Individual and Household Determinants of Child Food Insecurity and Hunger

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Introduction

Food insecurity among children is a serious, policy-relevant issue in the United States today for two central reasons. First, the magnitude of the problem is enormous. In 2011, for example, 20.6% of children in America were in food insecure households (16.7 million children) (Coleman-Jensen et al., 2012). And, almost half of these children experienced food insecurity themselves. The extent of food insecurity is at an all-time high, and despite the end of the Great Recession, rates have not returned to the food insecurity levels of 2011. Second, there are many demonstrated negative health consequences associated with food insecurity. Among other consequences, here are some that are associated with food insecurity among households with children: higher risks of some birth defects (Carmichael et al., 2007, anemia (Eicher-Miller et al., 2009, Skalicky et al., 2006), lower nutrient intakes (Cook et al., 2004), greater cognitive problems (Howard, 2011), higher levels of aggression and anxiety (Whitaker et al., 2006), higher probabilities of being hospitalized (Cook et al., 2006), poorer general health (Cook et al., 2006), higher probabilities of asthma (Kirkpatrick et al., 2010), higher probabilities of behavioral problems (Huang et al., 2010), and more instances of oral health problems (Muirhead et al., 2009). More recent work has demonstrated that children suffering from some forms of food hardship but not food insecure are also more likely than fully food secure children to suffer from myriad negative health outcomes (Cook et al., 2013). So, alongside the fact that millions of children in the U.S. faced involuntary restrictions in their food intakes over the past year, these restrictions led to a host of negative outcomes.

In response to the magnitude and seriousness of the food insecurity problem in the United States, an extensive food insecurity literature has emerged. One way to segment this literature is into these three categories – analyses of the consequences of food insecurity, the public policy interventions that can be used to alleviate food insecurity, and the determinants of food insecurity. In this chapter, I concentrate on the literature describing the determinants of food insecurity, although, as relevant, I will discuss the other two streams of this literature. I begin with a description of the measurement of food insecurity and cover the extent of food insecurity among children. I then turn to three categories where I think future research can be pursued – a better understanding of the reasons why determinants matter; a broader set of approaches to measuring the determinants of food insecurity; and new data collection efforts.

Overview of Food Insecurity in the United Sates

Defining Food Insecurity

In an effort to measure food insecurity in the United States, a series of questions related to food intakes first appeared in the Current Population Survey (CPS).[1] After a series of modifications to these questions, the Core Food Security Module (CFSM) was established. (For more details about the CFSM, see (1).) The measure is based on a set of 18 questions for households with children and 10 questions for households without children. Examples of questions include: "I worried whether our food would run out before we got money to buy more," (the least severe item); "Did you or the other adults in your household ever cut the size of

[1] This section borrows heavily from Gundersen, 2013.

your meals or skip meals because there wasn't enough money for food?"; "Were you ever hungry but did not eat because you couldn't afford enough food?"; and "Did a child in the household ever not eat for a full day because you couldn't afford enough food?" (the most severe item for households with children). (A complete list of questions can be found in, e.g., Coleman-Jensen et al., 2012). Each question is qualified by the stipulation that the outcomes are due to financial issues.

The USDA places households into food insecurity categories based on responses from the CFSM. This placement is made with the assumption that the number of affirmative responses reflects the level of food hardship experienced by the family. The following thresholds are established: (a) food security (all household members had access at all times to enough food for an active, healthy life); (b) low food security (at least some household members were uncertain of having, or unable to acquire, enough food because they had insufficient money and other resources for food); and (c) very low food security (one or more household members were hungry, at least some time during the year, because they couldn't afford enough food). A household is said to be "food insecure" if they fall into category (b) or (c). Food insecurity statuses are also established for the children in the household. The children in a food insecure household are said to be low food secure if the respondent answers affirmatively to 2 to 4 child-specific questions and very low food secure if the respondent answers affirmatively to 5 of more child-specific questions.

