Food Tradeoffs among Food Pantry Clients in Missouri, 2005 & 2010

by

Joan M. Hermsen

J. Sandy Rikoon

University of Missouri

Contact Information: Joan Hermsen, Department of Sociology, University of Missouri, Columbia, MO 65211. HermsenJ@missouri.edu

Acknowledgement: This project was supported with a grant from the UK Center for Poverty Research through the U.S. Department of Health and Human Services, Office of the Assistant Secretary for Planning and Evaluation, grant number 3 U01 PE000002-06S3. The opinions and conclusions expressed herein are solely those of the author(s) and should not be construed as representing the opinions or policies of the UKCPR or any agency of the Federal government.

Abstract
This study uses data from the Missouri Food Pantry Client Survey to assess whether food tradeoffs increased for food pantry clients between 2005 and 2010 in conjunction with the deteriorating economic conditions in the nation. Results indicate that a lower share of clients reported tradeoffs in 2010 as compared to 2005, and in a series of logistic regression models these differences persisted after controls for individual, household, and county characteristics. County unemployment rates are significant predictor of making a food tradeoff, although the effect was the same in both 2005 and 2010. A decomposition of the multivariate results reveals that given the composition of pantry clients in 2010, the percentage of households making tradeoffs in 2010 should have been even lower than reported. However, the returns to user characteristics changed such that any composition-based reductions in the probability of tradeoffs for 2010 were substantially offset.

Introduction

The nation is slowly recovering from an economic recession unlike any experienced in several decades. Job losses have impacted not only low-income families, but also the middle class. Families already on the economic margins are finding it even more difficult to sustain household livelihoods while formerly middle class families now find themselves precariously perched among the downwardly mobile. In this paper, we investigate the impact of the current recession on one segment of the low-income population-- food pantry users in central and northeast Missouri. In particular, we assess whether, and for whom, reports of food tradeoffs have increased between 2005 and 2010. We argue food pantry users are a special population through which to investigate the impacts of the recession. As a population, they tend to be low income, under or unemployed, and food insecure. In sum, they are a particularly vulnerable group.

Background and Rationale

The U.S. economy is undergoing a major restructuring. Unemployment rates are at historic highs. The average duration of unemployment spells continues to grow and there is evidence that a growing number of workers are becoming discouraged and leaving the labor market. As a result, poverty and food insecurity rates have increased significantly in the last few years. American families are facing levels of hardship that are unprecedented in recent memory.

Numerous news accounts have documented the impact of the recession on the circumstances of American households. In a recent CBSnews/NYTimes poll nearly 75% of respondents report the recession has been difficult or a hardship for their families (Montopoli 2009). News story after news story relays anecdotal evidence of an increased demand at food

pantries, longer lines at shelters, and higher levels of "doubling up" among families. Poverty rates have increased across the nation as the recession has unfolded. The national average increased from 13.2% in 2008 to 14.3% in 2009, or by 3.7 million persons (DeNavas-Walt, et al. 2010). And as expected, food insecurity has also increased. While 11% of households were food insecure in 2007, in 2009 that number jumped to over 14% (Andrews and Nord 2009).

The recession has impacted workers across educational levels, occupations, and industrial sectors. Hence, the population of those facing poverty and food vulnerability has likely changed. Many families now face poor economic circumstances for the first time in their lives. As such, many are now just learning about the range of private and public resources available to cushion the worst effects of job loss and poverty.

One such resource is food pantries, a key component of the emergency food system. Food pantries distribute "baskets" of food, usually for free, to needy users. Amidst increases in food vulnerability, emergency food programs are growing in importance (Berner and O'Brien 2004; Biggerstaff, et al 2002). In the past, emergency food centers, such as food banks, food pantries, and soup kitchens would only open during severe economic downturns. Then, once the crisis was sufficiently alleviated, the food centers would close and wait for the next economic downturn. However, this changed in the late 1970s/early 1980s when emergency food pantries and soup kitchens became permanent organizations that are continuously open.

News accounts stress the increased demand for food at pantries as well as the changing composition of users in the last few years. For example, new users appear to be better educated than long term users, and a higher share of new users appear to be recently poor as opposed to longer term pantry users who appear to have been struggling for some time to make ends meet. Feeding America, a national food distribution network, reports that between 54 percent and 75

percent of local emergency food centers (e.g. soup kitchens, pantries) experienced an increased demand for food between 2006 and 2009 such that by 2009, 5.6 million U.S. households obtained food assistance from a food pantry (Cohen, et al. 2010).

Food Tradeoffs

We are particularly interested in the material hardships faced by food pantry clients. A growing body of research draws attention to the distinction between poverty and material hardship. Whereas poverty refers to having insufficient income to meet basic needs, hardship refers to material deprivation (Beverly 2001; Heflin, et al. 2009; Mayer and Jencks 1989). Material deprivation can include food insecurity, an inability to pay for basic needs, insufficient clothing, lack of health care, poor shelter, and so forth.

In this study, we focus on material tradeoffs as a form of hardship. Research has documented households make implicit or explicit tradeoffs between food and other expenses. These food tradeoffs are often used as measures of food insufficiency, a form of material hardship (Quandt et al. 2001). Studies show that low-income households spend less on food when home heating/cooling costs rise while higher income households simply increase food expenditures (Bhattacharya et al. 2003; Nord and Kantor 2006), indicating an implicit tradeoff is made by low-income households. In addition, households that access public programs such as subsidized housing (Meyers et al. 2005) and home energy assistance (Frank et al. 2006) report lower childhood undernutrition than households with comparable characteristics but no assistance, suggesting the assistance frees household cash to be used on food expenditures instead.

