Analysis of Trends in Household Composition Using American Housing Survey Data



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American Housing Survey

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Foreword

I am pleased to release this report commissioned by the U.S. Department of Housing and Urban Development, *Analysis of Trends in Household Composition Using American Housing Survey Data*. This report uses the longitudinal features of the American Housing Survey (AHS) to examine trends in household formation and the phenomenon of "doubled-up" households in the aftermath of the housing bubble and recession of 2007 through 2009. The stresses of that period, arising as they did from imbalances in the housing sector, reduced the rate of household formation among young individuals and families who would normally have moved out of their parents' and shared units to live on their own. Moreover, the double stresses of the mortgage crisis and job loss induced many who had been living on their own to move in with relatives and other people to economize on housing expense.

The AHS is uniquely qualified to examine this phenomenon, because it is a nationally representative longitudinal survey that returns to the same housing units every 2 years. Thus, analysts using AHS data not only can produce aggregate estimates of household formation, they can examine changes in the composition of individual households. This study shows a steady decline in new household formations from 2003 through 2009. The primary contributors to new doubled-up households were adult children moving in with their parents. A notable increase occurred in the number of households consisting of more than one family living in the same housing unit, however.

The Department is interested in doubled-up households because they represent a disguised form of stress in the nation's housing markets. Although doubled-up households may not exhibit the high housing cost burdens that are normally associated with "worst case housing needs," and although their members are not homeless, their housing choices suggest that they are at best precariously housed and in danger of falling into the more easily observed categories of housing distress. This study provides information to policymakers and scholars to help them understand these undercurrents before they become manifest.

Kurt G. Usowski
Deputy Assistant Secretary
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Executive Summary

This report uses data from the American Housing Survey (AHS) to analyze changes in household composition from the 2003 survey through the 2009 survey (hereafter, from 2003 to 2009), particularly those changes that reflect an increase in doubled-up households. The term "other household member" is applied to people who are not the householder nor the householder's spouse, partner, or minor children. Other household members include adult children, parents, grandchildren, siblings, and nonrelatives. Households containing other household members are labeled "doubled-up households." Census Bureau studies suggesting a link between the recession and the increase in doubled-up households motivated this research. The data reported here provide several indications that the recession and the preceding financial crisis had an effect on doubled-up households.

Trends in Household Composition From AHS National Summary Data

Several findings stand out in the AHS national summary data (see Tables 1A through 1C).

- The growth rate of households declined during the study period; 3.0 million households were added from 2003 to 2005, 1.8 million were added from 2005 to 2007, and only 1.1 million were added from 2007 to 2009.
- Households with single, adult offspring ages 18 through 29 years increased substantially from 2003 to 2009, registering a 12.9-percent change overall and a 24.6-percent change among renter households.
- The number of households containing one or more unrelated subfamilies more than tripled during the period, growing by more than 400,000 households.

Table 14 uses data from the 2011 AHS to update these trends. The latest AHS data do *not* provide reliable comparisons with previous AHS data because the Census Bureau changed the benchmark used to estimate counts in 2011 (from the 2000 census to the 2010 census). With this caveat in mind, the 2011 AHS shows that (1) 3.0 million new households were added from 2009 to 2011, and (2) the count of households with unrelated subfamilies declined by 80,000 from 2009 to 2011.

The AHS national summary data indicate that the increase in doubled-up households has *not* caused more crowding in housing units. During the 6-year period from 2003 to 2009, only minimal changes occurred in measures of crowding, and, in general, these changes show less overcrowding.

Comparison of AHS and Current Population Survey Analyses of Doubled-Up Households

AHS data indicated trends similar to those reported in Census Bureau studies using data from the Current Population Survey (CPS). Even without making adjustments for certain definitional and methodological differences, the AHS counts of doubled-up households are close to those in the Census reports. If children 18 years old and older are considered to be adults living at home, the AHS counts 26.0 million doubled-up households in 2007 and 26.5 million in 2009, compared

with Census Bureau counts of 26.1 million in 2008 and 28.4 million in 2010. If children 21 years old and older are considered to be adults living at home, the AHS counts 20.5 million in 2007 and 21.0 million in 2009, compared with 19.7 million in 2007 and 21.8 million in 2011, as reported in the Census Bureau's income and poverty report for 2010 (see Table 3). Further analysis of the characteristics of doubled-up households shows that the AHS data describe these households as having the same demographic characteristics as reported in a Census Bureau study based on CPS data. The similarity in counts and in the descriptions of doubled-up households demonstrates that the AHS can be safely used to study changes in household composition. A planned supplement on doubled-up households will enhance the information available in the AHS.

Characteristics of Doubled-Up Households and Their Housing Units

The richness of information in the AHS microdata provides additional insights into the characteristics of doubled-up households (see Tables 4 through 6).

- Households with older householders are more likely to be doubled up.
- Households with householders who are Black, non-Hispanic; other race, non-Hispanic; or Hispanic are more likely than households with White householders to be doubled up.
- Households with foreign-born householders are more likely to be doubled up than those with householders born in the United States or associated areas, such as Puerto Rico.
- The percentage of doubled-up households that live in single-family homes is substantially higher than the percentage of nondoubled households that live in single-family homes.
- Doubled-up households are more concentrated in central cities and in the urban parts of suburban areas than their nondoubled counterparts. The quality of housing units, as measured by the AHS adequacy standard, does not differ between doubled-up and nondoubled households.

Adult Children As the Primary Contributors to Doubled-Up Households

Children ages 21 and older are the most common type of other household member; approximately one-half of the doubled-up households in all four surveys (2003, 2005, 2007, and 2009) included a child ages 21 and older. The percentage of doubled-up households with a child or children ages 21 and older increased by slightly more than 3 percentage points during this period, which includes the financial crisis and subsequent recession (see Table 7).

- In all four surveys, approximately 50 percent of all adult children in doubled-up households were ages 21 through 25. The percentages of those ages 26 through 30 and those ages 50 and older were highest in 2009. The substantial increase in doubling up among those ages 26 through 30 in 2009 is consistent with young adults having difficulties finding employment. The percentage of adult children ages 50 and older in doubled-up households increased steadily across the four surveys and may reflect both a worsening of economic conditions and an increase in the number of adult children moving in with aged parents to take care of them (see Table 8).

- Worsening economic conditions are clearly evident in the limited information in the AHS on the work experience of adult children living with a parent or parents. The percentage of adult children working in the past week fell from about 60 percent in the first three surveys to approximately 57 percent in the 2009 survey. The percentages of wage, salary, and self-employment income steadily declined across the surveys.

More-Than-One-Family Households As a Secondary Contributor to Doubled-Up Households

The most dramatic demographic change in household composition from 2003 to 2009 was the more than tripling of the number of households containing unrelated subfamilies.

- The number of households with related subfamilies grew from 2,656,000 to 2,846,000, and the number of households with unrelated subfamilies grew from 199,000 to 622,000. The increase in the number of unrelated subfamilies and the shift in the composition of this group lend credence to the proposition that economic hard times have led to doubled-up households; in this case, doubled-up households among unrelated households.
- The key demographic changes among households with unrelated subfamilies were an increased percentage of non-Hispanic subfamilies; a higher percentage of younger, unrelated subfamilies, particularly among those ages 26 through 35; an increased percentage of American citizens among the reference persons (that is, that person within each family unit chosen by the Census Bureau to distinguish households on the basis of race, age, employment history, and so on) in unrelated subfamilies; and a better educational profile for those reference persons.

Changes in Doubled-Up Status at the Household Level, 2005 to 2009

By focusing on households that occupied the same housing unit throughout the 2005-to-2009 period, we were able to observe how households became doubled up, stayed doubled up, or became undoubled (see Tables 8 and 9). A shift in the character of doubled-up units occurred during the period that included the financial crisis and recession.

- Children remaining at home dominated the evolution of doubled-up households during the recession period. Of the households that were doubled up in 2005 and became undoubled by 2009, 58.6 percent had a child or children ages 21 and older move out, whereas among the households that became doubled up between 2005 and 2009, 79.1 percent contained a child age 21 and older in 2009.
- Units that entered the period doubled up with adult children or grandchildren were more likely than all other doubled-up households to stay doubled up.

Concluding Observations

The Census Bureau studies suggesting a link between the recession and the increase in doubled-up households were an important motivation for this research. The data cited in this report provide several indications that the recession and the preceding financial crisis had an effect on doubled-up households. The most notable indications were the following:

- The steady decline in new household formations from 2003 to 2009.
- The increased number of adult children living at home.
- The fact that, by 2009, adult children living at home were more likely to be recently out of school and were less likely to be employed.
- The increased number of unrelated families living in one household.
- The characteristics of these unrelated families changing in such a way as to suggest that economic hardship became a more important cause of unrelated families living together than immigration.

The report also contains suggestions for further research on changes in household composition.

1. Overview

1.1. Background

In October 2009, Econometrica, Inc., entered into a contract with the U.S. Department of Housing and Urban Development (HUD) to support the American Housing Survey (AHS). Task 13 of that contract required the Econometrica team to analyze the information collected in the national AHS on changes in household composition during the most recent recession. HUD asked Econometrica to track the proportion of new household formations as the economy has moved through the current business cycle and to track the incidence of subfamilies and crowding among recent movers in different survey years.

In September 2011, the Census Bureau published its annual P-60 report on income and poverty in the United States (DeNavas, Proctor, and Smith, 2011).[1] This report called attention to the "doubled-up household" effect that the recent recession has had on household composition.

> Doubled-up households are defined as households that include at least one "additional" adult: a person 18 or older who is not enrolled in school and is not the householder, spouse or cohabitating partner of the householder. In spring 2007, prior to the recession, doubled-up households totaled 19.7 million. By spring 2011, the number of doubled-up households had increased by 2.0 million to 21.8 million and the percent rose by 1.3 percentage points from 17.0 percent to 18.3 percent (Census Bureau, 2011c).

The analysis in the published report followed a more detailed Census Bureau study of the changes in household composition from 2008 to 2010 by Laryssa Mykyta and Suzanne Macartney (2011).

The Census Bureau report and previous paper focused mainly on how the recession slowed household formation by discouraging young adults from moving out and forming their own households and by making it necessary for single adults and families to move back to live with parents or to join together to form more-than-one-family households. Mykyta and Macartney pointed out that doubled-up households can include parents moving in with children. An extensive article in the weekend edition of the *Wall Street Journal* (Browning, 2012) highlighted this latter phenomenon.

This report, prepared under Econometrica's 2009 contract with HUD, builds on the Census Bureau's previous work, using information from the AHS.

1.2. Definitions

This report uses the following terms, for which definitions are important.

- *Household.* A household consists of all people who occupy a particular housing unit as their usual residence. Each occupied housing unit contains one and only one household.

[1] See page 21. The P60 report for 2011 did not discuss doubling up.

[2] *American Housing Survey for the United States: 2009* contains the following statement on page A-21 following the

By definition, the number of households is equal to the number of occupied housing units.