The Extent of Food Insecurity

I now turn to U.S. food insecurity trends from 2001 to 2011. This is based on information from Table 1B in (1).) In Figure 1 the proportion of children in food insecure households, food insecure children, and very low food secure children are displayed. Three things are worth emphasizing about. First, the extent of food insecurity increased dramatically in 2008. Until 2007, food insecurity rates were relatively steady – between 15.6% and 17.6%. The food insecurity category increased more than 30% (from 15.8% to 21.0%) with roughly similar proportional increases in the other categories. Second, despite the end of the Great Recession, rates of food insecurity remained high in 2009 through 2011. These continued high rates presumably reflect the lingering effects of the Great Recession, including still historically high rates of unemployment and poverty (Gundersen et al., 2012a). Third, even during better economic conditions, there are still a high percentage of children who are food insecure. As seen in Figure 1, for example, food insecurity among households with children never fall below 15 percent and children experiencing food insecurity themselves never fall below 9 percent. This is the case despite strong economic conditions throughout most of the 2001-2007 time period.

The Determinants of Food Insecurity for Children

I begin this section with a review of a subset of findings from the first round of grants funded through the Research on Childhood Hunger Program. This program, funded by the Food and Nutrition Service of the Food and Nutrition Service (FNS) of the USDA has three principal objectives: to develop an integrated, cutting edge research agenda; to build research capacity for examining childhood hunger; and to provide a research review with implications for nutrition assistance. Reviewing this work is especially relevant insofar as the goals of the Research on Childhood Hunger Program closely match the stated goals of this NAS Workshop. Three rounds

have been funded to date but only the first round has results which have been posted on the UKCPR website.[2]

The findings reviewed here use a wide variety of econometric techniques and data sets and pose distinct questions. In reviewing these, I highlight the key findings from the papers rather than provide a comprehensive overview.[3] [4] Some of the main findings regarding the determinants are that the following categories of children are more likely to be food insecure after controlling for other factors[5]: with an incarcerated parent (Wallace and Cox, 2012), with a parent who is an immigrant (Balistreri, 2012), living in complicated household structures (Balistreri, 2012), with a parent with disabilities (Balistreri, 2012), changing residences (Jacknowitz and Morrissey, 2012), and declines in maternal or child health (Jacknowitz and Morrissey, 2012).

I now turn to other studies that have examined the determinants of food insecurity in all households, including households with children. While these studies may not explicitly concentrate on food insecurity in households with children, these determinants are also likely to hold for analyses which focus exclusively on households with children. The following factors have been found to be associated with food insecurity in these studies which use cross-sectional data[6]: the lack of financial management skills (Gundersen and Garasky, 2012), the household head is American Indian (Gundersen, 2008), being at high risk of homelessness (Gundersen et al., 2003), not receiving child support (Garasky and Stewart, 2007), having a non-custodial father who does not visit regularly (Garasky and Stewart, 2007), lack of access to social capital (Martin et al., 2004), summertime (Nord and Ronig, 2006), being in a state with higher than average unemployment rates (Bartfeld and Dunifon, 2006), facing high food prices (Gregory and Coleman-Jensen, 2012), and having a cigarette smoker in the home (Cutler-Triggs et al., 2008). In studies using panel datasets, the following dynamic factors have been associated with being at higher risk of food insecurity: negative income shocks, lack of assets, changes in household composition, and becoming unemployed (Gundersen and Gruber, 2001; Leete and Bania, 2010, Ribar and Hamrick, 2003); declines in mental health status and limited financial buffers (Heflin et al., 2007; Heflin and Butler, 2013); and declines in general health, declines in the number of adults, increases in the number of children, and increases in domestic violence (Heflin and Butler, 2013).

I conclude with a brief consideration of the importance of income as a determinant. Figure 2 displays the relationship between food insecurity and income (normalized by the poverty line).[7] The figure is based on all observations in the 2011 December Supplement of the CPS with incomes between 0 and 400% of the poverty line. Two measures of food insecurity are used – the proportion of children in food insecure households and the proportion of food insecure

[2] See Table 1 for more information about all the projects that have been funded on the three rounds.

[3] Consistent with previous work on food insecurity across different population types, these studies generally find, controlling for other factors, that households with lower incomes; those headed by a single parent, a non-Hispanic black, a Hispanic or someone with less education; households with more children; and non-homeowners are more likely to be food insecure.

