

Dietary Impacts of Food Assistance Programs

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With 1 in 6 Americans receiving some type of food assistance, there is great interest in understanding how their diets might be affected. This chapter reviews the available evidence on the dietary impact of the Nation's food assistance programs on the diet of recipient households.

Introduction

In fiscal 1998, about 1 in 6 Americans received food assistance from at least 1 of the Nation's 15 food assistance programs (see box on domestic food-assistance programs). The U.S. Department of Agriculture (USDA) administers most of these programs, designed to provide needy persons with access to a more nutritious diet, to improve the eating habits of the Nation's children, and to help America's farmers by providing an outlet for distributing foods purchased under farmer assistance authorities.

The Nation's domestic food assistance programs provide an important source of food for many low-income people. However, even with these programs, some low-income households may still not get enough to eat. The 1995 Food Security Survey found that nearly 12 percent of all U.S. households experienced food insecurity at some point during the year, including 4.1 percent of all households that experienced some level of hunger (Hamilton and others, 1997). Even when low-income households get enough to eat, they may not consume the types of foods and levels of nutrients required for good health. A recent review of the dietary and nutritional status of the

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U.S. population concluded that the risk of nutrition-related health problems and prevalence of health conditions related to poor nutritional status are generally greater among people with low incomes than among people with higher incomes (Federation of American Societies for Experimental Biology, 1995).

In this chapter, we summarize evidence on the dietary impact of the Nation's food assistance programs on the diets of recipient households.

Trends in Food Assistance

Food assistance programs were first established during the Great Depression in the 1930's. Although one of the objectives of the programs was to help alleviate hunger, their primary purpose at the time was to reduce the stocks of surplus agricultural commodities purchased by the Federal Government in stabilizing farm prices and incomes. The level of food assistance depended on the amount of available surplus commodities, increasing when surpluses were large and falling when surpluses decreased.

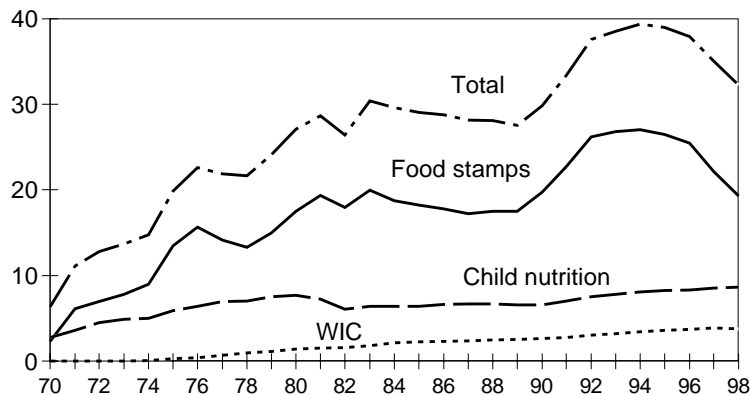
In the 1960's, documented instances of both underconsumption and undernutrition in the United States increased public awareness and concern about the food problems of the poor (Kotz, 1969). These instances focused national attention on the need for food assistance programs to address poverty-related hunger and malnutrition. Consequently, Federal outlays for food assistance programs increased, in real terms, by over 500 percent from fiscal 1970 to 1994 (fig. 1). While the growth of the Food Stamp Program (FSP) accounted for most of this increase, new programs—such as the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC)—also signaled an increased commitment to food assistance during this period.¹ Expansion of the food assistance programs has slowed in recent years: real outlays actually decreased about 18 percent from fiscal 1994 to fiscal 1998. The Nation's strengthening economy has reduced the demand for food assistance, particularly the FSP, which has seen a reduction in the number of

¹ The modern Food Stamp Program began as a pilot project in 1961, was authorized as a permanent program to those States wishing to take part in 1964, and went nationwide in 1974. WIC started initially as a 2-year pilot project in 1972, and went nationwide in 1974.

Figure 1

Food assistance spending, 1970-98

\$ billion (1996)



Adjusted by CPI for all items, using 1966 as the base.

Source: USDA/ERS.

participants recently and in the real benefits per participant. In addition, the recent welfare reform legislation reduced the benefits provided by the food assistance programs and restricted their use to certain individuals. These changes, however, are smaller than those affecting the cash welfare programs, magnifying the importance of the food assistance programs as part of the social safety net.