- *Householder.* Householder is a term used only in survey work. A household may contain several people with different demographic or economic characteristics. In analyzing survey data, it is useful to have one person whose characteristics can be referenced to distinguish households on the basis of race, age, employment history, and so on. In general, the choice of householder is arbitrary. The householder characteristics are used as an imperfect proxy for the characteristics of the other members of the household. In the AHS, the householder is the first household member listed on the questionnaire who is an owner or renter of the sample unit and is 18 years old or older.
- *Other household member.* "Other household member" includes any person who is not the householder, the householder's spouse or partner, or a child of the householder younger than age 21. Parents, grandchildren, and unrelated children are included in "other household members." Sometimes the report includes children ages 18 and older (instead of ages 21 and older) in "other household members." When this alternative definition is used, the report clearly indicates the difference.
- *Doubled-up household.* A household with an "other household member" is a doubled-up household. In most contexts, a child age 21 or older will count as an "other household member," but sometimes the analysis will count a child age 18 or older as an "other household member." When this alternative definition is used, the report clearly indicates the difference.
- *Family.* In this report, a family consists of: (1) a married couple with or without children; (2) an unmarried, widowed, divorced, or separated woman with a child or children; or (3) an unmarried, widowed, divorced, or separated man with a child or children.
- *Primary family.* If the householder is a member of the family, then the family is the primary family.
- *Subfamily.* If the householder is not a member of the family, then the family is a subfamily.
- *Reference person.* Reference person is another term used only in survey work. A family may contain several people with different demographic or economic characteristics. In analyzing survey data, it is useful to have one person whose characteristics can be referenced to distinguish families on the basis of race, age, employment history, and so on. The reference person's characteristics are used as an imperfect proxy for the characteristics of the other members of the family or subfamily. For primary families, the reference person is always the householder. For subfamilies, the choice of reference person is arbitrary. Usually, the reference person of a subfamily is the first person from the subfamily age 21 or older whose information is recorded.

1.3. Organization of the Report

This report uses the AHS to investigate recent changes in household composition. In addition to this Overview section, the report consists of eight other sections.

- **Section 2—Trends in Household Composition From AHS National Summary Data.** Consistent with HUD's requirement of Econometrica to analyze household composition changes, Section 2 presents household composition information from the national summary tables. Summary data are presented from four AHSs: 2003, 2005, 2007, and 2009. The AHS data track household composition from 2005 (before the recession and the financial crisis) to 2007 (when the financial crisis hit and the very beginning of the recession) and to 2009 (when the recession came to a conclusion and the slow recovery began). After reading this section, the reader should be left with an understanding of how household composition changed from the 2003 survey through the 2009 survey (hereafter, from 2003 to 2009). Examination of changes in the number of persons per household and the number of persons per room during this period indicates that the increase in doubled-up households did not result in more overcrowding.

- **Section 3—Comparison of AHS and CPS Analysis of Doubled-Up Households.** Section 3 evaluates the extent to which the AHS replicates trends reported by the Current Population Survey (CPS). To accomplish this goal, AHS microdata are used to replicate, to the extent possible, the trends reported by Mykyta and Macartney (2011) and in the Census Bureau's income and poverty report for 2010. The third section also uses the microdata to replicate information on the characteristics of doubled-up households from Mykyta and Macartney's analysis. On the basis of Table 3, the AHS reports similar trends in household composition to those based on CPS data.

- **Section 4—Characteristics of Doubled-Up Households and Their Housing Units.** Section 4 presents a deeper analysis of the characteristics of doubled-up households and their housing units. Tabular and multivariate analyses indicate that doubled-up households differ from other households in housing and unit. For example, households with foreign-born householders and those in single-family, detached units are more likely to be doubled up.

- **Section 5—Adult Children As the Primary Contributors to Doubled-Up Households.** Section 5 finds that adult children living at home represent most other household members in doubled-up households. Section 5 examines the characteristics of these adult children and finds that, although the characteristics changed only slightly from 2003 to 2009, the changes are consistent with the effect of the recession on the economic opportunities of young adults.

- **Section 6—More-Than-One-Family Households As a Secondary Contributor to Doubled-Up Households.** Section 6 examines the characteristics of a second important type of doubled-up households, those containing more than one family. The section describes these households in terms of the characteristics of the householders in the primary family and those of the reference person or people in the other family or families. The most important changes in more-than-one-family households were a tripling of the number of households with unrelated subfamilies and demographic shifts among the unrelated subfamilies consistent with economic hardship.

- **Section 7– Changes in Doubled-Up Status at the Household Level, 2005 to 2009.** Section 7 analyzes the dynamics of household composition during the period of the

recession by studying an important subset of the AHS microdata, namely, those housing units with the same households in 2005 and 2009. Section 7 compares the composition of three groups of households: those that were doubled up in both 2005 and 2009, those that doubled up between 2005 and 2009, and those that undoubled between 2005 and 2009. Adult children living at home were the predominant cause of the differences among these groups.

- **Section 8—Doubled-Up Households As Reported by the 2011 AHS.** Section 8 looks at the national summary tables from the 2011 AHS, which was released after the analysis of 2003-to-2009 data in this report was complete, to see if any notable changes have occurred in household composition. Table 14 reports these numbers, with the important caveat that the counts are not comparable because the Census Bureau changed the benchmark used to estimate counts.

- **Section 9—Concluding Observations.** Because this analysis was stimulated by the attention given to changes in household composition during the recession, Section 9 pulls together results reported in the previous sections that bear on the alleged effect of the recession on household composition. Section 9 also presents ideas for future research.

2. Trends in Household Composition From AHS National Summary Data

Tables 1A through 1C contain information on household composition drawn from Table 2-9 in the AHS national summary tables for 2003, 2005, 2007, and 2009. These data are used to study trends in household composition during this period.

Table 1A. AHS National Summary Data on Household Composition, All Households: 2003 to 2009

	2003	2005	2007	2009
Households (thousands)	105,842	108,871	110,692	111,806
Single-person households	28,171	29,181	29,996	30,108
Two-or-more-person households	77,672	79,691	80,695	81,698
As a percent of all households				
Single-person households	26.6	26.8	27.1	26.9
Two-or-more-person households	73.4	73.2	72.9	73.1
Persons other than spouse or children (thousands)				
With other relatives	22,012	22,724	23,133	23,656
Single adult offspring 18 to 29	12,050	12,397	12,889	13,511
Single adult offspring 30 years of age or over	3,649	3,629	3,778	3,862
Households with three generations	3,049	3,335	3,202	3,301
Households with one subfamily	2,428	2,541	2,480	2,622
Subfamily householder age under 30	1,225	1,252	1,218	1,318
30 to 64	1,060	1,156	1,180	1,219
65 and over	143	133	82	85
Households with two or more subfamilies	113	100	138	111
Households with other types of relatives	7,244	7,474	7,174	7,165
With nonrelatives	9,564	9,979	10,265	10,717
Co-owners or co-renters	3,153	3,410	2,683	3,428
Lodgers	1,316	1,445	1,262	1,207
Unrelated children, under 18 years old	1,105	1,058	1,100	1,133
Other nonrelatives	4,808	4,914	6,179	6,049
One or more subfamilies	196	274	494	621
Two-person households, none related to each other	4,956	5,204	5,396	5,403
Three-to-eight-person households, none related to each other	730	711	825	862

AHS = American Housing Survey.

Table 1B. AHS National Summary Data on Household Composition, All Owner Households: 2003 to 2009

	2003	2005	2007	2009
Households (thousands)	72,238	74,931	75,647	76,428
Single-person households	15,455	16,205	16,686	16,777
Two-or-more-person households	56,784	58,725	58,961	59,651
As a percent of all households				
Single-person households	21.4	21.6	22.1	22.0
Two-or-more-person households	78.6	78.4	77.9	78.0
Persons other than spouse or children (thousands)				
With other relatives	16,501	17,172	17,170	17,454
Single adult offspring 18 to 29	9,619	9,911	10,179	10,481
Single adult offspring 30 years of age or over	2,957	2,960	3,046	3,148
Households with three generations	2,227	2,441	2,300	2,342
Households with one subfamily	1,699	1,813	1,697	1,837
Subfamily householder age under 30	762	843	778	858
30 to 64	804	846	847	906
65 and over	133	124	73	73
Households with two or more subfamilies	81	50	86	74
Households with other types of relatives	4,713	4,919	4,532	4,543
With nonrelatives	4,383	4,780	4,509	4,816
Co-owners or co-renters	898	1,024	806	1,000
Lodgers	545	725	488	533
Unrelated children, under 18 years old	683	663	627	647
Other nonrelatives	2,649	2,793	3,080	3,160
One or more subfamilies	111	146	265	352
Two-person households, none related to each other	2,189	2,414	2,341	2,440
Three-to-eight-person households, none related to each other	163	183	192	190

AHS = American Housing Survey.

Table 1C. AHS National Summary Data on Household Composition, All Renter Households: 2003 to 2009

	2003	2005	2007	2009
Households (thousands)	33,604	33,940	35,045	35,378
Single-person households	12,716	12,976	13,310	13,331
Two-or-more-person households	20,888	20,966	21,735	22,047
As a percent of all households				
Single-person households	37.8	38.2	38.0	37.7
Two-or-more-person households	62.2	61.8	62.0	62.3
Persons other than spouse or children (thousands)				
With other relatives	5,510	5,553	5,963	6,202
Single adult offspring 18 to 29	2,432	2,486	2,710	3,030
Single adult offspring 30 years of age or over	692	669	732	714
Households with three generations	822	894	902	958
Households with one subfamily	729	728	783	784
Subfamily householder age under 30	463	409	441	459
30 to 64	256	309	333	314
65 and over	10	10	9	11
Households with two or more subfamilies	33	50	51	37
Households with other types of relatives	2,531	2,555	2,643	2,622
With nonrelatives	5,180	5,199	5,756	5,901
Co-owners or co-renters	2,255	2,386	1,877	2,427
Lodgers	771	720	774	674
Unrelated children, under 18 years old	423	395	473	486
Other nonrelatives	2,159	2,121	3,100	2,889
One or more subfamilies	86	128	229	269
Two-person households, none related to each other	2,767	2,790	3,055	2,963
Three-to-eight-person households, none related to each other	567	528	633	672

AHS = American Housing Survey.

These four surveys cover the period leading up to and through the recent severe economic recession. The official dating by the National Bureau of Economic Research places the peak of the preceding expansion at December 2007 and the trough of the recession at June 2009. This recession seemed to arrive early and stay late in the housing market. Housing starts fell significantly in 2006 and continued to plummet, with only slight upticks in 2010 and 2011. Rental vacancy rates reached 12.3 percent in 2009, the highest rate in the past 40 years. Home prices, as measured by the Federal Housing Finance Agency's repeat-sales house price index (purchases only), rose sharply from 2003 to 2007 and then declined nearly monotonically through 2011 to the level of the first quarter of 2004.

The prolonged turmoil in the housing market reflects the origin of the recession in the financial crisis of 2007 to 2009, which, in turn, was triggered by the collapse of the housing finance market. Troubles with subprime and nontraditional mortgage products began as early as 2006,

grew in volume, and spread to other financial markets. The first of several tidal waves broke on July 31, 2007, when two of Bear Stearns' hedge funds filed for bankruptcy. The recession followed shortly afterwards.

Demographic changes can be dramatic, such as the postwar baby boom, but even dramatic changes can unfold slowly, so that observing demographic shifts can be akin to watching the grass grow. Tables 1A through 1C show this quality.

