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Slicing Up The U.S. Food Dollar

Farm Vs. Marketing Costs

'Eating Out' Expenditures

1983 Food Price Outlook

Where Does The Food Dollar Go?

This issue of the *National Food Review* follows the trail of the U.S. food dollar from the supermarket or restaurant, back through the food marketing, transportation, and processing stages, and to the farmer.

"Where the Food Dollar Goes" by Harry Harp sets the stage with an overview of at-home and away-from-home food expenditures. "American Eating Places" by Michael Van Dress and Judith Jones Putnam takes a closer look at eating out, and "The 1983 Outlook for Food Prices and Consumption" by Paul Westcott looks ahead to what Americans can expect for their food dollars.

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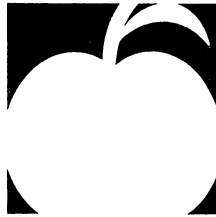
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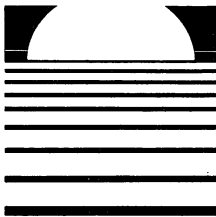
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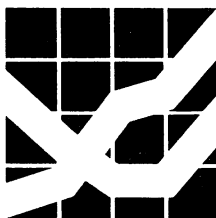
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Where the Food Dollar Goes

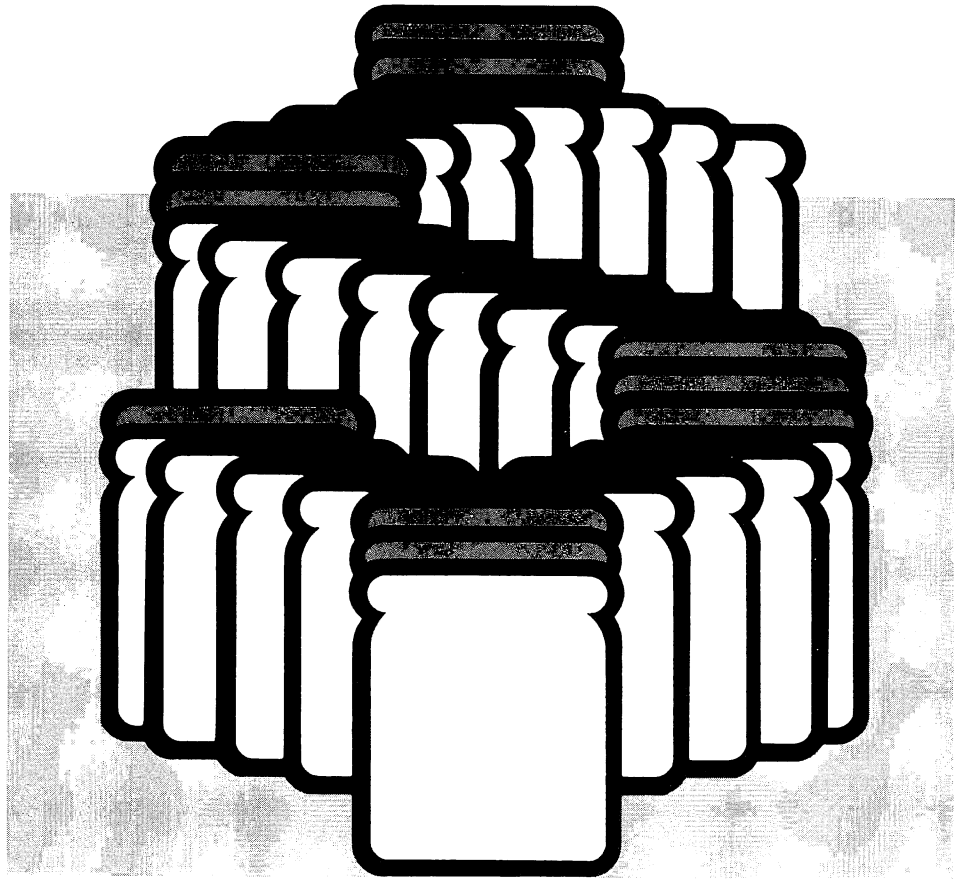
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Last year, Americans spent an average of about \$1 out of every \$6 of after-tax income on food—nearly \$1,500 per person—to cover the farm value and charges added by firms that manufacture, ship, and sell finished foods.

Total 1982 retail expenditures for foods produced on U.S. farms, which excludes imported foods and fishery products, were \$298 billion (table 1). The food dollar can be divided between the farm value (payments to farmers) and the marketing bill which reflects the costs of processing agricultural commodities into food and bringing them from the farm to consumers. Payments to farmers were \$84 billion in 1982, or 28 cents of the food dollar, while \$214 billion, or 72 cents of the food dollar, went to cover the marketing bill. In recent years, marketing costs have increased faster than prices received by farmers, causing the farm value share of food expenditures to decline and the marketing share to rise. In 1979, the marketing bill accounted for 67 cents of the food dollar, and the farm value 33 cents.

The farm value's share of food expenditures varies greatly among foods, depending on the inputs used to make them and the complexities of the marketing process. In general, animal products have the highest ratios of farm value to retail price; the more highly processed crop products have the lowest. For instance, the farm value represents 50 to 60 percent of retail prices for meats, dairy products, and poultry and eggs. In contrast, the farm value accounts for only about 20 percent of retail prices for processed fruits and vegetables, and 14 percent of the price of bakery and cereal products.

The marketing bill for foods purchased in grocery stores is the total cost of the four broad functions that the food industry performs—processing, transporting, wholesaling, and retailing. In 1982, it accounted for 66 percent of at-home food expenditures, and the farm value accounted for the remaining 34 percent. But, owing to the added costs of preparing and serving food consumed in restaurants and other eating places, the market-



ing bill for away-from-home food accounted for 83 percent of expenditures, and the farm value 17 percent.

Individual marketing costs also differ for foods bought in stores and restaurants. For example, 30 cents of each dollar spent for food in stores paid for processing, another 9 cents were spent for wholesaling, and 6 cents for intercity transportation (fig. 1). Retailing charges added the last 21 cents. These shares have been relatively constant over the years, because costs of each function have risen at roughly similar rates. For a dollar spent for food away from home, processing costs accounted for 18 cents, transportation charges for 3 cents, and wholesaling for 6 cents, leaving 56 cents for preparation and serving (fig. 2).

Marketing Components

The \$214 billion paid to food marketers by consumers in 1982 went to pay all costs of doing business. Labor, packaging, and transportation costs represent 45 percent of the total food dollar (table 2).

Labor costs. Direct labor costs accounted for 32 percent of the food dollar in

1982. Wages and benefits are paid to over 7 million workers, including employees of processing plants, warehouse employees, clerks in food stores, meatcutters, and foodservice workers.

Costs of employee benefits, such as health insurance and retirement funds, have increased faster than wages over the years and now account for 19 percent of the labor component of the marketing bill. Over the past decade, hourly earnings of employees in food processing and marketing establishments have risen at an average annual rate of 8.4 percent a year. This increase closely approximates increases in earnings for the nonagricultural sector of the economy. Rising labor costs affected food expenditures less severely in 1982. Hourly earnings of food industry workers rose 6.2 percent.

Labor costs' proportion of the food dollar has increased since 1972, from 30 to 31 percent, mainly because more workers are employed in restaurant food service. In addition, productivity (the volume of output from an hour of labor) declined in food retailing and eating places over the past decade. Thus, increases in workers' wages resulted in higher unit labor costs.

However, productivity in food processing has risen at a steady annual rate of 2 percent, partially offsetting rising wages of these workers. These increases resulted primarily from the substitution of capital for labor as a consequence of new technology. Improvements in productivity have been achieved by large expenditures for new plants and equipment. For example, capital expenditures by firms manufacturing food and kindred products increased from \$2.6 billion in 1972 to \$8.3 billion in 1981, but slowed to about \$8 billion in 1982.

Rising prices of new plants and equipment doubled over the last decade, eroding some of the cost saving of substituting capital for labor. Higher interest rates charged to businesses have also added to these costs.

At present, Government and private industry are studying additional opportunities for improving productivity in food distribution, such as modernizing wholesaling facilities, and replacing cash registers with computer scanning equipment that automatically reorders stocks. Such equipment is now being used in about 20 percent of all supermarkets. The adoption of these innovations will require time and large capital expenditures.

Packaging costs. Packaging materials represented the second largest marketing cost in 1982, accounting for 8 percent of the total food dollar. Packaging costs included metal cans, glass and plastic bottles, and other containers for food products and the boxes and other materials used for shipping food products. Food processors were the largest users of packaging materials, accounting for over four-fifths of the total used by all food marketing firms.

Costs of food packaging materials rose sharply in the 1970's, reflecting rising production and material costs, particularly for petroleum. Packaging costs declined 2 percent in 1982, because of excessive production of most containers and paper materials, and weak demand for packaging products in nonfood industries due to the recession.

Table 1. Food Expenditures, Marketing Bill, and Farm Value: At-Home and Away-From-Home Markets

	Total expenditures	Food at home ¹	Food away from home
		\$billions	
Food expenditures²			
1972	122.2	85.6	36.6
1978	216.0	150.5	65.5
1979	241.2	170.7	70.4
1980	260.8	179.5	81.3
1981	284.5	193.8	90.7
1982	297.6	201.1	96.5
Marketing bill			
1972	82.4	53.2	29.2
1978	147.1	94.2	52.9
1979	162.8	106.0	56.8
1980	179.7	113.5	66.2
1981	202.1	127.1	74.9
1982	214.1	133.6	80.5
Farm value			
1972	39.8	32.4	7.4
1978	68.9	56.3	12.6
1979	78.4	64.7	13.7
1980	81.1	66.0	15.1
1981	82.4	66.6	15.8
1982	83.5	67.5	16.0

¹Primarily purchased from retail food stores for use at home.

²Consumer expenditures for domestically produced farm foods.

