Chapter 3
How SNAP Reduces Food Insecurity

Craig Gundersen

Abstract Food insecurity has emerged as a central measure of well-being in the USA due to both its magnitude and its serious health and other consequences. Over 40 million people in the USA are food insecure. The number of food insecure persons would be far higher were it not for the Supplemental Nutrition Assistance Program or SNAP, formerly known as the Food Stamp Program. SNAP supplements a family's income, helping them to buy nutritious food. In this chapter, I provide a brief history of SNAP and discuss SNAP's eligibility and benefit structure. There would be no need for SNAP were it not for food insecurity. I discuss measurement of food insecurity, its determinants and health consequences, and the effect of SNAP on food insecurity. I conclude with a discussion of proposals that would enhance SNAP and proposals that would impede SNAP in meeting its goals.

Keywords Food insecurity · Food insecure · Food secure · SNAP · Food stamps · Supplemental Nutrition Assistance · Entitlement program · Work requirements for SNAP

Food insecurity has emerged as a central measure of well-being in the USA due to both its magnitude and its serious health and other consequences. Almost 40 million people in the USA are food insecure (Coleman-Jensen, Rabbitt, Gregory, & Singh, 2019). Food insecure households lack access to adequate food due to insufficient funds (Gundersen & Ziliak, 2015). The number of food insecure persons would be far higher were it not for the Supplemental Nutrition Assistance Program or SNAP, formerly known as the Food Stamp Program. SNAP supplements a family's food budget so they can buy nutritious food.

SNAP is the most effective tool used to reduce food insecurity in the USA. The program has reached this stature for the following reasons. First, extensive resources are devoted to the program, allowing for the provision of assistance to millions of

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Americans. In 2018, almost 40 million persons received SNAP at a total cost of over $65 billion (Rosenbaum & Keith-Jennings, 2019). Second, SNAP is funded as an entitlement program which means that it is a mandatory expenditure in the U.S. federal budget. With this status, SNAP is not subject to regular appropriations or legislative mechanisms that could reduce its funding. Third, it is the only program available to individuals across all ages. Fourth, SNAP has been successful in achieving its central goal alleviating food insecurity. (This is discussed in a later section on SNAP's impact on food insecurity.) As such, the U.S. Department of Agriculture (USDA) can be confident that expenditures on this program are worthwhile.

I begin with a brief history of SNAP followed by the current eligibility criteria and benefit structure. Since the central goal of SNAP is to alleviate food insecurity, I then discuss measurement of food insecurity, its determinants and health consequences, and the effect of SNAP on food insecurity. I conclude with a discussion of proposals that would enhance SNAP and proposals that would impede SNAP in meeting its goals.

Supplemental Nutrition Assistance Program (SNAP)

History of SNAP

Food assistance programs in the USA emerged in the 1930s during the Great Depression. In 1939, a program was established wherein individuals receiving public relief (i.e., government assistance) could purchase stamps to obtain foods determined by the USDA to be in surplus. The Food Stamp Act of 1964 built on this program by allowing the use of food stamps in selected counties. By 1974, food stamps were available in all counties (see Almond, Hoynes, & Schanzenbach, 2011, for more on the expansion of SNAP by county over time). In 2008, the Food Stamp Program took on its current name of SNAP. (For more on the history of SNAP, see Bartfeld, Gundersen, Smeeding, & Ziliak, 2015.) The program is administered by the USDA through the Food and Nutrition Service (FNS), which works with partners at the state and local level in implementing the program.

SNAP has undergone numerous changes, but its basic structure (described in the next section) has stayed the same. The size of the program is seen in Fig. 3.1 which shows the number of people enrolled and total expenditures on SNAP and its predecessor, food stamps, from 1980 to 2017. From 2000 to 2013, there were annual increases in both the number enrolled and the amount paid in benefits. Since 2013, however, there has been a decline in both measures, primarily reflecting improvements in economic conditions (Ganong & Liebman, 2018).