Despite some substantial increases in the number of households with people other than spouses or children younger than age 18, the proportions of these households relative to all two-or-more-person households changed little during the period. Still, several things stand out in Tables 1A through 1C, including the following.

- The growth rate of all households declined during the period; 3.0 million households were added from 2003 to 2005, 1.8 million were added from 2005 to 2007, and only 1.1 million were added from 2007 to 2009.

- From 2003 to 2009, the number of households that contained people other than spouses or children younger than age 18 grew faster than the number of all households. In 2009, 1.6 million more households had a relative other than a spouse or child younger than 18 than in 2003, a 7.5-percent increase compared with the 5.6-percent increase in the total number of households. In 2009, 1.2 million more households had a nonrelative than in 2003, a 12.1-percent increase. Note that these two groups overlap; that is, some households contain a relative other than a spouse or child younger than 18 and also a nonrelative.

- The percentage change in households with people other than spouses or children younger than age 18 was greater among renter households than owner households. The percentage increase for households with relatives other than spouses and children younger than 18 was 12.6 percent for renter households compared with 5.8 percent for owner households. The percentage increase for households with nonrelatives was 13.9 percent for renter households compared with 9.9 percent for owner households. Because rental units are, on average, smaller than owner-occupied units, this pattern raises the possibility of overcrowding.

- Households with single, adult offspring ages 18 through 29 increased substantially during the 6-year period, registering a 12.9-percent increase overall and a 24.6-percent increase among renter households. This pattern is consistent with the thesis that the recession stunted the ability of young adults to start their own households.

- Among households with nonrelatives, the number with subfamilies more than tripled from 2003 to 2009, among both owner-occupied and renter-occupied units. The increased sharing of housing by unrelated families may be related to the recession, to immigration, or to both.

- The number of households containing one related subfamily increased by 194,000, and the number of households containing unrelated subfamilies increased by 425,000. The number of households with lodgers declined by 100,000.

Table 2 examines how these trends affected two key measures of crowding: the average number of people in a household and the distribution of households by the number of people per room. Having more than one person per room is often used as a definition of overcrowding.

Table 2. Changes in Measures of Household Crowding

	All Units		Owner Units		Rental Units	
	2003	2009	2003	2009	2003	2009
Average number of people per household	2.55	2.54	2.65	2.63	2.33	2.34
People per room (percent)						
0.50 or fewer	70.4	71.3	74.3	75.0	62.0	63.3
0.51 to 1.00	27.2	26.4	24.4	23.7	33.2	32.5
1.01 to 1.50	2.0	1.9	1.1	1.2	3.9	3.4
1.51 or more	0.4	0.3	0.2	0.1	0.9	0.8

Table 2 shows little evidence of hardship from crowding. During the 6-year period, only minimal changes occurred, and in general these changes show less overcrowding. Average household size decreased slightly among all units and owner-occupied units and increased slightly among renter-occupied units. The percentage of overcrowded units (more than one person per room) never exceeded 2.5 percent overall and, except for owner-occupied units, declined from 2003 to 2009. The percentage of overcrowded owner-occupied units was unchanged at 1.3 percent.

3. Comparison of AHS and CPS Analysis of Doubled-Up Households

3.1. Methodological Differences Between the AHS and CPS

This section compares counts of doubled-up households derived from the AHS with those derived by other researchers using the CPS. To understand the comparison, we need to deal with three issues: (1) the treatment of cohabitating partners, (2) the treatment of children ages 18 and older enrolled in school, and (3) differences in the count of households.

Cohabitating partners. In the AHS national summary data, HUD classifies cohabitating partners as two unrelated individuals sharing a household, whereas Mykyta and Macartney (2011) and the Census Bureau's income and poverty report treated these individuals as a unified household; that is, not a doubled-up household.[2] Fortunately, the AHS microdata contain a variable (REL) that distinguishes between roommates and unmarried partners. We believe that a household composed only of cohabitating partners should not be labeled a doubled-up household. Therefore, for this comparison, we derive the AHS estimates from the microdata and not from the published numbers reported in Tables 1A through 1C.

Children ages 18 and older enrolled in school. The AHS and CPS both consider children ages 18 and older to be adults. In the Census Bureau's income and poverty report, children ages 18 through 21 who are enrolled in school are *not* considered to be "other adults." Mykyta and Macartney (2011) treated children older than 18 who are enrolled in school as other adults in their counts but controlled for school enrollment in their regression analysis. The AHS collects information on educational attainment but not on current school enrollment. For this reason, we derive two estimates of doubled-up households from the AHS microdata, one that treats children 18 and older as other adults and one that treats only children 21 and older as other adults. These estimates bracket the desired estimate; that is, an estimate that counts children ages 18 through 21 only if they are not enrolled in school.

Household counts. The AHS and the CPS are samples, and the Census Bureau derives counts for both surveys from independent sources. The AHS and the CPS tables published by the Census Bureau contain household counts that are very close; the AHS reported 110,692,000 households in 2007 compared with the 110,306,000 households reported in Table 11 from the CPS's Housing Vacancy Survey. The minor differences between the AHS and CPS totals can be explained by differences in the timing of the estimates, because the AHS and CPS use the same benchmarks in calculating totals. In comparing estimates of doubled-up households, note that the Census Bureau's income and poverty report bases its estimate of the percentage of doubled-up households on a count of 115,900,000 households in 2007, and Mykyta and Macartney (2011) recorded 116,783,000 in 2008. These studies have household counts different from the CPS-published tables. The documentation for the CPS supplement file explains the difference. The weighting discussion in that document focuses on how the CPS weights are calculated: "Finally,

[2] *American Housing Survey for the United States: 2009* contains the following statement on page A-21 following the definition for *Two- to eight-person households, none related to each other*: "The publications make no distinctions between housemates and unmarried partners" (Census Bureau, 2011a).

household and family weights are the weights assigned from the householder or reference person after all adjustments have been made and should be used when tabulating estimates of families-households."[3] In other words, household counts from these studies are derived from the population counts and are not directly controlled to the number of households as the AHS household counts are.[4]

3.2. Comparison of the Counts of Doubled-Up Households, AHS Versus CPS

Table 3 compares the three sets of estimates. In 2007, the AHS estimate that counts children only ages 21 and older is somewhat more than the estimate from the income and poverty report. The AHS estimate that counts children ages 18 and older is substantially more. This pattern makes sense because the income and poverty estimate does not include children ages 18 through 21 if they are enrolled in school.

Table 3. Comparison of Estimates of Doubled-Up Households Based on AHS and CPS Data

Year	Source	All Households	CPS Doubled-Up Household	Percent	AHS Doubled-Up Households	Percent
2007	AHS (ages 21 and older)	110,644,783			20,504,750	18.5
2007	Income and poverty (ages 21 and older)	115,900,000	19,700,000	17.0		
2008	Mykyta and Macartney (ages 18 and older)	116,783,000	26,139,000	22.4		
2009	AHS (ages 18 and older)	111,805,793			26,543,380	23.7
2010	Mykyta and Macartney (ages 18 and older)	117,538,000	28,357,000	24.1		
2011	Income and poverty (ages 21 and older)	119,100,000	21,800,000	18.3		

AHS = American Housing Survey. CPS = Current Population Survey.

The AHS estimate for 2009 that counts children ages 18 and older lies between the 2008 and 2010 estimates from Mykyta and Macartney. Again, this result makes sense because Mykyta and Macartney included all children ages 18 and older, not only those enrolled in school, and, therefore, their estimates are consistent with the AHS concept.

3.3. Comparison of the Characteristics of Doubled-Up Households, AHS Versus CPS

Table 4 reproduces Table 2 from Mykyta and Macartney (2011) using data from the 2009 AHS microdata and numbers reported by Mykyta and Macartney. This table describes the characteristics of households by doubled-up status. If the doubled-up household includes multiple families, the family characteristics relate to the primary family. The demographic

[3] Pages 2–7 of www.census.gov/apsd/techdoc/cps/cpsmar11.pdf, accessed on April 27, 2012.
[4] An analogous problem arises when researchers attempt to use the AHS, a household survey, to count people. The AHS uses household weights to derive population counts, and this process results in undercounts of the total population.

characteristics refer to the characteristics of the householder. To conform to the approach used by Mykyta and Macartney, we consider a household with a child older than 18 as a doubled-up household even if the child is enrolled in school. Mykyta and Macartney also included one-person households in the table; by definition, these households are not doubled up. The AHS numbers include one-person households in the columns headed "Not Doubled Up."

Table 4. Comparison of Characteristics of Doubled-Up Households Based on AHS and CPS Data

	2008 CPS-Based		2009 AHS-Based		2010 CPS-Based	
	Doubled Up	Not Doubled Up	Doubled Up	Not Doubled Up	Doubled Up	Not Doubled Up
Total (thousands)	26,139	90,645	26,543	85,262	28,357	89,181
Household characteristics (%)						
Household type						
Married family	47.4	50.7	48.7	51.1	46.6	50.7
Cohabitating partners	3.2	6.4	2.8	6.2	4.0	7.0
Unmarried family	39.5	7.3	26.7	6.9	39.4	7.1
Nonfamily	9.9	35.6	21.8	35.8	9.9	35.2
Region						
Northeast	20.1	17.8	19.6	17.9	19.5	17.9
Midwest	19.9	23.3	19.6	23.6	20.1	23.2
South	35.7	37.2	36.4	37.4	36.2	37.4
West	24.3	21.8	24.4	21.0	24.2	21.5
Household tenure						
Own	70.0	67.3	68.5	68.3	68.3	66.6
Rent/no cash rent	30.0	32.7	31.5	31.7	31.7	33.4
Demographic characteristics of the householder (%)						
Age						
Younger than age 18	0.7	0.0	0.2	1.0	0.7	0.0
Ages 18 through 24	7.5	4.8	6.0	4.2	7.9	4.4
Ages 25 through 34	10.2	18.3	9.5	19.0	10.8	18.2
Ages 35 through 64	67.5	54.3	70.2	53.1	66.3	53.8
Ages 65 and older	14.0	22.6	14.1	22.7	14.4	23.8
Sex						
Male	48.8	51.3	51.6	55.2	48.1	51.6
Female	51.2	48.7	48.4	44.8	51.9	48.4
Race						
White non-Hispanic	60.9	73.7	60.3	74.3	60.2	74.1
Black non-Hispanic	14.3	11.4	14.6	11.4	14.4	11.5
Hispanic	17.3	9.7	18.0	9.3	18.0	9.2
Other non-Hispanic	7.4	5.1	7.0	5.0	7.4	5.2

Table 4. Comparison of Characteristics of Doubled-Up Households Based on AHS and CPS Data (continued)

	2008 CPS-Based		2009 AHS-Based		2010 CPS-Based	
	Doubled Up	Not Doubled Up	Doubled Up	Not Doubled Up	Doubled Up	Not Doubled Up
Nativity						
Born in United States	80.3	88.4	77.3	87.7	80.4	88.9
Foreign born	19.7	11.6	22.7	12.3	18.6	11.1
Marital status						
Married	49.6	52.2	50.7	52.2	48.7	52.1
Separated/divorced/widowed	28.0	28.6	28.8	27.8	28.1	28.1
Never married	22.4	19.2	20.6	19.9	23.3	19.8
Educational attainment						
Less than high school	16.7	12.1	17.2	12.5	16.4	11.0
High school graduate	30.1	29.2	30.0	26.7	31.3	29.0
Some college	28.6	27.7	28.7	29.2	28.3	27.9
Bachelor's degree or more	24.6	31.0	24.1	31.6	24.1	32.2
Work status						
Employed	68.4	63.0	63.0	58.2	63.1	59.7
Unemployed	3.5	2.9	NA	NA	7.0	5.7
Not in labor force	28.1	34.1	NA	NA	29.9	34.7
Below personal poverty level	17.2	12.3	11.0	14.0	19.7	12.8
Disability status (%)						
Member with disability	NA	NA	21.0	16.2	NA	NA
No members with disability	NA	NA	79.0	83.8	NA	NA

AHS = American Housing Survey. CPS = Current Population Survey. NA = data not available.

