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Chapter 10

Food Quality and Prices

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Consumers in the U.S. have historically been able to count on a safe, high quality food supply -- food that nourishes and improves their health and productivity. In the past decade, over three-fourths of consumers have reported confidence in the safety of their food (Smallwood). However, this confidence is eroding. Between January and March of 1989 it dropped from 81% to 67% (Senauer). Consumers' increased fears stem largely from their involuntary exposure to new and unknown hazards associated with high technology and new products. For example, this year, 82% of consumers think pesticide residues are a serious hazard and 61% worry about antibiotic and hormone residues in animal products (FMI).

Regardless of the source of the concern, consumers are annoyed by a growing fear that eating may be hazardous and that the government is unable or unwilling to do anything about it. It is also detrimental to the food and agricultural industry and the political process. This chapter will address a full range of food quality characteristics and a concomitant range of appropriate government policies.

Quality Dimensions and Government Regulation

Safety is one dimension of food quality, but its importance spans all cultures and all time. Good nutrition, convenience, good taste, aesthetics and status are quality characteristics of food which gain and lose popularity with diet and health news, lifestyle, income and demographic trends. For example, in the 1960s we focused on eating a balanced diet, consuming enough of the right types of foods, increasing protein and decreasing carbohydrates.

Now, we focus on avoiding foods that exacerbate dread diseases, increasing carbohydrates and decreasing saturated fats, sodium, cholesterol and calories.

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A continuum of food quality characteristics ranges from the very negative, such as questionable safety, to unknown nutritional benefits and risks, to positive characteristics such as convenience and status (see Figure 1). The order of these characteristics is debatable, but the most negative characteristics are difficult to detect. Consequently, there is no way to set a market price for these quality characteristics. In contrast, the most positive characteristics can be readily observed, easily controlled and labeled, and therefore, priced according to private market demand. Large differences in the consequences of consuming foods within this range of quality characteristics and large differences in the amount of information consumers have at the point of purchase require large differences in public policies designed to deal with quality concerns.

Figure 1. Food Quality Characteristics.

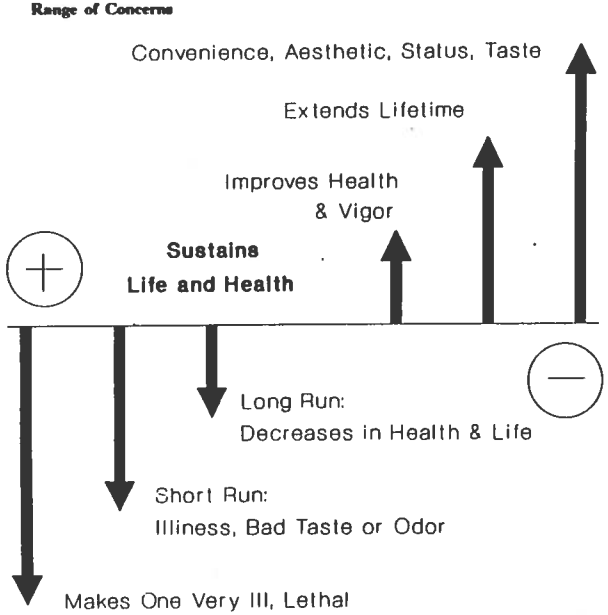


Figure 2. Food Quality Characteristics.

Public and Private Goods

	Benefits Available to Everyone	Benefits Available only to Users
Benefits shared by many at the same time (non-rival)	PUBLIC GOODS Qualities harmful/hidden High risk of illness Regulation: Protects/bans; or sets max. acceptable risk. e.g., bacterial pathogens, toxins, carcinogens, poisons.	QUASI PUBLIC/PRIVATE GOODS Qualities harmful/beneficial Qualities can be labeled Risk varies Regulation: Educate; Mandate Information; and/or set min. standards. e.g., nutrients, ingredients, fats, cholesterol, caffeine, sodium
Benefits Enjoyed by one individual at a time (rival).	QUASI-PUBLIC GOOD e.g., pesticide residues, additives, preservatives, antibiotics, hormones.	PRIVATE GOOD Qualities beneficial/knowable Small risk of illness Regulation: Education; Ensure information is honest. e.g., ingredients, origin, calories, aesthetics, taste, quantities, prices.

In Figure 2, quality characteristics of food have been rearranged to illustrate the appropriateness of government's response. The most negative food quality characteristics are "public goods." Limiting exposure to hidden qualities that cause illness or death benefits all consumers alike. Government's proper role is to *protect* consumers by doing what they cannot do for themselves. Everyone benefits; private search costs and health risks are reduced, and general economic productivity is enhanced.