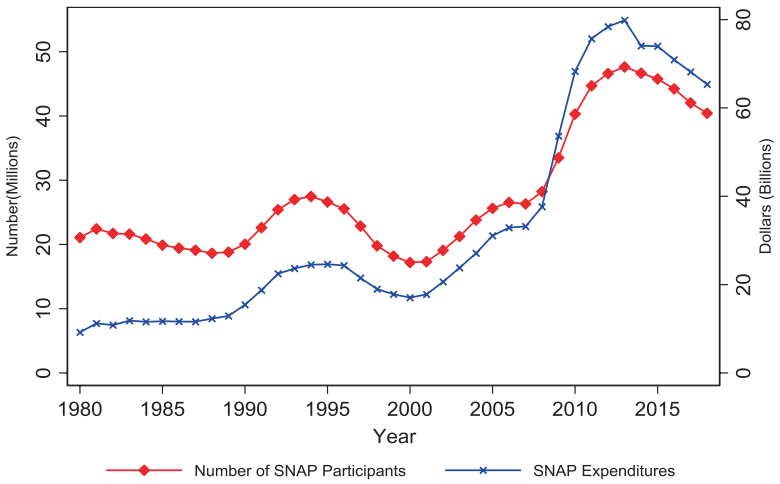


Fig. 3.1 SNAP participants and expenditures: 1980–2018. Source: Author's calculations based on SNAP Data Tables (FNS, USDA, 2019)

SNAP: Eligibility Criteria and Benefit Structure

Households are eligible for SNAP if they satisfy three criteria demonstrating limited resources. First, there is the gross income test where a household's income (before any deductions) must be <130% of the poverty line ($25,100 for a family of four in 2018). Some states have set more lenient thresholds of up to 200% of the poverty line. The gross income test is waived for households with seniors or persons with disabilities. Second, the household's net income cannot exceed the poverty line. Net income is calculated as gross income minus certain deductions. These include, for example, a 20% earned income deduction and a dependent care deduction when such care is necessary for work, training, or education. Third, a household's total assets cannot exceed $2250; $3500 for households with a senior or disabled member. The third criterion is now waived in most states and, in those states without waivers, the limit is often set higher.

For eligible households, benefit levels are then constructed as follows. A household with a net income of zero receives the maximum SNAP benefit; i.e., the cost to purchase the USDA-designed Thrifty Food Plan (TFP) specifying foods and amounts of food for adequate nutrition. (For more on how the TFP is constructed, see Wilde & Llobrera, 2009.) In 2018, the maximum benefit amounted to $640 per month for a family of four. For each additional dollar in net income, benefits are reduced by 30 cents; if the income is in the form of earnings from work, benefits are reduced by 24 cents. This distinguishes SNAP from other assistance programs which distribute benefits in a lump-sum manner that is independent of income once someone is eligible.

Upon entering SNAP, recipients are given an electronic benefit transfer (EBT) card that they can use at approved retail food outlets in the USA on a wide array of food products. The set of stores constitute nearly all food retailers in the USA and the scope of products has only minor limitations (e.g., no purchasing already cooked foods), so SNAP gives recipients a great deal of flexibility to meet their family's food needs.

The ability of SNAP to meet the food needs of vulnerable families is further enhanced by its status as an entitlement program. This is seen in Fig. 3.1 whereby there have been increases in expenditures on SNAP, in some years, large increases, and this occurred without the need for explicit legislative approval for additional monies in any given year. Conversely, when the economy is strong (e.g., currently and in the late 1990s), SNAP caseloads and expenditures fall. In contrast to SNAP, other government programs that are not designated as entitlement programs have a set amount of money available, and once that is gone, further authorization is needed to increase expenditures. (WIC is an example of such a program.)

Food Insecurity

Measurement of Food Insecurity

Eradicating food insecurity is an explicit and implicit goal of the USDA. However, prior to 1996, there was not consistent monitoring of the extent of food insecurity nor, for that matter, the efficacy of programs to address it. In 1996, though, the USDA introduced the Food Security Supplement (FSS) to the Current Population Survey (CPS) in order to measure food insecurity. The FSS consists of 18 questions: ten for households without children and eight for households with children, each relating to financial constraints. Examples of survey questions include: *Did you or the other adults in your household ever cut the size of 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 question). (For the complete set of questions, see Coleman-Jensen et al., 2019.)