The 2009 AHS and Mykyta and Macartney (based on the 2008 and 2010 CPS) report similar percentages of married family households and cohabitating partner households among doubled-up households. Both series report a higher percentage of married family households and cohabitating partner households among nondoubled households than among doubled-up households. The AHS reports a much lower percentage of unmarried family households and a much higher percentage of nonfamily households among doubled-up households than do Mykyta and Macartney. This difference is probably definitional. We classified a household as an unmarried family household only if the household contained a child of the householder; it is possible that Mykyta and Macartney included households containing a parent or other relative of the householder.

The AHS and Mykyta and Macartney report very similar regional distributions for doubled-up and nondoubled households. Mykyta and Macartney show a decline from 2008 to 2010 in the percentage of doubled-up households that are homeowners and an increase in the percentage that are renters. The AHS 2009 percentages fall between Mykyta and Macartney's 2008 and 2010 percentages for both owners and renters.

The age distributions are similar in the AHS and Mykyta and Macartney, except that the AHS has a somewhat lower percentage of doubled-up households with householders ages 25 through 34. The AHS shows a slightly higher percentage of doubled-up households among male householders than does Mykyta and Macartney, but this discrepancy probably results the AHS shows a greater proportion among all households of households with male householders. The distributions regarding race and ethnicity are similar. In all three distributions, households with White non-Hispanic householders are underrepresented among doubled-up households, and households with Black non-Hispanic, Hispanic, or other non-Hispanic householders are overrepresented.

Households with householders born outside the United States are overrepresented among doubled-up households in all three distributions. The percentage of foreign-born householders among doubled-up households in the AHS data is more than the percentages in the Mykyta and Macartney distributions. The AHS reports a greater proportion of households with foreign-born householders in general.

The married status distributions are very similar, as are the distributions by education of householders. The AHS and Mykyta and Macartney indicate that households with householders with a bachelor's or higher degree are underrepresented among doubled-up households.

The AHS does not have information on labor force status, and therefore it is not possible in the AHS to separate nonworking householders into those unemployed and those not in the labor force. All three datasets show approximately 63 percent of doubled-up households with working householders.

One important difference between the Mykyta and Macartney and AHS results involves the poverty status of doubled-up households. Mykyta and Macartney report that doubled-up households have a higher poverty rate than nondoubled households, whereas the AHS data show a lower poverty rate among doubled-up households than among nondoubled households.

Although the CPS contains information on the disability status of household members, Mykyta and Macartney did not examine this characteristic. Table 4 shows that a higher percentage of doubled-up households have a member with a disability than do nondoubled households.

Except for poverty status, the AHS and Mykyta and Macartney paint very similar pictures of doubled-up and nondoubled households. Based on these comparisons, we can conclude that the AHS provides a reliable source of data on household composition. The AHS weights are controlled to household benchmarks, a factor that favors the accuracy of household counts by household type based on AHS data.

4. Characteristics of Doubled-Up Households and Their Housing Units

The main purpose of Table 4 was to determine if the AHS and CPS report similar household characteristics for doubled-up and nondoubled households. The middle columns of Table 4 contain detailed information on the characteristics of doubled-up households based on AHS data. In this section, we will use multivariate analysis to further explore the characteristics of doubled-up households.

4.1. Housing Characteristics of Units With Doubled-Up Households

The AHS also contains extensive information on the physical characteristics of housing, much of which is not available in the CPS. Table 5 compares the housing characteristics of doubled-up households with those of other households, including single-person households. To compare AHS household characteristics with those reported by Mykyta and Macartney, Table 4 uses the AHS counts that classified a household as doubled up if it contains a child age 18 years old or older. For consistency with the data reported in Table 4, Table 5 uses AHS counts based on the same definition.

Table 5. Housing Characteristics of Doubled-Up Households in 2009

	Doubled Up	Not Doubled Up
Total (thousands)	26,543	85,262
Percent of households		
Structure type		
Mobile homes	6.0	6.2
Single-family detached homes	69.6	64.1
Single-family attached homes	5.2	5.4
2- through 4-unit structures	6.9	7.6
5- through 9-unit structures	4.0	4.9
10-or-more unit structures	8.3	12.0
Number of rooms		
Three or fewer	3.4	11.0
Four	14.0	16.5
Five	22.8	22.7
Six	23.5	21.5
Seven	16.9	14.1
Eight or more	20.4	14.1
Age of structure		
50 years old or older	33.8	31.0
30 through 49 years old	31.5	30.8
20 through 29 years old	12.5	12.6
10 through 19 years old	12.3	12.4
0 through 9 years old	9.9	13.3

Table 5. Housing Characteristics of Doubled-Up Households in 2009 (continued)

	Doubled Up	Not Doubled Up
Percent of households		
Location of unit		
Central city	31.0	28.4
Urban suburb	36.7	33.9
Rural suburb	13.4	14.1
Urban nonmetropolitan area	6.4	8.0
Rural nonmetropolitan area	12.4	15.7
Condition of unit		
Adequate	94.7	94.9
Moderately inadequate	3.5	3.5
Severely inadequate	1.8	1.6

A substantially higher percentage of doubled-up households live in single-family detached units than do households that are not doubled up. Single-family detached units are generally larger than units of other structure types and, therefore, more easily adapted to having other adults as household members. For all other structure types, the percentages of doubled-up households are less than the percentages of nondoubled households. More than 60 percent of doubled-up households live in units with six or more rooms, compared with slightly less than 50 percent of nondoubled households.

Approximately 10 percent of doubled-up households live in units constructed in 2000 or later compared with more than 13 percent of nondoubled households. At the other end of the age-of-structure spectrum, approximately 34 percent of doubled-up households live in units that are 50 years old or older compared with 31 percent of nondoubled households.

Doubled-up households are more concentrated in central cities and in the urban parts of suburban areas than their nondoubled counterparts. This pattern is consistent with doubled-up households containing immigrant households, doubled-up households with parents of young adults attempting to find employment, and doubled-up households of families whose breadwinners have lost their jobs. Moving in with households in the central city or in urban suburbs better favors job searching than moving in with households in other locations.

The quality of housing units, as measured by the AHS adequacy standard, does not differ between doubled-up and nondoubled households. As noted previously, the increase in doubled-up households has not resulted in an increase in overcrowding. Therefore, it is not surprising that it has also not resulted in deterioration in unit quality.

4.2. Multivariate Analysis of Characteristics of Doubled-Up Households and Their Housing Units

In this subsection, we apply multivariate analysis to the relationship between being a doubled-up household and the household and housing characteristics discussed in the previous two tables. We have two objectives. First, we want to learn whether any of the relationships observed in Tables 4 and 5 disappeared when we controlled for other factors. For example, are doubled-up

households still more likely to have foreign-born householders after we control for race and ethnicity? Second, we also want to find out whether, after controlling for other factors, the probability of a household being doubled up was greater or less depending on the point in the business cycle when the data were collected.

Table 6 reports the results of logit regressions using household and demographic variables to predict the likelihood of a household being doubled up. Table 6 contains separate logit regressions for each of the 4 years studied and a logit regression that combines the data from all four surveys and includes variables identifying the year when household status was observed. The regressions are unweighted; they use all the sample cases used in the tabulations in Tables 4 and 5, representing 26,543,000 doubled-up households, on a weighted basis. Although all five regressions were statistically significant at the 0.01-percent level, some indications suggest that some of the coefficients may not be stable if the list of independent variables were to change. These indications are mentioned in the discussion of the results in Table 6.

Table 6. Multivariate Analysis of the Characteristics of Doubled-Up Households

Contribution of unit and household characteristics to the odds of being a household with another adult member	Combined Model	2003	2005	2007	2009
Intercept	– 2.1758[α]	– 2.2233[α]	– 2.2639[α]	– 2.2968[α]	2– .1859[α]
2003	– 0.0086[γ]	—	—	—	—
2005	– 0.0297[γ]	—	—	—	—
2007	– 0.0745[α]	—	—	—	—
Cohabitating partner household	0.1518	0.2116[γ]	0.2681	0.0159[γ]	-0.0021[γ]
Unmarried family	1.9180[α]	2.0419[α]	2.1099[α]	1.8310[α]	1.7010[α]
Nonfamily household	5.4451[α]	5.6096[α]	5.6578[α]	5.2748[α]	5.2397[α]
Rental unit	– 0.1622[α]	– 0.2137[α]	– 0.1460[α]	– 0.0843[γ]	– 0.1614[α]
Northeast	0.3338[α]	0.3785[α]	0.3418[α]	0.3014[α]	0.3031[α]
Midwest	– 0.0049[γ]	0.0585[γ]	– 0.0620[γ]	– 0.0161[γ]	0.0000[γ]
West	0.0911[α]	0.1137[α]	0.0544[γ]	0.0542[γ]	0.1252[α]
Householder ...					
Younger than age 18	– 2.7455[α]	– 2.2333[α]	– 1.8917[α]	– 3.3927[α]	– 3.3673[α]
Ages 18 through 24	– 0.2447[α]	– 0.3253[α]	– 0.2503[α]	– 0.1117[γ]	– 0.2398
Ages 25 through 34	– 1.0235[α]	– 0.9720[α]	– 0.9765[α]	– 1.0658[α]	– 1.0806[α]
Ages 65 and older	0.2008[α]	0.2394[α]	0.2122[α]	0.2273[α]	0.1663[α]
Male	0.0842[α]	0.1297[α]	0.0959[β]	0.0658	0.0458[γ]
Black non-Hispanic	0.2262[α]	0.2798[α]	0.1676[α]	0.1912[α]	0.2653[α]
Hispanic	0.4178[α]	0.4377[α]	0.3358[α]	0.4289[α]	0.4689[α]
Other race non-Hispanic	0.4454[α]	0.5136[α]	0.4922[α]	0.4419[α]	0.3518[α]
Not born in United States	0.6018[α]	0.6242[α]	0.6475[α]	0.5816[α]	0.5813[α]
Widowed, separated, or divorced	– 0.1177	– 0.2246	– 0.2853[β]	– 0.0078[γ]	0.1120[γ]
Never married	– 0.3561[α]	– 0.5237[α]	– 0.4482[α]	– 0.1502[γ]	– 0.2100[γ]
Not a high school graduate	0.3432[α]	0.3180[α]	0.3759[α]	0.3537[α]	0.3531[α]
Has some college education	– 0.2094[α]	– 0.2079[α]	– 0.2022[α]	– 0.2390[α]	– 0.2135[α]

Table 6. Multivariate Analysis of the Characteristics of Doubled-Up Households (continued)