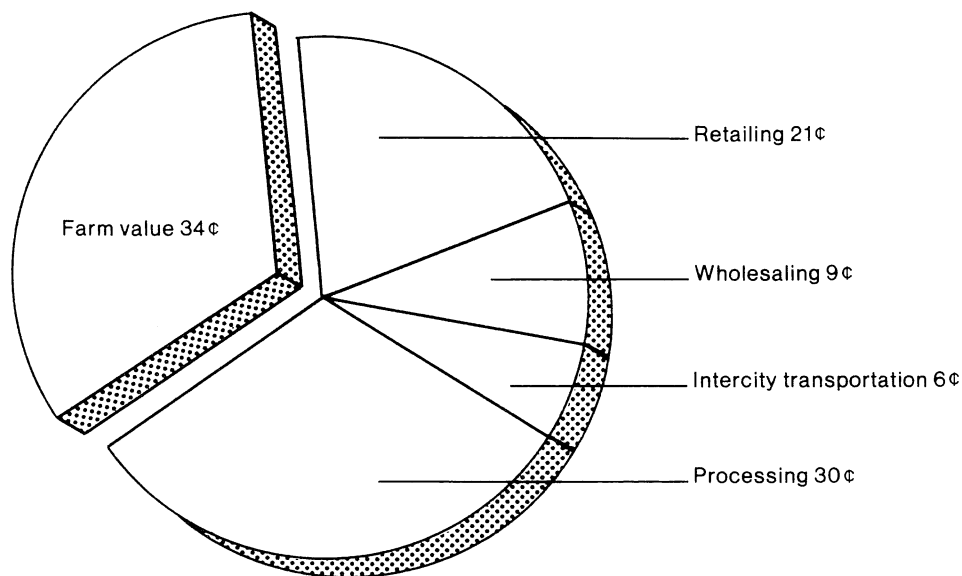
Table 2. Components of the Food Marketing Bill

	1972	1978	1979	1980	1981	1982
	\$ billions					
Total marketing bill	82.4	147.1	162.8	179.7	202.1	214.1
Labor ¹	36.6	66.0	73.8	80.7	90.7	95.5
Packaging	8.9	16.5	18.4	21.1	22.9	23.6
Transportation ² (rail and truck)	6.1	10.5	11.6	12.7	14.1	14.7
Fuel and power	2.5	6.3	7.6	9.0	10.9	11.7
Corporate profits (before taxes)	4.0	9.2	9.9	11.0	12.0	13.1
Other ³	24.3	38.6	41.5	45.2	51.5	55.5

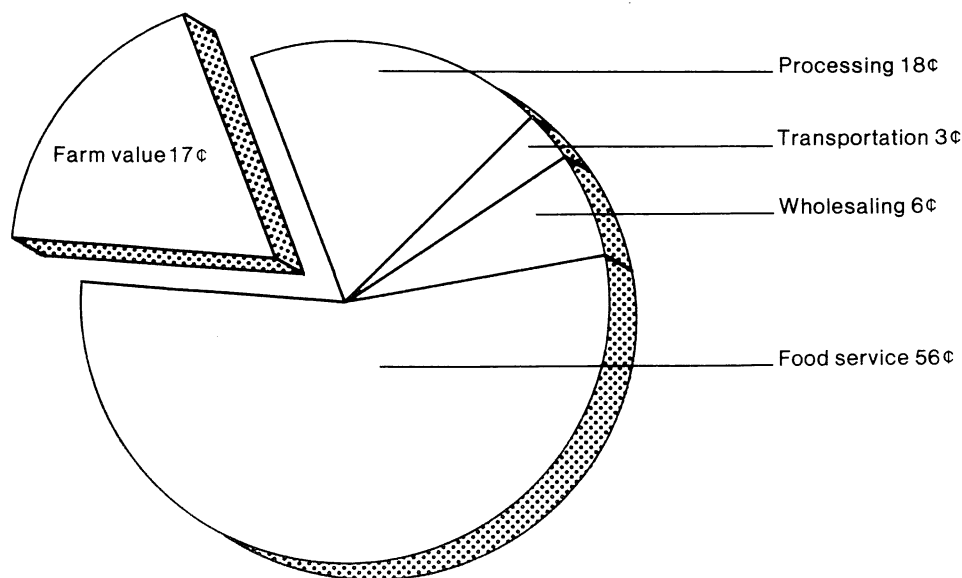
¹ Includes supplements to wages and salaries, such as pensions and health insurance premiums. Also includes imputed earnings of proprietors, partners, and family workers not receiving stated remuneration.

²Does not include local hauling charges.

³Includes business taxes, depreciation, rent, advertising, interest, and numerous other costs.

Figure 1. Components of the Food Dollar Spent for At Home Consumption

Based on 1982 data.

Figure 2. Components of the Food Dollar Spent for Away From Home Consumption

Based on 1982 data.

Transportation costs. Shipping food by rail and truck took 5 percent of the food dollar in 1982. This did not include intracity truck transportation or water and air transportation. Transportation costs rose sharply from the early 1970's through 1981 as a result of high fuel prices and rising labor costs. Transportation costs rose little in 1982, partly as a result of lower diesel fuel prices and rate-cutting among truckers and railroads to prevent loss of business as industrial production slowed because of the recession.

Corporate profits. Higher food prices are sometimes attributed to growth in profits. Total profits have increased over the years as the volume of sales has grown. Yet, higher food prices have been caused more by increased costs than by higher profits. Corporate profits (before taxes) of retailers, wholesalers, and processors combined now account for about 4 percent of the food dollar, up from 3 percent in 1972.

Energy costs. Direct energy costs for food marketing firms, excluding transportation, amounted to nearly \$12 billion in 1982, accounting for almost 4 percent of the food dollar. Energy has been increasing as a proportion of the food dollar since the early 1970's. Since 1973, when fuel prices doubled, energy costs have been rising almost 15 percent a year—about double the rate of increase for other marketing costs. In 1982, energy costs rose 4.7 percent, the smallest increase in the last decade. Most of this slowdown reflects a 5-percent decline in diesel and fuel oil prices. Demand has been down, reflecting slow economic growth and continued price-induced conservation efforts. Additionally, petroleum product inventories have been reduced, in part due to continued high interest costs.

In contrast, coal prices have risen at a faster rate than a year ago. This reflects higher mining costs and larger export demand for coal as an alternative to petroleum products. Higher coal prices

The 1983 Outlook for Food Prices and Consumption

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and high costs of financing have further boosted electricity rates. Natural gas prices also have continued to increase at a substantial rate, largely as a result of decontrol.

In summary, the major portion of the consumer's food dollar goes to processors, wholesalers, and retailers, while the rest goes to farmers. At each stage in the marketing chain, food marketers add margins to cover costs, such as labor, packaging, and transportation, and also to yield a profit.□

The Marketing Bill

The marketing bill discussed in this article is an estimate of the total charge for marketing all U.S. farm foods, including foods consumed in restaurants and other eating places and those bought in retail food stores. It is the difference between total civilian expenditures for these foods, or the total food dollar, and total farm value. The marketing bill statistics are affected by changes in prices, volume, type of products marketed, and the quantity of marketing services per unit of product. The marketing bill statistics show the distribution of the food dollar between the many participants and cost components involved in marketing food.

In contrast, the market basket approach of using fixed quantities of foods is used in the following article to analyze changes in retail food prices. Prices for this basket of foods are broken down into farm value and farm-to-retail price spreads for the total basket and major food groups. These statistics identify the underlying causes of changes in retail food prices. The farm value is based on prices received by farmers for commodities equivalent to foods in the market basket. The farm-to-retail price spread represents charges for providing processing and distribution functions for this basket of foods.□

Retail food prices in 1982 averaged 4 percent higher than in 1981. This was the smallest annual increase since 1976, and it marked the seventh of the last 8 years that food price gains have been less than the general inflation rate. Food prices have also risen at successively lower rates since the double-digit increases of 1978 and 1979.

Moderate food price increases are expected in 1983, reflecting record wheat, corn, and soybean crops harvested last year, larger production of fruits and vegetables, slow recovery of consumer food demand and agricultural export demand, and a lower general inflation rate. Grocery store food prices are likely to rise 3 to 6 percent this year, while prices for food away from home are expected to be up 4 to 6 percent. These increases imply an overall rise of 3 to 6 percent in food prices in 1983.

Within this range, the current assessment indicates a food price increase of about 4 percent for 1983. Important factors that will affect food prices in 1983 include weather, export demand for agricultural commodities, consumer demand for food, and changes in food marketing costs.

USDA's market basket statistics illustrate the underlying causes of the food price moderation. The retail cost of the market basket—a fixed set of foods representing consumer purchases—measures prices for domestically produced foods sold in grocery stores. Retail cost can be divided into two components: the farm value of foods, and the farm-to-retail price spread. These data account for about 82 percent of food at home, with prices for fish and imported foods making up the remainder.

The farm value of foods—accounting for slightly over a third of the retail cost of the market basket—has risen slowly for 3 years and is expected to again show only a small increase in 1983. This largely reflects weak domestic demand for food and export demand for agricultural commodities, in part due to the recession. Only slight improvement in demand is expected in 1983.

Increases in the farm-to-retail price

spread—representing charges for marketing food—have slowed significantly since 1979, especially last year. Continued moderation in the spread is expected in 1983. This is especially important for food prices, because the spread accounts for nearly two-thirds of the retail cost of the market basket.

Food Marketing Costs

The sharp decline in the rate of increase of the farm-to-retail price spread last year reflects significant moderation in food marketing costs. These costs rose 5 percent last year, down from an 11-percent rise in 1981. This slowing of food marketing costs parallels the decline in the general rate of inflation, which fell from 10.4 percent in 1981 to 6.1 percent in 1982. With the general inflation rate expected to slow some this year, food marketing cost increases will remain moderate. Four major factors—labor, packaging, energy, and transportation—account for over three-fourths of all food marketing costs. (For a more detailed discussion of these costs, see "Where the Food Dollar Goes" in this issue.)

Labor. Perhaps the most important developments last year occurred in wages and benefits paid to workers in the food industry. Labor costs rose 7 percent last year, down from a 10-percent increase in 1981.

Several factors contributed to this slowdown in labor costs. The minimum wage did not increase in 1982. Also, the lower inflation rate reduced cost-of-living increases in wages, especially important for food retailing costs. But, even more importantly, smaller wage and benefit increases were negotiated in many new labor contracts last year. Because of the recession and high unemployment, workers made concessions to protect jobs, especially in industries with financial difficulties.

To illustrate, workers for five major pork-processing companies agreed to contracts that essentially freeze wages and eliminate cost-of-living adjustments until the fall of 1984. In exchange, the meat-packers gave assurances that no plants

Table 1. Food Price Indicators

Consumer price index category	1979	Change from previous year				1983 ^f
		1980	1981	1982	Percent	
Food	10.9	8.6	7.9	4.0		3 - 6
Food away from home	11.2	9.9	9.0	5.3		4 - 6
Food at home	10.8	8.0	7.3	3.4		3 - 6

f = forecast.