The increase in Federal outlays for food assistance programs begun in the 1960's occurred at the same time as a reduction in differences between the diets of low income and other households. Surveys of the eating habits of the American people provided by USDA's Nationwide Food Consumption Surveys (NFCS) found that between 1965-66 and 1977-78, a period that marked the national expansion of the FSP and the introduction of WIC, the gap between the diets of low-income and other families narrowed. During this period, the share of low-income households with diets that met 100 percent of the Recommended Dietary Allowances (RDA's) for seven key nutrients essential to good health grew from less than 40 percent to about 50 percent, more than double the growth rate of the general population. This period has also been associated with a reduction in the incidence of stunting in preschool children, and an improvement in

the prevalence of low birth weights and anemia in low-income preschool children (USDA-FCS-ERS, 1995; Yip and others, 1987; Yip, 1989). However, the question remains as to how much of this improvement can be attributed to the food assistance programs.

Food Assistance Programs Take a Variety of Forms

The food assistance programs administered by USDA take a variety of forms, providing different types of food benefits to various target recipients. However, three programs account for 85 percent of the total \$33.6 billion spent on food assistance in 1998: the Food Stamp Program (\$18.8 billion), the National School Lunch Program (\$5.8 billion), and the WIC Program (\$3.8 billion).

The Food Stamp Program (FSP) is the principal food assistance program, and it is designed to provide the basic nutritional needs of all eligible low-income households. Unlike the other food assistance programs that target specific groups, the Food Stamp Program is available to most households (subject to certain work and citizenship requirements) that meet income and asset criteria. This program provides recipients with a monthly allotment of coupons that can be redeemed for food at authorized retail food stores. The allotment is based on USDA's Thrifty Food Plan, a low-cost model diet that meets standards for a nutritious diet. Few restrictions are placed on what foods recipients can purchase.² However, USDA tries to influence food choices by reimbursing half the cost of approved FSP nutrition education and promotion activities by the States. Currently, 46 States have approved nutrition education plans.

Other USDA programs provide more specific food benefits to more narrowly defined sets of recipients. For example, WIC is designed to provide benefits to low-income pregnant and postpartum women and to infants and children up to 5 years of age who are found to be at nutritional risk. This program provides vouchers redeemed at retail stores for specific foods that are nutritionally important to these

² Food stamps can be used to buy any food or food product for human consumption, and seeds and plants for use in home gardens to produce food. Food stamps cannot be used to buy alcohol, tobacco, vitamins, medicines, pet foods, hot foods ready to eat, foods intended to be heated in the store, lunch counter items, or foods to be eaten in the store.

recipients, including foods high in protein, calcium, iron, and vitamins A and C.³ Recipients are free to choose items within the set of designated foods. In addition, WIC provides recipients with nutrition education, health care referrals, and immunization screening. The desire to provide WIC recipients with fresh unprepared foods such as fruits and vegetables led to the development of the WIC Farmers' Market Nutrition Program in 1992, which provides additional coupons that can only be used at farmers' markets.

The Child Nutrition Programs, which include the School Lunch, School Breakfast, Child and Adult Care Food, and Summer Food Service Programs, target children enrolled in public and nonprofit private schools, child-care institutions, and summer recreation programs. In recent years, an increased emphasis has been placed on the nutritional content of food assistance benefits provided through these programs. Concern has centered, in particular, on the high fat content of commodities, such as cheese and butter, distributed by The Emergency Food Assistance Program (TEFAP) and as bonus commodities to the school lunch and breakfast programs. Although surplus quantities of these commodities are no longer available at their previous levels, nutritional concerns led USDA, in 1995, to implement the School Meals Initiative for Healthy Children. This initiative was designed to improve school meals by supplying schools with educational and technical resources to motivate children to eat healthy meals in addition to providing new tools and techniques to help foodservice staff prepare nutritious, appealing meals. In an effort to improve the nutritional quality of school meals, USDA also wrote new regulations to ensure that school meals supply specific amounts of certain nutrients and comply with the Dietary Guidelines for Americans (USDA, 1990) (see chapter 18).

³ The authorized foods are iron-fortified infant formula, infant cereal, milk, cheese, eggs, iron-fortified breakfast cereal, fruit or vegetable juice that contains vitamin C, dry beans and peas, and peanut butter. Women who exclusively breastfeed also receive vouchers for canned tuna and carrots.

Effects of Food Assistance Programs On Participants' Diet

Participation in a food assistance program can affect diet in two ways. First, it can increase the quantity of food consumed. Second, it can lead to the intake of foods with higher nutritional quality.

Empirically, participants in food assistance programs have been found to consume a greater quantity of food than nonparticipants with an equal amount of "total" income (income plus the value of food assistance benefits). However, typically, a dollar of food assistance benefits does not increase food consumption or expenditure by the full dollar of benefits. This happens because recipients substitute a portion of the food assistance benefits for food that would have been bought or consumed anyway. Estimates reported by Fraker (1990) indicate that, on average, an additional dollar of food stamp benefits increases food expenditures by 26 cents. Seventy-four cents of each dollar of benefits replaces expenditure on food previously bought with income and is used by recipients to increase nonfood expenditures. Another example of this type of substitution is the distribution of surplus cheese undertaken by TEFAP in the early 1980's. In this case, each dollar of donated cheese was estimated to increase cheese consumption by about 65 cents, with the remaining 35 cents displacing previous purchases of cheese (USDA, FNS, 1987). Substitution by program benefits has also been observed in WIC (Rush, 1986) and in the school lunch/breakfast programs (Devaney and others, 1993).

