**Household composition and family wellbeing:**
**Exploring the relationship between doubling up and hardship**

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*Abstract*

Despite the increased prevalence of doubling up, there has been little attention in the literature to the effects of doubling up on other measures of economic wellbeing like material hardship. In this analysis, we use data from the 2008 Survey of Income and Program Participation (SIPP) to examine the relationship between doubling up and material hardship (including a composite measure of hardship, housing, medical and utility-related hardships) as well as food insecurity. We estimate individual random-effects and fixed-effects models and find that doubling up is associated with lower levels (or log odds) of experiencing most types of material hardship. However, doubling up is associated with increased difficulty in accessing medical care and increased food hardship. Taken together, our results suggest that doubling up has varying effects on different types of hardship.

## Introduction

Although the United States has made considerable progress over the last 50 years in fighting poverty (Fox et al., 2015; Wimer et al., 2013), in 2014, 15 percent of the population lived in poverty, and 21 percent of children were poor (DeNavas-Walt & Proctor, 2015). Despite assistance from government programs, many families continue to have a hard time making ends meet (Short, 2015) and frequently face material hardship (Nelson, 2011). Material hardship is a consumption-based indicator of economic security that captures forgone basic necessities (like food or medical treatment), which may impinge on an individual's wellbeing. Hardship is correlated with, but distinct from poverty, and many households above the poverty line experience hardship (Mayer & Jenks, 1989; Meyer & Sullivan, 2003; Nelson, 2011; Short, 2005; Sullivan, Turner & Danziger, 2008). Hardship may also have a more direct impact on adults and children than income poverty (e.g., lack of medical treatment or no light to do homework;

Heflin, London & Scott, 2011), and has been linked with poorer outcomes for children (Gershoff, Aber, Raver & Lennon, 2007; Zilanawala & Pilkauskas, 2012). Thus, it is important to understand the circumstances that contribute to families experiencing material hardships, and to consider how hardship may be reduced.

One way individuals may cope with challenging economic circumstances is to combine households with others ("doubling up"). Doubling up, also known as household sharing or household extension, is a common phenomenon. In 2010, approximately 19% of households lived in a doubled up household (Mykyta & Macartney, 2012). Doubling up has also become more common over the last 10-15 years, and studies have shown it increased during the Great Recession (Taylor et al., 2010; Mykyta & Macartney, 2012; Wiemers, 2014). Among low-income families, doubling up is even more prevalent; nearly one in two economically disadvantaged children lived in a doubled-up household between birth and age 9 (Pilkauskas, Garfinkel & McLanahan, 2014). Although doubling up is much more common among low-income families, research has found that household poverty rates do not differ between doubled up households and those that are not shared (Mykyta & Macartney, 2012). What is less clear is whether doubling up might be linked with material hardship, a question we address in this article.

To examine the associations between doubling up and material hardship we use the U.S. Census Bureau's 2008 Panel of the Survey of Income and Program Participation (SIPP).[1] Specifically, we address the following research questions: 1) Is doubling up associated with

[1] The estimates in this paper are based on responses from a sample of the population. As with all surveys, estimates may vary from the actual values because of sampling variation and other factors. All comparisons made in this paper have undergone statistical testing and are significant at the 90-percent confidence level unless otherwise noted. For information on confidentiality protection, sampling error, non-sampling error, and definitions see http://www.census.gov/programs-surveys/sipp/tech-documentation/source-accuracy-statements/source-accuracy-statements-2008.html.

material hardship? 2) Do these associations vary by type of hardship? and 3) Are there differences in the associations between doubling up and material hardship by whether doubling up occurs with kin and those living with non-relatives? Understanding how families make ends meet, and whether specific coping mechanisms, like doubling up, reduce hardship, can help us better understand the implications of private safety net use and consider how policy might reduce the incidence of hardship.

## Background

### *Defining Material Hardship*

Measures of material hardship capture an individual's inability to meet their basic needs, such as inadequate food, housing or medical care (Mayer & Jencks, 1989). Material hardship, unlike income or poverty, measures families' living conditions by assessing concrete adversities (Federman et al. 1996). Because income does not capture resources like wealth, government transfers or credit, it excludes resources that families may use to avoid hardship (Pilkauskas, Currie & Garfinkel, 2012). Thus, two income-poor families may have very different lived experiences.

Despite increasing research on material hardship, there is little consensus on how to measure hardship (Beverly 2001; Ouellette et al. 2004; Short 2005; Heflin 2006; Carle, Bauman, & Short 2009: Heflin et al. 2009; Nelson, 2011). Most studies measure hardship as the inability to pay bills, inadequate or poor housing, unmet medical or dental needs and food insecurity. Research has found that the underlying mechanisms behind different types of hardship vary, and has noted the importance of examining domains of hardship as well as aggregate measures of hardship (Heflin et al. 2009; Heflin et al, 2011). In this paper we consider each of these hardships as described below. We examine experience of having any hardship but also differences by types

of hardship.

*Defining Doubling Up*

In this paper, we broadly define a doubled up household as one including at least one additional adult beyond the nuclear family (spouse/unmarried partner and their children). Adult children of householders between the ages of 18 and 24 are not considered to be additional adults, as they are likely to be young adults (or students) who have not left the parental home (following Wiemers, 2014). Cohabiting unmarried partners of the households are also not considered to be additional adults (following Mykyta & Macartney, 2012; Pilkauskas, Garfinkel & McLanahan, 2014), as the reasons for living with a cohabiting partner are likely quite different from the reasons for residing with other adults.

A large literature recognizes doubling up as a form of social support, one that can be relied upon in times of economic need (Edin & Lein 1997; Stack 1977; Tienda & Angel, 1984; Hofferth, 1984; Hogan et al., 1990; Wiemers, 2014; Seefeldt & Sandstrom, 2015). A substantial literature on housing also emphasizes doubling up as a precursor to homelessness (e.g. Koebel & Murray, 1999; Miron, 1989; Mutchler & Krivo, 1989; Wright et al., 1998), while other studies suggest that doubling up, in and of itself, represents a hardship. These studies note that families (in the US) generally prefer to live independently and that doubling up may represent a hardship if it results in a lack of privacy or household crowding (Skobba & Goetz, 2015). Although doubling up may not be an individual's preference, reducing rent, which can range from 30 to 50 percent of a low-income families' budget (Schwartz & Wilson, 2007), is likely to have large economic benefits, saving families as much as $4000 a year (Pilkauskas, Garkinkel & McLanahan, 2014). Qualitative research in this area has also demonstrated that families double up to reduce housing costs, suggesting that doubling up is more often utilized as a hardship

prevention strategy than a hardship in and of itself (e.g. Seefeldt & Sandstrom, 2015). Therefore, in this paper, we treat doubling up as a potential form of support, to examine whether doubling up reduces or increases hardship.