Table 2. Market Basket Statistics

Category	1979	Change from previous year				1983 ^f
		1980	1981	1982 ^p	Percent	
Retail cost	11.7	7.2	7.7	3.6		3 - 6
Farm value	10.7	5.5	2.7	1.0		1 - 4
Farm-to-retail price spread	12.3	8.3	10.5	5.1		4 - 7

p = preliminary. f = forecast.

would be closed through the middle of 1983.

In the California food-canning industry, a 3-year agreement negotiated last year will increase wages 3 to 9 percent over the length of the contract. This is significantly lower than the 21- to 27-percent wage adjustments provided for over the 3-year duration of the previous contract. Employees of some food retailers also agreed to smaller wage and benefit increases in new labor contracts negotiated last year.

Food industry labor costs in 1983 will probably slow further, with a 5- to 7-percent rise likely. Again, the minimum wage will be unchanged this year, and cost-of-living adjustments will be limited by a moderate general inflation rate. Most scheduled wage and benefit increases from existing contracts will be smaller than in recent years. Continued weakness also is expected in many labor contract negotiations.

Packaging. Packaging costs in the food sector were down 2 percent last year. Prices for polyethylene resin—the major material used in plastic containers and film wrapping—dropped a fourth last year; prices for paperboard and paper products were stable; and prices of tin cans and glass containers rose less than in 1981.

Packaging costs may increase 2 to 5 percent in 1983. Polyethylene resin prices may be up some because petroleum prices will likely be higher. Prices for paperboard and paper products are expected to be somewhat higher than last year's level, and container industry competition will continue to hold down tin can and glass bottle prices. For glass bottles, a new labor contract will be negotiated in 1983, which will likely lead to smaller cost rises, but costs for natural gas will continue upward and partly offset labor costs.

Energy. Energy costs rose 5 percent last year, about a fourth of the 1981 rate. This reflects a 4-percent decline in diesel and fuel oil prices, as slow economic growth, a drawdown of petroleum product inventories, and continued price-induced conservation efforts curtailed demand.

Energy costs will likely rise more rapidly in 1983. Demand for diesel and fuel oil will still be weak through at least the middle of the year, but prices will likely rise slightly as petroleum product inventories begin to rebuild. Prices for coal and electricity may rise slightly faster than inflation. Phased decontrol will continue to push natural gas prices up sharply.

Transportation. Rail rates for food products last year increased less than half as fast as in 1981. Rail rate increases must be approved by the Interstate Commerce Commission (ICC) to reflect increased operating costs. Operating costs, however, slowed last year, largely because of lower diesel fuel costs. In 1983, diesel fuel costs will likely be up more than last year, but labor costs probably will not be up as much. This will likely result in a lower rate of increase for rail costs and, consequently, ICC-approved rail rate increases in 1983.

Trucking costs were up somewhat less than rail rates last year. Increases for most truck-transported goods generally parallel rail increases. However, increased competition resulting from decontrol of the industry in 1980 led to lower trucking transportation rates for some foods. In 1983, trucking rate increases will likely be up near the 3- to 6-percent increase expected for rail rates.

Food Product Highlights

Prices for most foods rose only moderately or declined last year. However, reduced production led to double-digit price increases for pork and fresh fruit. This year, small price rises are expected for most foods, with declines likely for some categories.

Meats. Retail prices of red meat rose 4.8 percent last year as production fell 4 percent. Most of this was a consequence

of significant adjustments in the hog industry. Following 2 years of financial losses, hog producers cut production back 10 percent last year. Consequently, pork prices rose sharply through most of 1982 and averaged 12.9 percent higher than in 1981.

Beef production last year was up slightly from 1981's level, with retail prices rising 1.4 percent. Production was down in the first half of the year, but rose in the second half due to increased grain-fed beef and cow slaughter. Importantly, higher cow slaughter implies that cattle producers may have delayed the expansion phase of the cattle cycle. With consumer incomes and food demand stagnant, the demand for cattle has been weak, causing financial difficulties for many producers.

Further cutbacks in meat production of 1 to 2 percent are expected in 1983, pushing retail meat prices up 3 to 6 percent. Developments in the general economy and implications for consumer incomes and food demand will be important for determining meat price increases this year.

Developments in the hog industry will again have a strong influence on prices. With low corn prices relative to market prices for hogs last fall, some expansion in hog herds would usually have occurred, resulting in pork production increases by the middle of 1983. However, many hog producers were reluctant to expand because of cash flow difficulties. Therefore, pork production may be off about 5 percent in 1983, with retail pork prices likely to rise 4 to 7 percent. Beef production in 1983 may be near last year's level, with retail beef and veal prices expected to be up somewhat more than in 1982.

Poultry and Eggs. Poultry prices fell 1.8 percent last year. This was mainly due to continued increases in broiler supplies, as broiler production was up about 1 percent and export demand was weak. In addition, large stocks of frozen turkey at the beginning of 1982 offset reduced production, holding retail turkey prices lower than a year ago for most of the year. Egg prices fell 2.8 percent last year.

Table 3. Major Food Marketing Costs

Category	Change from previous year		
	1981	1982 ^p	1983 ^f
		Percent	
Food marketing costs	11	5	4 - 7
Labor	10	7	5 - 7
Manufacturing	9	7	4 - 6
Wholesaling	9	8	6 - 8
Retailing	11	6	5 - 7
Packaging	8	-2	2 - 5
Paperboard and paper products	10	0	2 - 5
Polyethylene resin	2	-26	3 - 6
Tin cans	6	5	1 - 4
Glass containers	12	8	4 - 7
Fuel and power	19	5	8 - 12
Electricity	14	11	7 - 10
Diesel and fuel oil	24	-4	5 - 8
Natural gas	14	20	15 - 25
Coal	6	8	6 - 9
Rail transportation rates	16	7	3 - 6

p = preliminary. f = forecast.

Lagging export demand kept supplies near 1981 levels, even though production was down about 1 percent.

In 1983, poultry production will likely be up again, with low grain prices holding down feeding costs. With lower red meat supplies, however, poultry demand may rise some, pushing retail poultry prices up 2 to 5 percent. Egg production this year is expected to be near the 1982 level, but weak foreign demand may hold prices lower than last year.

Dairy Products. Retail prices for dairy products were up 1.4 percent last year, the smallest annual increase since 1965. Changes in dairy legislation kept the price support at \$13.10 per hundredweight last year. Also, marketing cost increases were significantly smaller than in recent years. Additionally, milk production continued to expand. Lower grain prices reduced feeding costs, and the resulting increase in feed use raised output per cow. Further,

low farm prices for cull cows discouraged net dairy herd liquidation.

In 1983, the price support will be unchanged, and marketing cost increases are likely to remain moderate. Milk production may rise further in 1983, even though deductions will be made from producer prices to help offset public costs of the price support program. Consequently, retail prices for dairy products in 1983 will again likely be up less than the inflation rate.

Fish and Seafood. Retail prices for fish and seafood last year averaged 3.6 percent higher than in 1981. Fresh and frozen fish prices were up sharply early in the year as cold weather reduced the catch. As weather improved, fish supplies recovered, resulting in significantly lower fish prices later in the year. Moderate increases are expected for fish prices this year, although poor winter weather could again limit supplies and push prices up sharply early in 1983.

Table 4. Changes in Consumer Price Indexes, 1980-83

Food category	1980	1981	1982	1983 ^f
	Percent			
All food	8.6	7.9	4.0	3 - 6
Food away from home	9.9	9.0	5.3	4 - 6
Food at home	8.0	7.3	3.4	3 - 6
Meats	2.9	3.6	4.8	3 - 6
Beef and veal	5.7	0.9	1.4	2 - 5
Pork	-3.4	9.3	12.9	4 - 7
Poultry	5.1	4.1	-1.8	2 - 5
Eggs	-1.8	8.3	-2.8	-3 - 0
Dairy products	9.8	7.1	1.4	2 - 5
Fish and seafood	9.2	8.3	3.6	2 - 5
Fruits and vegetables	7.3	12.0	5.5	1 - 4
Sugar and sweets	22.9	7.9	-0.2	3 - 6
Cereals and bakery products	11.9	10.0	4.5	2 - 5
Fats and oils	6.6	10.7	-2.8	2 - 5
Nonalcoholic beverages	10.6	4.2	2.8	3 - 6
Other prepared foods	10.8	10.3	5.2	3 - 6

^f = forecast.

Source: Historical data from Department of Labor; forecasts by Economic Research Service, USDA.

Fruits and Vegetables. Fruit and vegetable prices last year averaged 5.5 percent above 1981 levels. For the second consecutive year, a freeze in Florida reduced supplies and pushed fruit and vegetable prices up early in the year. For fresh vegetables, planted acreage nationwide was also down last winter, and insect damage reduced the California lettuce crop. As a result, retail fresh vegetable prices rose sharply in the first quarter of 1982. As production rebounded later in 1982, prices fell. In particular, last fall's potato harvest was the largest since 1978, pushing potato prices down about 16 percent from year-earlier levels. Consequently, for the year, fresh vegetable prices averaged only 0.5 percent higher than in 1981.

Fresh fruit prices averaged 11.1 percent above 1981 levels, as production difficulties affected citrus and noncitrus supplies last year. Processed fruit prices averaged 5.4 percent above the 1981 level. This mainly reflects the effects of the Florida freeze on frozen concentrated orange

juice (FCOJ) production, which pushed prices up early in the year.

Fruit and vegetable prices this year are expected to be up 1 to 4 percent. A 3-percent rise in potato production last fall and a substantial increase in contracted vegetable acreage for processing will limit movements in retail vegetable prices. Processed tomato production rose 28 percent, and processed corn production was up 16 percent. A 6-percent rise in apple production last fall, 44 percent greater grape production, and a projected 26-percent increase in orange production will likely push fresh fruit prices down. Pear prices will be up, however, reflecting a 10-percent smaller crop last year.

Larger Florida orange production for processing will hold down FCOJ prices this year. Most of the orange trees in Florida have recovered from the 1982 freeze damage, as the State had ample rain last spring and summer. Also, although production of fruit for canning was down last year, carryover supplies are

large. This will keep canned fruit supplies adequate to meet lagging demand in 1983 and will likely hold retail price increases for processed fruits lower than the general inflation rate.

Sugar and Sweets. Retail prices for sugar and sweets last year averaged near 1981 levels. Global production of sugar for the 1981/82 marketing year exceeded consumption by about 10 million tons, bringing world carryover stocks to nearly 40 percent of annual consumption needs. Consequently, 1982 world raw sugar prices fell sharply. Domestically, however, a sugar price support program was enacted, and duties, fees, and quotas were placed on sugar imports. This insulated the domestic market from much of the impact of the lower world sugar prices, holding retail prices for sugar and sweets stable through most of last year, when they likely would have otherwise fallen.