In general, the net increase in food consumption or expenditure associated with a food assistance program depends in part on how or in what form benefits are provided. The more restricted the benefits, the greater the net increase. Commodity donation programs and WIC, which target the consumption of specific foods, generally increase food consumption more than a similar amount of food stamps, which can be spent on most types of food. However, the cost of administering a program increases as the food benefits become more narrowly defined (USDA, ERS, 1995).

Although food assistance programs have been shown to increase the quantity of food consumed by recipients, the effect of food assistance programs on improving the quality of the participants' diets has proven more difficult to ascertain. The next section summarizes the

evidence of the success of the main USDA food assistance program at increasing both the quantity and the quality of recipients' diets.

Food Stamp Program (FSP)

The large size of the FSP means that any impact on the dietary patterns of recipients will be important. We divide evidence of the FSP's effect on the diet of recipients into its effect on (1) how much and what types of food participants buy, and (2) the quality of nutritional intake by individual participants. Individual intake is considered in terms of average intake of micronutrients as a percentage of RDA's and the percentage of calories from total fat.

Total Food Expenditures and Budget Shares

Many empirical studies have demonstrated that food assistance benefits provided in the form of food stamps result in greater food expenditures than an equal amount of income (see Fraker, 1990, for a review of these studies).

Basiotis and others (1998) also report finding that food stamp benefits increase the probability of consuming at least the recommended levels of 3 of the 5 food groups defined by the Food Guide Pyramid. Households that receive food stamps also, on average, spend more on food at home than similar nonparticipating low-income households, but less on food away from home. Meals away from home incorporate the cost of services, so they tend to be more expensive per unit of nutrients than home meals. Thus, FSP participants obtain greater nutrients per dollar of food expenditures. Morgan and others (1985b) report, in fact, that FSP recipients had higher levels of food energy, protein, calcium, iron, and magnesium per food dollar than low-income nonrecipients in 1977/78. However, only the difference in calcium was statistically significant.

Unlike other food assistance programs, such as the commodity distribution programs (and, to some degree, WIC), food stamp recipients have a great deal of discretion in deciding what foods to buy. Do FSP households and other similar nonparticipating low-income households buy the same types of food?

Nelson (1979), using data collected from a direct examination of cash register receipts instead of using the recall method employed in the

Table 1—Expenditure shares for at-home food items by low-income households in 1977/78 and 1987/88, by FSP participation

Food item	1977/78		1987/88	
	FSP	Non-FSP	FSP	Non-FSP
<i>Percent of food expenditures</i>				
Meat, poultry and fish	37.2	35.3	33.3	31.5
Eggs, nuts and legumes	3.2	3.6	3.1	3.0
Fruits	7.1	8.1	8.3	8.9
Vegetables	10.9	11.5	10.3	11.3
Grain products	15.2	14.3	14.1	13.8
Milk products	10.7	11.3	13.3	12.8
Fats and sugars	6.1	6.5	6.2	5.8
Others ¹	9.7	9.6	11.5	12.8

¹ Includes food consumed in mixtures, nonalcoholic beverages, soups, sauces, gravies, and condiments.

Source: 1977/78 and 1987/88 NFCS.

NFCS, reports similar average expenditure shares by FSP households and eligible nonparticipating households. A comparison of average expenditure shares by low-income households that are and are not FSP participants in both 1977/78 and 1987/88 also suggests that, despite some differences, the two groups buy similar market baskets of food (table 1).⁴

Has the FSP changed the composition of the market basket bought by recipients? Comparing average expenditure shares in 1977/78, just after the FSP became a national entitlement program, to their levels 10 years later provides a potential measure of the cumulative impact of the FSP on the eating habits of the low-income population. Based on the results reported by Morgan and others (1985a), only the larger expenditure share for meat, poultry, and fish and the smaller expenditure share for fruit by FSP recipients compared with low-income nonrecipients in 1977/78 are statistically significant (table 1). Whereas FSP recipients still allocated a larger expenditure share to meat, poultry,

⁴ Low-income households are households that have income less than or equal to 130 percent of the poverty threshold. Some low-income households not receiving food stamps may be ineligible to receive food stamps because they do not meet the asset eligibility criterion. Other low-income households not receiving food stamps may be eligible but choose not to participate. In general, low-income households not receiving food stamps have higher average income and asset levels than households that receive food stamps. USDA last collected household food expenditure data in 1987/88.