The benefits of government protection from unsafe food are measured by cost savings from medical care, lost wages, pain and suffering, premature death, lower productivity and lost sales. Between 3 and 14% of the population becomes ill each year from foodborne microorganisms; four in 100,000 people die from this annually, compared to two in 100,000 from cancers linked to pesticides in food (Roberts and Ravensway, 1989b). Estimates of the annual costs of medical care and lost productivity that could be saved by eliminating two serious food contaminants, salmonellosis and campylobacteriosis, are $2 billion per year (Roberts and Ravensway, 1989a). Similar benefits from eliminating exposure to 16 common bacterial pathogens in food is almost $5 billion per year (Roberts, 1989).

This year, Congress responded to the need for protection from unsafe food with at least nine House bills and three Senate bills. The bills would mostly alter government's authority to regulate food safety by banning or limiting exposure to bacteria, toxins and pesticides (see Appendix A).

Privatizing or deregulating "public goods" (in this case, "bads") is rarely a viable option, since consumers cannot detect these hazards at a reasonable private cost and because the consequences of exposure are dire. Profit incentives and opportunities are such that self-regulation in matters of safety seldom work for long.

Food quality characteristics that are more transparent, that can be more easily evaluated by consumers at relatively low cost, are called "quasi public/private goods" or "private goods." Qualities such as taste, convenience, aesthetics and status can be readily determined by inspection or by reading labels are "pure private goods." Consumers can make choices according to their preferences and budgets. Government's appropriate role here is relatively simple. It is to ensure truthful, adequate *information* and to *facilitate market trade*.

Many quality characteristics of food can be categorized as "quasi public/private goods" because more accurate information could help

consumers make better choices. In many cases, however, the credibility of the information is suspect. For example, clear labeling of nutritional content and ingredients such as saturated fat could be mandated and its accuracy reasonably assured. The usefulness of this information would, however, depend in large part on education about saturated fat. It is believed to be linked to heart disease and cancer, but because the information is relatively new and changing, it is suspect.

Information about food additives, pesticide residues and other suspected carcinogens, new food technologies such as irradiation, and new ingredients such as non-fat fats also fall into this category.

As science and technology alter knowledge about the effects of food quality characteristics on health, government's appropriate role increasingly involves a mix of *protection, information and education*. Education that supplements product information helps move the quality characteristics from "quasi public goods" toward "private goods" (see Figure 2).

An extremely important aspect of government's role in monitoring these quasi public/private food quality characteristics will be to gain and maintain the public's confidence. Should public confidence in science and/or in the government's ability and will to monitor the use of science seriously erode, the government will lose the ability to educate consumers, and thus to promote private markets for quality characteristics.

If the warnings and advice are not credible, the government will increasingly have to resort to product bans to protect consumers from harmful substances in the food supply.

At least 11 House and three Senate bills have been introduced recently to improve the quantity, quality and uniformity of food labels (see Appendix A). A concerted effort is underway to improve the information provided to consumers about food quality, allowing them to make better decisions.

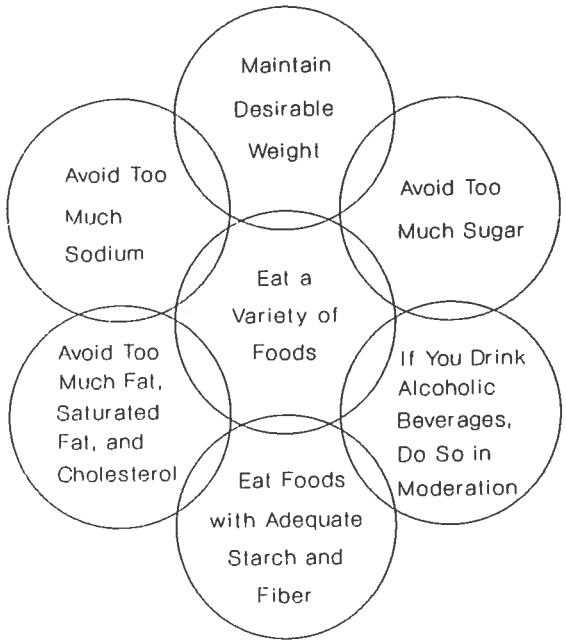
When government mandates information, the benefits are shared by all consumers, whether or not they consume the labeled food. Requiring accurate nutritional and ingredient information tends to raise the average quality of the food supply and raises the level of quality control in the food industry (Padberg, 1977). Thus, such information has a "public goods" nature, even as it leads to better private choices.