Global production of sugar for the 1982/83 marketing year is again likely to exceed consumption, so world raw sugar prices in 1983 will continue to be low. Domestically, an increase in the sugar price support and continued sugar import restrictions will contribute to a rise in retail prices for sugar and sweets of about 3 to 6 percent.

Cereals and Bakery Products. Price rises for cereals and bakery products last year were held down primarily by moderation of food marketing costs. Cereals and bakery products are highly processed foods and, therefore, marketing costs play the dominant role (over 85 percent) in determining their prices. Additionally, both wheat and rice production in 1981 were record high, and a larger wheat crop was harvested last year. Consequently, the value of farm commodities used in cereals and bakery products fell last year, further limiting retail price rises.

Moderate marketing costs are expected to again hold down price increases for cereals and bakery products in 1983. Also, little change is expected in the farm value of these foods. Carryover supplies of

wheat are high, reflecting the second consecutive year of record-large production in 1982. Although 1982 rice production was down from the 1981 record, it was the second highest ever. Combined with large carryover stocks of rice from 1981, this will push total rice supplies for 1983 to a record high.

Fats and Oils. Retail prices for fats and oils fell 2.8 percent in 1982. Large supplies of oilseeds limited price movements for vegetable oils. Record-high 1981 peanut production led to a recovery in supplies from the depressed levels caused by the 1980 drought. Marketing costs, which account for about three-fourths of retail prices for fats and oils, rose more slowly.

Retail prices for fats and oils may increase 2 to 5 percent in 1983. Record-large soybean production last year will again hold down prices for vegetable oils, but a decline in peanut production in the fall of 1982 will likely exert upward pressure on peanut and peanut butter prices this year. Marketing costs will again rise slowly.

Nonalcoholic Beverages. Nonalcoholic beverage prices rose 2.8 percent last year. Soft drink price rises slowed due to lower sugar prices, increased use of corn sweeteners, and smaller increases in marketing costs. Coffee prices rose sharply in January and February, but then stabilized. Global coffee production in 1981 was record large, but a freeze in Brazil diminished expectations for 1982 production, leading to the early-year price runup.

This year, nonalcoholic beverage prices will again be up moderately, primarily due to small increases in marketing costs. Higher domestic sugar prices will also contribute to soft drink price rises. Coffee prices are likely to remain relatively stable in 1983. Global coffee production last year was down 16 percent, reflecting a 46-percent drop in the Brazilian crop that resulted from 1981 freeze damage. However, carryover stocks from the record 1981 crop will hold world supplies

Table 5. Food Consumption, Retail Weight, 1980-83

Food category	1980	1981	1982 ^p	1983 ^f
Pounds per person				
Total food	1,407	1,400	1,393	1,405
Animal products	587	582	577	571
Red meats	160	157	149	143
Beef and veal	78	79	79	77
Pork	68	65	57	53
Other	13	13	13	13
Poultry	61	63	64	65
Eggs	35	34	34	33
Dairy products	308	304	306	306
Other	24	24	24	24
Crop products	820	818	816	834
Cereals and bakery products	150	151	151	153
Vegetable oils	47	48	49	49
Fruits and melons	162	165	159	163
Vegetables	294	284	287	296
Sugar and sweeteners	133	135	135	138
Other	33	34	35	35

p = preliminary. f = forecast. Note: Totals may not add due to rounding.

this year near the 1982 level. Further, no freeze occurred last year in coffee-producing areas, so 1983 production will likely improve.

Food Consumption Situation

Per capita food consumption last year on a retail weight basis was down slightly from 1981's level, largely due to lower pork and fruit supplies. Per capita food use in 1983 is expected to rise some. Increased consumption of crop product foods, reflecting large crops last year and increased fruit and vegetable supplies this year, will offset a decline in consumption of animal product foods.

Consumption of animal product foods was down about 1 percent last year, with an additional 1- to 2-percent decline likely in 1983. Last year's decrease was led by a 5-percent drop in red meat use. At 149 pounds per person, red meat consumption was the lowest since 1965, well below the record of 170 pounds per person in 1971. Most of last year's decline

was due to the sharp fall in pork use. Beef and veal consumption was unchanged as population growth offset a small rise in beef production. In 1983, red meat use will be down again, with beef and pork consumption each expected to fall.

Poultry consumption last year continued its long-term upward trend due to expansion in the broiler industry. Importantly, with pork use down sharply, poultry consumption per person exceeded pork use last year for the first time ever. With further expansion likely in the broiler industry this year, poultry use is expected to again exceed pork use in 1983. This shift is a consequence of the low price of poultry relative to pork, mainly reflecting the higher feed conversion ratio of poultry. Also, poultry producers can react faster to changing market conditions than hog producers can, thereby giving them a competitive cost advantage in the short run.

Egg use leveled off last year, but will

Food and Fiber Imports

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continue its long-term downward trend in 1983, the result of dietary concerns and competition from other breakfast foods. Dairy product use was up last year, temporarily reversing a long-term decline. Fluid milk use was down, but the distribution of cheese and butter from Government stocks pushed processed dairy product consumption up. In 1983, per capita consumption of dairy products will be unchanged, with lower fluid milk use being offset by slightly higher processed dairy products use.

Per capita consumption of crop product foods last year was near the 1981 level. Lower consumption of most fruits was offset by larger consumption of potatoes and corn sweeteners. In 1983, consumption of crop product foods will be up 2 to 3 percent. Fruit and vegetable use will be up significantly as production recovers from many weather-related difficulties that limited 1982 supplies. Further increases in corn sweetener use will offset some decline in sugar consumption. Use of cereals and bakery products will be up due to large wheat and rice supplies. □

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Although the United States is the world's largest exporter of agricultural commodities, accounting for roughly 2 out of every 5 tons traded on the world market, it is also the fourth largest importer behind West Germany, the Soviet Union, and Japan. In 1982, the United States imported 15 million metric tons of farm products valued at \$15.5 billion.

To participate in trade, a country ordinarily has a "comparative advantage" such as America's highly productive farmland and climate, Bolivia's mineral wealth, or Colombia's tropical climate for producing coffee. A country exports these goods, while importing those produced at an advantage by other countries. The temperate U.S. climate, for example, precludes production of tropical products such as coffee, cocoa, and rubber. However, abundant fertile land and a highly efficient agricultural sector provide the United States with a comparative advantage in producing such commodities as wheat, corn, and soybeans for export.

While the United States has an advantage in producing products such as grains and oilseeds, which are more economically produced with labor-saving technology and productive land, products that have a higher labor component face stiffer competition from foreign producers due to lower wages paid in many of these countries. Thus, a U.S. laborer might have more advanced machinery at his disposal, allowing him to complete a task in less time, but the lower wage structure in foreign countries can enable foreign competitors to undercut U.S. prices.

Product Mix of U.S. Agricultural Imports

U.S. agricultural imports can be separated into complementary products—commodities that are not produced commercially in the United States, and supplementary products—those that are similar or interchangeable to a significant extent with a commodity that is produced domestically. Both complementary and supplementary products enter the U.S. food and fiber system at

various stages of processing. We import low value, unprocessed commodities (bananas), high value, unprocessed commodities (coffee beans), and processed products (canned hams). In most cases, it is to a country's advantage to import primary or raw products and process them, thus generating higher national income and more jobs.

Approximately 40 percent of the total dollar value of U.S. farm imports is for complementary products, of which less than 20 percent would be considered processed. The 5 million tons of complementary products imported in 1981 were mostly bulk items that entered duty free, such as bananas, coffee, cocoa beans, and natural rubber. Cocoa products (butter, powder, and cake), the most significant processed products in this category, also entered the United States virtually duty free.

The remaining 60 percent of U.S. agricultural imports are supplementary products. These products range from Australian beef and Caribbean cane sugar, to Malaysian palm oil and Turkish tobacco. The United States is capable of producing these products or close substitutes, yet demand for supplementary products exists for a number of reasons:

- Imported beef, worth \$1.4 billion in 1982, provides a leaner, cheaper cut to augment U.S. beef production. Unlike U.S. producers who grain-feed three-fourths of their beef cattle in confined feedlots during the last 3 to 6 months before slaughter, producers in the world's other large beef-producing countries (Australia, New Zealand, the European Community) graze their cattle up to the time of slaughter, thus assuring leaner, less expensive meat. The use of imported beef in the United States has risen from 1 percent of domestic production just after World War II to its present rate of 7 to 8 percent. This is in large part due to the proliferation of "fast food" restaurants and the dramatic reduction in the U.S. dairy herd, limiting the supply of lean cattle for slaughter.

- Higher discretionary income in the United States and a large population with diversified needs provide a viable market for a wide range of imported goods. Even the smallest importer has a relatively large customer base with which to cover costs. This is particularly true for "luxury" goods whose purchases are very responsive to changes in income, such as imported European wines and cheeses.

- The United States simply cannot produce enough of certain commodities, such as sugar, to meet domestic demand.

- Extended growing seasons in other countries help meet U.S. demand for certain products when our products are unavailable. For example, Mexican farmers produce vegetables year-round and ship them here during our winter months when U.S. production is at its lowest level.

- Some U.S. processors import raw commodities, such as sugar, coffee, cocoa, and tobacco, process them or blend them with other domestic inputs, and sell the finished good to a third country.

- Economic "disincentives" exist for particular U.S. products. For example, it is not economical for U.S. milk processors to produce casein, given the higher profits for alternative byproducts such as nonfat dry milk, butter, and cheese.

- Lower prices of foreign products make them competitively attractive in this country.

Import Perspective Since 1950

Given the size and affluence of the U.S. population, and the relatively free access to U.S. markets afforded foreign exporters, it is understandable that U.S. importers and foreign suppliers view this market as a dynamic one with great potential. However, the volume of agricultural products entering the United States over the past 30 years has not grown all that much. Only once since 1950 have imports been outside the relatively nar-

row range of 10 to 17 million tons, while U.S. exports over the same period climbed from 16 million tons to 163 million.

Growth in import volume occurred in supplementary products, as complementary goods (coffee, cocoa, rubber, etc.) have stayed relatively constant at 4 to 6 million tons. The ratio of supplementary products to total imports (in value terms) shows a modest upward trend since 1950 (see figure 1). A closer look at selected agricultural commodities illustrates the changing demand for imported goods in the United States (table 1).