*Why might doubling up be associated with material hardship?*

The expected effects of doubling up on material hardship are ambiguous. First doubling up may be beneficial. If doubling up has real economic value, moving into a shared household, or bringing additional adults into one's household, may alleviate economic strain and decrease material hardship. Additional household members may also provide extra resources to help pay for household costs and other expenses. Doubling up may also bring additional non-economic resources to the household if, for example, a coresident grandparent provides low- or no-cost childcare, freeing up funds to pay other expenses and ultimately reducing hardship. Bringing an additional adult in the household could also make households eligible for public benefits (such as the Supplemental Nutrition Assistance Program (SNAP) which is based on household size and income) thereby reducing hardship.

Second, doubling up may be costly. Doubling up might mean that rather than providing more resources, the additional people in the household stretch already limited resources leading to increased hardship. Doubling up may also induce more costs if an additional household member has some other need, say a health problem, that depletes economic resources (if for example there are more medical bills to be paid) leading to higher levels of household hardship. If bringing additional members into the household raises income levels, it might also reduce eligibility for public assistance potentially leading to higher levels of hardship.

Doubling up may not change levels of hardship. Individuals may choose to double up because they prefer to live together (Kamo, 2000). Studies have found that among immigrant

populations, or groups with a strong sense of familism, doubling up may be a preferred household arrangement (Blank 1998; Van Hook 2007). If doubling up occurs because of a preference, rather than some need, it is not clear whether hardships should be affected in any way by coresidence. In sum, the link between doubling up and material hardship is unclear.

Associations between doubling up and hardship may also vary by whether or not the individuals who are doubling up are kin or non-kin. Altruism theory would predict that families provide for each other because of intrinsic values around supporting kin (Becker, 1974). More generally, social norms around obligations to assist and share resources are stronger for kin than non-kin. Thus, the link between hardship and doubling up may be stronger (either positive or negative) among kin than among non-kin.

Additionally, the associations may vary by whether or not an individual moves into someone else's home, or whether someone receives an additional person into their own home. In general, we might expect that people move into someone else's home because they have some need, be it economic or otherwise. Similarly, we might anticipate that someone who receives another individual into their home may do so to assist the other individual. In this scenario, we might expect receivers to experience increased household hardship and those who move into someone else's home to have reduced hardship. Yet it is also possible that someone who is experiencing economic insecurity would invite others to live in their household to reduce hardship. Just as it is possible that an individual may move into someone else's home not because they are experiencing a need themselves, but because the householder has some need. Thus, while there are reasons to expect differences in the links with hardship depending on whether the individual hosts others in their home, or whether they move in with others, the direction of the association is not clear.

Lastly, the link between doubling up and hardship might vary by the type of hardship. Research has noted that the underlying mechanisms for different types of hardships vary (Heflin, Sandberg & Rafail, 2009). Qualitative research that investigated strategies employed by low-income families to avoid hardship found that doubling up was used to avoid housing related hardships, such as poor or dilapidated housing, but was less commonly employed to avoid utility, food, medical or clothing hardships (Heflin, London & Scott, 2011). Studies have also found that some families double up to reduce housing costs while keeping other finances separate, whereas others also pool resources to pay bills and buy food (Seefeldt & Sandstrom, 2015). These findings suggest that doubling up may reduce housing related hardships most strongly, but that variation likely depends on the amount of income pooling occurring within households.

*Prior Research*

To our knowledge, no quantitative research has investigated the links between doubling up, per se, and material hardship. One study examined the association between household extension, and numerous other forms of perceived social support (such as having someone to rely upon in times of need), and found no links with material hardship (Henly, Danziger & Offer, 2005). Many qualitative studies have noted that doubling up is used a means of avoiding material hardship (e.g. Edin & Lein, 1997; Hill & Kauff, 2001; Helfin, London & Scott, 2011; Seefeldt & Sandstrom, 2015), suggesting that doubling up should be associated with lower levels of hardship. A few papers have investigated the relationship between social support, more broadly defined than doubling up, and material hardship and find that people with more perceived support have lower levels of material hardship (Henly, Danziger & Offer, 2005; Mills & Zhang, 2013).

Two closely related studies investigated multigenerational coresidence and food insecurity (one type of hardship), and found that food insecurity was higher among multigenerational households as compared to grandparents living alone (Ziliak & Gunderson, forthcoming) or single generation households (Do, Rodgers, & Rivera Drew, 2015). Another closely related literature has investigated the links between doubling up, or other forms of household extension, and poverty. Studies have found that poverty rates among doubled up households as compared to those that do not include additional adults are quite similar (Mykyta & Macartney, 2012). Research focused on single mothers in the US who double up as compared to those who do not has found similar poverty rates across the two groups (Raymo, Smeeding, Edwards & Caruthers, 2014) but also that the doubled up single mothers were significantly better off economically (Brown & Lichter, 2004).

The current study builds on earlier literature to investigate the association between doubling up and material hardship among a nationally representative population. We study differences by type of hardship, and by kin and non-kin doubling up.

**Data and methods**

In this analysis, we use data from the 2008 SIPP to examine the relationship between doubling up and material hardship (including a composite measure of hardship, housing, medical and utility-related hardships) as well as food insecurity. We incorporate data from the core files collected through Wave 9, and the Adult Wellbeing topical modules collected at Waves 6 (May 2010 to July 2010) and 9 (May 2011 to Julyt 2011).[2]

[2] The first wave of data in the 2008 SIPP Panel was collected between September 2008 and December 2008 and references the period May through November 2008..

The SIPP is a panel survey based on a representative sample of the civilian, non-institutionalized population and includes approximately 50,000 eligible households.[3] All adults in sampled households are interviewed once every four months for a period of twenty-four to forty-eight months. SIPP's longitudinal design follows household members over time, even if the individuals move out of the original household. The SIPP 2008 Panel is particularly well suited to examining how changes in household composition such as doubling up influence household hardship and the dynamics of hardship because the survey questions related to wellbeing are collected at two points in the panel. Moreover, by examining different types of hardship we can assess whether doubling up is linked more strongly with particular hardships.

Our analytic sample includes persons who were interviewed at the first survey wave and who completed the Adult Wellbeing topical module at Waves 6 *and* 9. When weighted, the analytic sample represents 269.3 million persons for the person-level analysis.

*Measures of material hardship*

In this analysis, we explore the association between sharing a household and several measures of household hardship and food insecurity, including measures reflecting whether or not the household: (1) was able to meet its essential expenses; (2) had trouble paying rent or mortgage; (3) had missed utility payments; (4) had phone or utilities cut off; or (5) did not see a doctor or dentist when needed; as well as a composite measure of hardship (sum of individual hardships). In addition, we test two dichotomous measures reflecting food insufficiency and food insecurity [See Appendix A]. We test both continuous and dichotomous measures of several of these facets of hardship (see Zilanawala and Pilkauskas 2012; Schaefer & Gutierrez 2013), as described in Appendix A.