[4] Some of the studies are concerned with determinants that are associated with participation in various social safety net programs. The connection between participation in food assistance programs and food insecurity are covered in another chapter so I do not cover those here.

[5] Most of these studies actually examined the more severe case of very low food security among children but, consistent with the theme of this paper, I use the term "food insecurity".

[6] Studies that look at determinants of food insecurity but the central focus is on something else (e.g., the effect of SNAP on food insecurity) are not covered here.

[7] The methods used here are similar to those used to construct Figure 3 in Gundersen et al., 2011.

children (i.e., two of the measures found in Figure 1). Three key things can be deduced from this figure. First, the probability of food insecurity declines with income. While this holds for both measures, the gap between the measures declines with income. Second, that poverty is not synonymous with food insecurity is reflected in the high proportions of households that are food secure and poor. For example, almost 60% of children in households close to the poverty line are not in food insecure households. Third, conversely, a not insignificant portion of children in households with incomes above the poverty line are food insecure. For example, at 200% of the poverty line, over one-in-five children are in food insecure households.

Future research directions

As seen in the discussion above, we know a great deal about the determinants of food insecurity among households with children. And, the research on the determinants of food insecurity among all households, many of which also include children, is likely informative. I now consider some future research directions over this dimension.

Open Questions about Determinants[8]

Disability As discussed above, households with at least one person with a disability are substantially more likely to be food insecure than households without persons with disabilities.[9] What is less understood is, even in models that control for other factors, why households with persons with disabilities are more likely to be food insecure. Possible reasons include limitations in accessing food; the amount of time it takes to care for those with disabilities and/or to navigate the challenges associated with one's own disabilities; barriers to the labor market; and higher health care costs (which takes away available money for food). These reasons are likely to differ depending on the type of disability – thus, separating this out by type of disability and who in the household has what type of disability is important. Understanding what combination of factors will help us guide the appropriate policy interventions.

Immigration Children in households with immigrants are more likely to be food insecure, all else equal, than children in households without immigrants. Among other questions, this raises the following: Does immigration status matter – for example, between citizens and non-citizens? Does whether there are undocumented immigrants in the household matter? To what extent does the effect of immigration differ by where persons are immigrating from? The answers to these questions will help elucidate the types of policies that should be pursued. For example, if a particular immigrant group is at especially high risk and their SNAP participation rates are low, outreach towards them may be warranted.

Education The education level of parents has an influence on food insecurity among children, even after controlling for a wide array of other factors. The reasons for this are not immediately apparent. Possible reasons may include lower discount rates, education proxies for other assets (often time studies are unable to include asset measures), and education proxies for other skills (e.g., financial management skills). There is an ongoing emphasis on increasing education levels in the United States. If there is something about more years of schooling *per se* that leads to lower probabilities of food insecurity, efforts by policymakers to increase educational attainment (outside of the effects on income) may not result in declines in food insecurity.

[8] Some of these questions may require new data collection efforts – I turn to these in the last sub-section.
[9] Also see Coleman-Jensen and Nord (2013) and Huang et al. (2009).

Income As discussed above, about half of poor households with children are food secure. Why, despite limited incomes, these households are food secure is not readily apparent. One reason is undoubtedly due to the protective effects of food assistance programs including SNAP, National School Lunch Program (NSLP), and WIC.[10] In addition to food assistance programs, there are other factors discussed above that help explain food security among low-income households but more research is needed about formal and informal coping mechanisms. This is an area where qualitative research may be especially useful in generating new understandings. One other factor that may also be considered is the possibility of underreporting of income.[11] It may be the case that at least some of these poor food secure households, in reality, have incomes above the poverty line.