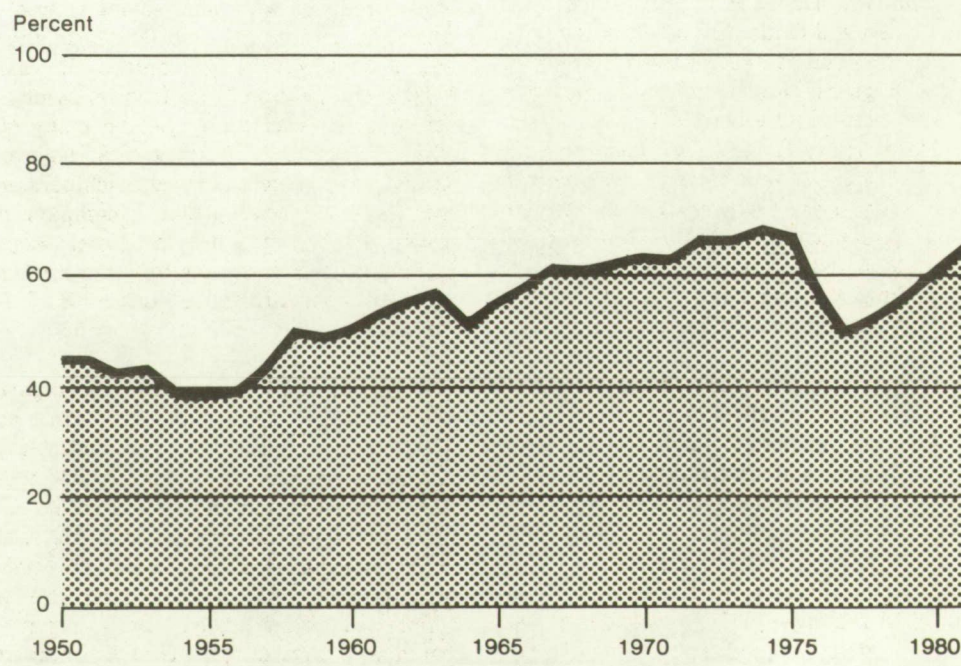
Imports of coffee beans accounted for as much as one-fourth of all U.S. agricultural imports in some years. There are, however, significant downward trends in coffee consumption in the United States, because of both fewer drinkers and fewer cups per day. A 1982 survey by the International Coffee Organization found that 56 percent of Americans drink coffee, compared with 75 percent in 1962,

and the number of cups per drinker had fallen from 4.2 to 3.4 per day. This can be traced back to developments over the past 30 years, such as health concerns and competition from soft drinks, which have taken a share of the beverage market away from coffee. Also, prices shot up dramatically after the Brazilian frost in 1975, losing, perhaps forever, a certain segment of coffee consumers.

Raw sugar imports accounted for about half of the 95 to 100 pounds of sugar consumed per capita between 1960 and 1973. However, since 1973, corn sweeteners, particularly high fructose corn syrup, have taken more than a fourth of the sweetener market away from sugar, forcing domestic and foreign producers to compete for a shrinking market. A price support program for sugar was included in the 1981 Agriculture and Food Act to protect domestic producers. Import fees and duties along with restrictive import quotas are now in effect.

Bananas have become the most con-

Figure 1. Supplementary Imports as a Percentage of Total U.S. Agricultural Imports



sumed fruit per capita in the United States. Over 21 pounds, all of which are imported, are consumed on average by every American each year. Following frosts in Florida, imports of frozen concentrated orange juice climbed to over 328 million gallons in 1982, compared with an annual average of 35 million gallons in the mid-1970's.

The mix of imported cocoa beans and products has changed in the past 10 years. Where the United States once imported about 300,000 tons of cocoa beans and 110,000 tons of cocoa products—such as chocolate—we now import 162,000 tons of products and 192,000 tons of beans. This has happened for a number of reasons. Two of the major exporters, Brazil and Ecuador, have employed certain measures such as export subsidies to increase the level of cocoa products exported vis-a-vis cocoa beans. This was done to capture the "value added" of exporting a ton of cocoa butter at \$5,100 a ton versus exporting the cocoa beans for

only \$1,875 a ton (1981 prices). Also, some U.S. producers, through joint ventures and the formation of subsidiaries, have been able to take advantage of cheaper labor, tax incentives, and export subsidies, by locating processing facilities in exporting countries.

Among the most rapidly growing imports have been wines and beer, reaching \$1.23 billion in 1982, from only \$177 million in 1970. The European Community, with French and Italian wines and Dutch and German beers, accounts for the overwhelming majority of that market.

Regional Growth

Only once since 1950 has Brazil been surpassed as the largest supplier of agricultural commodities to the United States, and that was by Mexico in 1973. The fortunes of Latin America's share in the U.S. market rest to a large extent on these two countries, particularly since the United States imposed an embargo on shipments from Cuba in 1960. Cuba had

supplied approximately three-fourths of all U.S. imported sugar, and consistently ranked among our largest suppliers of agricultural products.

Brazil has developed a diversified export policy over the years and no longer relies on coffee bean sales to the United States for 90 percent of its export revenue as it did in 1950. It now relies on a wider range of commodities, including raw and processed coffee, cocoa beans and products, processed beef, orange juice, sugar cane, nuts, scrap tobacco, and castor oil. In 1980, Brazil was the first country to exceed \$2 billion in annual exports to the United States.

Mexico ships a wide variety of goods to the United States, three-fourths of which are vegetables, coffee, fruits, and cattle.

Other major suppliers in Latin America include the Dominican Republic, Colombia, Argentina, Honduras, Ecuador, Guatemala, and Costa Rica.

Canada and Mexico enjoy a special trade relationship with the United States due to their proximity. Combined, they account for 10 to 15 percent of the U.S. import market. Nearly half of all Canadian exports to the United States are either live animals or fresh and frozen meats.

Table 1. Import Volume of Selected Agricultural Commodities; Averages for Calendar Years 1949-51, 1959-61, 1969-71 and 1979-81

	1949-51	1959-61	1969-71	1979-81
1,000 metric tons				
Complementary				
Coffee, green	1,216	1,351	1,230	1,082
Bananas	1,491	1,581	1,799	2,383
Cocoa beans	286	273	275	189
Cocoa products	17	60	104	173
Tea, crude	NA	51	68	83
Rubber, crude	744	466	592	680
Supplementary				
Red meats	130	400	804	917
Cheese	21	31	67	110
Sugar, cane/beet	3,342	4,067	4,619	4,235
Tomatoes, fresh	185	251	252	286
Tobacco, unmd.	43	72	106	163
Coconut oil	55	78	249	439
Wines and malt liquor ¹	NA	93	218	949

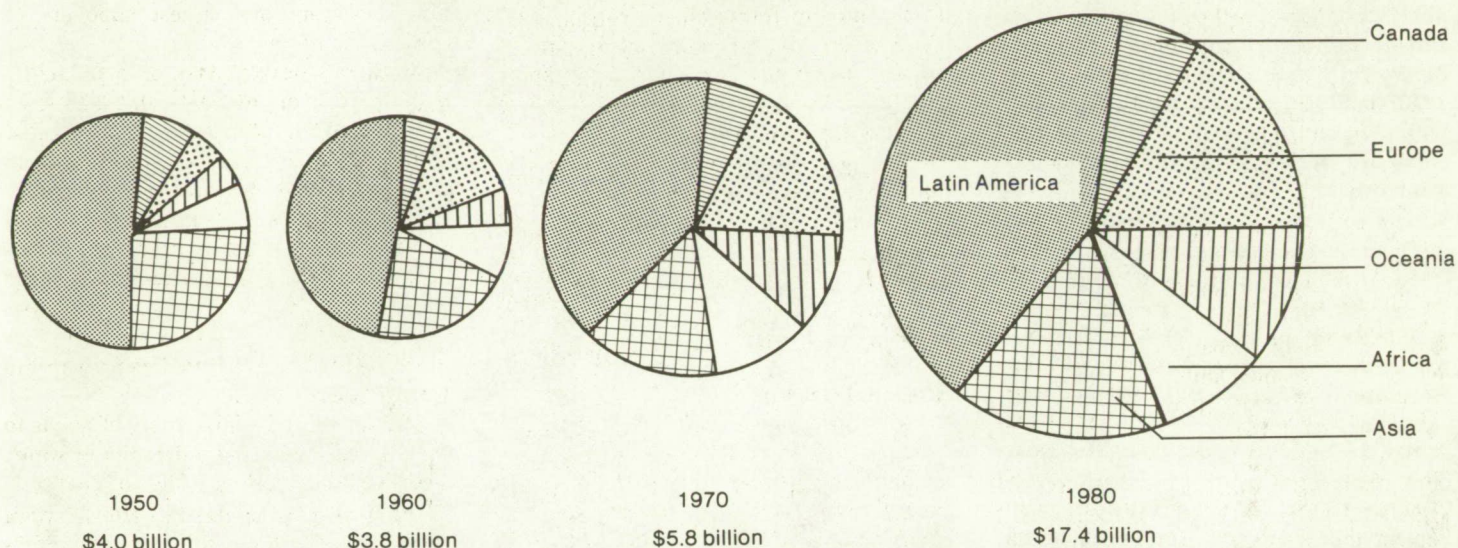
NA = not available.

¹Figures expressed in 1,000 liters. One liter equals 0.264175 gallon.

Table 2. U.S. Per Capita Consumption of Selected Agricultural Products: 1960, 1970, 1980

	1960	1970	1980
Pounds retail weight			
Coffee	11.6	10.4	7.8
Cocoa	2.9	3.1	2.6
Bananas	19.5	17.6	20.8
Sugar	97.6	101.7	83.7
Cheese	8.4	11.5	17.6
Red Meat	144.2	162.2	157.2
Fishery Products	10.3	11.8	12.7
Fresh Vegetables	105.7	99.1	108.3
Fresh Fruit	93.9	81.3	87.4

Figure 2. Regional Shares of U.S. Imports; 1950, 1960, 1970, and 1980



Europe, predominantly Western Europe, has found a large market here for canned hams (Polish and Danish), a wide variety of cheeses, wines, and beers. These specialty products account for over half of U.S. agricultural imports from Europe. Because Western Europe relies so heavily on exports—it is estimated that a third of their Gross National Product is generated by them—it has developed efficient marketing skills that facilitate entry into a new market with a wide range of products.

Australia and New Zealand are among the world's lowest cost dairy and livestock producers due to year-round grazing, moderate temperatures, and limited pressure to develop land for other uses. As a result, even the enormous costs of transporting lean beef to the United States have not proved prohibitive. Sugar, cheese, casein, and wool also make their way into the United States from "Down Under."