The responses for these questions are *sometimes, yes* or *no*. In other cases, respondents are asked if something happened *never, sometimes,* or *often*. A response of *sometimes* or *often* is counted as an affirmative response. Other questions ask respondents if something happened *almost every month*, *some months but not every month*, or *in only 1 or 2 months*. A response of *almost every month* or *some months but not every month* is counted as an affirmative response. Based on these responses, households are delineated into three categories: A household is said to be *food secure* if they respond affirmatively to two or fewer questions; *low food secure* if they respond affirmatively to three to seven questions (three to five questions for households without children); and *very low food secure* if they respond affirma-

tively to eight or more questions (six or more questions for households without children). Households with any degree of food insecurity include one or more members who were hungry, at least at some time during the year, because they could not afford sufficient food. The categories of low food secure and very low food secure (VLFS) are often combined and called *food insecure*.

Figure 3.2 shows the official rates of food insecurity and VLFS from 2000 to 2018 (Coleman-Jensen et al., 2019; Table 1A). Irrespective of the measure, the patterns are similar insofar as the food insecurity rate was relatively steady at about 12% and the VLFS rate at about 3.5% until 2007. For both measures, the rates increased dramatically in 2008 with the onset of the Great Recession and remained elevated through 2014.

Determinants of Food Insecurity

Consistent with other measures of vulnerability, the aggregate rates of food insecurity and VLFS do not portray the variation by geography and by demographic characteristics. Variation by geography can be seen in Fig. 3.3, a map of estimated food insecurity rates for children by county in 2017. (More details about how these estimates are constructed can be found in Gundersen, Dewey, Hake, Engelhard, & Crumbaugh, 2017.) In some parts of the country, including the upper Midwest and the Northeast, food insecurity rates are lower than the national average. In contrast, there are areas where rates are especially high (e.g., the Mississippi Delta and Appalachia). Even within states, there can be dramatic differences—consider the

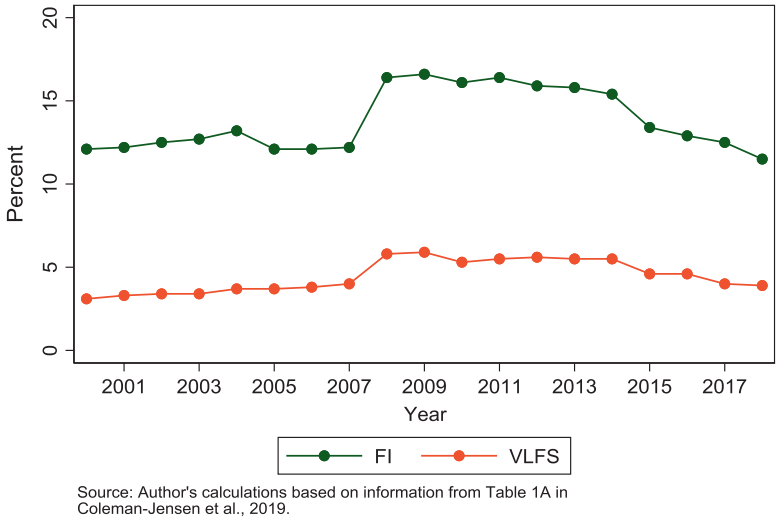
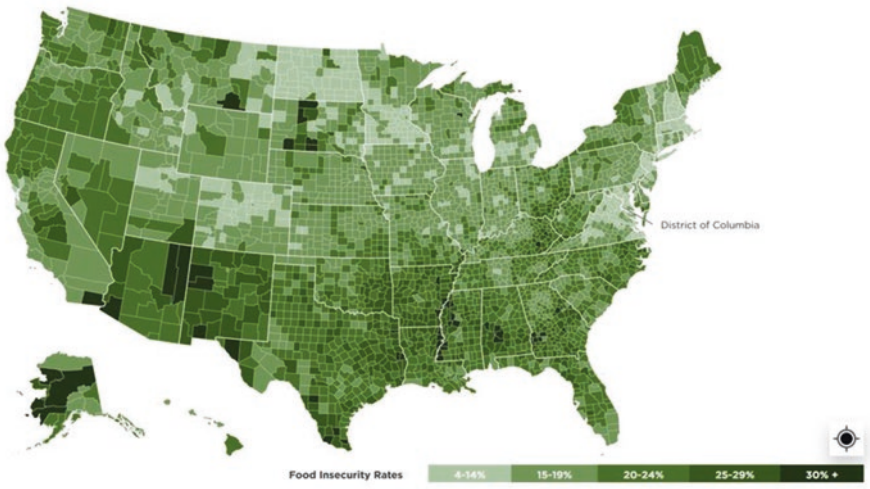


Fig. 3.2 Food insecurity and VLFS rates by year. Source: Authors calculations based on information from Table 1A in Coleman-Jensen et al. (2019)



Source: Feeding America (2019). Reprinted with permission.