A corollary to the perhaps surprisingly high proportion of food secure poor households is that millions of children live in food insecure households with incomes above the poverty line who are food insecure. This can perhaps be explained by some of the dynamic factors discussed above including the effects of income shocks and assets. In many cases, though, these food insecure families still have incomes which would seemingly allow them to be food secure. Possible additional explanations worth exploring include the roles of fixed expenses (e.g., are these households making mortgage payments at the expense of food purchases?), the lack of knowledge of how to get by on less money, different expectations of what constitutes a sufficient amount of food (i.e., a level of food consumption that would be considered adequate for households who have long had low levels of food intakes may not be perceived as such for households recently forced to cut back on food expenditures), and lack of access to food assistance programs for those with incomes above 185% of the poverty line.[12]

Multi-generational families While children in households with grandparents are less likely to be food insecure than children in households without grandparents, all else equal, the reasons for this are not clear. Possible reasons worth exploring include the role of the grandparents providing a less expensive form of child care; the ability to prepare meals at lower cost if more time is spent on cooking; and that the marginal benefit of having more SNAP and other benefits (among households eligible for these benefits) is greater than the marginal cost of having a senior in the household. Being able to bring a grandparent in the household or move in with a grandparent may also be proxying for the social capital that a family has access to and there is some evidence that those with at least some social network are less likely to be food insecure[13]. Living in multi-generational families, though, is associated with higher risks of food insecurity among seniors living with grandchildren than seniors living without grandchildren (Ziliak and Gundersen, 2012). As a consequence, policies that encourage multi-generational households should be cognizant of the differential effects by age.

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[10] See, e.g., DePolt et al. (2009), Gundersen and Kreider (2008), Gundersen and Oliveira (2001), Kreider et al. (2012a), Nord and Golla (2009), Nord and Prell (2011), Ratcliffe et al. (2011), Van Hook and Balistreri (2006), and Yen et al. (2008) for evidence about SNAP; Gundersen et al. (2012b) for evidence about NSLP; and Kreider et al. (2012b) for evidence about WIC.

[11] See Dahl et al. (2011) for a discussion of discrepancies of income reports in a nationally representative data set compared to administrative data.

[12] The relationship between income and food insecurity when alternative measures of poverty (which influence how resources available to households) is found to be closer than for the traditional poverty measure of income (Kaushal, 2012). Even under these alternative measures, though, there are still many food secure children with incomes below the poverty line and vice-versa.

[13] See Martin et al. (2004) and Ziliak et al. (2008) for evidence regarding the effect of social networks on food insecurity.

SNAP As discussed above, SNAP recipients have lower probabilities of food insecurity than eligible non-recipients. What is less understood is whether the impact of SNAP differs by different economic and demographic factors. If the impact does differ, especially in studies that are confined to SNAP-eligible populations, the relative influence of various determinants may differ depending on SNAP participation status. This may also be relevant for dynamic studies. For example, it might be the case that the change in food insecurity resulting from a change in household status may at least be partially affected by corresponding changes in SNAP participation due to changes in household structure.

Open Questions about Interpretations

The previous sub-section examined new sets of questions that can be posed regarding the determinants of food insecurity. In this sub-section I consider possible new approaches to studying food insecurity, independent of increasing our understanding of why specific determinants are predictive of food insecurity.

Magnitudes Like in many other research areas, researchers have generally examined whether or a variable is statistically significant in predicting whether or not someone is food insecure. This approach is used in both bivariate and multivariate comparisons. What has often been overlooked, though, are the magnitudes of the association of variables with food insecurity. By looking at these magnitudes (however measured), we will garner a better understanding of what factors are especially important in determining food insecurity and allow policymakers and program administrators to more effectively target scarce resources.

Depth and Severity Studies of food insecurity have almost always treated food insecurity as a binary outcome – food insecure versus food secure or very low food secure versus low food secure or food secure. When these broad categories are used, however, a great deal of information is being suppressed. Consider, for example, two households, one responding affirmatively to 3 questions and one responding affirmatively to 7 questions. Both are treated as low food secure even though the latter household has a higher level of food insecurity. This juxtaposition becomes even more relevant when the breakdown is by food insecure versus food secure – there binary comparisons lump households responding affirmatively to 3 questions in the same category as those responding to 18 questions.