Three-fourths of the value of U.S. agricultural imports from Africa are accounted for by coffee, cocoa beans, sugar, and rubber. The Ivory Coast is far and

away the largest African supplier at \$330 million, with 10 other countries shipping \$50 million to \$100 million each to the United States. Although these countries also rely heavily on exports, their transportation and marketing systems are so unwieldy, and they are so tied to Europe, that any expansion of exports, particularly processed goods, to the United States is limited.

Agricultural imports from Asia come mostly from the East, in particular Indonesia, the Philippines, and Malaysia. Here, too, there is a reliance upon unprocessed commodities, such as coffee, rubber, sugar, and tobacco, which account for 45 to 50 percent of total agricultural exports to the United States. However, commodities such as canned pineapples, canned mushrooms, and certain vegetable oils have made significant gains in the U.S. market. In fact, the United States felt compelled to raise the import tariff on canned mushrooms from 13 to 33 percent ad valorem in 1980, for a 3-year period, to aid domestic processors, primarily in Pennsylvania and Delaware.

Outlook

U.S. imports of food and fiber are expected to show relatively slow growth over the next year or two, then pick up in the mid-1980's in response to a brighter outlook for the economy. Import volume has remained relatively stable over the years. Changes in the value of U.S. agricultural imports have been largely dependent on price changes.

Domestic consumption is declining for two of the major imports—coffee and sugar—while a third, rubber, is tied to an ailing automobile industry. Fresh and frozen beef and pork, second after coffee, are limited by quota levels, as are cheese and live animals. Frozen concentrated orange juice imports fluctuate widely depending in part on the Florida orange crop. It appears that the only genuine growth commodities of the top 15 imports are wine, beer, and bananas.

Imports are currently projected to be about \$19 billion to \$20 billion in the mid-1980's. Projections beyond that will hinge on such things as the rate of import substitution, protectionism, and the success (or failure) of various international commodity agreements. □

The Codex Alimentarius Commission—Latin for “code concerned with nourishment”—was set up by the Food and Agricultural Organization (FAO) and the World Health Organization (WHO) in 1962 to negotiate agreements from 122 member countries on international standards and safety practices for foods. These standards and practices are designed to protect consumers against health hazards and fraud, ensure fair practices in the food trade, and facilitate international trade in foods. The Codex standards are minimum safety and hygiene levels that countries voluntarily apply to their exports and imports of commodities directly consumed by humans.

Membership on the Commission is open to all countries that are members or associate members of FAO or WHO. Other countries that are members of the United Nations are allowed to attend Commission meetings as observers. Government officials and industry people from member countries attend the biennial sessions and express their views.

The Commission has 27 committees to draft Codex standards. The six general subject committees deal with permitted and prohibited food additives, limits for pesticide residues, food hygiene, food labeling, methods of analyzing and sampling foods to verify the provisions in Codex standards, and general principles for the Commission. Seventeen commodity committees develop standards for specific groups of foods. Four regional coordinating committees work with groups of countries to promote sharing of food inspection techniques and to establish regional standards for products important to the regions. The United States presently chairs three committees: Food Hygiene; Processed Fruits and Vegetables; and Cereals, Pulses and Legumes.

Developing food standards and codes of practice is an eight-step process to final approval by the Commission. The Commission, or one of its committees, first decides that a food product by virtue of



After the Commission decides that a food product needs a world standard, it directs the appropriate committee to prepare a draft stipulating ingredients, quality, hygienic and labeling requirements, food additives, adulteration limits, and sampling and analysis methods. The proposed draft standard is sent to the member countries for comment. The committee considers the comments and suggestions, incorporates those it agrees

with, and resubmits the proposal to the countries for additional comment. After a second discussion, the committee forwards it to the Commission. If the Commission approves the proposal, it is finalized as a Codex Alimentarius Standard or Code of Practice and submitted to member governments for acceptance.

The Commission invites member governments to adopt Codex standards and codes, but it does not try to influence how governments adopt or enforce regulations. Since its inception, the Commission has distributed 128 standards for acceptance covering infant foods, fruit juices, processed fruits and vegetables, quick frozen foods, fish products, cocoa products and chocolate, nutritive sweeteners, fats and oils, meat products, edible ices (ice cream and ice milk), and milk products.

Member governments can fully accept these Codex commodity standards, issue a target acceptance, accept with specified deviations, or not accept. With a target acceptance, a country states its intention to accept the standard after a stated number of years and, in the meantime, allow imported products meeting those standards to be distributed in the country. As of July 1981, 64 countries had responded to one or more of the 128 standards, for a total of 511 full acceptances, 149 target acceptances, and 148 acceptances with specified deviations.

Adopting a Codex standard is a complicated process in most developed countries. In the United States, the Food and Drug Administration (FDA) has mandatory standards of identity, minimum quality, and fill of container standards (accurate net weight requirements and no excessive empty space in containers) for domestic and imported food products. USDA sets standards for meat and poultry products, and develops voluntary quality standards for meat, poultry, eggs, grains, dairy products, and fresh and processed fruits and vegetables. The U.S. Department of Commerce has a similar program for fish products.

The Codex standards are more inclusive than the U.S. standards. In addition

to formulation standards, minimum quality, and fill requirements, the Codex standards also list specific requirements for the product's label, hygienic requirements, contaminant levels, and analytical methods to verify these standards. These requirements do not appear in U.S. food standards but are in other parts of our food and environmental regulations. If FDA or USDA were to revise a current standard to match the Codex standard, more restrictions might have to be placed on the food product. At the same time, since Codex standards are for minimum quality and safety, FDA or USDA might have to relax some of their standards for imports and domestic food products. FDA and USDA must examine the effects of tightening or relaxing a standard to determine whether consumers and producers would benefit and whether costs for manufacturers and prices for consumers would change. Before making a final decision, FDA and USDA must solicit public comments through a Federal Register notice. Similar considerations and procedures would be used for adopting a standard for a food product not currently regulated by FDA or USDA.

The FDA has completed action on 41 of the 128 Codex standards that have been submitted to governments for acceptance. Another 14 standards are involved in FDA's rulemaking process. Sometimes the Codex standards are not compatible with our agricultural practices, or they are considered too subjective to be legally enforced in the United States. For these reasons, the FDA has not fully accepted any of the Codex standards, but has accepted 19 with specified deviations.

USDA has responsibility for nine Codex standards dealing with cured meat products or edible fats. USDA has not accepted any of the Codex standards regarding these products. U.S. laws only allow meat and poultry products made in foreign plants that have inspection programs equal to our own to be sold in this country. Therefore, foreign inspection programs must also be approved before a meat or poultry product can be imported into the United States.

Member governments also have the option of not accepting a Codex standard for a certain product, but allowing any such product that meets the Codex standard to be sold in their countries. Since Codex standards are internationally agreed upon, countries that require imports to meet these standards cannot be accused of unjustifiably impeding trade. The United States has adopted this alternative for 22 food products.

The Codex Alimentarius Commission has also written 45 Codes of Hygienic and/or Technological Practice for Foods. These codes are especially helpful for developing countries trying to ensure proper processing and hygienic quality of their food supply. The codes are used to train food inspectors, processors, and handlers throughout the world. The Commission's "Code of Ethics for International Trade in Food," aimed at preventing unsafe and substandard food from entering world trade, was issued to governments in 1981.

Food Additives and Pesticide Residues

In the areas of food additives and pesticide residues, the Commission has been very active. The Commission has evaluated the safety of nearly 400 food additives and recommended maximum levels for them in foods. Through 1981, the Codex Committee on Pesticide Residues (CCPR) looked at maximum residue levels for 122 pesticides in a wide variety of foods, resulting in about 1,700 Codex proposals for tolerance levels.

Countries have three options for accepting maximum pesticide residue limits: full acceptance, where a government agrees to apply the CCPR tolerance to both imported and exported foods; limited acceptance, where a government will apply the tolerance only to imported foods but cannot apply a more stringent, lower tolerance to imports than to exports; and target acceptance, where a government states that it will give full or limited acceptance at some future date.

There are also three categories of nonacceptance: nonacceptance/free distribution—products complying with the

CCPR tolerance may be distributed freely in the country; nonacceptance/conditional distribution—products complying with the tolerance may be distributed under certain conditions within the country; and nonacceptance/no distribution—products complying with the tolerance cannot be distributed in the country.

The U.S. Environmental Protection Agency (EPA), which sets pesticide residue limits in foods, has examined 883 Codex proposals that affect U.S. tolerances for 1,489 chemical/food product combinations. The EPA has fully accepted 20 percent of the CCPR tolerance proposals, most of which match current U.S. tolerance levels, and has given 37 percent nonacceptance/free distribution status. The Codex tolerances in this category are lower (more strict) than their U.S. counterparts, and while we do not require our domestically produced foods to have this lower level of pesticide residue proposed by the CCPR, the EPA found no reason to keep these foods out of the United States. Nonacceptance with free distribution promotes the Commission's goal of easing international trade because foods with this status that meet the CCPR tolerance would not be barred from a country.

The EPA has given 8 percent of the CCPR tolerances nonacceptance/conditional distribution, and the remaining 35 percent have nonacceptance/no distribution status. This last set of tolerances was rejected either because EPA did not agree with them, or because the food product is not sold in the United States.

CCPR tolerances can differ from U.S. tolerances, or maximum residue levels, because of different agricultural practices underlying the two tolerances. The EPA has set U.S. tolerances to indicate what the agency considers the proper use of pesticides, and raising U.S. tolerances may not preserve this watchdog feature. Lowering a tolerance may require U.S. farmers to change their pesticide use. The EPA tries to comment on each of the 200 to 300 tolerance proposals that are

drafted each session and present supporting or challenging data to the CCPR.

The Commission has also studied food irradiation—a process where food is deinfested or sterilized by exposure to gamma rays or X-rays (see "Food Irradiation Hinges on Approval, Feasibility, and Acceptance" in *NFR-20*). In 1979, the Commission adopted a General Standard for Irradiated Foods, and a Code of Practice for Operating Food Irradiators.

Developing Countries

The work of the Codex Alimentarius Commission is especially valuable to developing countries that have ineffective or minimal domestic food safety and quality programs. The hygiene practices and handling and storage techniques recommended by the Commission would reduce some of the spoilage losses developing countries experience. Inadequate hygiene practices in food processing and handling can also cause importing countries to reject the developing country's products. If developing countries guarantee that their food exports meet the standards and codes of practice recommended by the Commission, importers are assured of the foods' composition and quality.