try, and fish and a smaller share to fruit than did low-income nonparticipants in 1987/88, the differences in expenditure shares are slightly smaller in 1987/88, and it is not known whether these differences are statistically significant. The reduction in the share of meat, poultry, and fish by both recipients and nonrecipients follows the general trend toward lower consumption of red meats and increased consumption of cheese in the United States during this period (Lutz and others, 1992). The increased share spent on fruit, however, is counter to the general trend in the population during this period.⁵

Caution must be exercised when using any cross-sectional data set, such as in the NFCS, to compare the food choices of FSP recipients and nonrecipients. Because these surveys are only snapshots of the population at a moment in time, it is not possible to discern, for example, whether a proportion of the behavior of households currently not participating in the FSP might have been influenced by past participation. In fact, similar budget shares may simply reflect the fact that the FSP has been successful in attracting those that need food assistance most. Therefore, the available data do not preclude a significant impact of the FSP simply because the diets of FSP participants and nonparticipants are similar at various points in time.

Nutrient Intake

Besides measuring household food expenditures, USDA also collects data on the nutrient intake of individuals. Table 2 reports the average nutrient intake of FSP participants and low-income nonparticipants in 1977/78 and 1989/91, as a percentage of RDA's. An average intake below the RDA does not necessarily mean that people are malnourished. The RDA's are set high enough to meet the requirements of most healthy people, and therefore exceed the requirements of many individuals. However, the risk of some individuals having inadequate intakes increases as the average intake falls further below the RDA. Similarly, average intake levels above the RDA increase the likelihood that most individuals are consuming sufficient amounts of that particular nutrient.

⁵ A formal evaluation of differences in the market baskets would have to address the impact of some differences in the methodologies between the two surveys and concerns about the level of nonresponse in the 1987-88 survey (LSRO, 1991).

Table 2—Average 1-day intake as a percentage of RDA by FSP participation, 1977/78 and 1989/91¹

Nutrient	1977/78 ²		1989/91 ³	
	FSP	Non-FSP	FSP	Non-FSP
	<i>Percent of 1980 RDA</i>		<i>Percent of 1989 RDA</i>	
Protein	169	158	185	155
Vitamin A (IU)	126	124	123	133
Vitamin C	141	134	157	153
Thiamin	117	111	136	124
Riboflavin	129	128	143	131
Niacin	119	112	130	123
Vitamin B-6	76	68	98	89
Vitamin B-12	144	148	284	250
Calcium	79	83	84	83
Phosphorus	122	127	124	125
Magnesium	79	79	111	93
Iron	88	95	107	112
Vitamin E	na	na	85	80
Vitamin A (µg RE)	na	na	110	110
Folate	na	na	193	161
Zinc	na	na	80	75

¹ Because RDA's have changed, it is not possible to compare the percentages between the two time periods.

² USDA-HNIS (1982), Preliminary Report No. 11, tables 3.3-2/3, measured as a percentage of 1980 RDA's.

³ Tippet and others (1995), table 10.3, measured as a percentage of 1989 RDA's. na = not available.

Since the RDA'S for certain nutrients changed during these time periods, a direct comparison of the percentage of the RDA's between the two time periods is not appropriate. However, within each time period, average intake patterns of FSP participants and nonparticipants are quite similar. Except for magnesium in 1989/91, those nutrients that are underconsumed by FSP participants are also underconsumed by nonparticipants. Again, caution must be exercised when interpreting differences in the diets of FSP recipients and nonrecipients measured using cross-sectional data.

Statistical methods have been used to identify the effect of the FSP as distinct from other factors—such as age or household composition—on the intake of micronutrients. The impact of both FSP participation

Table 3—Average 1-day intake of total fat as a percentage of energy for total population and by FSP participation

Household	1965/66	1977/78	1985/86 ¹	1989/91
	<i>Percent of calories from fat</i>			
Low-income households ²	41.7 ³	38.5 ⁴	35.7 ⁵	34.4 ⁶
FSP	na	38.0	35.7	35.0
Non-FSP	na	38.9	35.8	34.0
U.S. total	43.2 ³	41.2 ⁷	37.2 ⁸	35.1 ⁹

na = not available.

¹ For females age 19-50.

² In 1965/66, low-income households were those with annual income less than \$3,000. For the remaining years, a household was defined to be low income if its income was less than or equal to 130 percent of the corresponding poverty index.

³ Calculated from USDA-ARS (1969), Report No. 62-18, table 1a/1b.

⁴ USDA-HNIS (1982), Preliminary Report No. 11, tables 3.2-1/3.

⁵ USDA-HNIS (1986), Report No. 85-2, table 5B, and USDA-HNIS, Report No. 86-2, table 5B.