*Defining doubled up status*

[3] Households may consist of families, a single individual or a group of unrelated individuals.

Our key independent variable is the doubled up status of the person. We define a person as doubled up if they are living with at least one additional adult excluding a spouse or unmarried partner of the householder, or the child of the householder who is under the age of 25.[4] In this preliminary analysis, we operationalize doubled up status as a dichotomous variable indicating whether or not the person is doubled up. We also plan to test a categorical variable of doubled up status indicating whether the person is: (1) not doubled up, (2) doubled up, but only with kin; (3) doubled up, including relatives and non-relatives; (4) doubled up, only with non-relatives (as in a household of roommates). Given different social norms around resource sharing with kin as compared to non-kin, we anticipate there may be differences in the links with hardship.

*Studying the association between doubling up and material hardship*

In order to examine the association between doubling up and material hardship, we conduct several analyses, estimating individual random-effects and fixed-effects. First, we estimate a set of random effects regression models on the pooled SIPP data, controlling for a number of variables described below (in the future we plan to test using ordinary least squares models clustering at the person level) [5]. Standard errors are adjusted for sample design effects. Second, we investigate whether *changes* in doubling up status affect *changes* in reported material hardship using person-level fixed-effects. Individual fixed-effect models control for time-invariant characteristics of individuals that might influence both doubling up and material hardship. We include a few time varying controls (educational attainment, marital status, disability status, household type, metropolitan residence, housing tenure, employment, income

[4] We will conduct robustness checks to ensure that our results are consistent across various definitions of doubled up status.
[5] We estimate logit models for dichotomous outcomes.

and wealth in these models as well) that are associated with both doubling up and material hardship.

In each set of models, we first estimate the unadjusted association between doubling up and hardship (Model 1); Model 2 incorporates individual and household characteristics, such as age, sex, race/ethnicity, nativity, educational attainment, disability status, marital status, metropolitan status, housing tenure, and household type; Model 3 adds additional controls which may be endogenous to doubling up but are important to control, such as employment status, government program participation, household income to poverty ratio and household net wealth.[6]

**Results**

*Descriptive results*

Table 1 presents summary characteristics of the analytic sample at Wave 6 among those persons with reported hardship in both Waves 6 and 9. As shown, 62.8 million persons, about 23.3 percent of the sample, were doubled up at Wave 6. Of those doubled up, about 79.9 percent were doubled up only with relatives or kin, and about 9.6 percent lived only with non-relatives. Table 1 reveals significant differences in sample characteristics by doubled up status. For example, 30 percent of doubled up persons were young adults – between 18 and 34 years of age, compared with about 20 percent of those not living in doubled up households.

Persons living in doubled up households were more likely to be black non-Hispanic (16.9 percent) compared to those who were not doubled up (10.2 percent). Similarly, those doubled up were more likely to be Hispanic than their non-doubled up counterparts (23.8 percent v. 14.0

[6] We also tested personal measures of economic wellbeing, such as personal income to poverty ratio and personal net wealth. Associations between these measures and hardship were similar to those reported here.

percent). Foreign-born individuals were also more likely to be doubled up (18.8 percent) than not (10.7 percent).

Household type also varies by doubled up status. For example, 40.9 percent of doubled up persons lived in a family household with an unmarried head of household, compared with just 14.3 percent of persons not doubled up.

Consistent with prior research, those living in doubled up households were relatively disadvantaged. For example, only 14 percent of persons in doubled up households held a college degree compared with 22.6 percent of those not doubled up. Those sharing households were also more likely to be unemployed than their counterparts (7.3 percent v. 4.7 percent). Further, more than one half of those doubled up lived in households (53.9 percent) receiving some form of government assistance, compared with 28.4 percent of those who were not doubled up.

In Table 2, we show the various material hardship measures at Wave 6 by doubled up status[7]. As shown in Table 2, individuals living in doubled up households had significantly higher levels of material hardship (across most types) and food insecurity as compared with those residing in non-doubled up households.[8] For example, 31.4 percent of doubled up persons lived a household that experienced any hardship in the previous year, compared with 23.7 percent of persons not living in a doubled up household.

*Results from models estimating the association between doubling up and hardship*

In Table 3 we report results from the random-effects and fixed-effects models estimating the association between doubling up and the hardship index. This index measures the number of hardships reported and ranges from 0 to 6. We report coefficients for Model 1 estimating the

[7] These estimates include data for individuals in households responding to the Adult Wellbeing Module at both Waves 6 and 9, and were weighted using replicate weights for Wave 9.

[8] There were no significant differences in reported evictions or cutoff utilities by doubled up status **[Table 2: 12H]**.

unadjusted association between doubling up (or changes in doubled up status in the fixed effects models) and hardship; Model 2 including demographic and household characteristics as control variables; and Model 3 including the full set of individual and household characteristics and further incorporating additional measures of economic wellbeing that may be associated with hardship.

As shown in Table 3, in the unadjusted random effects model, persons in doubled up households report higher levels of hardship than their non-doubled up counterparts (Model 1). Further, although the magnitude of the coefficient declines, the positive association between doubling up and hardship holds after controlling for individual and household level characteristics in Model 2. However, when other measures reflecting economic wellbeing are included in the model, living in a doubled up household is no longer significantly associated with reported hardship in the random-effects models.

In contrast to the results for random-effects models reported in Table 3, in the unadjusted individual fixed effects model, changes in doubled up status (e.g. moving into a doubled up household) were associated with *declines* in reported hardship. This finding remained robust even in the full model controlling for individual characteristics, household characteristics, and other measures of economic wellbeing.

In Table 4, we report results from random-effects and individual fixed-effects models estimating the association between doubling up and each of the hardship measures. These models include the full set of individual and household characteristics, including measures of economic wellbeing (Model 3). We find that doubling up is associated with lower levels (or log odds) of experiencing housing and utility hardship in random effects models, as well as lower log odds of reporting an inability to meet expenses. In general, doubling up also is associated with reduced

hardship in fixed effects models estimating changes in hardship. However, two exceptions stand out – medical and food hardship. Doubling up is associated with higher log odds of having difficulty accessing medical care and greater food hardship in random effects models. However, changes in doubling up status are not significantly associated with changes in medical or food hardship in fixed effects models. Taken together, these results suggest that doubling up has varying effects on different types of hardship.

Table 5 shows results from random-effects and individual fixed effects models estimating the association between type of doubling up and reported levels of hardship. In these models, the omitted category is not doubled up. Again, as in Table 3, we present results from Models 1, 2, and 3. In the unadjusted random-effects model (Model 1), persons who were doubled up with kin (whether with kin only or with both kin and non-kin) reported significantly higher levels of hardship than persons who were not doubled up. There was no significant difference in reported hardship between persons not doubled up and those living with non-relatives in the unadjusted random-effects model.