Without laws regulating the quality and safety of imported foods, these developing countries are vulnerable targets for inferior and unfit foods. Developing countries use the Codex codes of practice to train food inspectors to catch adulterated foods. International standards for safe and wholesome foods would lessen the incidence of this inferior food dumping. For these and other reasons, developing countries constituted the majority of countries initially accepting Codex standards.

International food standards also ease trade between countries by removing national differences in formulations and labeling that block trade. Exporters selling food products tailored to the standards and requirements of one country cannot easily reformulate their products for sale to a country with a different set of requirements. In this way, exporters are

prevented from quickly responding to world market conditions.

Some exporting countries complain that the developed countries are not adopting the Codex standards quickly enough. The stricter standards of developed countries serve as nontariff barriers for imported food products that might take away sales from domestic producers. Countries with protected agricultural sectors may be hesitant to relinquish their nontariff barriers. If a country is subsidizing domestic producers by buying excess food products, it does not want cheaper imports to displace domestic food products and add to the amount it must purchase.

Much of the initial work of the Commission is nearing completion as the committees finish developing standards for foods that need world models. Six committees have adjourned without fixing a date for their next meeting. Other committees are working on the more exotic, low-volume foods. Now the work of the Codex Alimentarius Commission is to encourage countries to adopt the Codex standards and codes of practice. The Commission must also amend published standards when new technological advances or discoveries warrant.□

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Nutrient Content of the National Food Supply, 1981

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Nutrient levels in the Nation's food supply in 1981 were similar to those in 1980. The per capita per day levels for niacin, vitamin A, and vitamin B₁₂ were 1 to 3 percent higher, and levels for thiamin and ascorbic acid were slightly lower. Levels for food energy (calories) and the other nine nutrients did not change appreciably. However, over the longer period between 1967-69 and 1981, levels of almost all nutrients changed, ranging from a 12-percent increase in ascorbic acid to a 6-percent decrease in calcium. Increases in fat and carbohydrate levels raised the level of food energy about 3 percent between 1967-69 and 1981.

The historical series "Nutrient Content of the U.S. Food Supply" measures changes that have occurred in the American diet since 1909. This series is compiled by the Human Nutrition Information Service (HNIS) of USDA. HNIS researchers use annual USDA data on the quantity of foods available for consumption and their nutrient composition to derive per capita levels of food energy and 14 nutrients. The amounts of food available for consumption are determined by subtracting exports, yearend inventories, nonfood use, and military procurement from production, imports, and beginning inventories. Per capita consumption in 1981 was discussed in *NFR-20*.

Nutrient Levels in 1980 and 1981

Changes were minimal for food energy and nine nutrients—protein, fat, carbohydrate, calcium, phosphorus, iron, magnesium, riboflavin, and vitamin B₆ (table 1). However, changes did occur in the amounts of these nutrients contributed by individual foods within the major food groups, but such changes tended to offset each other. For example, the decline in protein from decreased use of pork was offset by increased use of poultry, beef, and other meats.

Among the nutrients showing an increase, vitamin B₁₂ showed the largest gain—3 percent. This rise is attributed to increased use of fish and shellfish, especially clams, which are a relatively rich source of vitamin B₁₂. A small increase

in use of edible offal also contributed to the rise in vitamin B₁₂ and to vitamin A as well. However, the 2-percent higher level of vitamin A in 1981 was due primarily to increased use of tomatoes, canned sweetpotatoes, and certain dark-green and deep-yellow vegetables. These foods are concentrated sources of vitamin A and even a slight variation in their use has an impact on the level of this vitamin in the food supply.

The 1-percent increase in niacin may be attributed to increased use of nuts, poultry, and tomatoes. Gains in niacin from these foods more than compensated for the loss due to the decreased use of pork.

The decline in the ascorbic acid level between 1980 and 1981 reflected the 12-

and 29-percent drop in use of fresh and chilled citrus products, respectively, and the 13-percent drop in use of fresh potatoes. Vegetables, excluding potatoes, are second to fruits as a source of ascorbic acid (table 2). Nevertheless, gains in the level of this vitamin from increased use of tomatoes and some fresh and frozen dark-green vegetables did not offset the loss of ascorbic acid from decreased use of citrus products and white potatoes.

The lower level for thiamin resulted from a 5-percent decline in use of pork, one of the best sources of this vitamin. Some other foods, such as dried beans, dried peas, nuts, and soy products, are more concentrated sources of thiamin on a per pound basis, but use of these foods is relatively small compared with pork.

Table 1. Nutrients Available for Consumption, Per Capita Per Day¹

Nutrient (unit)	1981 as a percent of:					
	1909-13	1967-69	1980	1981	1967-69	1980
Food energy (kcal)	3,460	3,310	3,400	3,420	103	100
Protein (g)	100	100	100	100	100	100
Fat (g)	124	157	162	163	104	100
Carbohydrate (g)	489	381	393	395	104	100
Calcium (g)	0.76	0.94	0.88	0.88	94	100
Phosphorus (g)	1.51	1.54	1.48	1.48	96	100
Iron (mg)	15.0	16.8	16.9	17.0	101	100
Magnesium (mg)	400	344	331	332	96	100
Vitamin A value (IU)	7,600	8,100	8,000	8,100	101	102
Thiamin (mg)	1.62	1.96	2.16	2.13	109	99
Riboflavin (mg)	1.78	2.31	2.32	2.32	100	100
Niacin (mg)	18.9	23.8	25.8	26.0	109	101
Vitamin B ₆ (mg)	2.15	1.95	1.98	1.98	102	100
Vitamin B ₁₂ (mcg)	8.2	9.5	9.0	9.2	97	103
Ascorbic acid (mg)	104	108	123	121	112	98

¹Quantities of nutrients computed by Human Nutrition Information Service, Consumer Nutrition Center, on the basis of estimates of per capita civilian food consumption (retail weight), prepared by the Economic Research Service. Includes estimates of produce from home gardens. No deduction made in nutrient estimates for loss or waste of food in the home, use for pet food, or for destruction or loss of nutrients during the preparation of food. Data include iron, thiamin, riboflavin, and niacin added to flour and cereal products; other nutrients added primarily as follows: Vitamin A value to margarine, milk of all types, flavored milk extenders; vitamin B₆ to cereals, meal replacements, infant formulas; vitamin B₁₂ to cereals; ascorbic acid to fruit juices and drinks, flavored beverages and dessert powders, flavored milk extenders, and cereals. Percentages based on unrounded data.

Table 2. Contribution of Major Food Groups to Nutrient Levels, 1967-69 and 1981

Food group	Food energy	Protein	Fat	Carbohydrate	Calcium	Phosphorus	Iron	Magnesium	Vitamin A value	Thiamin	Riboflavin	Niacin	Vitamin B ₆	Vitamin B ₁₂	Ascorbic acid
Percent															
1967-69															
Meat, poultry, and fish	21.3	41.4	37.3	0.1	3.9	26.8	31.6	13.0	22.5	30.4	23.1	47.4	40.1	69.2	2.0
Eggs	2.2	5.7	3.2	0.1	2.5	5.9	6.1	1.4	6.5	2.5	5.7	0.2	2.5	9.3	0
Dairy products, excluding butter	11.2	22.0	12.3	7.0	75.4	35.8	2.3	21.8	12.2	9.2	41.8	1.6	11.5	20.4	4.5
Fats and oils, including butter	16.9	0.1	40.1	(1)	0.4	0.2	0	0.4	8.2	0	0	0	0.1	0	0
Citrus fruits	0.8	0.4	0.1	1.6	0.8	0.6	0.8	1.9	1.3	2.3	0.5	0.7	1.2	0	23.9
Noncitrus fruits	2.3	0.6	0.2	5.0	1.2	1.1	3.8	4.0	6.2	1.9	1.6	1.8	6.6	0	12.2
Potatoes and sweetpotatoes	2.9	2.3	0.1	5.4	1.0	3.6	4.3	7.3	5.7	5.1	1.6	6.6	10.8	0	16.2
Dark-green, deep-yellow vegetables	0.2	0.4	(1)	0.5	1.6	0.6	1.7	2.0	20.4	0.9	1.1	0.6	2.0	0	9.0
Other vegetables, including tomatoes	2.4	3.3	0.4	4.6	4.8	4.9	9.6	10.3	15.4	6.6	4.6	5.8	10.6	0	30.2
Dry beans and peas, nuts, soy products	2.9	5.0	3.5	2.1	2.6	5.7	6.6	10.9	(1)	5.2	1.8	6.5	4.7	0	(1)
Grain products	19.9	18.3	1.4	36.4	3.4	12.6	29.7	18.2	0.4	35.9	17.5	23.4	9.8	1.2	0
Sugars and other sweeteners	16.2	(1)	0	36.5	1.2	0.2	0.7	0.2	0	(1)	0.1	(1)	0.1	0	(1)
Miscellaneous ²	0.8	0.4	1.4	0.7	1.1	2.0	2.9	8.5	1.3	0.1	0.8	5.2	0.1	0	2.0
1981															
Meat, poultry, and fish	20.8	43.0	35.8	0.1	4.2	28.6	31.0	14.1	22.0	27.3	22.9	45.5	40.8	71.7	2.0
Eggs	1.8	4.8	2.6	0.1	2.3	5.1	5.0	1.2	5.4	1.9	4.8	0.1	2.0	8.1	0
Dairy products, excluding butter	10.0	20.7	11.4	5.6	71.6	33.1	2.5	20.0	12.3	7.2	36.5	1.2	10.8	18.6	3.2
Fats and oils, including butter	18.4	0.1	43.3	(1)	0.4	0.2	0	0.4	7.9	0	0	0	0.1	0	0
Citrus fruits	1.0	0.5	0.1	2.0	1.0	0.8	0.8	2.4	1.6	2.7	0.5	0.8	1.4	0	26.9
Noncitrus fruits	2.3	0.7	0.4	4.9	1.4	1.3	3.9	4.6	5.9	1.9	1.8	1.8	7.4	0	12.3
Potatoes and sweetpotatoes	2.7	2.3	0.1	5.2	1.0	3.6	4.6	7.1	4.6	4.6	1.4	6.0	9.4	0	13.3
Dark-green, deep-yellow vegetables	0.3	0.5	(1)	0.5	1.8	0.8	1.8	2.3	20.6	0.9	1.3	0.6	2.3	0	10.7
Other vegetables, including tomatoes	2.5	3.3	0.4	4.7	5.2	5.1	9.9	10.8	17.0	6.3	4.7	5.7	10.7	0	28.1
Dry beans and peas, nuts, soy products	2.7	4.8	3.5	1.7	2.6	5.5	5.8	10.8	(1)	4.4	1.7	5.9	4.2	0	(1)
Grain products	20.1	19.0	1.3	36.5	3.8	13.4	31.6	19.3	0.4	42.7	23.7	28.8	10.8	1.6	0
Sugar and other sweeteners	17.1	(1)	0	38.2	3.7	0.8	0.7	0.2	0	(1)	(1)	(1)	(1)	0	(1)
Miscellaneous ²	0.6	0.4	1.2	0.5	0.9	1.6	2.3	6.8	2.3	0.1	0.6	3.4	0.1	0	3.4

¹Less than 0.05 percent.²Includes coffee, chocolate liquor equivalent of cocoa beans, and fortification of products not assigned to a food group.