⁶ Tippet and others (1995), table 11.3.

⁷ Calculated from USDA-HNIS (1984), Report No. I-2, appendix J, table 1.

⁸ Calculated from USDA-HNIS (1987), Report No. 86-1, table 2.1.

⁹ Tippet and others (1995), table 11.1.

and the size of the food stamp allotment have been measured. Results indicate that whereas the FSP can have both a positive and a negative impact on the intake of specific micronutrients, very few of the estimates are statistically significant (Fraker, 1990; Butler and Raymond, 1996; Rose and others, 1998). Butler and Raymond (1996) suggest that the level of education, or knowledge of nutrition, may be a more important factor than the receipt of food stamps in explaining nutrient intake decisions.

Intake of Total Fat

Concern about the high consumption of fat in the United States has led to Federal dietary recommendations that total fat provide no more than 30 percent of calories. Simple descriptive measures indicate that the percentage of calories from total fat for low-income households has, on average, been lower than that of the general population (table 3). However, in recent years, this difference has grown smaller as the population has reduced its consumption of fat (see chapters 3

and 11). Since the 1970's, the intake of calories from total fat for both FSP participants and nonparticipants has fallen. However, like the average intake pattern of the micronutrients, consumption of total fat by FSP participants and nonparticipants is quite similar.

National School Lunch Program (NSLP)

The NSLP is available to 98 percent of public school children and to over 90 percent of all school-age children. Comprehensive studies by Akin and others (1983) and by Wellisch and others (1983) report the positive nutritional impacts of this program.

Akin and others (1983), using intake data from the 1977/78 NFCS, found that participation in the NSLP was associated with greater daily consumption (over 24 hours) of food energy, protein, and 10 vitamins and minerals (calcium, iron, niacin, thiamine, riboflavin, vitamins A, B-6, and B-12, magnesium, and phosphorus). Only for vitamin C did they find no significant effect of the NSLP. They also concluded that the NSLP had a significantly positive effect on both low- and high-income children, but that the impact was greater for low-income children.

The data used by Akin and others (1983) did not identify the actual meals in which foods were eaten, and, therefore, they were not able to establish a causal link between the NSLP and greater nutritional intake. Wellisch and others (1983), on the other hand, using data from the National Evaluation of School Nutrition Programs (NESNP), were able to examine lunches eaten by students. They found that school lunch participants consumed lunches containing significantly higher amounts of food energy, vitamins A and B-6, calcium, magnesium, phosphorus, riboflavin, protein, niacin, and thiamin—but significantly less vitamin C—than the lunches consumed by nonparticipants. Fraker (1988), using the same data as Wellisch and others but a different methodology, confirmed these results for macronutrients except for energy.

Wellisch and others (1983) concluded that the positive nutritional impacts of the NSLP were not due solely to more food being consumed but also from a higher nutrient density. Unlike Akin and others (1983), Wellisch and others (1983) concluded that the NSLP had no differential effect on students from different income classes.

The School Nutrition Dietary Assessment (SNDA) study was conducted in 1992. The survey updated the experience of the school lunch and breakfast programs, and facilitated the evaluation of these programs in light of advances in our understanding of the relationship between diet and health. Using data from this study, Devaney and others (1993) confirmed the positive nutritional impact of the NSLP. Lunches consumed by NSLP participants contained more food energy, more protein, and, with the exception of vitamin C, more vitamins and minerals than lunches eaten by nonparticipants. However, Devaney and others (1993) also found that NSLP participants consumed more fat, saturated fat, cholesterol, and sodium, and less carbohydrates at lunch than nonparticipants. The higher consumption of vitamin C at lunch by nonparticipants was almost entirely due to their higher consumption of vitamin C-fortified sweetened beverages such as juice drinks or fruitades. Results were similar for both high- and low-income students.

The SNDA study also found that, for most vitamins and minerals, the nutrient effects of the school lunch did not carry over 24 hours. Only the higher consumption of vitamin A by NSLP participants, and their lower consumption of vitamin C, were found to significantly differ over 24 hours. However, participation in the NSLP was associated with significantly higher consumption of fat and saturated fat (as a percentage of food energy), and a significantly lower consumption of carbohydrates (as a percentage of food energy) throughout the day.

School Breakfast Program (SBP)

Results from the SNDA study found that the availability of the SBP did not increase the likelihood that a student will eat breakfast (Devaney and others, 1993). On a typical school day in 1992, approximately 12 percent of students did not eat breakfast. This percentage was the same for students in schools that participated in the SBP and for those in schools that did not. This result, however, appears to be sensitive to how breakfast is defined and to family income (Devaney and Stuart, 1998).