Quality Diets

Consumers are increasingly concerned about the quality of our overall diet. We have been told that heart disease and cancer are linked in no small way to the types of foods we eat. We have been told to cut down on saturated fat, cholesterol, sodium and total calories. We have been told to increase dietary fiber and grains. Dietary Guidelines that emphasize these changes have been publicized by the USDA (Figure 3). These guidelines are based on dietary goals that recommended a diet similar to those subsequently recommended by the American Heart Association and The National Research Council. (See Appendix B.)

Largely because of recommendations to dramatically decrease saturated fats, most of which are animal fats, the agricultural industry has been reluctant to embrace, much less promote, these guidelines. Many farmers fear demand for their products will decline and their profits will be cut. Some producers thought these diet concerns were a fad that would fade away.

Figure 3. Dietary Guidelines for Americans.



Should the agricultural community have embraced the dietary goals more than a decade ago? If consumers had changed their eating habits to meet the recommendations, how would agricultural producers have fared in the 1980s? How would prices be affected? These questions were researched simulating a situation in which all Americans adopted a diet consistent with the Dietary Goals between 1981 and 1985.[1] Differences in the amounts and types of food that would have been eaten were translated into changes in demand for basic agricultural commodities.

These changes were fed into an econometric model, the Food and Agricultural Policy Simulator (FAPSIM) (Salathe, et al., 1982) to estimate differences in prices farmers received, farm income, acreage planted and, in some cases, retail food prices. The results represent an upper bound on the potential changes in domestic demand for domestically produced agricultural commodities should the direction of food consumption continue or accelerate toward the Dietary Goals of the Senate Select Committee on Nutrition and Human Needs (1977).

Data from the USDA Human Nutrition Information Service (HNIS) was used to establish initial demand shifts. The baseline consumption pattern was derived from the HNIS 1977-78 National Food Consumption Survey of Households and Individuals. This observed consumption pattern was the basis for the "1983 Family Food Plans" (USDA) for three income levels.

These food plans are regularly derived by HNIS to help consumers make cost effective, nutritionally sound food choices. The Thrifty Food Plan is also used by nutrition educators and policymakers to determine the appropriate level of funding for food stamps and other government food programs.

The "1983 Family Food Plans" (USDA) were designed by HNIS researchers to move the observed 1977-78 eating patterns of 11 age/sex groups toward the Dietary Goals, while keeping the consumption patterns as close as possible to those actually reported. These criteria were consistent with the data needs of this study. It was assumed that consumers would alter their food intake to accommodate a healthy diet by

[1]Parties cooperating most closely with this study were Betty Peterkin, Richard Kerr and Linda Cumberland from HNIS and J. Michael Price and Terry Hickenbotham from the Economic Research Service (ERS) of USDA. Their contributions were essential to the analysis reported herein.

Table 1. Percentage Change in Per Capita Food Utilization of Foodstuffs Based on Recommended Dietary Changes.

	Foodstuff	Recommended Percent Change in Per Capita Consumption	1985 Actual Per Capita Consumption[1] (in lbs/yr)	1985 "Healthy" Per Capita Consumption[2] (in lbs/yr)
1.	Red Meat (all)	-8.3	185.8	170.4
2.	Pork	-16.7	66.1	55.1
3.	Beef	+1.7	106.9	108.7
4.	Fish	+9.4	13.6	14.9
5.	Poultry	+5.0	69.3	72.8
6.	Eggs	-23.5	21.2 doz	16.2 doz
7.	All Milk Equivalents	-12.0	595.8	524.3
8.	Milk/Yogurt	+9.0	219.9	239.7
9.	Cheese	-14.6	22.4	19.1
10.	Ice Cream	-11.2	18.0	16.0
11.	Butter	-38.0	4.9	3.1
12.	Fats and Oils	-38.0	63.8	39.9
13.	Peanuts (kernel use)	-26.8	6.2	4.5
14.	Tree Nuts	-26.8	2.3	1.7
15.	Fresh Fruits (not citrus)	+5.7	66.2	70.0
16.	Citrus Fruits & Juice	+5.0	35.4	37.2
17.	Vegetables (not potatoes)	+14.0	154.8	176.8
18.	Potatoes	+9.3	94.4	103.2
19.	Lentils (dry beans and field peas)	+108.0	6.5	13.6
20.	Wheat	+51.0	165.5	249.9
21.	Corn	-34.0	259.8	170.4
22.	Rice	+60.0	9.3	14.9
23.	Sugar (beet and cane)	-27.0	63.4	46.3
24.	Other Caloric Sweeteners	-37.0	89.3	56.3
25.	Soft Drinks and Non-Citrus Drinks	-50.0	47.2	23.6