Contribution of unit and household characteristics to the odds of being a household with another adult member	Combined Model	2003	2005	2007	2009
Householder ...					
Has bachelor's or higher degree	– 0.5764[α]	– 0.4885[α]	– 0.6612[α]	– 0.5796[α]	– 0.6881[α]
Worked in the past week	– 0.0817[α]	– 0.0622	– 0.1028[α]	– 0.0885[β]	– 0.1064[α]
Primary family has income below poverty level	– 0.4055[α]	– 0.3458[α]	– 0.4742[α]	– 0.4857[α]	– 0.2945[α]
Household income (thousands)	0.0012[α]	0.0003[α]	0.0027[α]	0.0018[α]	0.0024[α]
Mobile home or manufactured house	– 0.0406[γ]	– 0.0415[γ]	– 0.1254[γ]	– 0.0333[γ]	0.0661[γ]
Single-family attached unit	– 0.0759[β]	– 0.0788[γ]	– 0.1367	– 0.1299[γ]	– 0.1019[γ]
Unit in two- to four-unit structure	– 0.1079[α]	– 0.0072[γ]	– 0.0762[γ]	– 0.0889[γ]	– 0.0396[γ]
Unit in structure with five or more units	– 0.0479[γ]	– 0.5994[α]	– 0.7270[α]	– 0.5894[α]	– 0.6472[α]
Unit has fewer than two bedrooms	– 0.6319[α]	0.3579[α]	0.3810[α]	0.4004[α]	0.3977[α]
Unit has three bedrooms	0.3859[α]	0.7714[α]	0.6201[α]	0.7155[α]	0.7065[α]
Unit has four bedrooms	0.7168[α]	1.1447[α]	1.0466[α]	1.0463[α]	1.0571[α]
Unit has five or more bedrooms	1.0973[α]	0.1886[β]	0.2405[α]	0.2218[β]	0.1067[γ]
Unit has moderate physical problems	0.1865	0.2301[β]	0.1959[γ]	0.0703[γ]	0.1709[γ]
Unit has severe physical problems	0.1742[α]	0.1006[α]	0.1480[α]	0.1651[α]	0.0904[β]
Unit in central city	0.1222[α]	– 0.2030[α]	– 0.1439[α]	– 0.0932[β]	– 0.2144[α]
Unit outside metropolitan area	– 0.1701 [α]	– 0.0243[γ]	– 0.0661[γ]	– 0.1843[β]	– 0.0675[γ]
Sample size	103,332	35,316	31,559	28,398	32,628
Likelihood ratio	21,487[α]	11,178[α]	9,854[α]	8,596[α]	9,775[α]

[α] Coefficient is statistically significant at the 1-percent level or better.
[β] Coefficient is statistically significant at the 5-percent level.
[γ] Coefficient is not statistically significant.
Note: Unless otherwise marked, coefficient is statistically significant at the 10-percent level.

To assess the probability of being doubled up in relation to the business cycle, we compared across years. We used 2009 as the reference year; that is, the likelihood of being a doubled-up household in each year was compared with the probability in 2009, all other things being equal. The combined regression found no statistically significant difference between cases observed in 2003 or in 2005 compared with those observed in 2009.[5] All other things being equal, cases observed in 2007 were less likely to be doubled up. Because the peak of the previous expansion was December 2007 and the trough of the recession was June 2009, it is understandable why units would be more likely to be doubled up in 2009 than in 2007. Similar differences can be

[5] In regression analysis, if a set of variables defines groups, such as survey year, wherein all the cases must fall into one of the groups, then one of the variables must be omitted from the regression. The coefficients of the variables not omitted are interpreted as measuring the difference between that variable (for example, being observed in 2007) and the omitted variable (in this example, being observed in 2009).

expected between 2009 and both 2003 and 2005, however, because the economy was strong in 2003 and 2005.[6]

Compared with married households, unmarried families and nonfamily households were more likely to be doubled up. If a household includes more than one family, marital status refers to the householder in the primary family. Cohabitating partner households are not more likely to be doubled up.

Households in rental units are less likely to be doubled up than households in owner-occupied units, even after controlling for type of structure and size of unit. This suggests that the added stability of being a homeowner compared with that of being a renter encourages a household to offer housing to other adults and the other adults to accept the offer.

Households in the Northeast and West were more likely to be doubled up than households in the South, possibility because of regional differences in the price of housing. Households in the Midwest were about as likely as those in the South to be doubled up.

Households with older householders are more likely to be doubled up. For the regressions reported in Table 6, the omitted category was households with householders ages 35 through 64. Table 6 shows that households with younger householders are less likely to be doubled up and households with older householders, those ages 65 and older, are more likely to be doubled up than the those ages 35 through 64. This pattern suggests that older households either are better able to provide assistance because of their station in life or have more obligations to family or friends than younger households.

Households with male householders are more likely to be doubled up. Households with householders who are Black non-Hispanic, other race non-Hispanic, or Hispanic are more likely than households with White householders to be doubled up. This finding holds even after controlling for being foreign born. Households with foreign-born householders are more likely to be doubled up than those with householders born in the United States or associated areas, such as Puerto Rico.

Households with householders who are widowed, divorced, or separated or who never married are less likely to be doubled up than married households. The coefficients for these variables are not statistically significant in the regressions for 2007 and 2009. In a set of regressions that did not include the variables identifying cohabitating partner, unmarried family, and nonfamily households, the widowed, divorced, or separated variable and the never married variable were strongly statistically significant but had the opposite signs.[7]

When considering the effect of education on the probability of being doubled up, the set of households with householders who had a high school education but no further education was the control group. Compared with this group, households with householders who did not graduate

[6] The trough of the previous recession was November 2001.

[7] The other regressions also did not include the household income variable and grouped single-family detached and single-family attached units together into the omitted category. The other regression was not estimated across the combined data.

from high school were more likely to be doubled up, whereas households with householders with more than a high school education were less likely to double up. The more educated a householder is, the less likely the household will be doubled up.

The AHS does not provide detailed information on labor force participation. The only relevant AHS variable reports whether a person worked the previous week. If the person did not work, the AHS does not distinguish being unemployed from not being in the labor force. Households with householders who worked in the past week are less likely to be doubled up. Households in which the primary family has an income of below the poverty level are less likely to be doubled up, and increased household income makes a household more likely to be doubled up.[8]

The education, work experience, and income variables paint a somewhat inconsistent picture. The education and work experience variables suggest that, other things being equal, households with more economic security are less likely to be doubled up, whereas the income-related variables suggest that higher income makes a household more likely to be doubled up. We are inclined not to attach much meaning to the work experience variable and to attach more importance to the family poverty variable than the household income variable. We discount work experience because of the previously noted shortcomings in this variable, and we discount the income variable because of its small magnitude. Therefore, we think the models show that families with incomes below the poverty line generally do not have the resources to accept other adults, and that, after controlling for poverty, households with householders with less education are more likely to need to double up or more likely to have family situations that require doubled-up households.[9]

When examining the effects of housing characteristics on doubled-up households, we looked at four housing characteristics: type of structure, size of unit, physical condition of unit, and location of unit.

For structure type, we used single-family detached units as the control group. The combined regression indicates that the other structure types are less likely to have doubled-up households. The coefficients for mobile homes and units in structures with five or more units are not statistically significant in the combined regression. In the single-year regressions, the coefficients for units in structures with five or more units are statistically very significant. The only other statistically significant coefficient for these variables in the single-year regressions is the coefficient for single-family attached units in 2005. In an alternative specification, in which we combined detached and attached single-family units, most of the coefficients were insignificant. Households in units in structures with five or more units were more likely to be doubled up, but

[8] Although the household income coefficients are very significant, their magnitudes are small. Using the combined equation, changing from a White householder to a Hispanic householder increases the likelihood of being doubled up by the same amount as a $338,000 increase in income. This example is illustrative only. One would want to model income in the regression in a nonlinear way to cover income changes of this magnitude accurately.

[9] One HUD reviewer suggested a related explanation of the apparent inconsistency among the education, work experience, and income variables. Employed people with higher educations are in a better position to lend a hand to a friend or relative who is in trouble. On the other hand, because of income segregation, their friends and relatives are more likely to be well off and, thus, not in need of a place to stay.

the significance of these coefficients was mixed: it was at the 5-percent level in 2003 and 2009 but at only the 10-percent level in 2007 and insignificant in 2005.

For unit size, we used two-bedroom units as the control group. The combined results are easy to interpret: larger units are more likely to be doubled up. The single-year results contradict the combined results in one important respect. In each single-year regression, units with fewer than two bedrooms are found to be more likely to be doubled up.[10]

Regarding metropolitan location, being in a suburb was the control group. In the combined regression, households in central cities were more likely to be doubled up, and households in rural areas were less likely to be doubled up. Again, the single-year results are contradictory; in these regressions, units in central cities are less likely to be doubled up. Except for the 2007 regression, the rural coefficients are not statistically significant in the single-year regressions.[11]

[10] In the alternative specification, the single-year results show larger units are consistently more likely to be doubled up.

[11] In the alternative specification, the central-city coefficients are uniformly positive and statistically significant at the 1-percent level, and the rural coefficients are uniformly negative and statistically significant at the 1-percent level.

5. Adult Children As the Primary Contributors to Doubled-Up Households

This section uses AHS data to classify doubled-up households on the basis of the relationship between the "other household member or members" who live in the household and the householder. Because adult children living at home are the primary contributors to doubled-up households, the section examines the characteristics of these children.

At this point in the analysis, we shift from a definition of doubled-up household that considers children ages 18 years and older as other household members to a definition that considers children ages 21 and older as other household members. Using the 18-and-older definition enabled us to compare the AHS information on doubled-up households with the information from the CPS. In this section, we use a definition that classifies a household as doubled up if—among other possible reasons—it contained a child age 21 or older but not if that child is younger than age 21. We believe this approach is better when using AHS data, because the AHS cannot distinguish between adult children enrolled in school and adult children not enrolled in school.

The change in definition results in a lower count of doubled-up households. Tables 4 and 5 show 26,543,000 doubled-up households in 2009. Using the revised definition, Table 7 shows 22,884,000 doubled-up households in 2009.

Table 7. Units With Doubled-Up Households by Type of Other Household Member, 2003 to 2009

	2003	2005	2007	2009
Households with two or more people (thousands)	77,672	79,691	80,695	81,698
Doubled-up households (thousands)	22,024	22,389	22,428	22,884
Other household members as percent of doubled-up households*				
Child age 21 or older	47.4	47.8	49.1	50.5
Other relative	17.9	17.8	14.9	15.0
Grandchild	12.7	13.4	13.8	14.1
Roommate	12.2	11.8	12.0	10.8
Other nonrelative	11.6	10.7	9.7	10.0
Sibling	9.0	9.4	9.9	9.8
Parent	8.5%	9.1	10.1	9.8
Lodger	2.4	2.6	2.8	2.9

Note: The percentages add to more than 100 percent because some doubled-up households have more than one other household member.

5.1. Types of Other Household Members: 2003 to 2009

From this point on, the term *other household member* includes any person who is not the householder, the householder's spouse or partner, or a child of the householder younger than age 21. Grandchildren and unrelated children are included as other household members.