Devaney and others (1993) report that participation in the SBP is associated with higher intakes of food energy, calcium, riboflavin, phosphorus, and magnesium at breakfast. Wellisch and others (1983) compared students who participated in both the school lunch and breakfast programs with those who consumed USDA lunch but non-

USDA breakfast. Students who participated in both programs consumed more calcium and magnesium but less vitamins A and B-6 and iron.

Devaney and others (1993) also found participation in the SBP is associated with a higher percentage of breakfast food energy from fat, saturated fat, and protein, and a lower percentage of food energy from carbohydrates. Unlike school lunch participants, however, most differences between the breakfast intakes of SBP participants and nonparticipants persisted over 24 hours. However, the differences at breakfast in the percentage of food energy obtained from fat and carbohydrates becomes statistically insignificant over the full day.

The Special Supplemental Nutrition Program For Women, Infants, and Children (WIC)

WIC provides supplemental foods high in nutrients determined by nutritional research to be generally lacking in the diets of the targeted population. Empirical studies have generally concluded that this program has been successful in providing these nutrients to its target population.

The most comprehensive evaluation of the WIC program is provided by *The National WIC Evaluation*, commissioned by USDA's Food and Nutrition Service in the early 1980's (Rush, 1986). This evaluation makes a number of observations about the impact of WIC on the diets of recipients targeted by this program: (1) pregnant women participating in WIC, in comparison with a control group, were found to have greater intake of all 11 measured micronutrients with the exception of vitamin A;⁵ (2) infants enrolled in WIC had greater mean intake of iron and vitamin C than the control group, and the proportion of infants consuming diets low in iron, vitamin A, and vitamin C was smaller among WIC participants; and (3) children in WIC had greater mean intake of iron, vitamin C, vitamin B-6, thiamin, and niacin than the control group, and the proportion of children consuming diets low in iron, vitamin A, riboflavin, and vitamin B-6 was smaller among WIC participants. However, this evaluation noted that

⁵ These micronutrients consist of calcium, iron, magnesium, phosphorus, thiamin, riboflavin, niacin, and vitamins A, B-6, B-12, and C.

“the improvements are limited to those currently enrolled, with little or no residuum from past participation in the program” (p. II-9).

The improvement in nutrient intake associated with participation in the WIC program was also reported by Rose and others (1998) and Chavas and Keplinger (1983). Rose and others focus on the intake of preschoolers between age 1 and 5. They report that WIC participation increased the intake of preschoolers for 10 out of 13 micronutrients.⁶ In addition, Basiotis and others (1998) report that WIC participation is associated with improved scores on USDA’s Healthy Eating Index (HEI).⁷ Chavas and Keplinger also concluded that the effectiveness of WIC appeared to decrease with increases in income and to be greater for Whites than for Blacks.

The National WIC Evaluation reported that total food expenditures were not (statistically) different between WIC and non-WIC households, but that WIC households had significantly greater expenditures on WIC-type foods than did non-WIC households. The impact of the program is felt, therefore, mostly in terms of its impact on food composition rather than on total food expenditures (Arcia and others, 1990).

The evaluation also notes how WIC affects the eating patterns of recipient households. For example, WIC households spent less per month on meals away from home than did non-WIC households. This suggests that WIC program participation contributes to a larger proportion of home-cooked meals in the household diet. Since meals away from home have an implicit cost of service, they tend to be more expensive per unit of nutrients than home-cooked meals, implying that the WIC program is able to foster a more efficient use of the household’s food budget, that is, more nutrients per dollar (Arcia and others, 1990).

⁶ These micronutrients included protein, thiamin, riboflavin, niacin, vitamin B-6, vitamin E, folate, magnesium, iron, and zinc.

⁷ The HEI consists of 10 equally weighted components, each based on different aspects of a healthy diet—grains, vegetables, fruit, dairy, meat, total fat, saturated fat, cholesterol, sodium, and diet variety—that reflect how well diets conform to the 1995 *Dietary Guidelines for Americans* and the USDA Food Guide Pyramid.

Conclusion

Evidence from 30 years indicates that food assistance programs can affect the amount and the types of foods consumed by the low-income population. The clearest evidence is that these programs increase the quantity of food consumed. However, their effect on the quality of the recipient's diet has so far been uncertain. Certainly, greater food expenditure does not necessarily imply a more healthful diet.

For the more narrowly targeted programs, such as WIC or the School Lunch Program, nutrient intake is typically increased (at least while recipients remain in the program). However, for the FSP—the largest program in both expenditure and number of recipients—there is no convincing body of evidence that this program improves the overall quality of the recipients' diet, although there is some indication that it has increased the intake of some nutrients.

Current data preclude establishing a link between the FSP and diet quality. Surveys have collected detailed information on the food consumption behavior of households that are actual and potential recipients of this program, but only at one point in time. These surveys have been replicated at various intervals, but never for the same set of households. Without observations from which to compare previous food choices, it is difficult to identify program effects as distinct from previous habits.