Fig. 3.3 Child food insecurity rates, by county. Source: Feeding America (2019). Reprinted with permission

much higher rates of food insecurity in counties with Indian reservations in North Dakota. Figure 3.2 demonstrates the continuing presence of food insecurity in the USA, while Fig. 3.3 demonstrates its geographic pervasiveness. The explanation for the persistence and pervasiveness of food insecurity can be found by looking at why certain households are at greater risk. In what follows, I cover six of the determinants of food insecurity. (For a wider discussion of the determinants of food insecurity see Gundersen & Ziliak, 2018.)

Low-Income

As expected, poor households are more likely to be food insecure than non-poor households. In 2017, for example, 36.8% of poor households were food insecure (Coleman-Jensen, Rabbitt, Gregory, & Singh, 2018; Table 2). While income is obviously an important determinant, 73.2% of poor households are food secure. Looking at the proportion of the total food insecure population, the overwhelming majority of these households (68.2%) have incomes above the poverty line (Coleman-Jensen et al., 2018; Table 2). In other words, despite facing serious challenges in obtaining enough food to be food secure, these poor households are food secure.

Disruptions in Income and Expenditures

Research has found that those facing drops in income, job loss, volatile income, and housing instability are more likely to be food insecure in comparison to similar households not facing those shocks (e.g., Gjertson, 2016; Heflin, Corcoran, & Siefert, 2007; King, 2018; Leete & Bania, 2010). Unexpected changes in expenditures are another shock that can increase the likelihood of food insecurity. Indirect evidence of this is found in the substantially higher probabilities of food insecurity among those who report having unpaid bills in at least 1 month in the previous year than those without unpaid bills (Gundersen, Engelhard, & Hake, 2017). Savings is one way to help buffer these shocks but so too is obtaining a loan to smooth consumption. Consistent with this is the finding that imposition of restrictions on the location of payday lenders led to increases in food insecurity (Fitzpatrick & Coleman-Jensen, 2014).

Household Structure

Among households with children, those headed by a single mother have food insecurity rates of 30.3% versus 9.5% for those headed by two parents (Coleman-Jensen et al., 2018; Table 2). While single-parent households have lower incomes on average, the impact of household structure remains even after controlling for other factors. The effect of household structure is also seen in older populations. Consider those aged 40 or higher, living in households with and without grandchildren present. Here, the rates of food insecurity are over twice as high for the former group—19.2% versus 8.5% for the latter (Ziliak & Gundersen, 2016; Table 1). For households across the age spectrum, it is likely that unobserved characteristics of these households, rather than household structure in-and-of-itself, are responsible for the higher rates of food insecurity. For example, higher levels of chaos–which can be tied to household structure–is one characteristic that is often unobserved in data sets but has been shown to lead to higher rates of food insecurity (Fiese, Gundersen, Koester, & Jones, 2016).

Disability Status

The food insecurity rates of households with at least one member who has a disability are substantially higher than households without a member who has a disability. These higher rates hold even after controlling for other observed characteristics such as income and household structure (e.g., Brucker, 2016; Brucker & Nord, 2016; Sonik, Parish, Ghosh, & Igdalsky, 2016). Across a wide array of disabilities, those with disabilities have substantially higher rates of food insecurity than those without disabilities, and in some cases, much higher rates—4.6 times higher for those with a mental health disability (Brucker & Coleman-Jensen, 2017).

American Indians

Counties with high proportions of American Indians have, on average, starkly higher rates of food insecurity. This holds true for the broader American Indian population as their rates of food insecurity are 1.8 times higher in households with children and 2.1 times higher in households without children relative to non-American Indians (Gundersen, 2008).