Several studies directly ask the respondent if she/he made food tradeoffs. According to the 2010 *Hunger in America* report, households using the emergency food system reported having to make food tradeoffs. Forty-six percent had to choose between paying for utilities and food, 39 percent between paying rent/mortgage and food, 34 percent between paying for medical bills and food, and 35 percent between paying for transportation and food. These tradeoffs have consequences. For example, in a study of homebound older women, Sharkey (2003) reports that at least one in five elders indicated she had to choose between paying for food and purchasing medication or paying bills, and those women making tradeoffs experienced reduced nutrition intake even when participating in a meal delivery program. And a study of emergency room patients found that 18 percent of respondents reported making a tradeoff between purchasing food or paying for medicine (Biros et al. 2005), with 44% of these "hunger positive" patients also stating their health was worse because of the choice.

The relationship between poverty and material hardship is contingent upon the duration and depth of poverty experienced as well as the specific types of hardship examined (Iceland and Bauman 2007). And this relationship is further complicated because poor families draw on their social networks and available private institutions and public programs to avoid hardships through cash transfers or exchanges of goods/services (Edin and Lein 1997; Gilbert 1998; Harknett 2006; Nelson 2005; Sullivan, Turner, and Danziger 2008).

Social network scholarship tells us that networks reflect the principle of homophily – our networks are comprised of people like us across class and race (McPherson et al. 2001). Typically we would expect the networks of those who come to food pantries to be comprised of other lower income family members and friends - the very people who may have less to share (Billingsley 1992; Pattillo-McCoy 1999; Wilkerson 1990). Findings from the Survey of Income

and Program Participation show that low-income households in fact receive little cash assistance from social network members (Wu and Eamon 2007). Further, in a study using the Women's Employment Survey it was reported that over 80% of women transitioning off welfare received no financial support from kin (Henley, Danziger, and Offer 2005). However, Haxton and Hartnett (2009), in a study using Fragile Families data, find that nearly one in three households with young parents received financial assistance from kin. Regardless, most network assistance is nonpecuniary (Harknett 2006).

Food pantry households tend to be income poor households. With the recession, new families, including those formerly not poor, are using pantries. If these users are embedded in extended networks with low incomes, then one would expect reports of food tradeoffs to be higher in 2010 than 2005. However, if those new pantry users are in social networks with greater economic resources then we would not expect food tradeoffs to be higher in 2010 as compared to 2005.

In addition to social networks, individuals turn to social institutions for help in times of economic crisis. Social services agencies may be the most important institution households turn to when in need. It is through these agencies that households access public programs such as food stamps and WIC, housing vouchers and unemployment insurance, utility and transportation assistance. To the extent that low income households use these forms of public assistance, and that such forms are effective in limiting material hardship, then there would not be any particular increase in material hardships noted in 2010 as compared to 2005. However, if food pantry households are not accessing these programs in high numbers, or the amount of assistance received is limited, then a higher share of income poor households will likely report greater material hardships in 2010 as compared to 2005.

The influx of new clients to the pantry system because of the recession likely includes some households that are new to the experience of income poverty. These downwardly mobile households may have cash reserves to draw upon to avoid or postpone material hardships, including food tradeoffs. If a greater share of new pantry clients is in fact the downwardly mobile, then it is likely that the share of households reporting food tradeoffs in 2010 is no greater than, or maybe even less than, the share reporting tradeoffs in 2005. However, if new clients are disproportionately long term low-income households, there would likely be a greater percentage of households making food tradeoffs in 2010 than in 2005.

Approach

Our central goal is to assess whether material hardship, as measured by food tradeoffs, increased for food pantry clients in the northeastern region of Missouri during the economic recession. We do not directly assess the impact of recession from our data as we did not specifically inquire as to recession related impacts in the context of our interviews. Further, the data we have represent two cross-sections of pantry clients, not longitudinal data following the same set of clients over time. We do attempt to infer recession impacts based on changes in the distribution of responses on food tradeoff questions comparing 2005 and 2010. Lastly, we do not attempt to adjudicate between competing explanations (social networks, program use, cash reserves) for the rates of food tradeoffs. Rather, we offer these explanations as guides for thinking through the findings that emerge.

Data & Methods

The Missouri Food Pantry Client Survey

The project region is 32 counties in the central and northeast regions of Missouri. The region includes 107 food pantries that served a monthly average of 97,000 people in 2010. With only two cities of more than 25,000 residents, the vast majority of the region's clients and pantries are located in rural areas and small and medium-sized towns. Wave I of the *Missouri Food Pantry Client Survey* was conducted in the summer of 2005 and sampled 47 pantries and 11 mobile pantry locations with a client response rate of 85 percent.[1] The number of completed surveys for 2005 is 1,314. Wave 2 of the *Missouri Food Pantry Client Survey* was collected in summer of 2010 and sampled 42 pantries, with a response rate of 78 percent and 1,167 completed surveys.[2] The *Missouri Food Pantry Client Survey* was administered face-to-face and took about 20 minutes to complete.[3] The survey includes five modules: demographic variables, household food insecurity and material hardships, food insecurity coping mechanisms (e.g. use of networks, local institutions, federal programs), health status, and dietary behaviors.