There are methods that can be used that more fully utilize the 18 questions in the CFSM. One approach can be found in Gundersen (2008) where measures that portray the incidence (i.e., the current binary comparisons), depth, and severity of food insecurity are developed.[14] They are then employed in a study comparing food insecurity among American Indians in comparison to non-American Indians. As shown there, this comparison differs markedly depending on which measure is used and, in particular, it influences the relative effects of covariates. Another advantage to these broader measures of food insecurity is that they allow the researcher to use econometric methods that are better suited to continuous measures; this is especially relevant for studies using longitudinal data. I would encourage future research to use these measures in order to (a) more fully utilize the potential of the CFSM and (b) uncover new interpretations of the various determinants of food insecurity.

Endogenous responses The CFSM has been extensively studied before and after its introduction in 1996 and I believe its usefulness as a tool to measure food insecurity has been clearly validated. In addition, its acceptance by researchers, policymakers, and program

[14] These methods are axiomatically derived in a manner similar to that found for the Foster-Greer-Thorbecke (Foster et al., 1984) class of poverty measures.

administrators is testament to its ability to elucidate something relevant. All of this does not preclude the possibility that respondents within a particular economic or demographic category may interpret the questions differently. If this is the case then the determinant may not be exogenous to the food insecurity outcome and the resulting, say, coefficient estimate may not be unbiased. At least in cases where this endogeneity may be suspected (e.g., as covered above, for those with incomes above the poverty line), some further exploration of how people are interpreting the questions may be considered.

Research in developing countries The research literature on food insecurity in developing countries is much more extensive than the U.S. food security literature. (For a review of the food insecurity literature in developing countries see, e.g., Barrett and Lenz, forthcoming.)This is primarily due to the more serious gravity of the problem in those countries, the longer time frame for this research literature to develop, and the larger number of countries being considered. The U.S. food insecurity literature has, in the main, largely ignored the food insecurity literature from developing countries.[15] An examination of the methods used in the developing country literature, the interpretations of the determinants, and the construction of data sets would help to enrich our understanding of food insecurity in the U.S.[16]

Consequences as determinants As briefly reviewed above, there are a wide array of negative health outcomes associated with food insecurity. In many cases, it is rather unambiguous that food insecurity causes those negative health outcomes. For example, one would expect that food insecurity would lead to increased probabilities of anemia rather than the other way around. In other cases, though, the causality is not as clear. Consider the case of maternal depression. While the experience of food insecurity could arguably lead to depression (after all, it is very sad to see one's children experience food insecurity) it may be the case the experience of depression makes one less able to ensure food security for a family.[17] Employing econometric methods to more accurately portray the causal direction of food insecurity and its consequences will improve our understanding of both the determinants and consequences of food insecurity.

How much more money is needed to be food secure Along with the CFSM, there are a wide array of other questions regarding food-related topics on the December Supplement of the CPS. One question posed, prior to any food insecurity questions being asked, is the following: "In order to buy just enough food to meet (your needs/the needs of your household), would you need to spend more than you do now, or could you spend less?" This is followed by the question, "About how much MORE [LESS] would you need to spend each week to buy just enough food to meet the needs of your household?" For food insecure households reporting that they need more money, this provides the researcher with a new way of interpreting the extent of a family's food insecurity. This may also allow for different interpretations of the influence of determinants when this monetary value is used as a dependent variable rather than food insecurity. Overall this question has been underutilized as taken from the CPS and has not been included on other surveys.[18]

[15] A similar divide holds in other contexts. For example, the poverty literature in the U.S. is almost completely separated from the poverty literature in developing countries.
[16] I would argue the converse also holds.
[17] Consistent with the discussion above, depression may also influence how one responds to the questions on the CFSM.
[18] Work using this question includes, e.g., Gundersen and Ribar (2011) and Gundersen et al. (2012).

Child responses Recent work has demonstrated that children respond differently to questions about their food insecurity status (see, e.g., Fram et al., 2011 for the U.S.; Kuku et al., 2011 for Zimbabwe). As a consequence, the incidence of food insecurity will, in general, differ depending on who answers the questions. One area for future research is to see whether the determinants differ. Insofar as they do differ, this may indicate distinct policy responses depending on whether the child or the parent's perspective is deemed as the "correct one".

Data Issues

Many of the future research directions articulated in the preceding two sub-sections can be pursued with existing data sets. However, some of these can only be pursued with new data collection efforts and others could potentially be enhanced with such efforts. I now turn to a discussion of data needs with respect to the two previous sub-sections and, as relevant, I put into a broader context.