A more robust statistical design may be required to establish a positive relationship between FSP participation and diet quality, one that measures past food purchases and program experience by both actual and potential recipients. This type of design has been used in evaluating WIC and the School Lunch and Breakfast programs. Data that track low-income individuals over time can illustrate changes in the diet associated with FSP participation. Perhaps, these data will show that differences in diet quality would have been larger if the FSP had not existed.

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Appendix: **Domestic Food Assistance Programs**

The Federal Government administers a number of domestic food assistance programs that together form a nutritional safety net for needy people and help ensure that everybody, regardless of income, has access to an adequate and nutritious diet.

- The **Food Stamp Program**, with outlays of \$18.8 billion in fiscal 1998, is the single largest Federal food assistance program. Unlike the other food assistance programs that target specific groups, such as children or the elderly, the FSP is designed to address the basic nutritional needs of all eligible low-income families or individuals. Eligibility and benefits are based on household size, household assets, gross and net income, and certain work and citizenship requirements. Most recipients are provided with monthly allotments of coupons that can be used like cash at more than 200,000 authorized retail foodstores. However, a growing number receive an Electronic Benefits Transfer (EBT) card, which operates like a bank card. The size of a household's monthly allotment is based on USDA's Thrifty Food Plan, a low-cost model diet that meets standards for a nutritious diet.

The FSP served an average of 19.8 million people residing in 8.2 million households each month in fiscal 1998. Typically, more than half of all food stamp beneficiaries are children. Average monthly benefits were \$71.99 per person.

- The Food Stamp Program in Puerto Rico, the Northern Marianas, and American Samoa was replaced in 1982 by the **Nutrition Assistance Programs**. These modified food stamp programs receive Federal funds through block grants, which allow these areas to operate food assistance programs designed specifically for their low-income citizens. Recipients receive either food coupons or cash.

- The **National School Lunch Program**, the second largest food assistance program behind food stamps, accounted for 17 percent of total outlays for all food assistance programs in fiscal 1998. The program provides lunches to children in public and nonprofit private schools and residential child-care institutions. Schools receive cash and some commodities from USDA to offset the cost of food service. In return, the schools must serve lunches that meet Federal nutritional requirements and offer free or reduced-price lunches to needy children. Any child at a participating school may participate in the program. Children from families with incomes at or below

130 percent of the poverty level are eligible for free meals, and those from families between 130 and 185 percent of the poverty level are eligible for reduced-price meals. Children from families with incomes over 185 percent of the poverty level pay a full price, although even those are subsidized to some extent. About 26.6 million children in almost 98,600 schools and residential childcare institutions participated in the program each school day in 1998. More than half of these children received a free or reduced-price lunch.

In 1995, USDA implemented the School Meals Initiative for Healthy Children to improve school meals by supplying schools with educational and technical resources to motivate children to eat healthy meals in addition to providing new tools and techniques to help foodservice staff prepare nutritious, appealing meals.

- The **School Breakfast Program** provides breakfasts to school children, with students from low-income families receiving free or reduced-price meals. Although eligibility is similar to that of the School Lunch Program, the School Breakfast Program is considerably smaller, serving 7.1 million children in 71,100 schools and residential childcare institutions each school day in fiscal 1998.
- The **Child and Adult Care Program** provides healthy meals and snacks to children in non-residential childcare centers and family daycare homes. (The adult care portion of the program, which provides meals to the elderly and functionally impaired adults in adult daycare settings, accounted for only 2 percent of total program costs in fiscal 1998.) Children from low-income families are eligible for free or reduced-price meals. A total of 1.6 billion meals were served under this program in fiscal 1998.
- The **Summer Food Service Program** provides free meals to children (age 18 and under) during school vacations in areas where at least half of the children are from households with income at or below 185 percent of the Federal poverty guidelines. There is no income test for eligibility; any child in the program's operating area may participate. The program is operated at the local level by local sponsors who are reimbursed by USDA. Local sponsors may be government agencies, public or private nonprofit schools, public or nonprofit colleges and universities operating the National Youth Sports Program, and public and nonprofit summer camps. In fiscal 1998, the program served over 136 million meals or snacks. During the peak month of July, an average of 2.3 million children participated each day.

- The **Special Milk Program** provides funding for milk in public and nonprofit schools, childcare centers, and camps that have no other federally assisted food programs. Milk is provided either free or at low cost to all children at participating schools. Schools may elect to serve free milk to children from families with incomes at or below 130 percent of the poverty level. In fiscal 1998, 131 million half-pints of milk were served under this program, about 6 percent of which were served free. Participation in this program has dropped in recent years, due primarily to a drop in program participation as a result of the expansion of the National School Lunch and School Breakfast Programs, which include milk with the meals.