[1] Pantry clients are instructed by local pantries that they may visit a food pantry in the food bank network only once a month. However, most pantries do not systematically track use so there is no way to be certain this instruction is followed. Interviewers in both years did see the same people twice, but only on rare occasion, and they did not interview subjects more than once.

[2] Since data on distribution is known most precisely on number of pounds of food distributed by each pantry, the sampling unit is the food pantry. In 2005, pantries were included if the pantry served at least 0.5% of the total pantry clients for the region. In 2010, pantries were included in the sample if the pantry served at least 0.75% of regional pantry clients. To achieve a 95% confidence level, we surveyed approximately 1200 individuals at each wave. The number of surveys completed at each pantry was stratified by each pantry's proportion of the overall regional total clients served. Each wave of the data is a separate sample; this is not a longitudinal study of households that were sampled first in 2005 and again in 2010.

[3] Spanish speaking interviewers were used as needed.

Measures

Food tradeoffs: The 2005 wave of the survey had a limited number of hardship questions. Those items took the form of food tradeoffs. These same questions were asked again in 2010, in addition to several new hardship questions that are not analyzed in this paper. The tradeoff questions are very similar to those used in several other studies examining food insufficiency (see earlier discussion). In 2005 and 2010 clients were asked:

> In the past 12 months, have you or anyone in your household ever had to choose between:
>
> 1. Buying the food you need and paying for medicine or medical care?
> 2. Buying the food you need and paying for utilities?
> 3. Buying the food you need and paying for rent or mortgage?
> 4. Buying the food you need and paying for gas?

Clients who responded 'yes' are coded as (1) and those who responded 'no' are coded as (0). In 2005, this series of questions appears immediately after questions about food security. In 2010, the items appear after the food security module and after seven other hardship questions.

Individual and household characteristics: Several characteristics of the respondent and her/his household are included in the analyses. These measures are typically included in studies of material hardship. They include gender, age, education, marital status, race, presence of children, household size, employment status of the household, household income to poverty ratio, and metro status of residence. See table 1 for a detailed description of the measures.

County unemployment rate: In addition to individual and household characteristics, we also examine the relationship between county unemployment rates and food tradeoffs. This is

particularly important as county unemployment rates in the study area nearly doubled between 2005 and 2010. See table 1 for further details.

Year: A variable for year is included in the analyses to assess overtime change in percent of respondents reporting food tradeoffs (2005 = 0, 2010 = 1).

Analysis Strategy

We use two strategies to assess whether reports of food tradeoffs changed during our study period. First, we conduct a series of four binary logistic regressions using individual and household characteristics, the county unemployment rate, and year to predict each food tradeoff. Here we are interested in the coefficient for year. If significant, the findings will indicate that net of controls there is a significant difference in the probability of the food tradeoff comparing 2005 and 2010. Second, we decompose the difference between 2010 and 2005 in the percentage of the sample reporting food tradeoffs to evaluate how reported differences can be attributed to changes in the characteristics of the sample, the returns to the characteristics, and an interaction of both (Oaxaca 1973).

Findings

Sample Characteristics

The demographic characteristics of our two samples are fairly similar (see table 2). Differences are noted here. Our sample in 2010 has a greater share of whites, those with some college education, households with no children, and households with part-time working adults than did the sample in 2005. In addition, there are more cohabitating households and separated/divorced households in 2010 than in 2005. There are also both a greater share of the poorest households and households above the poverty line in 2010 as compared to 2005. These

changes are somewhat expected as the recession cut across the population exposing new groups to greater food vulnerability (e.g. whites, college educated). The rise of part-time worker households is also to be expected, especially considering the declining share of full-time employed households in the population. Finally, the average unemployment rate for counties in the sample increased from 4.96 in 2005 to 8.44 in 2010, a clear marker of the recession's impact on employment.

Distribution of Food Tradeoffs

As described earlier, we assess material hardship through a series of four questions that ask if the household had to choose between buying the food they needed and paying for medical care/medicine, paying for utilities, paying for rent/mortgage, and paying for gas. The percentage of pantry clients reporting food tradeoffs is reported in the top panel table 3.

In 2010, over 40 percent of clients reported having to make some type of hardship tradeoff. Specifically, clients reported choosing between paying for food and paying for medicine or medical care (46%), food and utilities (56%), food and rent/mortgage (42%), and food and gas (60%). These figures are lower than national estimates reported by Feeding America. However, these percentages for 2010 are very comparable to, although lower than, those reported by clients in 2005. The only tradeoff with a higher report in 2010 was food versus gas. This undoubtedly reflects the higher gas prices recorded in 2010 as compared to 2005. Gas prices for Missouri were as low as $2.38 a gallon in early spring 2010 but they increased through late spring to a high of $2.82 in May. Gas prices decreased during our interview window, ranging from $2.51 to $2.67 during the summer of 2010. For comparison, in the summer of 2005, gas prices in Missouri averaged between $1.90 and $2.16/gallon (gasbuddy.com)

The second panel of table 3 reports the number of tradeoffs reported by pantry client. In 2010, 28% of clients reported no food tradeoffs as compared to 25% in 2005. However, a greater share of clients in 2010 as compared to 2005 reported having to make 3 or 4 food tradeoffs. One in four households in 2010 reported making all four food tradeoffs while 20% reported making three tradeoffs. In total, 46% percent, or nearly half, of all clients faced 3 or 4 food tradeoffs in 2010. In 2005, 43% of clients reported levels this high.