Table 7 classifies doubled-up families by the type of other household member. The percentages add to approximately 120 percent in all 4 years, which indicates that approximately 80 percent of doubled-up households have only one type of other household member.

Children ages 21 and older are the most common form of other household member; approximately one-half of doubled-up households in all 4 years included a child age 21 or older. The percentage with a child or children ages 21 and older increased by slightly more than 3 percentage points during the period that included the recession.

Other relatives and grandchildren were the next most common types of other household members, with approximately 30 percent of doubled-up households containing either another relative or a grandchild. The percentage with other relatives declined during the period, and the percentage with a grandchild or grandchildren increased.

By 2009, 9.8 percent of doubled-up households contained a sibling, and 9.8 percent contained a parent. Both of these percentages increased during the period, with the greatest percentage-point increase recorded by doubled-up households containing a parent or parents.

5.2. Characteristics of Adult Children Living at Home

Table 8 presents demographic characteristics of the adult children in doubled-up households in each of the 4 survey years. The number of adult children (defined as children ages 21 and older) living at home grew 10.3 percent during the 6-year period, from 12.5 to 13.8 million. Some households had more than one adult child living at home; therefore, the number of adult children characterized in Table 8 is more than the number of households with adult children reported in Table 7.[12]

[12] For example, in 2009, 13.8 million adult children (from Table 8) were living in 11.6 million households (22,884,000 x 50.5 percent from Table 7).

Table 8. Characteristics of Adult Children Living at Home

	2003	2005	2007	2009
Count (thousands)	12,501	12,803	13,099	13,786
Age of adult child[a] (percent)				
21 through 25	49.8	50.3	50.5	50.4
26 through 30	17.5	17.4	17.1	18.6[c]
31 through 35	9.7[c]	9.0	9.3	8.4
36 through 40	7.5[c]	6.9	6.1	6.0
41 through 50	10.1	10.5	10.4	9.7
Older than 50	5.5	6.0	6.5	6.9[c]
Education level[a] (percent)				
Not a high school graduate	16.0	15.6	13.9	13.0[c]
High school diploma or equivalent	30.6	29.7	31.6	31.4
Some college or vocational training	31.0	30.3	30.6	31.2
Associate's degree in college—occupational/ vocational program	2.9	3.2	3.2	3.2
Associate's degree in college—academic program	3.1	3.3	3.8	4.0[c]
Bachelor's degree	14.2	14.9	14.2	14.3[c]
Master's, Ph.D., or professional degree	2.3	2.9	2.6	2.8
Work experience[b] (percent)				
Worked in the past week	59.9	59.6	60.4	56.7
Wage or salary income	NA	67.7	63.6	62.1
Self-employment income	NA	5.0	2.8	2.5
Disability[b] (percent)				
Difficulty doing errands	NA	NA	NA	2.7
Difficulty dressing or bathing	NA	NA	NA	1.1
Difficulty hearing	NA	NA	NA	0.8
Difficulty seeing	NA	NA	NA	0.6
Difficulty walking or climbing stairs	NA	NA	NA	2.0
Difficulty concentrating or remembering	NA	NA	NA	3.4

NA = data not available.
[a] Characteristics are statistically different across the 4 survey years.
[b] Chi-square test not applied because of obvious differences or because only 1 year of survey data.
[c] Differences that made substantial contributions to the calculated Chi-square statistic.

6. More-Than-One-Family Households As a Secondary Contributor to Doubled-Up Households

This section examines the phenomenon of households that consist of more than one family. A household with a subfamily is, by definition, a doubled-up household. Section 6.1 looks at the increase in households containing more than one family and analyzes how household size and the number of children in a household vary by the number of families in the household. Section 6.2 uses data on the reference person to compare subfamilies with the primary family in households containing both related and unrelated subfamilies.

Although the age distribution was similar across all four surveys, the observed differences were statistically significant at the 5-percent level. In each survey, approximately 50 percent of all adult children in doubled-up households were ages 21 through 25 years old. The percentages among those ages 26 through 30 and those older than age 50 were highest in 2009. The percentages among those ages 31 through 35 and ages 36 through 40 were highest in 2003. The substantial percentage increase in those ages 26 through 30 in 2009 is consistent with young adults having difficulties finding employment. The percentage of adult children older than age 50 increased steadily across the four surveys and may represent a worsening of economic conditions and an increase in adult children moving home to take care of aged parents.

Worsening economic conditions are clearly evident in the limited information in the AHS on the work experience of adult children living with a parent or parents. The percentage of adult children working in the past week fell from about 60 percent in the first three surveys to approximately 57 percent in the 2009 survey. The percentages with wage, salary, and self-employment income declined steadily across the four surveys.

Economic conditions have a greater effect than disability status on whether adult children live at home. Only 2.7 percent of adult children living at home had difficulty running errands compared with 3.4 percent of all people; only 1.1 percent had trouble with bathing or dressing compared with 2.5 percent of all people; and only 3.4 percent had difficulty walking compared with 6.9 percent of all people.[13]

6.1. Housing Units With Subfamilies, 2003 to 2009

Table 9 uses AHS microdata to count the number of households containing more than one family by the relationship between the primary family and the subfamily or subfamilies. Table 9 uses the same data used to construct Tables, 4, 5, and 7, and the results are consistent with those reported in Tables 1A through 1C from the national summary data.

[13] The disability percentages for the overall population come from Table 11-1 on page A-2 of *Disability Variables in the American Housing Survey* (Eggers and Moumen, 2011).

Table 9. Housing Units With Subfamilies by Type of Subfamily, 2003 to 2009

	2003	2005	2007	2009	Percent Change (2003 to 2009)
Households (thousands)	105,842	108,871	110,692	111,806	5.6
Single-person households	28,171	29,181	29,996	30,108	6.9
Two-or-more-person households	77,672	79,691	80,695	81,698	5.2
Households with subfamilies* (thousands)	2,730	2,913	3,098	3,347	22.6
Related subfamilies	2,540	2,640	2,618	2,732	7.6
Unrelated subfamilies	196	273	493	621	216.8
Related and unrelated subfamilies	6	0	14	6	

* Households with subfamilies equal, subject to rounding, the sum of households with related subfamilies plus households with unrelated subfamilies minus households with both related and unrelated subfamilies; for example, in 2009, 3,347 = 2,732 + 621 – 6. Subtracting households with both related and unrelated subfamilies prevents double-counting these households.

The number of households with subfamilies grew by 600,000 from 2003 to 2009. The most remarkable phenomenon depicted in Table 9 is the more than tripling of housing units containing unrelated subfamilies. Most of this growth—220,000 out of 425,000—came from 2005 to 2007, the period containing the recession.

Table 10 breaks down households by the number of families in the household. More-than-one-family households comprise a minimal percentage of all households (approximately 3 percent in all 4 survey years) and a minimal percentage of family households (approximately 4 percent in all 4 survey years). These percentages grew modestly across the four surveys. As a percentage of all households, the number of more-than-one-family households grew monotonically from 2.6 percent in 2003 to 3.0 percent in 2009 and as a percentage of all family households, it grew monotonically from 3.8 percent in 2003 to 4.4 percent in 2009. Most more-than-one-family households, by far, contain only two families. In none of the four AHSs did a housing unit have more than four families.

Table 10. More-Than-One-Family Households, 2003 to 2009

Number of Households (thousands)	2003	2005	2007	2009
All occupied households	105,836	108,855	110,649	111,806
Nonfamily households*	34,108	35,327	36,359	36,524
One-family households	68,998	70,615	71,192	71,934
Two-family households	2,608	2,809	2,941	3,230
Three-family households	118	99	151	115
Four-family households	3	5	6	2
People per household				
All occupied households	2.5	2.5	2.5	2.5
Nonfamily households	1.2	1.2	1.2	1.2
One-family households	3.1	3.1	3.1	3.1
Two-family households	5.1	5.1	4.9	5.0
Three-or-more-family households	8.6	8.4	7.9	8.0
Children per household				
All occupied households	0.7	0.7	0.7	0.6
Nonfamily households	0.0	0.0	0.0	0.0
One-family households	1.0	0.9	0.9	0.9
Two-family households	1.8	1.8	1.8	1.8
Three-or-more-family households	3.4	3.7	3.4	3.5

***** A nonfamily household is a household composed of either a householder only or the householder and other people not related to the householder.

As one would expect, the number of people and the number of children in a household varies directly according to the number of families in the household, but, as Table 10 shows, virtually no change occurred from 2003 to 2009 in these per-household counts.

6.2. Characteristics of Householders in More-Than-One-Family Households

We investigated four related questions regarding more-than-one-family households.

1. How do more-than-one-family households differ from one-family households?
2. How do subfamilies differ from the primary family in a more-than-one-family household?
3. Do important demographic differences exist between related subfamilies in more-than-one-family households and unrelated subfamilies in more-than-one-family households?
4. Have these differences changed during the recent economic downturn?

To answer these questions, we examined the demographic characteristics of the reference person in these different household types. In a one-family household, the reference person is the householder. The householder is also the reference person for the primary family in a more-than-one-family household. For subfamilies, the reference person is not the householder but the person

in the subfamily used to designate relationships among the members of that subfamily.[14] (See definitions in Section 1.2). In a household composed of a married couple with children (subfamily) who have moved into the home of the wife's parents, the reference person of the primary family (householder) could be the wife's mother or father, depending on who was interviewed. The reference person of the subfamily could be the wife or the husband of the subfamily.

Tables 11A and 11B report key demographic characteristics of reference persons by household type in 2003 and in 2009. Comparing the counts in Table 10 with those of Tables 11A and 11B reveals two aspects of this analysis that may seem puzzling. First, Table 10 shows 2,729,000 households had more than one family in 2003 (2,608,000 + 118,000 + 3,000), but Table 11A shows only 2,618,000 householders of the primary family in more-than-one-family households.[15] The difference is the set of 112,000 households where the householder has no relatives in the household.[16] These cases are not included in Tables 11A and 11B because those tables compare the characteristics of primary families and subfamilies. Second, Tables 11A and 11B report the demographic characteristics in 2003 of 2,855,000 reference persons of subfamilies in 2003, 126,000 more reference persons than the number of households with subfamilies (2,729,000) from Table 10. The differences are the reference persons of subfamilies in households with more than one subfamily.[17]

[14] See Census Bureau (2011b), page 1274, for a discussion of the variables used for this analysis.
[15] The Table 10 count of more-than-one-family households for 2003 is the same, within rounding error, as the 2,730,000 in Table 9.
[16] The 112,000 households include 110,000 cases in which the household contains only one subfamily. Strictly speaking, these cases are not more-than-one-family households, but the AHS classifies them as such because the one family is a subfamily.
[17] In 2003, this difference would be (1 x 118,000 + 2 x 3,000) = 124,000, which is within rounding error of 126,000.