- The **Special Supplemental Nutrition Program for Women, Infants, and Children (WIC)** improves the health of low-income pregnant and postpartum women, as well as infants and children up to their fifth birthday, who are determined by health professionals to be nutritionally at risk. This is usually achieved by providing vouchers for foods that are rich in nutrients typically lacking in the WIC target population, and by providing eligible recipients with nutrition education and referrals to healthcare services. Participants receive vouchers that can be redeemed at retail foodstores for specific foods that are high in protein, calcium, iron, and vitamins A and C. The WIC program encourages breastfeeding among low income mothers, providing them with more vouchers and allowing them to stay in the program longer than mothers who do not breast-feed.

To increase access to fresh produce, WIC recipients in 32 States, the District of Columbia, and 2 Indian Tribal Organizations are currently provided additional coupons that can be used to buy fresh fruits and vegetables from authorized farmers or from farmers' markets through WIC's Farmers' Market Nutrition Program.

An average of 7.4 million people per month participated in the WIC program in fiscal 1998, of whom 24 percent were women, 26 percent were infants, and 51 percent were children. In terms of participation, WIC has been one of the fastest growing food assistance programs, as the number of participants more than doubled since fiscal 1988.

- The goal of the **Commodity Supplemental Food Program (CSFP)**, like WIC, is to improve the health of low-income pregnant and postpartum women, and infants and children up to their 6th birthday. Unlike the much larger WIC program, the CSFP also serves the elderly (60 or older), who now comprise over half of the program's participants. Instead of vouchers, CSFP provides food

tailored to the nutritional needs of the participants. Authorized food distributed under this program includes iron-fortified infant formula and cereal, adult cereals, grits, oatmeal, canned juice, evaporated milk and/or nonfat milk, canned vegetables and/or fruits, canned meat, poultry or tuna, egg mix, dehydrated potatoes, rice or pasta, and peanut butter or dry beans. In addition to authorized food, CSFP participants sometimes receive surplus food acquired through USDA's commodity price-support programs. CSFP often operates in areas where WIC is not available. Eligible people cannot participate in both programs at the same time. An average of almost 377,000 people participated in the program each month during fiscal 1995.

- The **Food Distribution Program on Indian Reservations** provides commodities to American Indians living on or near participating Indian reservations and who choose not to participate in the Food Stamp Program. The program provides an alternative to the FSP for many American Indians far from foodstores. Program recipients receive a monthly food package weighing about 50 to 75 pounds. It contains a variety of foods selected to meet the health needs and preferences of American Indians. Commodities either come from agricultural surpluses or are purchased by USDA specifically for the program. Household eligibility is based on income, resources, and proximity to a reservation. One of the smaller food assistance programs, it served an average of 124,700 people per month in fiscal 1998.

- The **Nutrition Program for the Elderly** provides cash and commodities to States for meals for senior citizens. Administered by the U.S. Department of Health and Human Services, the program receives commodity foods and financial support from USDA. Food is served through meals-on-wheels programs or in senior citizen centers and similar settings. There is no income test for eligibility; all people age 60 or older and their spouses are eligible for the program. Recipients can contribute as they wish toward the cost of the meal, but the meal is free to those who cannot contribute. Almost 250 million meals were served under this program in fiscal 1998.

- The **Disaster Feeding Program** is administered by the Federal Emergency Management Agency (FEMA), which is responsible for coordinating disaster relief. However, USDA purchases food commodities for assistance in major disasters or emergencies under this program when other food supplies are not readily available.

- The **Emergency Food Assistance Program (TEFAP)**, which began as a cheese-giveaway program in 1982, was implemented as a way to reduce inventories and storage costs of surplus commodities through distribution to needy households. In 1989, Congress appropriated funds to purchase additional commodities specifically for this program. USDA buys the food, processes and packages it, and ships it to the States. Within broad guidelines, each State sets its own eligibility criteria and selects local emergency feeding organizations to distribute the commodities. Expenditures for this program have fallen dramatically in recent years along with the inventory of surplus commodities.

- Under the **Food Distribution Programs for Charitable Institutions and Summer Camps**, USDA donates food to non-profit charitable institutions serving meals on a regular basis to needy persons and to summer camps for children. These include church-operated community kitchens for the homeless, orphanages, soup kitchens, temporary shelters, and homes for the elderly.

- USDA purchases food specifically to distribute to soup kitchens and food banks under the **Food Donation Programs to Soup Kitchens and Food Banks**. Commodities are allocated to the States based on a formula that considers the number of people in each State below the poverty level and the number unemployed. Within each State, priority is given to institutions that prepare food for the homeless.