Twelve percent of clients reported one tradeoff in 2010 and 14% did so in 2005. The most common tradeoff made by those with just one tradeoff in 2010 was paying for gas (5% of total users) and in 2005 was paying for medical care (4.8% of total users). Less than one percent of the samples in both years indicated they made only a housing tradeoff. The rent/mortgage tradeoff almost always occurs in tandem with other tradeoffs. For those reporting two tradeoffs, 14% of pantry users in 2010 and 18% in 2005, the most frequently reported combination in both years was choosing between paying for food and gas, and food and utilities.

The presence of food tradeoffs differs across characteristics of food pantry users. The distribution of food tradeoffs by these demographic characteristics are presented in table 4.

Logistic Regression Findings

The findings from the logistic regression analyses of food tradeoffs are presented in table 5. Of primary interest to us is the year coefficient as we want to know if the differences by year in food tradeoffs reported in table 3 exist net of controls for the characteristics of food pantry users. As shown, net of controls, the probability of experiencing a food tradeoff is significantly lower in 2010 compared to 2005 for three of the tradeoffs. That is, households are significantly

less likely to report making a food and medical, food and utilities, and food and rent/mortgage tradeoff.

However, the food and gas tradeoff is not significant after controls for the characteristics of pantry clients. In results not shown here, the year coefficient in the food and gas model is significant until county unemployment rates are included in the model. Once the economic climate is accounted for, there are no significant year differences in the probability of reporting this hardship.

The results also offer insight into which groups of pantry clients are at higher risk of a food tradeoff. Women are a significant 1.2 times more likely than men to experience food and medical, utilities, and rent/mortgage tradeoffs. Compared to users age 65 and up, users age 18 to 64 are significantly more likely to report each of the food tradeoffs. For example, pantry clients age 40-64 are twice as likely as those aged 65 and up to choose between buying food and paying for medical care or medication. Clients aged 18-39 and aged 40-64 are both over twice as likely as the oldest users to report difficulties paying for utilities and buy food. The youngest age group faces the greatest risk of having to choose between buying food and paying for housing expenses. They are 4.5 times more likely than seniors to face this tradeoff. The significant age differences in the probability of making a tradeoff may be exaggerated. Quandt and colleagues (2001) argue that elders will report fewer problems paying bills or making tradeoffs because they attribute different a meaning to debt and do not see foregoing food to in order to pay one's bills as a hardship. If this is the cases, then elderly in our samples will have underestimated food tradeoffs, resulting in a larger age gaps.

Net of controls, educational level does little to predict food tradeoffs. Compared to those with a college degree, high school dropouts and high school graduates report significantly lower

probability of a household experiencing a medical tradeoff while only high school dropouts are significantly less likely to have made a choice between food and gas. As with education, there are few significant effects for marital status. Compared to their never married peers, married users are 1.3 times more likely to face a food and medical tradeoff. And separated or divorced clients are significantly more likely to make a food and utilities, food and rent/mortgage, and food and gas tradeoff. It is possible that the instability associated at times with separated or divorced households enhances the risk of hardship. When compared to whites, only persons of other races have a significantly greater probability of food tradeoffs. That is, other race person households are more likely than white households to make a choice between buying food and paying for medical expenses (1.5 times), paying for utilities (1.9) and paying rent/mortgage (1.4). Black pantry users, however, are as likely as whites to experience these tradeoff hardships.

Household size is unrelated to the likelihood of experiencing a food tradeoff. However, households with children do report significantly greater probability of a making a food and utilities tradeoff. Specifically, households with children are 1.3 times more likely than households without children to make a choice between buying food and paying for utilities. Household employment and income to poverty ratios are not significantly related to the probability of reporting any of the food tradeoffs. That is, the probability of facing a food tradeoff is shared equally across households regardless of the working status of adults in the household or the relative income of the household. The results for income to poverty ratio are not surprising as the pantry households are generally low-income or poor households. The best off households have incomes that are still less then twice the poverty level and well below the national average.

Place does matter in predicting a household's probability of having to choose between buying food and paying medical, utility, housing, and gas bills. Metro households are between 1.5 and 1.9 times more likely than nonmetro households to report these tradeoffs. Metro households are less likely to engage in food provisioning strategies such as gardening and hunting or fishing. Also, the cost of living may be higher in metro counties than nonmetro counties.

Finally, county unemployment rates significantly predict whether a household made the four food tradeoffs. The higher the county unemployment rate, the greater the probability a household reported each of the four food tradeoffs, regardless of year. In results not shown here, an interaction term for year and county unemployment was found to be not significant in predicting any of the tradeoffs. Thus, the *effect* of unemployment rates on the probability of facing a food tradeoff did not differ comparing 2005 and 2010, even though unemployment rates themselves doubled during this time.

In sum, the likelihood a household faced a food tradeoff was significantly greater in 2010 than in 2005. Further, unemployment rates, a proxy for the local economic climate, are significant predictors of that likelihood. Living in counties with worse economic conditions increases the chances of reporting a food tradeoff. However, the effect of poor economic conditions is constant across time. The recession did not intensify the impact of poor economic conditions on the risk of food tradeoffs.