Table 11A. Characteristics of Reference Persons in 2003

	One-Family Households	More-Than-One-Family Households			
		Primary Family	Subfamily		
			All	Related Subfamily	Unrelated Subfamily
Households (thousands)	68,998	2,618	2,855	2,656	199
Sex of reference person (percent)					
Male	62.5	46.9	20.8	21.1	17.5
Female	37.5	53.1	79.2	78.9	82.5
Race of reference person (percent)					
White	83.4	67.2	66.9	65.9	80.1
Black	11.4	21.5	20.9	21.7	10.6
American Indian or Alaska Native	0.6	2.0	1.8	2.0	0.0
Asian	3.3	6.9	7.1	7.3	4.0
Other race	1.3	2.4	3.2	3.1	5.4
Ethnicity of reference person (percent)					
Hispanic	11.5	27.0	28.9	28.8	29.2
Non-Hispanic	88.5	73.0	71.1	71.2	70.8
Age of reference person (percent)					
25 and younger	5.1	6.1	34.5	35.8	18.2
26 through 35	19.3	10.3	30.4	30.2	33.5
36 through 50	36.7	35.5	23.2	21.5	46.0
51 through 64	22.9	31.2	6.7	7.1	2.2
65 and older	16.0	16.9	5.1	5.5	0.0
Education level of reference person (percent)					
Not a high school graduate	16.1	31.5	31.1	31.4	27.5
High school diploma or equivalent	28.4	31.6	36.4	35.7	44.8
Some college or vocational training	28.0	24.7	23.7	24.2	17.2
Bachelor's or higher degree	27.5	12.2	8.8	8.7	10.6
Citizenship of reference person (percent)					
American citizen	93.9	85.3	83.5	83.7	79.8
Not an American citizen	6.1	14.7	16.5	16.3	20.2
Recent work history of reference person (percent)					
Worked in the past week	65.4	61.0	49.9	49.4	55.9
Did not work in the past week	34.6	39.0	50.1	50.6	44.1

Table 11B. Characteristics of Reference Persons in 2009

	One-Family Households	More-Than-One-Family Households			
		Primary Family	Subfamily		
			All	Related Subfamily	Unrelated Subfamily
Households (thousands)	71,934	2,984	3,467	2,846	622
Sex of reference person (percent)					
Male	58.3	47.3	19.8	21.5	12.2
Female	41.7	52.7	80.2	78.5	87.8
Race of reference person (percent)					
White	82.2	70.8	70.2	67.8	80.8
Black	11.5	20.1	20.2	21.5	14.5
American Indian or Alaska Native	0.8	1.5	1.6	1.9	0.3
Asian	4.1	5.2	5.1	5.8	2.3
Other race	1.4	2.4	2.8	3.0	2.0
Ethnicity of reference person (percent)					
Hispanic	12.4	28.3	29.4	31.1	21.8
Non-Hispanic	87.6	71.7	70.6	68.9	78.2
Age of reference person (percent)					
25 and younger	4.5	5.4	31.5	33.9	20.6
26 through 35	18.1	12.0	33.9	32.8	39.0
36 through 50	35.2	33.1	25.6	23.1	37.4
51 through 64	25.7	33.3	6.1	6.8	3.0
65 and older	16.5	16.2	2.9	3.5	0.0
Education level of reference person (percent)					
Not a high school graduate	12.8	26.9	26.8	28.6	18.5
High school diploma or equivalent	27.6	33.5	36.8	36.5	38.2
Some college or vocational training	28.8	27.4	28.3	27.0	34.0
Bachelor's or higher degree	30.8	12.1	8.2	8.0	9.3
Citizenship of reference person (percent)					
American citizen	92.5	83.6	83.1	82.4	86.5
Not an American citizen	7.5	16.4	16.9	17.6	13.5
Recent work history of reference person (percent)					
Worked in the past week	64.4	58.8	53.1	51.3	61.5
Did not work in the past week	35.6	41.2	46.9	48.7	38.5

Compared with householders in one-family households, householders in more-than-one-family households are less frequently male, less frequently White, more frequently Hispanic, less frequently less than 35 years old but more frequently between the ages of 51 and 64, less frequently educated beyond high school, less frequently American citizens, and somewhat less likely to have worked in the past week. These patterns did not change from the 2003 survey through the 2009 survey.

Compared with the householder of the primary family in more-than-one-family households, the reference person in subfamilies is less likely to be male, more likely to be younger than age 35, and less likely to have worked in the past week. On race and ethnicity and on citizenship, the householder of the primary family and the reference person of the subfamily or subfamilies appear to be very similar overall.[18] The percentage of high school nongraduates is approximately the same for primary family householders and the subfamily reference persons; however, the householders of primarily families are somewhat more likely to have received education beyond high school. These patterns did not change from 2003 to 2009.

The reference persons of related subfamilies are more likely to be male, less likely to be White, more likely to be younger, and less likely to have worked in the past week than the reference persons in unrelated subfamilies. A noteworthy change from 2003 to 2009 involves ethnicity. In 2003, the reference persons of related and unrelated subfamilies were Hispanic in approximately 30 percent of cases. In 2009, the reference person was Hispanic in 30 percent of cases in a related subfamily but in only slightly more than 20 percent of cases in an unrelated subfamily.

More-than-one-family households shared some common characteristics in 2003 (before the recession) and in 2009 (after the recession). Even before the recession, economic necessity played a major role in determining when families needed to live together. In particular, one-parent households would be likely candidates to move in with another family, either with parents or with other one-parent households. Among one-parent families, many more have female householders than male householders,[19] so it is not surprising that the reference person in a subfamily would most likely be a female. Approximately 80 percent of reference persons are female in related and in unrelated households compared with 38 percent in one-family households. What is interesting is that the householder in a more-than-one-family household was also more likely to be female (53 percent) than the householder in a one-family household. Perhaps this finding results from the combination of two, unrelated families with female heads, no spouse, and children, but the breakouts in Tables 11A and 11B cannot confirm this conjecture.

The picture of one-parent, female-headed families living with parents is consistent with the age distributions reported in Tables 11A and 11B. The reference persons in subfamilies have a much younger age distribution than the householders in more-than-one-family households. These

[18] This analysis compares all subfamilies with all primary families. It is likely, in any given more-than-one-family household, that the primary family and subfamilies are similar in race and ethnicity, but this analysis does not address that question.

[19] In each AHS interview, the respondent is designated as the householder, and the householder can be either male or female. The designation of a female as the householder does not preclude the presence of a male spouse.

distributions are also consistent with young, married-couple families moving in with parents for economic reasons, however.

More-than-one-family households were less likely than one-family households to have a householder who is an American citizen, roughly 85 versus 93 percent. Slightly less than 85 percent of the reference persons in the subfamilies were American citizens. Although the stereotype of immigrant families living in homes with other immigrant families or with relatives who came to the United States earlier may have some validity, it can account for only a slight fraction of more-than-one-family households.[20]

Another important change from 2003 to 2009 occurred in educational attainment. In 2003, approximately 70 percent of reference persons in both related and unrelated subfamilies either failed to finish high school or had no education beyond high school. In 2009, the percentages were 65 percent for related subfamilies and 57 percent for unrelated subfamilies. Citizenship patterns also changed during this period. In 2003, 83.7 percent of the reference persons in related subfamilies were American citizens compared with 79.8 percent among unrelated subfamilies. By 2009, the percentages had shifted so that a lower percentage of related subfamilies had reference persons who were American citizens than unrelated subfamilies, 82.4 versus 86.5 percent.

The increase in the number of unrelated subfamilies—from 199,000 to 622,000—and the shift in the composition of this group lend credence to the proposition that economic hard times led to doubled-up households; in this case, doubled-up unrelated households. The key demographic changes were an increased percentage of non-Hispanic unrelated subfamilies, an increased percentage of younger unrelated subfamilies (particularly those ages 26 through 35), an increased percentage of American citizens among the reference persons in unrelated subfamilies, and a better educational profile for those reference persons.

[20] If all immigrant subfamilies lived with immigrant primary families, these families could account for only 15 percent of all more-than-one-family households, because only 15 percent of both groups are immigrants. If the matching of immigrant primary families with immigrant subfamilies were purely random, then immigrant primary subfamilies living with immigrant primary families could account for only 2.5 percent of all more-than-one-family households (0.15 x 0.15 = 0.025).

7. Changes in Doubled-Up Status at the Household Level, 2005 to 2009

The analysis in Sections 3 through 6 (Tables 5 through 11) used all the AHS microdata and looked at changes in the number of doubled-up households and the characteristics of those households in the aggregate. This analysis shows us how the number of doubled-up households increased during the period and how the characteristics of those doubled-up households evolved. The aggregate analysis does not tell us how individual households changed, however; for example, what additions caused a household that was not doubled up in 2005 to become doubled up in 2009. This section uses a subset of the AHS data to look at changes at the household level.

The longitudinal structure of the AHS enables us to observe how doubled-up status changed from 2005 to 2009 at the household level.[21] Our ability to observe changes is limited, however, because the AHS follows the same housing unit from survey to survey, not the same household. If the same household lived in the unit in both 2005 and 2009, then the AHS can see how the composition of that household changed during the period. If the household moved as its composition changed, however, then the AHS cannot observe this change.

In the AHS, a housing unit is said to contain the same household in 2009 as in 2005 if one or more people who lived in the unit at the time of the 2005 survey occupied the unit in 2009.[22] If a housing unit is composed of people who all moved into the unit after the previous survey, the AHS can distinguish the current status of the household but cannot tell whether the people living in the unit were doubled up before their move into the current unit.

Table 12 reports the type of other household member in households that changed doubled-up status from 2005 to 2009 in the year in which they were doubled up. For this analysis, we classify a household containing an adult child as doubled up if the child is age 21 or older but not if the child is younger than age 21. Restricting the analysis to housing units that were occupied by at least one member in successive surveys greatly reduces the number of households being studied.[23] Using a file that contained the same households in 2005, 2007, and 2009, we identified 3,676,000 housing units that were not doubled up in 2005 but were doubled up in 2009 and 2,939,000 housing units that were doubled up in 2005 but were not doubled up in 2009.

[21] We use the 2005-to-2009 period instead of the 2003-to-2009 period because it brackets the financial crisis and subsequent recession more tightly.

[22] The Census Bureau creates a variable, SAMEHH2, that takes the value 1 if any of the current residents lived in the unit at the most recent AHS and the previous interview was a regular interview; that is, it was not a vacant unit or a "usual residence elsewhere" interview.

[23] Note that no one person has to be in the unit in all three surveys. It is sufficient if one person lived in the household in both the 2005 and 2007 surveys and another person lived in the household in both the 2007 and 2009 surveys. For example, A and B can be roommates in 2005, B and C can be roommates in 2007, and C and D can be roommates in 2009, and the AHS would classify this unit as having the same household in all three surveys.

Table 12. Type of Other Household Member in Units That Changed Doubled-Up Status From 2005 to 2009

Households that became doubled up (thousands)		3,676
Households containing specific types of other household members in 2009	**Number (thousands)**	**Percent of Total**
Child age 21 or older	2,907	79.1
Parent	216	5.9
Grandchild	468	12.7
Sibling	132	3.6
Other relative	386	10.5
Roommate	86	2.3
Lodger	36	1.0
Other nonrelative	176	4.8
Households that became undoubled (thousands)		2,939
Households containing specific types of other household members in 2005	**Number (thousands)**	**Percent of Total**
Child age 21 or older	1,722	58.6
Parent	219	7.4
Grandchild	300	10.2
Sibling	142	4.8
Other relative	566	19.3
Roommate	173	5.9
Lodger	64	2.2
Other nonrelative	381	13.0

Note: Percentages total more than 100 percent because households can have more than one type of other household member.