Overlooked persons Studies of food insecurity that use nationally representative data (e.g., CPS, Survey of Income and Program Participation (SIPP)), are representative of most of the population in the U.S. However, there are some groups who, given the sampling frame, are overlooked. In particular, persons who are homeless or marginally housed (when the surveys are conducted) would not be included. Given their small numbers, their non-inclusion will not influence the determinants of food insecurity for the country as a whole. Insofar as the determinants of food insecurity among these groups may differ – and, hence, the policy responses may differ – including those who are excluded and similar households in separate surveys may be worthwhile. Understanding the appropriate policy responses will be especially important insofar as many of the groups overlooked are likely to have substantially higher food insecurity rates than the general population.

The construction of the sampling frame is one reason for why some persons are overlooked. Another reason is due to survey non-response. Insofar as a subset of these households are at-risk of being food insecure and the determinants of food insecurity differ from others in the survey, this may give us biased estimates for the overall population. Along with multiple other reasons for why one wants higher participation in surveys, eliminating bias in our understanding of the determinants of food insecurity is another one.

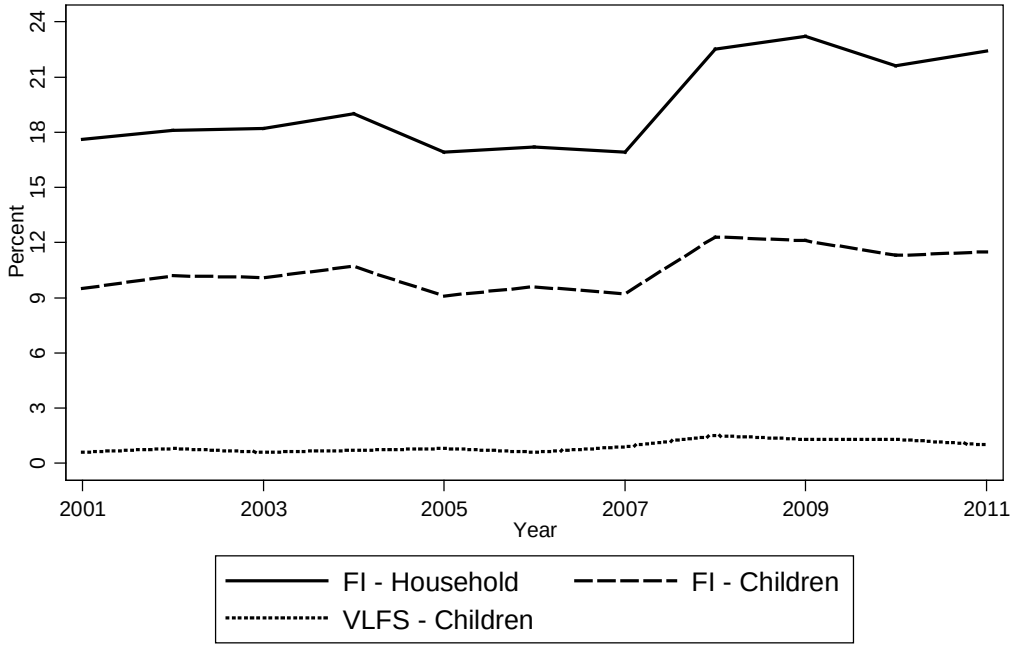
Qualitative data To date, the vast majority of our understanding of food insecurity in the United States is based on quantitative data sets. In contrast, there has been very little work that has been done using qualitative data and, furthermore, the work that has been done has not had much influence on the food insecurity literature or the policy ideas that have been generated. To give a more complete picture of food insecurity in the U.S., more research with qualitative data would be worthwhile. It would be worthwhile both in terms of addressing questions that quantitative data cannot address and in establishing new perspectives that could potentially be used in quantitative data collection efforts. I would offer three suggestions regarding qualitative data. First, the types of questions posed and the methods used should mainly address questions in the food insecurity literature that quantitative data cannot address. Second, the sampling should include both food secure and food insecure households. In contrast, some previous work using qualitative data have only included food insecure households; at least with respect to determinants, these types of data sets are often of limited use. Third, the research teams used for these studies should be transdisciplinary in focus. This would allow for a richer set of questions and approaches to interpreting responses to questions.