Decomposition Findings

As shown in earlier in table 3, the percent of pantry users experiencing a food tradeoff changed marginally from 2005 to 2010, with the exception of the food and gas tradeoff. But as

shown, in table 4, these differences are significant after controls for the characteristics of pantry users. The share of the clients reporting tradeoffs may be higher or lower than one would expect due to differences in the characteristics of users across years, differential returns by year to the characteristics of the users, or an interaction of the two. A decomposition analysis allows one to evaluate the extent each of these is true.

As shown in table 6, if the clients in 2010 had the same characteristics as clients in 2005, the risk of experiencing a food tradeoff would have been lower, and especially so for the medical and gas tradeoffs. For example, if the characteristics of the pantry users in 2010 matched those of 2005, the percent of clients reporting a medical tradeoff would have been over 8 percentage points lower (compared to the 2 percentage point difference reported in Table 3).

However, the 2010 advantages in the characteristics of the food pantry clients were offset by a shifting of the returns to characteristics that eliminated most of the 2010 advantage. That is, if the returns to user characteristics in 2010 matched that of 2005, we would expect to see a greater of risk of medical, utilities, and rent tradeoffs in 2010 than was reported by the users. This is especially true for the utilities tradeoff where we expect a 16.4 percentage point greater risk of food or utilities tradeoff in 2010 (compared to the 2 percentage point difference reported in table 3). The gas tradeoff is an exception here. Had the returns to characteristics been the same in 2010 as 2005, the probability of experiencing a gas tradeoff would have been marginally lower. The interaction of characteristics and returns has a small impact on the 2010-2005 differences in the percent of clients reporting food tradeoffs.

Discussion

Across the nation households find themselves accessing informal and formal sources of emergency assistance as they cope with job loss and lower incomes. Food pantries are one place families in distress turn to for help in alleviating an immediate need during times of crisis.

Food tradeoffs were widespread in 2010. Over 75% of pantry households reported at least one tradeoff. Assuming food tradeoffs indicate food insecurity (as many researchers do), then it appears households in our sample are food insecure, and at rates comparable to those estimated with USDA measure of food insecurity.

The most common tradeoff was food and gas, followed by food and utilities, food and medical care, and food and rent/mortgage. The share of pantry households reporting tradeoffs was higher than that reported nationally for users of the local emergency food system (e.g. pantries, shelters, soup kitchens). The situation in rural Missouri appears to be worse than for the average emergency food system client in the nation. Yet, the percentage of our pantry households reporting any specific tradeoff was lower in 2010 than in 2005 (except for gas), even in the face of a severe recession. Why is this?

First, the results from logistic regression analyses show that the effect of unemployment rates, our proxy for the local economic conditions, is the same in both 2005 and 2010. The especially high unemployment rates of 2010 did not put a household at any greater risk of a food tradeoff than did the lower unemployment rates of 2005. However, the composition of food pantry clients did change during the 2005-2010 period, a change likely due to the recession.

Second, the answer lies in part in the fact that the composition of the pantry population changed between 2005 and 2010 in ways that favor a lower chance of food tradeoffs. That is, the types of users who are a growing share of the food pantry population are also those users who

were less likely to experience a tradeoff in 2005. The rates of food tradeoff would have been even lower in 2010 than those reported here but for changes in the returns to the characteristics of individuals and households. The combined effects of tradeoff inducing characteristics intensified during this period.

Finally, compared to 2005, a larger share of the pantry clients in 2010 were nonregular users, defined as those visited a food pantry for less than a year and only sporadically (2005=29%, 2010=38%). We speculate that these nonregular users are those households for whom living conditions have been especially affected by the recession. The low-income and food vulnerable status of these households may be relatively new. Hence these households may be able to avoid food tradeoffs.

We posit several possible explanations for why some user households can avoid food tradeoffs, all of which are worthy of future study. For example, formerly working and middle class households that are downwardly mobile due to the job loss during the recession may still have cash reserves to draw on to avoid food tradeoffs. In addition, pantry households may be embedded in social networks with more resources to available to share to avoid hardship. It is also possible that charitable organizations and government agencies have been able to offset some of the expenses which generate tradeoffs for families, including new user families. For example, the expansion of the Supplemental Nutrition Assistance Program (food stamps) during the recession may have contributed to lower rates of food tradeoffs in 2010.

We identify several limitations of the current study. First, our measure of tradeoffs does not indicate the direction of the tradeoff. For example, in the case of choosing between paying for food or paying for utilities, we do not know what choice the respondent made. We suspect the answer would be variable, depending on how many months the utility bill had gone unpaid or

how much food was expected to come into the household in the near future. Second, because our measure of tradeoffs focuses on food, we do not know how pantry clients prioritize among other competing financial demands (e.g. choose between paying utility bill and paying rent). And third, our data do not include measures of household savings. We are unable to assess whether household savings lower the risk of food tradeoffs.

In conclusion, we find evidence the recession did not increase the rate of food tradeoffs per se. Rather, the recession changed the composition of food pantry clients and raised the risks of food tradeoffs associated with client characteristics. The result is that food tradeoff rates were similar in 2010 to 2005.

Bibliography

Andrews, Margaret and Mark Nord. 2009. "Food Insecurity Up in Recessionary Times." *Amber Waves: The Economics of Food, Farming, Natural Resources and Rural America*. December.