Of the 2005 doubled-up households that undoubled by 2009, 58.6 percent had a child or children age 21 or older move out; among the households that became doubled up from 2005 to 2009, 79.1 percent contained a child age 21 or older. This pattern explains the growth in the percentage of doubled-up households with an adult child noted in Table 7.

The households that became undoubled had a slightly lower percentage of grandchildren than the households that became doubled up, 10.2 percent versus 12.7 percent. The biggest difference between the households that became undoubled and those that doubled up involves the presence of other relatives and other nonrelatives. Only 10.5 percent of the newly doubled-up households had other relatives compared with 19.3 percent of the households that became undoubled. Other nonrelatives were the other household members of only 4.8 percent of newly doubled-up households compared with 13.0 percent of the households that became undoubled. All three of these patterns can be seen in the changes in Table 7.

We also looked at housing units that contained the same household in 2005, 2007, and 2009 and that were doubled up in both 2005 and 2009 to learn how the households in these units might

differ from those in units that either undoubled or doubled up during the period.[24] Table 13 distinguishes these households by the type of other household member; it reports these percentages for the 2005 and 2009 surveys.

Table 13. Type of Other Household Member in Units That Were Doubled Up in Both 2005 and 2009

Households that were doubled up in both 2005 and 2009 (thousands)		6,003
Households containing specific types of other household members in 2009	**Number (thousands)**	**Percent of Total**
Child age 21 or older	3,949,000	65.8
Parent	709,000	11.8
Grandchild	923,000	15.4
Sibling	626,000	10.4
Other relative	908,000	15.1
Roommate	307,000	5.1
Lodger	93,000	1.6
Other nonrelative	362,000	6.0
Households containing specific types of other household members in 2005	**Number (thousands)**	**Percent of Total**
Child age 21 or older	3,861,000	64.3
Parent	687,000	11.4
Grandchild	792,000	13.2
Sibling	566,000	9.4
Other relative	1,021,000	17.0
Roommate	331,000	5.5
Lodger	102,000	1.7
Other nonrelative	399,000	6.6

Note: Percentages total more than 100 percent because households can have more than one type of other household member.

Again, a child or children older ages 21 and older constituted the most common type of other household member. Approximately two-thirds of households that were doubled up in both 2005 and 2009 contained a child or children ages 21 and older. This percentage is more than the 58.9 percent in units that undoubled and less than the 79.1 percent of units that doubled up during the period. Approximately 11 percent of these units had adult grandchildren as other household members; this percentage was also more than the comparable percentage for units that undoubled and less than the comparable percentage for units that doubled up.

The percentage of units with other household members who are either a parent or a sibling is substantially more for units that were doubled up in both 2005 and 2009 than for units that either doubled up or undoubled during this period. Parents were other household members in approximately 12 percent of the households that were doubled up in both 2005 and 2009,

[24] Note that some of these households may not have been doubled up in 2007.

whereas they composed the other household members in 7.4 percent of the households that were doubled up in 2005 but not in 2009 and only 5.9 percent of the households that were not doubled up in 2005 but were doubled up in 2009. Siblings were other household members in approximately 10 percent of the households that were doubled up in both 2005 and 2009, they were other household members in 4.8 percent of the households that were doubled up in 2005 but not in 2009, and they were other household members in 3.6 percent of the households that were not doubled up in 2005 but were doubled up in 2009.

Tables 12 and 13 together suggest that a shift occurred in the character of doubled-up units during the period containing the financial crisis and recession. The units that entered the period doubled up were more likely to contain parents, other siblings, or other relatives or to involve roommates, lodgers, or nonrelatives. During the period, children and grandchildren became more prominent among types of other household members. The units that entered the period doubled up with adult children or grandchildren were more likely to stay doubled up, and nearly 80 percent of the newly doubled-up units contained adult children.

In general, the units that entered and left the period doubled up did not change their character during the period. Of doubled-up units that contained an adult child in 2005, 90 percent also contained an adult child in 2009.[25] Of such units that included a parent in 2005, 72 percent also included a parent in 2009. Two-thirds of such units that included an adult grandchild in 2005 also included an adult grandchild in 2009.

[25] It may not have been the same child.

8. Doubled-Up Households As Reported by the 2011 AHS

After the analysis reported in Sections 3 through 7 was complete, the Census Bureau released the national summary tables for the 2011 AHS. Because one major focus of this work was on changes in doubled-up households possibly attributable to the recession, we decided to examine whether the trends we reported for the 2003-to-2009 period continued into 2011.

Table 14 contains counts of occupied housing units by relevant household composition categories from 2003 to 2011. *Be careful in interpreting changes from the 2009 survey to the 2011 survey because the Census Bureau changed the benchmarks for the AHS weights in 2011 from the 2000 decennial census to the 2010 decennial census.* The change in benchmarks between the 1990 and 2000 censuses resulted in only minor AHS count changes, but the change in benchmarks between the 1980 and the 1990 censuses resulted in a substantial reduction in the AHS count of housing units.

Table 14. AHS National Summary Data on Household Composition for Occupied Housing Units, 2003 to 2011

						Change				
	2003	2005	2007	2009	2011	2003 to 2005	2005 to 2007	2007 to 2009	2009 to 2011	2003 to 2011
Households	**105,842**	**108,871**	**110,692**	**111,806**	**114,907**	3,029	1,821	1,114	3,101	9,065
Single-person households	28,171	29,181	29,996	30,108	31,332	1,010	815	112	1,224	3,161
Two-or-more-person households	77,672	79,691	80,695	81,698	83,576	2,019	1,004	1,003	1,878	5,904
Households with people other than spouse or children										
With other relatives	22,012	22,724	23,133	23,656	24,940	712	409	523	1,284	2,928
With single adult offspring, ages 18 through 29	12,050	12,397	12,889	13,511	13,841	347	492	622	330	1,791
With single adult offspring, ages 30 and older	3,649	3,629	3,778	3,862	4,545	– 0	149	84	683	896
With three generations	3049	3,335	3,202	3,301	3,860	286	– 33	99	559	811
With one related subfamily	2,428	2,541	2,480	2,622	2,972	113	– 1	142	350	544
With subfamily householder younger than age 30	1,225	1,252	1,218	1,318	1,400	27	– 4	100	82	175
With subfamily householder ages 30 through 64	1,060	1,156	1,180	1,219	1,487	96	24	39	268	427
With subfamily householder ages 65 and older	143	133	82	85	85	– 0	– 1	3	0	– 8
With two or more related subfamilies	113	100	138	111	126	– 3	38	– 7	15	13
With other types of relatives	7,244	7,474	7,174	7,165	7,730	230	– 00	–	565	486
With nonrelatives	9,564	9,979	10,265	10,717	11,548	415	286	452	831	1,984

Table 14. AHS National Summary Data on Household Composition for Occupied Housing Units, 2003 to 2011 (continued)

						Change				
	2003	2005	2007	2009	2011	2003 to 2005	2003 to 2005	2003 to 2005	2003 to 2005	2003 to 2005
With co-owners or co-renters	3,153	3,410	2,683	3,428	3,999	257	– 27	745	571	846
With lodgers	1,316	1,445	1,262	1,207	1,383	129	– 83	– 5	176	67
With unrelated children younger than age 18	1,105	1,058	1,100	1,133	872	– 7	42	33	– 61	– 33
With other nonrelatives	4,808	4,914	6,179	6,049	6,350	106	1,265	– 30	301	1,542
With one or more unrelated subfamilies	196	274	494	621	541	78	220	127	– 0	345
With two unrelated people	4956	5,204	5,396	5,403	5,848	248	192	7	445	892
With three through eight unrelated people	730	711	825	862	1,082	– 9	114	37	220	352
With more than one family	2,737	2,915	3,112	3,353	3,639	178	197	241	286	902
With related families	2,541	2,641	2,618	2,732	3,098	100	– 3	114	366	557
With unrelated families	196	274	494	621	541	78	220	127	– 0	345

Note: All counts are in thousands.

The Census Bureau may eventually release comparable 2011 weights based on the 2000 census. If so, researchers will then be able to determine unambiguously whether the observed 2009-to-2011 changes are real or induced by change in the benchmark.

With the preceding caveat, the changes in household composition from 2009 to 2011 appear to show two important deviations from the trends reported in Tables 1A-1C.

- The survey-to-survey increase in the number of households returned to 3 million new households during the 2-year period.
- The number of households with unrelated subfamilies decreased by 80,000 from 2009 to 2011; it had tripled from 2003 to 2009.

Other doubling-up trends continued into 2011.

- The number of doubled-up households increased by 2.1 million: 1.3 million households with other relatives and 0.8 million households with nonrelatives.
- The number of households with adult children increased by approximately 1 million: 330,000 with children ages 18 through 29 and 683,000 with children ages 30 and older.[26]

[26] These two groups are not necessarily mutually exclusive. A household might contain a 25-year-old child and 31-year-old child.

- A remarkably substantial increase occurred in the number of households with three generations. This count grew from 3.3 million in 2009 to 3.9 million in 2011.
- Although the number of households with unrelated subfamilies declined, the number with related subfamilies increased by 366,000 from 2009 to 2011.

Some of these changes may, of course, be attributable to the change in the benchmark used for the AHS weights, and caution is therefore required in interpreting them as real changes.

9. Concluding Observations

9.1. The Recession and Doubled-Up Households

The Census Bureau studies suggesting a link between the recession and the increase in doubled-up households were an important motivation for this research. The data reported here provide several indications that the recession and the preceding financial crisis had an effect on doubled-up households. The most notable indications were the following.

- The steady decline in new household formations from 2003 to 2009.
- The increased number of adult children living at home.
- The fact that, by 2009, adult children living at home were more likely to be recently out of school and were less likely to be employed.
- The increased number of unrelated families living in one household.
- The characteristics of these unrelated families changing in such a way as to suggest that economic hardship became a more important cause of unrelated families living together.

9.2. Paths for Future Research

It is very important to be able to follow these trends in household composition through the recovery from the most recent economic recession. A necessary step would be for the Census Bureau to release a set of weights for the 2011 AHS that is consistent with the 2000 census and to be prepared to do the same for the 2013 survey. As the economic recovery picks up speed, undoubling may be the trend directly around the corner, but researchers will not be able to tell without consistent weights.

Our multivariate analysis did not come close to exhausting the potential for meaningful econometric work with the AHS data on questions of household composition. More creative specification and fuller use of all available information might produce more robust results, successfully sort out the factors that cause doubled-up households, and determine which households and housing units are most likely to be doubled up.

Throughout this report, we speculated on why certain patterns exist in the data. More direct information on why individuals and families live in doubled-up households would clarify whether these speculations are accurate. One could use the information currently in the AHS on reasons why mover groups move, but the planned new module on doubled-up households in the 2013 AHS would provide more thorough information about the antecedents of doubling up and where people go when they leave the housing unit in which they were doubled up. The new module will pay particular attention to the place of doubling up in housing trajectories that include homelessness.

Finally, we did not use all the information in the AHS on the composition and characteristics of subfamilies. More work could be done comparing the characteristics of primary families and subfamilies. In particular, it would be useful to see how the income of subfamily members relates to the incomes of components of the doubled-up household and total household income. Perhaps this work should also be delayed until the 2013 AHS, with its doubling-up module, to take full advantage of that module's additional information.

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