Controlling for individual and household characteristics reduces the coefficients on the variable reflecting doubled up type. Yet, even after controlling for individual and household characteristics, persons doubled up with kin reported significantly higher levels of hardship than those not doubled up, as in Model 1. Finally, after controlling for other measures of economic wellbeing in Model 3, only those doubling up with both kin and non-relatives experienced higher levels of hardship than those not doubled up**;** the association between doubling up with kin only and hardship was no longer significant.

With respect to the results from the fixed effects models reported in Table 5, doubling up with kin only reduces reported hardship across all the models. However, changes in other types

of doubling up (i.e. with kin and non-kin, or with non-relatives only) were not significantly associated with changes in hardship in the fixed effects models.

In Table 6, we report coefficients from random and fixed effects models estimating the association between doubling up type and hardship for all hardship types. These models include the full set of controls representing individual and household characteristics as well as other measures of economic wellbeing (Model 3).

As shown in Table 6, persons who doubled up with kin only were significantly less likely to report not being able to meet expenses or pay their rent or mortgage or to report any hardship, and reported lower levels of housing hardship, utility hardship and food insecurity than those not doubled up in random effects models controlling for all covariates. However, those doubled up with kin were more likely to report medical hardship than persons not sharing a household. Doubling up with both kin and non-kin was positively associated with medical hardship in the random effects models, while doubling up with non-relatives was positively associated with any food hardship.

Results from fixed effects models are generally consistent with those from the random effects models. For example, as shown in Table 6, persons who were doubled up with kin reported reduced hardship, particularly reduced housing and utility hardships, than those who were not doubled up. Further, persons who moved in with both kin and non-kin experienced increases in medical hardship relative to those not doubled up. Changes in doubled up status were not significantly associated with changes in food hardship or insecurity in the fixed effects models.

As shown in Tables 3 and 5, other variables were also significantly associated with hardship in the fully adjusted random and fixed effects models (Model 3). Individual

characteristics reflecting relative disadvantage were significantly associated with hardship. For example, blacks and Hispanics were more likely to experience hardship, as were those living in family households headed by an unmarried female head, even after controlling for doubled up status and other factors. Being disabled, being unemployed or receiving government assistance was also positively associated with both higher levels of hardship in random effects models and with increased hardship in fixed effects models. In contrast, owning one's home and a higher household income to poverty ratio, which may reflect relative socioeconomic advantage, both were associated with reduced hardship in random and fixed effects models.

**Discussion**

In this analysis, we examine the association between living in a doubled up household on various forms of material hardship, including housing hardship, medical hardship and food hardship. In addition, we examine differences in hardship across different types of doubled up households. To our knowledge, we are the first study to examine these associations.

Descriptive results presented here suggest differences in hardship between households that were doubled up and those that were not. Specifically, those results suggest that individuals living in doubled up households were relatively disadvantaged compared to their counterparts. Not surprisingly then, our results further reveal that a higher proportion of those living in doubled up households experience hardship of most types compared to those who are not doubled up.

Results from random effects models suggest that doubling up is associated with lower levels of hardship, particularly housing and utility hardship, in models controlling for individual and household characteristics and other measures of economic well-being. In contrast, doubling up remains positively associated with medical hardships and food hardships.

Changes in doubled up status examined in the individual fixed effects models reduced overall hardship as well as housing and utility hardship in the models, suggesting that individuals may double up and move in with relatives or friends when they find it difficult to sustain their own household. Thus, although some may view the need to double up as a hardship, the negative association in the fixed effects models reported in Tables 3 and 4 suggest that doubling up represents a strategy to alleviate hardship, particularly housing hardships. The fact that the associations became stronger in the individual fixed effects models also suggests that there may be time invariant individual characteristics that are correlated with both hardship and doubling up that are not controlled in the random effects models.

Taken together, our results suggest that doubling up has varying effects on different types of hardship. Households may take in additional members to defray housing and utility costs, which are likely consistent from month to month or vary seasonally. Doubling up seems to reduce these forms of hardship. In contrast, doubling up is associated with greater food hardship. Additional household members may strain the household's food budget. Further, although additional household members may be expected to contribute a set amount to housing costs, they may be less likely to contribute directly to food costs. Finally, changes in household composition might affect a household's eligibility for government assistance programs, such as SNAP. If doubling up reduces eligibility for food assistance, then food hardship might increase. Doubling up was also positively associated with medical hardships, specifically forgone care in some models. Doubling up may increase the care burden on household members, and thus result in the postponement of medical care.

In terms of the models by doubled up type, the results echo those of for doubling up in general. Doubling up – in particular, doubling up with kin -- serves as a strategy to alleviate housing hardship.

There are several limitations to this paper. The first is timing – the adult well-being topical modules were fielded just one year apart, and it may be hard to capture changes in hardship in a relatively short time period. Moreover, several of the well-being questions reference the prior 12 months. Depending on the timing of the change in doubled up status, the respondent could be referencing hardship experienced during the time prior to a change in status. To the extent that this is the case, hardship could be lead to doubling up. As such, the relationships between doubling up and hardship reported in this paper should be considered associations rather than causal effects. To address these limitations, we plan to take advantage of the information from earlier waves in order to incorporate measures of duration of doubled up status into models predicting hardship.

All of the hardship questions are asked of the household reference person. In this paper, we estimate models both for the householder and for household members. On the one hand, the hardship questions reference experiences of the household and its members. Yet, other household members may perceive hardship differently from the householder.

In future analyses we plan to further investigate these differences to try to better understand why certain hardships increase and others decline. Additionally we plan to study differences by average household income level and by whether there are differences whether people move in with others, or bring others into their own home.

Despite these limitations, this analysis contributes to the literature on household composition and hardship. In general, these preliminary results are consistent with prior literature

that suggests that doubled up households and persons residing in doubled up households tend to be more disadvantaged and experience greater hardship on average than those who are not doubled up. However, after controlling for a variety of individual and household characteristics, those who are doubled up are less likely to experience housing and utility hardship but are more likely to experience medical and food hardship.