Prices of Food and Other Necessities

As previously discussed, the amount of *nominal income* available to a household influences food insecurity. How much nominal income purchases, however, depends on consumer prices and inflation; in other words, it is the *real income* of consumers that is relevant to food insecurity. Areas with lower food prices, all else being equal, have lower rates of food insecurity. More specifically, a one-standard deviation increase in food prices is associated with an increase of 2.7% in food insecurity (Gregory & Coleman-Jensen, 2013). One factor leading to lower food prices is the expansion of large-scale retailers into an area. Large-scale retailers are able to have lower prices and through this increased competition, other stores are compelled to lower their prices. As an example, the expansion of Walmart Supercenters has led to declines in food insecurity in those areas (Courtemanche, Carden, Zhou, & Ndirangu, 2019). Another necessity which constitutes a high proportion of expenditures for many low-income households is housing. On average, in low-income households, housing costs make up over 40% of their total expenditures (Schanzenbach, Nunn, Bauer, & Mumford, 2016). One estimate found that for each $500 increase in rent per year, there is a 10% increase in a household's probability of food insecurity (Fletcher, Andreyeva, & Busch, 2009).

Food Insecurity and Health Consequences

The magnitude of food insecurity in the USA makes it one of the leading health and nutrition issues. As such, there is heightened interest among researchers in the association between food insecurity and health outcomes As reviewed in Gundersen and Ziliak (2015), this research has found that, among children, food insecurity is associated with increased risks of some birth defects, anemia, lower nutrient intake, cognitive problems, aggression, and anxiety. Food insecurity is also associated with higher risks of being hospitalized and poorer general health, and with having asthma, behavioral problems, depression, suicidal ideation, and worse oral health. For adults, food insecurity is associated with decreased nutrient intake; increased rates of mental health problems and depression, diabetes, hypertension, and hyperlipidemia; worse outcomes on health exams; being in poor or fair health; and poor sleep outcomes. Further raising the profile of food insecurity are the higher

healthcare costs due to these negative health outcomes. For example, households with food insecurity had significantly greater estimated mean annualized healthcare expenditures in comparison to food secure households—$6072 versus $4208 (Berkowitz, Basu, Meigs, & Seligman, 2018). This amounts to $77.5 billion in additional annual healthcare expenditures borne by individuals and the government.

SNAP's Impact on Food Insecurity

Given the importance of SNAP in the social safety net, it is concerning that food insecurity rates are substantially higher among recipients than non-recipients. For example, in 2017, the food insecurity rate among SNAP participants was 50.1%, while SNAP-eligible non-participants had food insecurity rates of 23.4% (Coleman-Jensen et al., 2018; Table 8). This result is expected insofar as SNAP is designed to reach those who are at the greatest risk of food insecurity. However, after controlling for those at greatest risk of food insecurity, numerous studies have found that SNAP participants are less likely to be food insecure than eligible non-participants. For example, a recent study found that SNAP households with children are between 9.2 and 32.7% less likely to be food insecure than SNAP-eligible non-participating households with children. (See, Gundersen, Kreider, Pepper, & Tarasuk, 2017 for information about this estimate; see Gundersen, Kreider, & Pepper, 2017; Swann, 2017; and Gregory & Smith, 2019 for other recent work on this topic.) The impact of this on the overall food insecurity rate among children is seen in Fig. 3.4. The figure shows, from 2006 to 2018, the rate of food insecurity (a) with SNAP, (b)

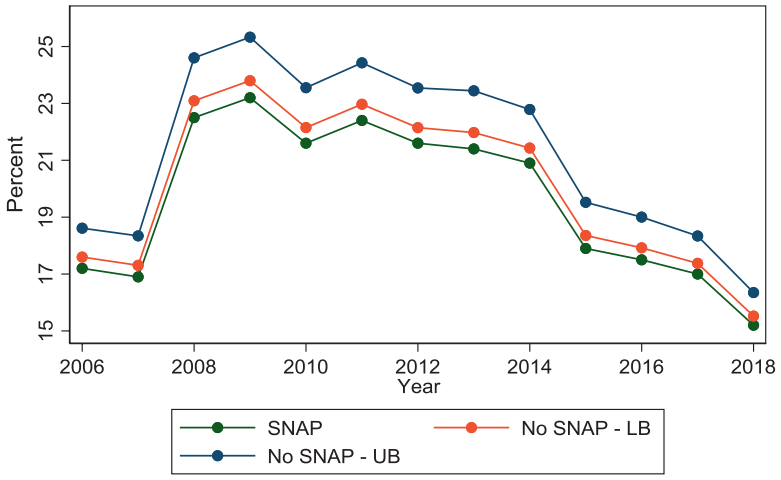


Fig. 3.4 Child food insecurity rates by year with and without SNAP: 90% participation rate. Source: Author calculations based on Gundersen, Kreider, Pepper, and Tarasuk (2017) and Table 1A in Coleman-Jensen et al. (2019)