Longer longitudinal data sets With respect to other challenges facing low-income Americans, there are data sets which have collected information from the same panel of persons and, in some cases, their descendants for years. Examples of this include the Panel Study of Income Dynamics (PSID) and the NSLY79. In part due to the relative recent development of the CFSM, there are not any data sets with as long a panel of observations on food insecurity. With respect to understanding the determinants of food insecurity, this hampers our research insofar as we do not have a good understanding of whether the determinants of transitory food insecurity differ from the determinants of more permanent forms of food insecurity. In addition, data sets with multiple years of observations enable more variation in food insecurity and other determinants which allow for more effective use of econometric panel methods.

Conclusion

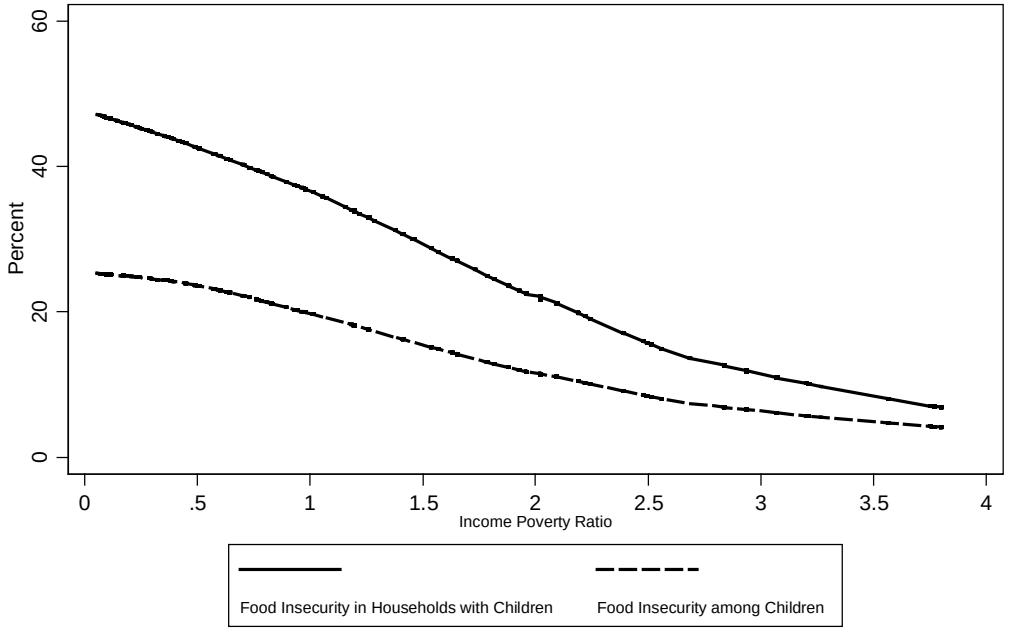
The food insecurity literature in the United States has given policymakers and program administrators knowledge that will allow for the creation of policies and programs to better address the problem of food insecurity. In this chapter I outlined some possible directions that could be taken to further improve this knowledge-base. The results generated from the Research on Childhood Hunger Program through the University of Kentucky Center for Poverty Research along with other ongoing research will help address some of these future research directions (along with multiple other questions) and, so if this chapter was written, say, two years from now it would reflect a wider knowledge base. Even with this new research coming along, there still remains a wide array of research that needs to be done on this topic.