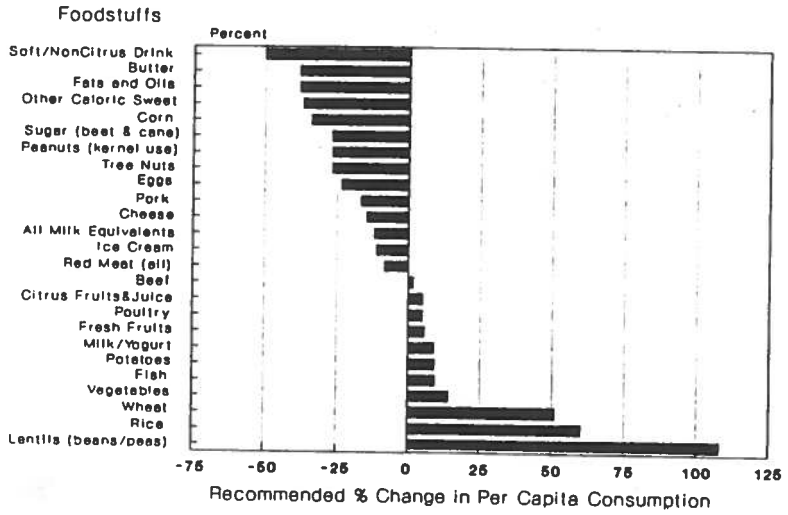
[1] Bunch, Karen L., Food Consumption, Prices and Expenditures, 1965-1986, USDA, ERS, Statistical Bulletin No. 749. (1986)

[2] Assumes total percentage change occurs with no regard to price responses.

making marginal adjustments in the entire food pattern that, cumulatively, would result in a healthy diet.[2]

For each of the 31 foods identified in the "1983 Family Food Plans," the quantities recommended for the new, "healthy" diet determined the percentage change from the baseline diet. For example, in the 1977-78 baseline diet, males aged 20-50 years reportedly ate 0.56 pounds of cheese per week. The recommended weekly consumption for this group, based on the new 1983 Medium Cost Food Plan, is 0.39 pounds of cheese, 30.4% less than prior consumption. The recommended percentage change in each food group, for each of the 11 age/sex categories, was multiplied by that category's proportion of the population, and then summed. This yielded a weighted average percentage change in each food category, which was applied to the consumption (disappearance) data as reported by ERS (Bunch; Putnam).

Figure 4. Percentage Change in Per Capita Food Utilization of Foodstuffs Based on Recommended Dietary Changes.



[2]Details of the 1983 Family Food Plans can be found in "USDA Family Food Plans, 1983 Low-cost, Moderate-cost and Liberal" (USDA). The moderate cost diet was used here, since it is closest to the average expenditures and consumption for U.S. households.

For example, annual per capita consumption of cheese in 1985 was 22.4 pounds. The weighted percentage change in cheese consumption recommended across the population was minus 14.6%. This meant that the demand for cheese would decrease to 19.1 pounds per capita if Americans, on average, altered their diets to conform to the Dietary Goals. Table 1 and Figure 4 show the weighted percentage changes in per capita consumption of 25 foodstuffs for which ERS collects and publishes data. The greatest recommended decrease was for caloric sweetened soft drinks (-50%) while the greatest recommended increase was for lentils (+108%).

The changes in per capita consumption in the last column on Table 1 assume a complete, one-time adjustment in demand with no consideration for changes in relative prices. In reality, consumers respond to price changes that occur as demand shifts. To capture the dynamic nature of a shift in demand over a five-year period, the FAPSIM model was used to determine the ultimate change in consumer demand and its effect on the agricultural sector.

The FAPSIM model estimates a simultaneous price-quantity equilibrium solution for a set of commodities. It also determines farm production expenses, cash receipts and a number of other outcomes, including retail food price indices.[3]

The recommended percentage changes in food demand, as stated in column one of Table 1, were used to alter the demand for agricultural commodities for which there is an econometric sub-model within the FAPSIM model. FAPSIM does not include sub-models for fruits and vegetables, nuts, sugar or beverages. How changes in the consumption of these foodstuffs would have altered agricultural prices and production is not accounted for in this study, but the largest part of commercial agriculture, in terms of acreage, income, and government programs, is included.[4]

[3]This model is especially good at estimating alternative scenarios to historical events, the goal of this study (Salathe, et al., 1982). The exact assumptions and methodology used to introduce the demand changes to FAPSIM are available from the author (Kinsey, Price and Hickenbotham, 1989).