Berner, Maureen and Kelley O'Brien. 2004. "The Shifting Pattern of Food Security Support: Food Stamp and Food Bank Usage in North Carolina." *Nonprofit and Voluntary Sector Quarterly* 33(4), pp. 655-672.

Beverly, Sondra G. 2001. "Material Hardship in the United States: Evidence from the Survey of Income and Program Participation." *Social Work Research* 25(3): 143-151.

Bhattacharya Jay, T. Deleire, S. Haider, and J. Currie. 2003. "Heat or Eat? Cold-Weather Shocks and Nutrition in Poor American Families" *American Journal of Public Health* 93(7):1149-1154.

Biggerstaff, Marilyn A., Patricia McGrath Morris, and Ann Nichols-Casebolt. 2002. "Living on the Edge: Examination of People Attending Food Pantries and Soup Kitchens." *Social Work.* 47(3): 267-277.

Billingsley, Andrew. 1992. *Climbing Jacob's Ladder: The Enduring Legacy of African-American Families.* New York Simon and Schuster.

Biros, Michelle H., Pamela L. Hoffman, and Karen Resch. 2005. "The Prevalence and Perceived Health Consequences of Hunger in Emergency Department Patient Populations." *Academic Emergency Medicine* 12: 310-317.

Cohen, R., J. Mabli, F. Potter, and Z. Zhao. 2010. *Hunger in America 2010*. Feeding America.

DeNavas-Walt, Carmen, Bernadette D.Proctor, and Jessica C. Smith. 2010. U.S. Census Bureau, Current Population Reports, P60-238, *Income, Poverty, and Health Insurance Coverage in the United States: 2009*, U.S. Government Printing Office, Washington, DC.

Edin, Kathryn and Laura Lein. 1997. *Making Ends Meet: How Single Mother Survive Welfare and Low-Wage Work.* Russell Sage Foundation: New York, NY.

Frank DA, NB Neault, A. Skalicky, JT Cook, JD Wilson, S. Levenson, AF Meyers, T. Heeren, DB Cutts, PH Casey, MM Black, and C Berkowitz. 2006. "Heat or Eat: The Low Income Home Energy Assistance Program and Nutritional and Health Risks among Children Less Than 3 Years of Age." *Pediatrics* 118(5):e1293-302.

Gilbert, Melissa R. 1998. "Race, Space and Power: The Survival Strategies of Working Poor Women." *Annals of the Association of American Geographers* 88(4): 595-621.

Harknett, Kristen. 2006. "The Relationship Between Private Safety Nets and Economic Outcomes Among Single Mothers." *Journal of Marriage and Family* 68 (February): 172–191.

Haxton, Clarisse L. and Kristen Harknett. 2009. "Racial and Gender Differences in Kin Support: A Mixed-Methods Study of African American and Hispanic Couples." *Journal of Family Issues* 30(8): 1019-1040.

Heflin, Colleen, John Sandberg, and Patrick Rafail. 2009. "The Structure of Material Hardship in U.S. Households: An Examination of the Coherence behind Common Measures of Well-Being." *Social Problems* 56(4): 746-764.

Henley, Julia R., Sandra K. Danziger, and Shira Offer. 2005. "The Contribution of Social Support to the Material Well-Being of Low-Income Families." *Journal of Marriage and Family* 67 (February): 122–140.

Iceland, John and Kurt J. Bauman. 2007. "Income Poverty and Material Hardship: How Strong is the Association?" *Journal of Socio-Economics* 36(3):376-396.

Mayer, Susan E. and Christopher Jencks. 1989. "Poverty and the Distribution of Material Hardship." *Journal of Human Resources* 24(1): 88-114.

McPherson, Miller, Lynn Smith-Lovin, James M. Cook. 2001. "Birds of a Feather: Homophily in Social Networks." *Annual Review of Sociology* 27: 415-444.

Meyers A, D. Cutts, DA Frank, S. Levenson, A. Skalicky, T. Heeren, J. Cook, C. Berkowitz, M. Black, P. Casey, and N. Zaldivar. 2005. "Subsidized Housing and Children's Nutritional Status: Data from a Multisite Surveillance Study." *Archives of Pediatric Adolescent Medicine* 159(6):551-556.

Montopoli, Brian. 2009. "Poll: Recession Means Hardship for Many Unemployed." http://www.cbsnews.com/blogs/2009/12/14/politics/politicalhotsheet/entry5978442.shtml. Accessed January 28, 2010.

Nelson, Margaret K. 2005. *The Social Economy of Single Motherhood: Raising Children in Rural America.* Routledge: New York, NY.

Nord, Mark, and Linda S. Kantor. 2006. "Seasonal Variation in Food Insecurity is Associated with Heating and Cooling Costs among Low-Income Elderly Americans," *Journal of Nutrition* 136: 2939-2944.

Oaxaca, R. 1973. "Male-Female Wage Differentials in Urban Labor Markets." *International Economic Review* 14: 693–709.

Pattillo-McCoy, M. (1999). *Black Picket Fences: Privilege and Peril among the Black Middle Class*. Chicago: University of Chicago Press.

Quandt, Sara A., Thomas A. Arcury, Juliana McDonald, Ronny A. Bell and Mara Z. Vitolins. 2001. "Meaning and Management of Food Security Among Rural Elders." *Journal of Applied Gerontology* 20(3): 356-376.