without SNAP and the lower bound estimate of the impact of SNAP (No SNAP−LB), and (c) without SNAP and the upper bound estimate of the impact of SNAP (No SNAP−UB). These estimates are shown under the assumption that 90% of eligible households with children participate. In addition to its impact on food insecurity, SNAP is improving well-being over multiple other dimensions (Bartfeld et al., 2015).

Proposals to Change SNAP

The stature of SNAP in the social safety net and its size in the budget of USDA has led to a wide array of calls for changes. I first discuss two proposals that would lead to greater restrictions surrounding SNAP followed by two proposals that would expand the program.

Requirements for and Restrictions on SNAP

There have been numerous calls from across the political spectrum to impose restrictions that would reduce the number of people in the program. Two of these proposals are framed in the context of the "right to food" (Gundersen, 2019).

While there is not a formal right to food in the USA, over many dimensions, de facto, SNAP serves to guarantee this right. One key component of any right is that it should not impose arduous conditions. As an analogy, consider the process of voting in the USA. After registration and going to a polling booth (or voting via absentee ballot), there are no further requirements imposed. For example, one does not have to demonstrate specific knowledge about candidates, justify why a vote was made, pass some form of IQ test, etc. The right to food as manifested in SNAP is constructed in a similar manner insofar as, after meeting the eligibility requirements and recertifying as needed, individuals do not have to meet further requirements.

The first set of proposals is to impose a wider set of work requirements on SNAP recipients. Currently, unemployed able-bodied adults without dependents (ABAWDs) between the ages of 18 and 50 years can receive SNAP for only 3 months in any 36-month period. Nevertheless, in times and places of economic stress, states can and do ask for waivers from this requirement. Proposals have been made to limit these waivers. There have also been proposals to expand the upper age limit to 60 years of age and require at least one parent to work if there is no child under the age of 6 years in the home.

This set of work requirements could perhaps be justified if SNAP did impede work effort. It is true that some assistance programs do discourage work at some points over the income distribution. As an example, suppose a household stands to lose $500 per month in benefits if they make $400 more from work. In this case the

household would be made worse-off by working more or earning higher wages. So a rational decision would be to not pursue earning the extra $400. While SNAP recipients do lose benefits when they get just above the eligibility threshold, the decline in benefits at the threshold is limited because, as stated earlier, benefits fall as someone approaches the threshold. In addition, at other points in the distribution, for each dollar earned there is a 24-cent decline in benefits which is unlikely to be an impediment.

A second set of proposals entails the imposition of restrictions on SNAP purchases. Since its inception, SNAP has faced calls to prohibit purchases of certain food items. These attempts aim to "improve the health of recipients," to prevent recipients from purchasing "luxury items", or to restrict certain companies from selling to SNAP recipients. Recently, these restrictions have concentrated on specific categories of food deemed to be "unhealthy." Some proposals have gone even further by arguing that all choice should be removed and instead, recipients should be mailed their food (so-called Harvest Boxes).

Unlike work, age and income requirements, restrictions on purchases would not directly remove people from the program. However, negative outcomes would occur due to increases in the stigma and transactions costs associated with SNAP. Stigma would increase insofar as, among other things, participants would feel singled out as being irresponsible and incapable of making well-informed food purchases for their children. The restrictions themselves convey the message that SNAP recipients make poor food choices, have unhealthy diets and perhaps, are more likely to be obese.

Restrictions on purchases would increase transactions costs for two main reasons. First, SNAP recipients will need to spend more time figuring out which food items are eligible for purchase with SNAP benefits and which are not. In stores where "SNAP eligible" or "SNAP ineligible" is clearly and correctly displayed, ascertaining which foods are eligible would be straightforward. But in stores without such displays, SNAP recipients would need to ascertain this information on their own (i.e., the opportunity cost of shopping with SNAP is higher). Second, due to the higher costs to stores associated with implementing these restrictions, the number of stores accepting SNAP benefits may decline. That could lead to longer travel distances in order for SNAP recipients to use their benefits, which may not be logistically possible for some. These hardships for recipients could lead to decreased participation in SNAP. (For a more in-depth discussion of why SNAP participation rates would fall, see Gundersen, 2015.)