[4]For example, 45% of all USDA outlays in 1987 were for crops and livestock covered by the Community Credit Corporation (OMB). In 1985, 84% of gross farm income was generated by the crops and livestock included in this study.

Results

Table 2 summarizes the results of recommended changes in demand, exports, planted acreage, farm prices and producer cash receipts as estimated by the FAPSIM model. Differences between the initial, recommended change in demand and the final estimated change after adjustments for relative food prices and consumer income appear in the first two columns. Except for butter and milk, all of the final demand changes were less than those recommended by the "Diet Plans," indicating that relative price changes would slow the demand shifts over time.

Two scenarios were estimated with regard to the demand for soybeans. Since the "1983 Family Food Plans" recommended a 38% decrease in all fats and oils, the results reported in Table 2 represent the results of the scenario in which demand for soybean oil was reduced by 38%. However, this reduction drove the model's estimate of soybean oil price to zero by the fifth year (a result that is not considered realistic). Since domestic use of soybean oil was 89% of its total use in 1985-86, a 38% drop in domestic demand resulted in a 33% drop in total demand.

Consequently, the demand response to soybean oil could not adjust adequately. Despite large adjustments in soybean oil prices, cash receipts to soybean farmers decreased only 11%. Two factors account for this. First, as soybean prices fell to their loan rate, cash receipts were protected by a government price support program. Second, the fall in soybean oil prices reduced the profitability of crushing soybeans. As a result, total crush decreased and the price of soybean meal increased by 48%. This partially offset a decline in cash receipts to soybean farmers.

To avoid the unrealistic decline in the price of soybean oil, a second scenario was devised in which soybean oil demand did not change. This scenario's results, compared to those in the first, illustrates the effect of a large reduction in soybean oil demand on other commodities. Numbers in Table 2 in parentheses identify cases in which results from the second scenario differ from the first scenario by more than one percentage point. The largest differences appear in the demand for butter. With no change in the demand for soybean oil, its price was higher, leading to higher prices for margarine. This caused butter demand to increase as a substitute. Soybean meal prices were also lower in scenario two, leading to increased poultry production and lower poultry prices.

Table 2. Percent Changes in Commodity Use, Acreage Price and Farm Income by 1985 (Assuming consumers had altered their diets tc meet the dietary guidelines, accounting for changes in relative prices and income.)

Commodity	Domestic Food Use: Recommended[1]	Domestic Food Use: Estimated[2]	Exports	Acreage Planted	Average Farm Price	Estimated 1985 Dollar Prices	Cash Receipts by Farmers
Wheat	+51.0	+45.8	-11.7	+3.1	+15.6	$ 3.56/bu.	+17.4
Rough Rice	+60.0	+52.8	-20.3	+2.1 (+0.6)[3]	+41.9	$ 9.20/cwt.	+30.9 (+29.1)
Corn	-34.0 -2.5	-23.6	0.0	-0.6 (-1.1)	0.0	$ 2.23/bu.	 (-3.7)
Soybeans	n/a	n/a	+0.2	-3.5 (-1.0)	-0.6	$5.02/bu.	-10.9 (-2.8)
(Soymeal)	---	---	-20.0 (+3.1)	---	+48.2 (-7.6)	$ 0.115/lb. ($0.716/lb.)	---
(Soyoil)	-38.0 (0.0)	-29.4 (-0.7)	+97.8 8.9	---	-100.0 (+10.1)	$0.000 $ .198/lb.	---
Beef	+1.7	-0.8	0.0[4]	n/a	-4.2	$55.93/cwt. (steers)[5]	-5.5 (-6.4)
Pork	-16.7	-5.3	0.0	n/a	-33.7 (-37.6)	$29.53/cwt. (27.80/cwt.) (barrows/gilts)	-38.1 (-41.9)
Broilers	+9.4	-0.3 (+2.0)	0.0	n/a	+10.3 (+ 0.7)	$ .53/lb. ($ .49/lb.) (12 city price)	+10.5 (+2.8)
Nonboilers	n/a	-13.2 (-12.2)	0.0	n/a	+13.9 (+3.9)	$ .17/lb. ($ .15/lb.)	+8.8
Turkeys	+9.4	+0.1 (+2.5)	0.0	---	+11.2 (+ 1.1)	$ .55/lb. ($ .50/lb.)	+11.3 (+3.5)
Eggs	-23.5	-13.6	0.0	---	-44.1 (-47.4	$ .32/doz. ($ .30/doz.)	-51.2 (-53.5)
Fluid Milk	+9.0	+9.0	0.0	---	+0.7	$12.84/cwt	+0.9 +2.3 (all dairy)
Butter	-38.0	-48.9 (-36.5)	0.0	---	0.0	$1.41/lb. (wholesale)	---
Cheese	-14.6	-12.3	0.0	---	0.0	$1.28/lb. (wholesale)	---
Nonfat Dry Milk	+9.0	+9.7	0.0	---	0.0	$.84/lb. (wholesale)	---
Frozen Milk Products	-11.2	-11.0	---	---	0.0	n/a	---