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**Table 1: Sample Characteristics**

| | DOUBLED UP (n=62,819,259) | | NOT DOUBLED UP (n=206,496,446) | | |
|---|---|---|---|---|---|
| | **Percent** | **SE** | **Percent** | **SE** | |
| Doubled up with kin only | 79.9 | 0.8 | | | |
| Doubled up with kin and non-kin | 10.5 | 0.3 | | | |
| Doubled up with non-kin only | 9.6 | 0.3 | | | |
| | | | | | |
| Age | | | | | |
| Less than 18 years | 20.5 | 0.4 | 25.7 | 0.1 | * |
| 18 to 24 years | 12.3 | 0.3 | 8.3 | 0.1 | * |
| 25 to 34 years | 17.7 | 0.3 | 11.8 | 0.1 | * |
| 35 to 64 years | 38.3 | 0.3 | 40.8 | 0.1 | * |
| 65 years and over | 11.2 | 0.3 | 13.4 | 0.1 | * |
| Female | 49.7 | 0.3 | 48.7 | 0.1 | * |
| Race/ethnicity | | | | | |
| White non-Hispanic | 50.1 | 0.7 | 69.5 | 0.3 | * |
| Black non-Hispanic | 16.9 | 0.5 | 10.2 | 0.2 | * |
| Hispanic | 23.8 | 0.6 | 14.0 | 0.2 | * |
| Other non-Hispanic | 9.2 | 0.3 | 6.3 | 0.1 | * |
| Foreign-born | 18.8 | 0.5 | 10.7 | 0.2 | * |
| Marital status | | | | | |
| Married | 29.0 | 0.4 | 45.1 | 0.2 | * |
| Separated, divorced or widowed | 17.2 | 0.3 | 13.5 | 0.1 | * |
| Never married | 53.8 | 0.4 | 41.4 | 0.2 | * |
| Educational attainment | | | | | |
| Less than high school | 34.5 | 0.5 | 32.8 | 0.2 | * |
| High school graduate | 25.3 | 0.4 | 18.8 | 0.2 | * |
| Some college | 26.2 | 0.5 | 25.8 | 0.2 | |
| Bachelor's degree or higher | 14.0 | 0.4 | 22.6 | 0.3 | * |
| Employment status | | | | | |
| Employed | 62.1 | 0.4 | 68.1 | 0.2 | * |
| Unemployed | 7.3 | 0.2 | 4.7 | 0.1 | * |
| Not in labor force | 30.6 | 0.4 | 27.2 | 0.2 | * |
| Household type | | | | | |
| Married family household | 50.2 | 0.8 | 67.6 | 0.3 | * |
| Male-headed family household | 11.4 | 0.4 | 3.2 | 0.1 | * |
| Female-headed family household | 29.5 | 0.7 | 11.1 | 0.2 | * |
| Nonfamily household | 9.0 | 0.4 | 18.1 | 0.1 | * |
| Owned home | 66.4 | 0.8 | 70.1 | 0.3 | * |
| Resides in metropolitan area | 80.8 | 1.0 | 79.1 | 1.0 | |
| Received any government assistance | 53.9 | 0.9 | 28.4 | 0.4 | * |

* $p < 0.05$

Note: Sample includes persons in households in which householder responded to the Adult Wellbeing module at Waves 6 and 9. Estimates use Wave 9 replicate weights and standard errors are adjusted for design effects.
Source: 2008 Survey of Income and Program Participation, Wave 6 and 9

**Table 2: Material hardship measures, at Wave 6**

| | Doubled up (N = 62,819,260) | | Not doubled up (N = 206,496,446) | | |
|---|---|---|---|---|---|
| | Estimate | SE | Estimate | SE | $p>0.05$ |
| Weighted percent | 23.3 | 0.3 | 76.7 | 0.3 | * |
| Any hardship | 31.4 | 0.8 | 23.7 | 0.4 | * |
| Could not meet all household expenses | 21.7 | 0.7 | 16.6 | 0.3 | * |
| *Housing* | | | | | |
| Did not pay full amount of rent or mortgage | 10.9 | 0.5 | 8.4 | 0.2 | * |
| Evicted | 0.5 | 0.1 | 0.4 | 0.1 | |
| Any housing hardship | 11.4 | 0.6 | 8.9 | 0.3 | * |
| *Utility* | | | | | |
| Did not pay utility bills | 14.9 | 0.6 | 11.0 | 0.3 | * |
| Had utilities cut off | 2.3 | 0.3 | 1.9 | 0.1 | |
| Had phone cut off | 5.7 | 0.4 | 3.7 | 0.2 | * |
| Any utility hardship | 16.6 | 0.7 | 12.1 | 0.3 | * |
| *Medical* | | | | | |
| Had unmet medical need | 11.5 | 0.5 | 7.5 | 0.2 | * |
| Had unmet dental need | 13.4 | 0.6 | 9.3 | 0.2 | * |
| Any medical hardship | 16.9 | 0.6 | 11.7 | 0.3 | * |
| **Composite measures of hardship** *(means reported)* | | | | | |
| Overall hardship index *(Range 0-6)* | 0.781 | 0.024 | 0.564 | 0.010 | * |
| Housing hardship index *(Range 0-2)* | 0.114 | 0.006 | 0.089 | 0.003 | * |
| Utility hardship index *(Range 0-3)* | 0.229 | 0.010 | 0.166 | 0.004 | * |
| Medical hardship index *(Range 0-2)* | 0.249 | 0.010 | 0.167 | 0.004 | * |

Note: Sample includes households (and persons in households) responding to the Adult Wellbeing module at Waves 6 and 9. Estimates use Wave 9 replicate weights and standard errors are adjusted for design effects.

Source: 2008 Survey of Income and Program Participation, Wave 6 and 9

**Table 3: The Association between Doubled Up and Material Hardship Index, Random Effects and Individual Fixed-Effects Models.**