Expansion of SNAP

In contrast to proposals that seek to further limit SNAP, some have urged expansion of SNAP. As discussed earlier, a high proportion of participants are still food insecure. In response, one recent proposal urges an across-the-board increase of 20% in the maximum SNAP benefit (Ziliak, 2016) in order to address what many perceive

as the unduly low-value of the Thrifty Food Plan. This would likely lead to reductions in food insecurity, albeit the extent to which this would occur is not considered in the paper. To build on this proposal, the addition of a question on the CPS that asks how much additional income households would need in order to be food secure has been suggested (Gundersen, Kreider, & Pepper, 2018). The authors find that increasing SNAP benefits by a lump sum of $41.62 per week would lead to a reduction in food insecurity of just over 60% among SNAP participants at a cost of roughly $25 billion. This would represent an approximately 35% increase in SNAP expenditures.

In addition to questioning the adequacy of benefit levels, one may also question whether the current eligibility threshold of 130% of the poverty line is too low. As such, increasing the eligibility threshold has been proposed. Of course, the probability of food insecurity declines as income increases. Food insecurity rates of those with incomes below 130% of the poverty line compared to those with incomes between 130 and 185% of the poverty line are 39.6 and 21.8%, respectively (Coleman-Jensen et al., 2018; Table 3). Nevertheless, that over one-in-five of these households are food insecure may be high enough to be of concern. In response, 27 states and the District of Columbia have set their gross income limit higher, up to 200% of the poverty line. Not all of these households would be eligible for SNAP since they still have to meet the net income test, but a high proportion are eligible, especially in states with high housing costs. Gundersen et al. (2018) consider what would occur if all households with incomes between 130 and 185% of the poverty line received SNAP and the resulting benefit amount was sufficient to remove them from food insecurity. They find that the total estimated cost would be $22.2 billion, and there would be a 63.5% decline in food insecurity in this population (Gundersen et al., 2018).

Conclusion

Food insecurity and its accordant health consequences has remained stubbornly high in the USA. The problem of food insecurity, though, would be substantially higher in the absence of SNAP. The success of SNAP is the primary reason the anti-hunger community has been steadfast in its opposition to work requirements and purchase restrictions. In terms of the former, there is no evidence that SNAP discourages work and, therefore, no indication that work requirements would lead to higher labor force participation, more self-sufficiency, and less need for assistance. Instead, additional requirements and the resulting decrease in the number of eligible households would lead to increases in food insecurity. A similar argument holds for restrictions on purchases insofar as there are no proven benefits to the imposition of restrictions on SNAP benefits (Gundersen, 2015), while the costs are clear—increases in food insecurity and general declines in well-being among low-income Americans.

Instead of dismantling SNAP, those concerned with food insecurity have proposed expansions of the program akin to the ones described here. These proposals have emerged because the structure of SNAP lends itself to expansions insofar as there are already regular increases in benefits due to inflation, and the eligibility criteria has been made more lenient over many dimensions (e.g., higher thresholds in some states; states waiving the asset test). Thus, it would be relatively straightforward to both increase benefit levels and bring more people into the program. While doing so would be expensive, as explained previously, the net result to the government should also include reductions in health care costs due to lower food insecurity rates. In particular, two government funded programs which have many food insecure households, Medicaid and Medicare, would see declines in costs.

In addition to proposed expansion of SNAP benefits and eligibility, as discussed here, changes that target specific households should be considered. As discussed here, certain households are at greater risk of food insecurity. One group is American Indians living on reservations. The distances that need to be traversed to get to a supermarket are often quite long in areas where reservations are located. This imposes additional costs with respect to gas, wear-and-tear on a vehicle (if one can afford a vehicle), time, etc. In response, the USDA may wish to consider incorporating these additional costs into the deductions used to calculate net income which would result in higher benefit levels. Another group is those with mobility disabilities. While for them, the distances to supermarkets are unlikely to be different than for non-disabled persons, the burden of getting to a supermarket is likely to be higher due to their disabilities. In response, the deductions for net income could be adjusted to incorporate differential costs depending on the mobility of the client.

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