1 The percent change in demand that would have resulted from strict adherence to the recommended dietary guidelines assuming no response to changes in relative prices as demand changed.

2 The estimated percent change in demand that would have resulted as the price and cross price and income effects on demand altered the recommended changes.

3 Numbers in parentheses indicate results from a scenario with no change in the demand for soybean oil where those results were different by more than one percentage point.

Scenario one shows two food grains, wheat and rice, with marked increases in farm price and cash receipts. The Dietary Goals encourage increased consumption of cereals and fiber. Whether this takes place in breads or cereals or pasta, it increases the demand for wheat and other grain.

Corn, largely a feed grain, declined in use partly because of the decrease in demand for pork, but also because it is a large contributor to caloric sweeteners. The original change in its demand for food use reflected a recommended decrease in the consumption of caloric sweeteners in soft drinks. The overall effect on corn producers was quite small, with the final change in demand for food a minus 23.6% versus the recommended 34.0%. Changes in relative prices tended to hold up the demand for corn.

The decrease in pork demand caused its price to fall, leading to a 38% decrease in pork producers' cash receipts. Lower pork prices led consumers to substitute pork for beef, decreasing the consumption of beef when the Dietary Goals recommended a small increase.

The changes in soy meal prices reduced the supply of poultry. A decline in the demand for eggs reduced the derived demand for poultry. Both factors put upward pressure on poultry prices. Increased poultry demand tended to further increase its price, but a decline in the demand and price of pork induced a cross price effect that caused consumers to substitute pork for poultry. The net effect was to decrease the demand for poultry and increase its price.

Eggs are not close substitutes for other livestock products, and the dramatic decrease in the demand for eggs caused their price to decline 44%. The model estimated a near 14% decline in demand after accounting for price changes.

The dairy sector is protected from demand shocks by government price support programs. The Commodity Credit Corporation (CCC) stands ready to purchase cheese, butter and non-fat dry milk at their respective support prices, which establishes price floors for these commodities. By supporting the price of these manufactured products, the CCC indirectly supports the price of all manufactured milk products. If the demand for these manufactured products decreases while prices are at support levels, the CCC will merely acquire additional stocks to maintain these price levels. The price changes reported in Table 2 for dairy products reflect

this situation. Despite substantial reductions in the demand for butter, cheese and frozen milk products, dairy product prices were unchanged.

The estimates in this study maintained government programs exactly as they were. Given this, net government costs for the agricultural programs that cover the commodities analyzed increased 6.3% in 1985. Increases in the demand for grains led to a decline in the cost of deficiency payments for wheat by 27.0% and for rice by 73.0%. For corn, deficiency payments increased 15.0%. Net deficiency payments decreased 10.5%. Storage payments on grains increased 33.0%. Expenditures for dairy products increased 58.0%, offsetting net savings in the grain sector. As long as the government dairy support program is in place, government costs increase as consumers respond to the Dietary Goals by decreasing their demand for high fat foods.

Gross farm income decreased 3.7% with or without a change in the demand for soybean oil. Net farm income declined 13.0% with a 38.0% drop in domestic soybean oil demand. Farm incomes dropped only 5.0% when there was no change in the demand for soybean oil. Retail food prices and expenditures were 2.0% less for food at home and 1.7% less for all food. This is based on changes in retail food prices for only those foods listed in Table 3; it does not include changes in fruits and vegetables, nuts, beans or fats and oils other than soybean oil.