| | Random Effects Models | | | | | | Fixed Effects Models | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Model 1: Unadjusted | | Model 2: With Individual and Household Characteristics | | Model 3: Full Model | | Model 1: Unadjusted | | Model 2: With Individual and Household Characteristics | | Model 3: Full Model | |
| | B | SE | B | SE | B | SE | B | SE | B | SE | B | SE |
| Doubled up | 0.171** | 0.014 | 0.041** | 0.015 | -0.017 | 0.015 | -0.054+ | 0.030 | -0.056+ | 0.032 | -0.068* | 0.032 |
| Householder | | | 0.012 | 0.016 | -0.001 | 0.015 | | | -0.034 | 0.057 | -0.038 | 0.057 |
| Age | | | | | | | | | | | | |
| Less than 18 years | | | 0.015 | 0.034 | 0.011 | 0.033 | | | -0.043 | 0.117 | -0.045 | 0.117 |
| 18 to 24 years | | | 0.071* | 0.029 | 0.030 | 0.029 | | | -0.021 | 0.097 | -0.026 | 0.097 |
| 25 to 34 years | | | 0.026 | 0.021 | -0.019 | 0.021 | | | -0.011 | 0.068 | -0.013 | 0.068 |
| 65 years and older | | | -0.332** | 0.019 | -0.278** | 0.020 | | | -0.032 | 0.073 | -0.031 | 0.073 |
| Male | | | 0.001 | 0.013 | 0.004 | 0.012 | | | | | | |
| Race/ethnicity | | | | | | | | | | | | |
| Black non-Hispanic | | | 0.204** | 0.021 | 0.098** | 0.021 | | | | | | |
| Hispanic or Latino origin | | | 0.224** | 0.021 | 0.070** | 0.020 | | | | | | |
| Other non-Hispanic | | | 0.888** | 0.025 | 0.048* | 0.024 | | | | | | |
| Foreign born | | | -0.057** | 0.022 | -0.076** | 0.020 | | | | | | |
| Educational attainment | | | | | | | | | | | | |
| Less than high school | | | 0.089** | 0.023 | 0.038+ | 0.023 | | | 0.030 | 0.059 | 0.032 | 0.059 |
| Some college | | | -0.015 | 0.018 | 0.024 | 0.017 | | | -0.036 | 0.063 | -0.034 | 0.063 |
| Bachelor degree or higher | | | -0.266** | 0.020 | -0.126** | 0.020 | | | -0.036 | 0.106 | -0.033 | 0.105 |
| Marital status | | | | | | | | | | | | |
| Separated, divorced or widowed | | | 0.031 | 0.026 | 0.025 | 0.026 | | | 0.116+ | 0.068 | 0.113+ | 0.068 |
| Never married | | | -0.051* | 0.025 | -0.033 | 0.026 | | | 0.073 | 0.074 | 0.071 | 0.074 |
| Is disabled | | | 0.365** | 0.020 | 0.308** | 0.020 | | | 0.013** | 0.038 | 0.106** | 0.038 |
| Employment status | | | | | | | | | | | | |
| Unemployed | | | | | 0.303** | 0.024 | | | | | 0.168** | 0.031 |
| Not in labor force | | | | | -0.067** | 0.015 | | | | | 0.003 | 0.027 |
| Metropolitan area residence | | | -0.037* | 0.015 | 0.010 | 0.014 | | | 0.007 | 0.078 | 0.007 | 0.078 |
| Lived in owned home | | | -0.368** | 0.015 | -0.240** | 0.014 | | | -0.132** | 0.045 | -0.126** | 0.045 |

** $p<0.01$; * $p<0.05$; + $p<0.10$

**Table 3: The Association between Doubled Up and Material Hardship Index, Random Effects and Individual Fixed-Effects Models.**

| | Random Effects Models | | | | | | Fixed Effects Models | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Model 1: Unadjusted | | Model 2: With Individual and Household Characteristics | | Model 3: Full Model | | Model 1: Unadjusted | | Model 2: With Individual and Household Characteristics | | Model 3: Full Model | |
| | B | SE | B | SE | B | SE | B | SE | B | SE | B | SE |
| Household type | | | | | | | | | | | | |
| Unmarried male head family household | | | 0.107** | 0.030 | 0.049+ | 0.029 | | | -0.099 | 0.069 | -0.103 | 0.069 |
| Unmarried female head family household | | | 0.250** | 0.021 | 0.145** | 0.021 | | | -0.035 | 0.054 | -0.042 | 0.054 |
| Nonfamily household | | | -0.013 | 0.027 | -0.012 | 0.026 | | | -0.083 | 0.064 | -0.081 | 0.064 |
| Received any government assistance | | | | | 0.413** | 0.014 | | | | | 0.127** | 0.024 |
| Household income to poverty ratio | | | | | -0.033** | 0.002 | | | | | -0.012** | 0.003 |
| Household net worth | | | | | 0.430 | 0.950 | | | | | -0.850 | 1.917 |
| Constant | 0.571** | 0.007 | 0.829** | 0.026 | 0.745** | 0.027 | 0.625** | 0.008 | 0.717** | 0.099 | 0.707** | 0.100 |
| n | 72,353 | | 72,353 | | 72,353 | | 72,353 | | 72,353 | | 72,353 | |

** $p<0.01$; * $p<0.05$; + $p<0.10$

Note: All models control for age, sex, race/ethnicity, nativity, educational attainment, employment status, and disability status, household type, number of children under age 18, housing tenure, metropolitan residence, government program participation, household income to poverty ratio and household net wealth. Standard errors adjusted for design effects.

Source: 2008 Survey of Income and Program Participation Waves 6 and 9

**Table 4: The Association between Doubled Up and Material Hardship, Random Effects and Individual Fixed-Effects Models.**

| | RANDOM EFFECTS | | FIXED EFFECTS | |
|---|---|---|---|---|
| | B | Adjusted SE | B | Adjusted SE |
| Hardship index | -0.017 | 0.015 | -0.068* | 0.032 |
| Could not meet all household expenses | -0.016** | 0.004 | -0.036** | 0.011 |
| Housing hardship index | -0.016** | 0.004 | -0.029** | 0.009 |
| Unable to pay rent and/or mortgage | -0.015** | 0.003 | -0.024** | 0.008 |
| Utility hardship index | -0.022** | 0.006 | -0.041** | 0.014 |
| Any utility hardship | -0.009 | 0.041 | -0.216* | 0.101 |
| Medical hardship index | 0.030** | 0.006 | 0.024 | 0.015 |
| Any medical hardship | 0.329** | 0.039 | 0.125 | 0.100 |
| Food hardship | 0.239** | 0.065 | 0.110 | 0.185 |
| Food insecurity | 0.056 | 0.046 | -0.057 | 0.121 |

** $p<0.01$; * $p<0.05$; + $p<0.10$

Note: All models control for age, sex, race/ethnicity, nativity, educational attainment, employment status, and disability status, household type, number of children under age 18, housing tenure, metropolitan residence, government program participation, household income to poverty ratio and household net wealth. Standard errors are adjusted for design effects.

Source: 2008 Survey of Income and Program Participation Waves 6 and 9

**Table 5: The Association between Doubled Up Type and Material Hardship Index, Random Effects and Individual Fixed-Effects Models.**