Sharkey, Joseph R. 2003. “Risk and Presence of Food Insufficiency Are Associated with Low Nutrient Intakes and Multimorbidity among Homebound Older Women Who Receive Home-Delivered Meals.” *The Journal of Nutrition* 3485-3491.

Sullivan, James X., Lesley Turner, and Sheldon Danziger. 2008. “The Relationship between Income and Material Hardship.” *Journal of Policy Analysis and Management* 27(1):63-81.

Wilkerson, Isabel. 1990. “Middle-class Blacks try to grip a ladder while lending a hand.” *New York Times*, November 26: A1.

Wu, Chi-Fang and Mary Keegan Eamon. 2007. “Public and Private Sources of Assistance for Low-Income Households.” *Journal of Sociology & Social Welfare* 34(4): 121-150.

Table 1. Description of Variables Used in Analyses

Age	Respondent's age recoded into dummy variables: age 18-39 (1=yes, 0=no), age 40-64 (1=yes, 0=no), and age 65 and over (1=yes, 0=no)
Sex	Respondent's sex: female = 1, male = 0
Race	Respondent's self-reported race recoded into dummy variables: black (1=yes, 0=no), other (1=yes, 0=no), white (1=yes, 0=no)
Education	Respondent's highest education completed recoded into dummy variables: high school dropout (1=yes, 0=no), high school graduate (1=yes, 0=no), some college (1=yes, 0=no), college graduate (1=yes, 0=no)
Marital Status	Respondent's marital status recoded into dummy variables: married (1=yes, 0=no), cohabitating (1=yes, 0=no), widowed (1=yes, 0=no), separated/divorced (1=yes, 0=no), never married (1=yes, 0=no)
Child in the Home	If child under age 18 resides in the household, then code = 1; if no child < 18 is present in household then code = 0.
Household Size	Sum of total number of adults and children in the household.
Household Employment Status	Three dummy variables in the set: no worker in household (1=yes, 0=no); one or more adults working < 35 hours a week (1=yes, 0=no); one or more adults working 35+ hours a week (1=yes, 0=no)
Household Income/Poverty Ratio	Dummy variables based on ratio of total household income to poverty threshold for household size: 0-50% of poverty level income (1=yes, 0=no); 51-100% of poverty level income (1=yes, 0=no); 101+% (1=yes, 0=no)
Residence	Indicator of whether respondent reside in a metro or nonmetro county: metro = 1, nonmetro = 0.
County Unemployment Rate	Census Bureau estimates of county unemployment rate for the month of survey interview.

Table 2. Composition of Food Pantry Users, 2010 and 2005

	2010	2005
Age	100%	100%
18-39	37%	39%
40-64	51%	48%
65+	12%	13%
Sex	100%	100%
Female	76%	77%
Male	23%	23%
Race	100%	100%
White	86%	80%
Black	9%	11%
Other	5%	9%
Education	100%	100%
< High school	26%	30%
HS graduate	42%	42%
Some college	26%	22%
College +	6%	6%
Marital Status	100%	100%
Married	37%	39%
Cohabitating	13%	11%
Widowed	8%	10%
Divorced/separated	27%	25%
Never married	15%	15%
Children in Home	100%	100%
Yes (w/ 1 adult)	10%	15%
Yes (w/ 2+ adults)	39%	41%
No children	51%	45%
Household Size		
Mean	3.12	3.17
Employment Status	100%	100%
No working adults	51%	54%
Working, <35 hrs	18%	11%
Working, 35+ hrs	32%	36%
Income/poverty Ratio	100%	100%
0-50%	33%	26%
51-100%	40%	49%
101% or more	28%	24%
Residence	100%	100%
Nonmetro	65%	64%
Metro	35%	36%
County unemployment rate		
Mean	8.44	4.96

Table 3. Percent Reporting Food Tradeoffs, 2010 & 2005

	2010	2005	Difference (2010 – 2005)	Percent Change
Tradeoffs				
Food vs medical/medicine	46%	48%	-2	-4%
Food vs utilities	56%	58%	-2	-3%
Food vs rent or mortgage	42%	44%	-2	-5%
Food vs gas	60%	53%	+7	+13%
Number of reported tradeoffs				
None	28%	25%	+3	+12%
One	12%	14%	-2	-14%
Two	14%	18%	-4	-22%
Three	21%	20%	+1	+5%
Four	25%	23%	+2	+9%