Food expenditures declined when the Dietary Goals were followed, mainly because the largest decrease in demand was for animal products, the most expensive part of the food market basket. The effect of food price changes meant that the weekly average 1985 food budget of $60.65 was $1.03 lower (Table 3). The average household spent $53.61 less on food in 1985 for a nationwide savings of $4.65 billion. The consumer price index (CPI) was 0.3% less with the concomitant decreases in indexed incomes, social security payments, food stamp allotments and other government programs indexed to the CPI.

Falling prices do not affect all households alike. Table 3 shows that for food at home, the middle income (average) households would have saved the greatest dollar amount ($41.91 per year) but the low income households would have saved the largest percentage of their home food expenditures (2.2%) and their income (0.6%). High income households would have saved less because they eat out more; a smaller proportion of their food expenditure is for food at home. Except for low income households, there would have been a 2.0% savings on food at home

Table 3. Change in Specific Retail Food Prices and Expenditures by Household Income.

	Food Commodity	Percent Change In Retail Price	Change In average Household Food Expenditures[1]	Change In Low Income Household Food Expenditures	Change In High Income Household Food Expenditures
1.	Cereal/Bakery	1.23	$ .070	$ .042	$ .063
2.	Milled Rice	10.5	N/A	N/A	N/A
3.	Corn	0.0	.00	.00	.00
4.	Fats/Oils	-26.3	-.300	-.205	-.270
5.	Beef	- 2.6	-.096	-.500	-.100
6.	Pork	-14.1	-.370	-.250	-.330
7.	Poultry	7.3	.110	.860	.126
8.	Eggs	-37.4	-.220	-.170	-.210
9.	Milk	0.0	.00	.00	.00
10.	Other Dairy	0.0	.00	.00	.00
	Total Weekly Expenditure Change on Food at Home:		$-.806	$-.547	$-.721
	(Percent Change:)		(-2.0)	(-2.2)	(-2.0)
	Percent of Income Spent on Food at Home:		8.2	30.5	5.2
	Percent of Income Spent on Food at Home Saved:		0.1	0.6	0.1
	Dollars Saved per Year:		$41.91	$28.44	$37.49

[1]Food expenditure data from Table 9, "Consumer Expenditure Survey Results from 1985," News, USDL87-399, Washington, D.C. Bureau of Labor Statistics, U.S. Department of Labor, September 4, 1987. Low Income is defined here as those households in the lowest income quintile; high income are those households in the highest income quintile.

expenditures, which represents a 1.0% decline in the income needed for home food.

Declining food costs freed household resources for expenditures elsewhere in the economy. For example, if $4.65 billion more were spent on nonfood items, local sales tax revenues would increase and the general economy would be boosted. If it were all saved, it would have boosted the personal savings rate from 5.1% to 5.2% of disposable income (Council of Economic Advisors, 1987, p. 274). Keeping food costs down is one way to keep consumption and savings up in the rest of the economy, facilitating economic growth and health.

The implications for agricultural policy are that government costs would have been higher, net farm income would have been lower, and consumer food costs would have been lower.

Should the dietary goals be promoted as part of public agricultural policy? To the extent that the guidelines are based on sound scientific nutritional knowledge, they should improve the health of the population. In the 1980s, if the guidelines had been followed exactly by everyone, the effect on agricultural producers would have depended on the commodity produced. To the extent that some production resources can be shifted from high saturated fat products, the agricultural sector could prosper by promoting "healthy diets."

At least four bills have been introduced in Congress this year to improve nutritional monitoring and research and refine dietary goals and guidelines. Consumers would be better off with dietary guidelines they can trust and are likely to follow, rather than randomly responding to erratic health news. The research results of this study indicate that consumers will also save money on food expenditures.

High quality diets require high quality food. Ensuring safe food and accurate information about food and food additives and their effects on health would result in additional savings to the economy, including increased productivity and consumption of other goods. Savings on medical care and premature deaths will add to the aggregate benefits of government policies that promote positive quality characteristics in food. Finally, consumer confidence in government's ability to protect the quality of their food supply will be improved.