| | Random Effects Models | | | | | | Fixed Effects Models | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Model 1: Unadjusted | | Model 2: With Individual and Household Characteristics | | Model 3: Full Model | | Model 1: Unadjusted | | Model 2: With Individual and Household Characteristics | | Model 3: Full Model | |
| | B | SE | B | SE | B | SE | B | SE | B | SE | B | SE |
| Doubled up Type *(Not doubled up)* | | | | | | | | | | | | |
| Doubled up with kin only | 0.160** | 0.015 | 0.036* | 0.016 | -0.025 | 0.016 | -0.067* | 0.033 | -0.070* | 0.035 | -0.082* | 0.035 |
| Doubled up with kin and non-kin | 0.342** | 0.037 | 0.137** | 0.036 | 0.048* | 0.021 | -0.004 | 0.066 | -0.011 | 0.065 | -0.032 | 0.065 |
| Doubled up with non-kin only | 0.045* | 0.044 | -0.011 | 0.044 | -0.022 | 0.026 | -0.010 | 0.084 | -0.008 | 0.086 | -0.019 | 0.086 |
| Householder | | | 0.011 | 0.016 | -0.002 | 0.015 | | | -0.033 | 0.057 | -0.036 | 0.057 |
| Age | | | | | | | | | | | | |
| Less than 18 years | | | 0.035 | 0.034 | 0.009 | 0.033 | | | -0.047 | 0.117 | -0.048 | 0.117 |
| 18 to 24 years | | | 0.071* | 0.029 | 0.029 | 0.029 | | | -0.026 | 0.097 | -0.030 | 0.097 |
| 25 to 34 years | | | 0.026 | 0.021 | -0.019 | 0.021 | | | -0.012 | 0.051 | -0.013 | 0.068 |
| 65 years and older | | | -0.332** | 0.019 | -0.277** | 0.020 | | | -0.032 | 0.055 | -0.031 | 0.073 |
| Male | | | 0.002 | 0.013 | 0.004 | 0.012 | | | | | | |
| Race/ethnicity | | | | | | | | | | | | |
| Black non-Hispanic | | | 0.205** | 0.021 | 0.099** | 0.020 | | | | | | |
| Hispanic or Latino origin | | | 0.223** | 0.021 | 0.070** | 0.020 | | | | | | |
| Other non-Hispanic | | | 0.888** | 0.025 | 0.049* | 0.024 | | | | | | |
| Foreign born | | | -0.057** | 0.022 | -0.076** | 0.021 | | | | | | |
| Educational attainment | | | | | | | | | | | | |
| Less than high school | | | 0.089** | 0.023 | 0.038+ | 0.023 | | | 0.030 | 0.059 | 0.032 | 0.059 |
| Some college | | | -0.014 | 0.018 | 0.024 | 0.017 | | | -0.036 | 0.063 | -0.034 | 0.063 |
| Bachelor degree or higher | | | -0.265** | 0.020 | -0.126** | 0.020 | | | -0.035 | 0.104 | -0.013 | 0.106 |
| Marital status | | | | | | | | | | | | |
| Separated, divorced or widowed | | | 0.028 | 0.026 | 0.026 | 0.026 | | | 0.117+ | 0.068 | 0.115+ | 0.068 |
| Never married | | | -0.052* | 0.026 | -0.033 | 0.026 | | | 0.073 | 0.074 | 0.072 | 0.074 |
| Is disabled | | | 0.365** | 0.020 | 0.308** | 0.020 | | | 0.103** | 0.038 | 0.106** | 0.038 |
| Employment status | | | | | | | | | | | | |
| Unemployed | | | | | 0.303** | 0.023 | | | | | 0.168** | 0.031 |
| Not in labor force | | | | | -0.067** | 0.015 | | | | | 0.004 | 0.027 |
| Metropolitan area residence | | | -0.037* | 0.015 | 0.009 | 0.014 | | | 0.005 | 0.078 | 0.006 | 0.078 |
| Lived in owned home | | | -0.367** | 0.015 | -0.239** | 0.014 | | | -0.131** | 0.045 | -0.125** | 0.045 |

**Table 5: The Association between Doubled Up Type and Material Hardship Index, Random Effects and Individual Fixed-Effects Models.**

| | Random Effects Models | | | | | | Fixed Effects Models | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **Model 1: Unadjusted** | | **Model 2: With Individual and Household Characteristics** | | **Model 3: Full Model** | | **Model 1: Unadjusted** | | **Model 2: With Individual and Household Characteristics** | | **Model 3: Full Model** | |
| | B | SE | B | SE | B | SE | B | SE | B | SE | B | SE |
| Household type | | | | | | | | | | | | |
| Unmarried male head family household | | | 0.104** | 0.030 | 0.047 | 0.029 | | | -0.097 | 0.069 | -0.102 | 0.069 |
| Unmarried female head family household | | | 0.249** | 0.021 | 0.145** | 0.021 | | | -0.034 | 0.054 | -0.041 | 0.054 |
| Nonfamily household | | | -0.005 | 0.028 | -0.013 | 0.027 | | | -0.090 | 0.066 | -0.089 | 0.066 |
| Received any government assistance | | | | | 0.412** | 0.014 | | | | | 0.126** | 0.024 |
| Household income to poverty ratio | | | | | -0.033** | 0.002 | | | | | -0.012** | 0.003 |
| Household net worth | | | | | 0.422 | 1.570 | | | | | 0.008 | 0.018 |
| Constant | 0.571** | 0.005 | 0.829** | 0.016 | 0.745** | 0.016 | 0.559** | 0.026 | 0.649** | 0.192 | 0.627** | 0.104 |
| n | 72,353 | | 72,353 | | 72,353 | | 72,353 | | 72,353 | | 72,353 | |

** $p<0.01$; * $p<0.05$; + $p<0.10$

Note: All models control for age, sex, race/ethnicity, nativity, educational attainment, employment status, and disability status, household type, number of children under age 18, housing tenure, metropolitan residence, government program participation, household income to poverty ratio and household net wealth. Standard errors are adjusted for design effects.

Source: 2008 Survey of Income and Program Participation Waves 6 and 9

**Table 6: The Association between Doubled Up Type and Material Hardship, Random Effects and Individual Fixed-Effects Models.**

| | Random Effects Models | | Fixed Effects Models | |
|---|---|---|---|---|
| | **B** | **SE** | **B** | **SE** |
| Hardship index | | | | |
| Doubled up with kin only | -0.025 | 0.016 | -0.082* | 0.035 |
| Doubled up with kin and non-kin | 0.048 | 0.035 | -0.032 | 0.065 |
| Doubled up with non-kin only | -0.022 | 0.043 | -0.019 | 0.086 |
| Any hardship | | | | |
| Doubled up with kin only | -0.010+ | 0.006 | -0.027* | 0.013 |
| Doubled up with kin and non-kin | 0.015 | 0.016 | -0.003 | 0.025 |
| Doubled up with non-kin only | -0.012 | 0.009 | 0.013 | 0.032 |
| Unable to meet expenses | | | | |
| Doubled up with kin only | -0.017** | 0.005 | -0.041** | 0.012 |
| Doubled up with kin and non-kin | -0.008 | 0.011 | -0.036 | 0.022 |
| Doubled up with non-kin only | -0.012 | 0.013 | -0.002 | 0.030 |
| Housing hardship | | | | |
| Doubled up with kin only | -0.020** | 0.004 | -0.031** | 0.010 |
| Doubled up with kin and non-kin | 0.008 | 0.009 | -0.018 | 0.019 |
| Doubled up with non-kin only | -0.009 | 0.011 | -0.033 | 0.025 |
| Unable to pay rent and/or mortgage | | | | |
| Doubled up with kin only | -0.019** | 0.004 | -0.026** | 0.009 |
| Doubled up with kin and non-kin | 0.009 | 0.009 | -0.005 | 0.017 |
| Doubled up with non-kin only | -0.009 | 0.009 | -0.029 | 0.024 |
| Utility hardship | | | | |
| Doubled up with kin only | -0.024** | 0.007 | -0.031* | 0.016 |
| Doubled up with kin and non-kin | -0.013 | 0.015 | -0.090** | 0.029 |
| Doubled up with non-kin only | -0.012 | 0.018 | -0.051 | 0.039 |
| Any utility hardship | | | | |
| Doubled up with kin only | -0.016** | 0.004 | -0.024* | 0.011 |
| Doubled up with kin and non-kin | -0.013 | 0.008 | -0.061** | 0.020 |
| Doubled up with non-kin only | 0.009 | 0.010 | 0.016 | 0.028 |
| Medical hardship | | | | |
| Doubled up with kin only | 0.029** | 0.007 | 0.014 | 0.017 |
| Doubled up with kin and non-kin | 0.055** | 0.015 | 0.076* | 0.031 |
| Doubled up with non-kin only | 0.012 | 0.018 | 0.034 | 0.041 |
| Any medical hardship | | | | |
| Doubled up with kin only | -0.020** | 0.004 | 0.007 | 0.011 |
| Doubled up with kin and non-kin | 0.034** | 0.010 | 0.040* | 0.020 |
| Doubled up with non-kin only | 0.004 | 0.012 | 0.013 | 0.029 |
| Food hardship | | | | |
| Doubled up with kin only | 0.001 | 0.002 | 0.001 | 0.006 |
| Doubled up with kin and non-kin | 0.002 | 0.005 | 0.004 | 0.011 |
| Doubled up with non-kin only | 0.012* | 0.006 | 0.009 | 0.014 |
| Food insecurity | | | | |
| Doubled up with kin only | -0.007+ | 0.004 | -0.010 | 0.009 |
| Doubled up with kin and non-kin | -0.012 | 0.008 | -0.010 | 0.017 |
| Doubled up with non-kin only | -0.003 | 0.010 | 0.040 | 0.032 |

