale, Adult Equivalence Scales and Household Bargaining Power," Unpublished manuscript.
- Bumpass, Larry and James A. Sweet. 1989. "National Estimates of Cohabitation," *Demography*, 26: 615-625.
- Charles, Kirwin and Melvin Stephens. 2004. "Job Displacement, Disability, and Divorce," *Journal of Labor Economics*, 22(2): 489-522.
- Chiuri, Maria Concetta and Daniela Del Boca. 2010. "Home-Leaving Decisions of Daughters and Sons," IZA Working Paper.
- Costa, Dora. 1999. "A House of Her Own: Old Age Assistance and the Living Arrangements of Older Nonmarried Women," *Journal of Public Economics*, 72(1): 39-59.
- Cullen, Julie Berry and Gruber, Jonathon. 2000. "Does Unemployment Insurance Crowd out Spousal Labor Supply," *Journal of Labor Economics*, 18(3): 546-572.
- DeLeire, Thomas and Ariel Kalil. 2002. "Good Things Come in Threes: Single-Parent Multigenerational Family Structure and Adolescent Adjustment," *Demography*, 39(2): 393-412.
- Dynarski, Susan and Gruber, Jonathon. 1997. "Can Families Smooth Variable Earnings?" *Brookings Papers on Economic Activity*, 1997(1): 229-303.
- Ermisch, John. 1999. "Prices, Parents and Young People's Household Formation," *Journal of Urban Economics*, 45: 47-71.
- Gruber, Jonathon. 1997. "The Consumption Smoothing Benefits of Unemployment Insurance," *American Economic Review*, 87(1): 192-205.
- Haider, Steven J. and Kathleen McGarry. 2006. "Recent Trends in Income Sharing among the Poor." In *Working and Poor: How Economic and Policy Changes Are Affecting Low-Wage Workers*, ed. Rebecca Blank, Sheldon Danziger, and Robert Schoeni, 205-232. New York: Russell Sage Press.
- Jacobson, Louis S., Robert J. LaLonde, and Daniel G. Sullivan. 1993. "Earnings Losses of Displaced Workers," *The American Economic Review*, 83(4): 685-709.

- Kaplan, Greg. 2008. "Moving Back Home: Insurance Against Labor Market Risk," Unpublished manuscript, New York University.
- Kaplan, Greg. 2009. "Boomerang Kids: Labor Market Dynamics and Moving Back Home," Working Paper 675, Federal Reserve Bank of Minneapolis.
- Lindo, Jason. Forthcoming 2010. "Are Children Really Inferior Goods? Evidence from Displacement-driven Income Shocks," *Journal of Human Resources*.
- London, Rebecca and Robert Fairlie. 2006. "Economic Conditions and Children's Living Arrangements," In *Working and Poor: How Economic and Policy Changes Are Affecting Low-Wage Workers*, ed. Rebecca Blank, Sheldon Danziger, and Robert Schoeni, 233-262. New York: Russell Sage Press.
- Manacorda, Marco, and Enrico Moretti. 2006. "Why do most Italian Youths live with their Parents? Intergenerational Transfers and Household Structure," *Journal of the European Economic Association*, 4(4): 800-829.
- Matsudaira, Jordan. 2010. "Economic Conditions and the Cyclical and Secular Changes in Parental Coresidence Among Young Adults: 1960 to 2007," Working Paper, Cornell University Department of Public Policy.
- McElroy, Marjorie. 1985. "The Joint Determination of Household Membership and Market Work: The Case of Young Men," *Journal of Labor Economics*, 3(3): 293-316.
- McGarry, Kathleen and Robert Schoeni. 2000. "Social Security, Economic Growth, and the Rise of Elderly Widows' Independence in the Twentieth Century," *Demography*, 37(2): 221-236.
- McLanahan, Sara and Gary Sandefur. 1994. *Growing Up with a Single Parent: What Hurts, What Helps*. Cambridge: Harvard University Press.
- Pew Research Center. 2009. *Recession Brings Many Young People Back to the Nest: Home for the Holidays and Every Other Day*. Washington, DC. <http://pewsocialtrends.org/assets/pdf/home-for-the-holidays.pdf>
- Pew Research Center. 2010. *The Return of the Multi-Generational Family Household*. Washington, DC. <http://pewsocialtrends.org/assets/pdf/752-multi-generational-families.pdf>
- Ruhm, Christopher. 1991. "Are Workers Permanently Scarred by Job Displacements?" *The American Economic Review*, 81(1): 319-324.
- Schwartz, Saul, Sheldon Danziger and Eugene Smolensky, 1984. *The Choice of Living Arrangements among the Aged*, in *Retirement and Economic Behavior*, Henry Aaron and Gary Burtless, eds., Washington: Brookings Institution Press.
- Seltzer, Judith. 1994. "Consequences of Marital Dissolution for Children," *Annual Review of Sociology*, 20: 235-266.
- Stephens Jr., Melvin. 2001. "The Long-Run Consumption Effects of Earnings Shocks," *The Review of Economics and Statistics*, 83(1): 28-36.
- Stephens Jr., Melvin. 2002. "Worker Displacement and the Added Worker Effect," *Journal of Labor Economics*, 20(3): 504-537.
- Stevens, Ann. 1997. "Persistent Effects of Job Displacement: The Importance of Multiple Job Losses," *Journal of Labor Economics*, 15(1): 165-188.
- Wiemers, Emily. 2009. "Moving Up and Moving Out: The Celtic Tiger and Home Leaving among Irish Young Adults," Doctoral Dissertation, UCLA.
- Wightman, Patrick. 2009. "Parental Job Loss and Children's Educational Attainment," Doctoral Dissertation, University of Chicago.