Appendix A. 1989-90 CONGRESS -- FOOD QUALITY

Inspection of Meat, Fish and Poultry

H.R. 1387 (D-ND) -- Mandatory Fish Inspection Act of 1987

H.R. 2511 (D-MA) -- Consumer Seafood Safety Act of 1989

H.R. 3071 (D-MN) -- Comprehensive Food Safety Act of 1989

H.R. 3155 (D-MI) -- Fish and Fish Products Safety Act of 1989

H.R. 3292 (D-TX) -- Food Safety Assurance Act of 1989

H.R. 3369 (D-KS) -- Consumer Seafood Safety Act of 1989

H.R. 3508 (D-TX) -- Federal Inspection for Seafood Healthfulness Act of 1989

Revise Authority to Regulate Food Safety

S. 1266 (R-WI) -- Federal Food, Drug, and Cosmetic Act, Amendment

Toxins in Corn

H.R. 2641 (D-IN) -- Aflatoxin Food Safety Act of 1989

Pesticides

H.R. 3153 (D-CA) -- Pesticide Regulatory Reform Amendments of 1989

H.R. 1508 (D-MN) -- Tolerance for Daminozide under the Federal Food, Drug and Cosmetic Act, Termination

H.R. 1725 (D-CA) -- Food Safety Amendments of 1989

H.R. 3292 (D-TX) -- Food Safety Assurance Act of 1989

S. 722 (D-MA) -- Food Safety Assurance Act of 1989

S. 1061 (R-VA) -- Use of Daminozide (Alar) Prohibition

Irradiation Limits

S. 1037 (D-ME) -- Food Irradiation Safety and Labeling Requirement Act of 1989

H.R. 2405 (D-CA) -- Food Irradiation Safety and Labeling Requirement Act of 1989

Food Labeling

<u>Fats</u>

H.R. 514 (D-TN) -- Fair Food Labeling and Advertising Act

H.R. 1441 (D-KS) -- Low Cholesterol Consumer Education Act

H.R. 2051 (D-MA) -- Food Labeling and Heart Disease Reduction Act

H.R. 3084 (D-NY) -- Nutritional Information Labeling Act

S. 623 (D-IA) -- Low Cholesterol Consumer Education Act

<u>Sodium</u>

H.R. 514 (D-TN) -- Fair Food Labeling and Advertising Act

H.R. 1712 (D-IA) -- Federal Food, Drug, and Cosmetic Act, Amendment

<u>General Nutrition</u>

H.R. 240 (D-PA) -- Federal Food, Drug and Cosmetic Act, Amendment

H.R. 3028 (D-CA) -- Nutrition Labeling and Education Act

H.R. 514 (D-TN) -- Fair Food Labeling and Advertising Act

H.R. 1684 (R-CA) -- Foods Are Not Drugs Act of 1989

S. 1425 (D-OH) -- Nutrition Labeling and Education Act of 1989

Facilitate Trade

H.R. 2681 (R-NJ) -- Food Contamination Prevention Act

S. 1505 (R-UT) -- Food and Nutrition Labeling Act of 1989

Dietary Status/Nutrition Monitoring

H.R. 677 (D-CA) -- National Nutrition Monitoring and Related Research Act of 1989

H.R. 1608 (D-TX) -- Comprehensive National Nutritive Monitoring System Act

H.R. 357 (D-NJ) -- Social Security Act, Amendment

S. 253 (D-NM) -- National Nutrition Monitoring and Related Research Act of 1989

Appendix B. Recommended Dietary Goals and Guidelines for Healthy Americans

Title & Organization	Total Fat	Saturated Fat	Polyunsat. Fat	Cholesterol	Protein	Complex Carbo.	Refined Sugar	Sodium
1. Dietary Goals for the United States US Senate Select Committee on Nutrition & Human Needs, 1977.[1]	7-33% of total calories	8-12% of total calories	8-12% of total calories	250-350 mg./day	12% of total calories	45-51% of total calories	8-12% of total calories	1600-2000 mg./day (4-6 g. of salt/day)
2. Dietary Guidelines for Healthy Adult Americans 1986.[2]	<30% of total calories	10% of total calories	10% of total calories	300mg/day for adults (100mg/1000 calories)	15% of total calories	50-55% of total calories	(decrease)	3000mg/day maximum (1000 mg/ 1000 cal.)
3. Dietary Recommendations, National Research Council, 1989. [3]	<30% of total calories	<10% of total calories	10% of total calories	<300mg/day	<15% of total calories (<1.6g/kg. body weight)	>55% of total calories	(no increase)	<2000mg/ day (<6 g. salt)

Sources:

1. Dietary Goals for the United States - 2nd Edition - Select Committee on Nutrition and Human Needs, U.S. Senate, Washington, D.C.: U.S. Government Printing Office, December 1977.
2. American Heart Association, Nutrition Committee. Circulation 7414 65A, 1986.
3. Committee on Diet and Health, Food & Nutrition Board, Commission on Life Sciences, National Research Council, Committee on Dietary Allowances, *Diet and Health*, Washington D.C., National Academy Press, 1989.

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