** $p<0.01$; * $p<0.05$; + $p<0.10$

Note: All models control for age, sex, race/ethnicity, nativity, educational attainment, employment status, and disability status, household type, number of children under age 18, housing tenure, metropolitan residence, government program participation, household income to poverty ratio and household net wealth. Standard errors are adjusted for design effects.

Source: 2008 Survey of Income and Program Participation Waves 6 and 9

**Appendix A: Measures of Material Hardship**

*(Note: Shading denotes that these variables were used to construct other variables but were not used as dependent variables in the analysis)*

| SIPP Variable | Constructed Variable | Coding for Constructed Variable |
|---|---|---|
| EABMEET: During the past 12 months, has there been a time when [YOU/YOUR HOUSEHOLD] did not meet all of its essential expenses? | MEETNEED: Did not meet all essential household expenses | 1: Yes<br>0: No |
| EABRENT: During the past 12 months, has there been a time when [YOU/YOUR HOUSEHOLD] did not pay the full amount of rent or mortgage | RENTNEED: Did not pay the full amount of rent or mortgage | 1: Yes<br>0: No |
| EABGAS: During the past 12 months, has there been a time when [YOU/YOUR HOUSEHOLD] did not pay the full amount of gas, oil or electricity bills? | GASBILL: Did not pay the full amount of gas, oil or electricity bills | 1: Yes<br>0: No |
| EABEVCT: During the past 12 months, has there been a time when [YOU/YOUR HOUSEHOLD] was evicted for not paying the rent or mortgage? | EVICT: Was evicted for not paying the rent or mortgage | 1: Yes<br>0: No |
| EABCUT: During the past 12 months, has there been a time when [YOU/YOUR HOUSEHOLD] had your gas, oil or electric cut off for failure to pay utility bills? | GASCUT: Had gas, oil or electric cut off for failure to pay utility bills | 1: Yes<br>0: No |
| EABPHON: During the past 12 months, has there been a time when [YOU/YOUR HOUSEHOLD] had phone service cut off? | PHONECUT: Had phone service cut off | 1: Yes<br>0: No |
| | UTILHARD: Index of utility hardship | Sum of UTILNEED, GASCUT and PHONECUT<br>*Range: 0-3* |
| | UTILHARDDI: Experienced any utility hardship | 1: Yes (UTILHARD>0)<br>0: No (UTILHARD=0) |
| EABDOCT: In the past 12 months, was there a time [YOU/ANYONE IN YOUR HOUSEHOLD] needed to see a doctor or go to a hospital but did not go? | MEDNEED: Needed to see a doctor or go to hospital but did not go | 1: Yes<br>0: No |
| EABDENT: In the past 12 months, was there a time [YOU/ANYONE IN YOUR HOUSEHOLD] needed to see a dentist but did not go? | DENTNEED: Needed to see a dentist but did not go | 1: Yes<br>0: No |
| | MEDHARD: Index of medical hardship | Sum of MEDNEED and DENTNEED<br>*Range: 0-2* |

**Appendix A: Measures of Material Hardship** (continued)
*(Note: Shading denotes that these variables were used to construct other variables but were not used as dependent variables in the analysis)*

| SIPP Variable | Constructed Variable | Coding for Constructed Variable |
|---|---|---|
| | MEDHARDDI: Experienced any medical hardship | 1: Yes (MEDHARD>0)<br>0: No (MEDHARD=0) |
| | HARDSHIP: Composite hardship index | Sum of MEETNEED, RENTNEED, GASBILL, PHONECUT, MEDNEED and DENTNEED<br>*Range: 0-6* |
| | HARDSHIPDI: Experienced any hardship | 1: Yes (HARDSHIP>0)<br>0: No (HARDSHIP=0) |
| EAFOOD1: Getting enough food can also be a problem for some people. Which of these statements best described the food eaten in your household in the last four months: (1) Enough of the kinds of food we want; (2) Enough but not always the kinds of food we want; (3) Sometimes not enough to eat; (4) Often not enough to eat | FOODHARD: Food insufficiency | 1: Yes *(Sometimes not enough to eat; Often not enough to eat)*<br>0: No *(Enough of the kinds of food we want; Enough but not always the kinds of food we want)* |
| (1) EAFLAST: The food that we bought just didn't last and we didn't have money to get more *(Often true/Sometimes true/Never true)*<br>EAFBALN: We could not afford to eat balanced meals. *(Often true/Sometimes true/Never true)*<br>(2) EAFSKIP: Did you or the other adults in the household ever cut the size of your meals or skip meals because there was not enough money for food? *(Yes/No)*<br>(3) EAFLESS: Did you or the other adults in the household ever eat less than you felt you should because there was not enough money to buy food? *(Yes/No)*<br>(4) EAFDAY: Did you or the other adults in the household ever not eat for a whole day because there was not enough money left for food? *(Yes/No)* | FOODINSEC | 1: Yes *(Respondent replies Often true/Sometimes true or yes to at least 2 of the 5 statements/questions listed)*<br>0: No *(Respondent replies Often true/Sometimes true or yes to less than 2 of the 5 statements/questions listed)* |