Figure 1: Food insecurity among Children in the United States, 2001-2011



Note: Figure is based on data from Coleman-Jensen et al., 2012, Table 1B

Figure 2: Relationship between food insecurity among children and income, 2011



Note: Author's calculations based on data from the December Supplement of the 2011 Current Population Survey

Table 1: Projects Funded through Research on Childhood Hunger Program

Round 1	
Title	Principal Investigator (Affiliation)
Large Grants	
Nonresident Fathers' Involvement and Welfare Policies: Impacts on Childhood Hunger	Steve Garasky (IMPAQ International)
How Can Communities and Households Protect Children from Very Low Food Security?	Sonya Jones (University of South Carolina)
Understanding Very Low Food Security among Children in the U.S.	Neeraj Kaushal (Columbia University)
The Dynamics of Food Insecurity and Effective Coping Strategies for Households at Risk of Childhood Hunger.	Gregory Mills (Urban Institute)
Food Hardship in the Low Income Population: Child Focused Evidence from the Three City Study	Robert Moffit (Johns Hopkins University)
Small Grants	
Family Structure and Time Allocation: Mechanisms of Food Insecurity among Children	Kelly Balistreri (Bowling Green State University)
Families with Hungry Children and the Transition from Preschool to Kindergarten	Colleen Heflin (University of Missouri)
Food Insecurity across the First Five Years: Triggers of Onset and Exit	Alison Jacknowitz (American University)
Identifying the Effects of WIC on Very Low Food Security	Brent Kreider (Iowa State University)
The Impact of Household Labor Market Shocks on Child Food Insecurity	Bradford Mills (Virginia Tech University)
The Impact of Incarceration on Food Security of Children	Sally Wallace (Georgia State University)
The Effect of Safety Net Programs on Food	Tara Watson (Williams College)

Insecurity	
Availability and Accessibility of Emergency Food Assistance and Food Insecurity among American Children	Qi (Harry) Zhang (Old Dominion University)

Round 2

Large Grants

Understanding the Interdependencies among Three Types of Coping Strategies Used by Very Low Food Secure Households with Children	Andrea Anater (RTI International)
Understanding Very Low Food Security and Other Food Hardships among Households with Children	Judith Bartfeld (University of Wisconsin)
Childhood Stress: A Mixed Methods Analysis of the Intergenerational Circumstances of Childhood Hunger	Mariana Chilton (Drexel University)
Economic Shocks, Neighborhood Food Infrastructure and Very Low Food Security	Sheldon Danziger (University of Michigan)
Connecting Saving and Food Security: Evidence from an Asset Building Program for Families in Poverty	Cäzilia Loibl (Ohio State University)
New Evidence on Why Children's Food Security Varies Across Households with Similar Incomes	Diane Whitmore Schanzenbach (Northwestern University)
Understanding Very Low Food Security among Children of Mexican-Origin: The Circumstances and Coping Strategies of Mexican-Origin Families in Texas Border Colonias	Joseph Sharkey (Texas A&M)

Small Grants

Risk and Protective Factors Associated with Prevalence of VLFS in Children among Children of Foreign-Born Parents	John Cook (Children's HealthWatch)
Financial Services and Food Insecurity among Households with Children	Katie Fitzpatrick (Seattle University)

The Effect of Household Financial, Time and Environmental Constraints on Very Low Food Security among Children	Helen Jensen (Iowa State University)
Food Insecurity During Childhood: Understanding Persistence and Change Using Linked Current Population Survey Data	Sheela Kennedy (University of Minnesota)
Parenting Practices and Attitudes: Children's Food Security in the Nexus of Parent Behavior	Elizabeth Powers (University of Illinois)

Round 3

Large Grants

Family Health Shocks and Young Children's Food Insecurity	Hope Corman (Rider University)
Understanding the Immediate and Long-Term Effects of Supplemental Nutrition Education Program-Education as an Intervention to Improve Food Security among Households with Children in Indiana	Heather Eicher-Miller (Purdue University)
Child Food Insecurity in Families with Young Children with and without Special Health Care Needs	Ruth Rose-Jacobs (Children's HealthWatch)

Small Grants

The Effect of In-Classroom Breakfast Feeding on Children's Food Security and Participation in the School Breakfast Program	Katherine Bauer (Temple University)
Do Big Box Grocers Improve Food Security? Evidence from the National Health and Nutrition Examination Surveys	Charles Courtemanche (Georgia State University)
Contextualizing Food Insecurity Among Children: Do Neighborhood Characteristics Shape the Risk?	Justin Denny (Rice University)
Understanding the Relationship between the School Breakfast Program and Food Insecurity	David Frisvold (Emory University)
Very Low Food Security and Teenage Labor Supply	Sarah Hamersma (University of Florida)

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