Table 4. Percent Reporting Food Tradeoffs, 2010 and 2005

	2010				2005			
	(1) food & medical	(2) food & utilities	(3) food & rent/mortgage	(4) food & gas	(5) food & medical	(6) food & utilities	(7) food & rent/mortgage	(8) food & gas
Total	46%	56%	42%	60%	48%	58%	44%	53%
Age								
18-39	41%	59%	45%	63%	41%	61%	51%	56%
40-64	52%	59%	44%	62%	56%	62%	45%	55%
65+	31%	39%	21%	42%	38%	32%	16%	38%
Sex								
Female	47%	58%	44%	61%	48%	60%	44%	53%
Male	39%	51%	36%	57%	47%	52%	42%	54%
Race								
White	45%	56%	41%	60%	47%	56%	41%	53%
Black	46%	51%	45%	54%	46%	62%	53%	49%
Other	60%	76%	53%	74%	60%	72%	54%	56%
Education								
< High school	41%	52%	40%	53%	49%	56%	41%	51%
HS graduate	44%	53%	39%	58%	45%	57%	44%	51%
Some college	50%	64%	49%	66%	51%	61%	48%	58%
College +	59%	63%	43%	77%	56%	60%	44%	51%
Marital Status								
Married	48%	57%	43%	61%	51%	57%	41%	54%
Cohabitating	46%	59%	44%	64%	44%	56%	44%	52%
Widowed	41%	50%	36%	51%	36%	43%	26%	43%
Divorced/separated	46%	59%	43%	61%	54%	69%	53%	57%
Never married	40%	49%	38%	56%	41%	53%	45%	52%
Children in Home								
Yes (w/ 1 adult)	37%	57%	41%	66%	49%	68%	50%	54%
Yes (w/ 2+ adults)	50%	65%	46%	64%	46%	61%	46%	55%
No children	44%	50%	39%	56%	50%	52%	39%	51%
Household Size								
Less than/equal to mean	44%	52%	39%	57%	48%	55%	60%	50%
Greater than mean	48%	63%	45%	65%	47%	62%	46%	56%
Employment Status								
No working adults	46%	54%	40%	58%	50%	56%	41%	52%
Working, <35 hrs	48%	58%	42%	62%	45%	60%	49%	55%
Working, 35+ hrs	44%	60%	45%	62%	47%	60%	46%	54%
Income/poverty Ratio								
0-50%	46%	58%	42%	59%	50%	65%	52%	57%
51-100%	48%	59%	45%	64%	48%	57%	42%	53%
101% or more	41%	51%	39%	57%	47%	54%	41%	51%
Residence								
Nonmetro	44%	55%	39%	58%	43%	54%	37%	49%
Metro	48%	58%	47%	63%	56%	63%	55%	59%
Unemployment Rate								
Less than/equal to mean	45%	55%	43%	60%	51%	59%	48%	55%
Greater than mean	45%	58%	40%	60%	44%	56%	39%	50%

Table 5. Logistic Regression Results for Food Tradeoff Models

	Food & Medical Care			Food & Utilities			Food & Rent/Mortgage			Food & Gas		
	B	Sig.	OR	B	Sig.	OR	B	Sig.	OR	B	Sig.	OR
Year (2010=1)	-.522	**	.593	-.553	**	.575	-.467	*	.627	-.080		.923
Gender (women=1)	.225	*	1.252	.232	*	1.262	.189	#	1.208	-.069		.933
Age 18-39	.102		1.107	.780	***	2.181	1.521	***	4.577	.600	***	1.823
Age 40 - 64	.711	***	2.037	.868	***	2.381	1.330	***	3.781	.576	***	1.779
Age 65 & up	---			---			---			---		
High school dropout	-.377	#	.686	-.113		.893	.175		1.191	-.335	#	.716
High school graduate	-.452	*	.636	-.167		.846	.049		1.050	-.272		.762
Some college	-.242		.785	.084		1.088	.268		1.307	.013		1.013
College graduate	---			---			---			---		
Married	.276	#	1.318	.185		1.203	.213		1.238	.198		1.220
Cohabitating	.148		1.160	.126		1.134	.172		1.187	.145		1.156
Widowed	-.048		.953	.249		1.283	.333		1.395	.109		1.115
Divorced/Separated	.201		1.222	.540	***	1.716	.475	**	1.608	.243	#	1.276
Never married	---			---			---			---		
Black	-.099		.906	.064		1.066	.251		1.285	-.256	#	.774
Other race	.453	*	1.572	.662	***	1.938	.343	*	1.409	.169		1.184
White	---			---			---			---		
Household size	.014		1.014	-.001		.999	-.026		.974	.028		1.028
Child in HHold (1=yes)	-.038		.963	.294	*	1.342	-.038		.963	-.008		.992
No working adult in Hhold	---			---			---			---		
Working adult <=35 hours	.067		1.069	.053		1.054	.055		1.057	.059		1.061
Working adult > 35 hours	-.024		.976	.147		1.158	.120		1.128	.081		1.084
Income to poverty ratio <=50%	---			---			---			---		
Income to poverty ratio 51%-100%	.024		1.024	-.027		.974	.034		1.035	.107		1.113
Income to poverty ratio= > 101%	-.122		.885	-.095		.909	-.019		.981	-.031		.970
Metro/nonmetro (1=metro)	.571	***	1.769	.418	***	1.518	.675	***	1.965	.509	***	1.663

County unemployment rate	.119	**	1.127	.144	**	1.155	.114	*	1.121	.108	*	1.114
Constant	-1.301	***	.272	-1.829	***	.161	-2.868	***	.057	-1.154	**	.315
Chi-square	117.142	***		137.531	***		156.112	***		84.799	***	
Cox & Snell R-square	.051			.059			.068			.037		
N	2250			2253			2225			2236		

# p<.10, *p<.05, **p<.001, ***p<.0001

Table 6. Decomposition Results for 2010-2005 Differences in Material Tradeoffs.

	Endowments		Coefficients		Interaction
Food vs Medical	-0.088	#	0.093		0.021
Food vs Utilities	-0.071		0.164	*	-0.073
Food vs Rent	-0.047		0.067		0.003
Food vs Gas	-0.084	#	-0.013		0.037

z<0.10, *z<0.05