Nutrient Levels in 1967-69 and 1981

Changes in nutrient levels tend to be greater over a longer period of time than from year to year. A comparison of nutrient levels for 1981 with those for 1967-69 indicates increases for food energy, fat, carbohydrate, iron, vitamin A, thiamin, niacin, vitamin B₆, and ascorbic acid; and decreases for vitamin B₁₂, magnesium, phosphorus, and calcium. Levels for protein and riboflavin changed little or none during this period.

The level of ascorbic acid in the food supply showed the largest increase. One-half of the 12-percent increase was due to greater use of frozen and canned citrus juice, up 60 and 36 percent, respectively. Increased use of tomatoes, dark-green and deep-yellow vegetables, and fortified fruit juices and fruit drinks also contributed to the higher level of ascorbic acid.

The next largest increases were for niacin (9 percent) and thiamin (9 percent). These two vitamins, along with riboflavin and iron, are nutrients added to enrich grain products. Higher standards for vitamin enrichment of certain grain products became effective in 1975, making a significant impact on the levels of these B-vitamins. However, between 1967-69 and 1981, the increase in riboflavin due to enrichment was offset by a sizable drop in use of dairy products—primarily fluid whole milk—which are the leading source of this vitamin. The continued enrichment of grain products with iron and the 37-percent rise in poultry use made a substantial contribution to the slightly higher iron level in the food supply. Greater use of poultry also contributed to the higher niacin level.

Although the protein level remained unchanged between 1967-69 and 1981, the other two energy-yielding nutrients, fat and carbohydrate, each rose by 4 percent, subsequently raising the level of food energy by 3 percent. The 46-percent increase in use of salad and cooking oils during this period provided an increase in fat that was considerably larger than the decline from dairy products and eggs.

Table 3. U.S. Food Supply: Fat Contributed by Major Food Groups, Per Capita Per Day

Year	Fats, oils		Meat, poultry, fish		Dairy products		Other foods		Total ¹	
	Grams	Per-cent	Grams	Per-cent	Grams	Per-cent	Grams	Per-cent	Grams	Per-cent
1909-13	46.1	37	46.4	37	18.2	15	13.7	11	124.5	100
1947-49	52.6	37	46.8	33	24.9	18	16.7	11	141.0	100
1967-69	62.9	40	58.5	37	19.3	12	16.2	10	157.0	100
1981	70.5	43	58.2	36	18.5	11	15.5	10	162.7	100

¹Components may not add to total because of rounding.

The higher level of carbohydrate was attributed to use of certain sugars and sweeteners, and grain products. Between 1967-69 and 1981, the use of corn syrup rose from 16 to 55 pounds per capita, more than offsetting the decline resulting from the 20-percent drop in the use of sucrose (table sugar). The increase in carbohydrate from sugars and sweeteners was about double the increase provided by grain products. Carbohydrate from other major food groups declined, but the decreases were too small to offset the gains.

Levels of vitamin A and vitamin B₆ increased slightly between 1967-69 and 1981. The rise in vitamin A resulted from small changes within the vegetable group, especially the slightly higher use of some tomato products. The increase in vitamin B₆ was provided equally by the meat, poultry, fish group (chiefly poultry) and noncitrus fruits.

Between 1967-69 and 1981, the levels of vitamin B₁₂, magnesium, phosphorus, and calcium in the food supply declined. The 39-percent drop in use of fluid whole milk, which was only partially offset by increased use of lowfat milks and cheese, was primarily responsible for the decline in these nutrients. The lower level for

vitamin B₁₂ was also attributed to decreased use of eggs. A marked decline in use of coffee and cocoa, concentrated sources of magnesium, contributed significantly to the lower level of this mineral.

Trends in Dietary Fat

Fat is an important part of the diet of all individuals. It serves as a source of energy and essential fatty acids and as a carrier for the fat-soluble vitamins A, D, E, and K. In addition, fat in the diet enhances the flavor of food and promotes a feeling of satiety by delaying digestion. Approximately 90 percent of the fat in the American diet comes from three major food groups—fats and oils; meat, poultry, fish; and dairy products, but in varying proportions (table 3). The desirable amount of fat and its sources are currently subjects of considerable controversy. Researchers at HNIS have analyzed national food supply data for trends in the amounts and sources of fat during this century.

Nutrient fat in the national food supply includes fat from all sources—fat naturally present in foods such as meats, milk, and nuts, as well as fat used for

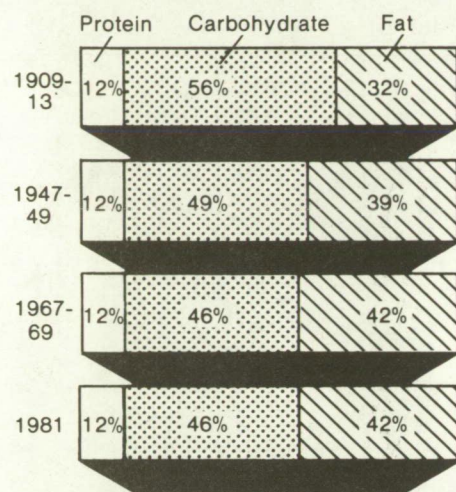
Figure 1. U.S. Food Supply: Sources of Energy

table spreads, cooking, and in the manufacture of food products. Between 1909-13 and 1981, the fat level of the food supply increased 31 percent, and the proportion of calories provided by fat increased from 32 to 42 percent (figure 1). Conversely, the proportion of calories from carbohydrate declined, while that from protein remained relatively stable at 12 percent. The increase in total fat is attributed to a twofold gain in fat from vegetable sources. On the other hand, fat from animal sources declined slightly—8 percent (figure 2).

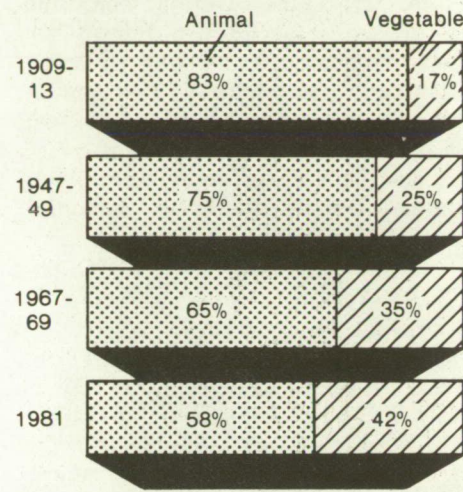
Fats and oils group—For 1909-13, this group and the meat, poultry, fish group provided almost equal proportions of fat in the food supply. Soon after, the fats and oils group became the leading source of fat, a position maintained throughout the years. In 1981, the fats and oils group accounted for 43 percent of the fat in the food supply, 6 percentage points higher than in 1909-13.

The fats and oils group includes butter, margarine, lard, shortening, edible beef

fat, and edible oils. Butter and margarine reversed their positions as sources of fat in the food supply between 1909-13 and 1981, reflecting the trend toward greater use of vegetable fats (table 4). Butter was the chief single source of fat in the fats and oils group at the beginning of the century and the leading table spread until the mid-1950's. Between 1909-13 and 1981, fat from butter declined 75 percent, while fat from margarine increased sevenfold. The use of margarine exceeded that of butter for the first time in 1957, when their respective contributions of fat in the group were 16 and 15 percent. Thereafter, the proportion of fat provided by margarine remained about 16 to 17 percent and that by butter continued downward. The increase in use of margarine, however, did not equal the decline in use of butter. Therefore, between 1909-13 and 1981 the total amount of fat from these two table spreads declined 19 percent.

The cooking fats—lard and shortening—accounted for the largest proportion of fat in the fats and oils group from the beginning of the century until 1975, when edible oils provided an equal proportion of the fat in the group. Direct use of lard excludes small quantities of lard used as an ingredient in other fat products such as margarine and shortening. In addition to lard, small amounts of edible beef fat are also used in the manufacture of some margarines and shortenings. Advances in technology that made edible beef fat more adaptable for use in commercial preparations have increased the use of this item. For most years during the first half of the century, direct use of lard exceeded use of shortening, but after 1954, the trend reversed. In 1981, use of lard accounted for 4 percent of the fat in the group; use of shortening, for 33 percent.

Edible oils are used chiefly as salad and cooking oils, but some also are used as ingredients in other foods, such as toppings and cream substitutes. Edible oils were largely responsible for the overall increase in the fat in the fats and oils group, as well as contributing substan-

Figure 2. U.S. Food Supply: Animal vs. Vegetable Fat

tially to the increase in vegetable fat. By 1975, these edible oils were the leading source of fat in the fats and oils group. The growth in use of edible oils (especially soybean oil, which represented 80 percent of the oils used in 1981) reflects several factors, such as improved processing methods and perhaps a preference for liquid oils in place of solid fats by industry and consumers. Some of the increase since the late 1950's may be related to the growth of the fast food industry and to the increased use of convenience and snack foods, many of which are fried in oil or contain oil.

Meat, poultry, fish group—In 1981, this food group accounted for 36 percent of fat in the food supply. Over the years, pork has remained the major source of fat among the foods in the meat, poultry, fish group, though its share declined from 60 to 51 percent between 1909-13 and 1981 because of the marked increase in fat from the use of beef and poultry (table 5). Beef is second to pork, provid-

ing 30 percent of the fat in this group in 1981, compared with 38 percent in 1976, a peak year for beef use, and 25 percent at the beginning of the century. The other meats—veal, lamb and mutton, edible offal, and game—accounted for only 3 percent of the fat in this food group in 1981, compared with 7 percent in 1909-13.

Fat from poultry more than tripled between 1909-13 and 1981, with nearly all of the increase occurring after 1947-49. Use of chicken, the largest component of poultry, increased from 15 to 52 pounds per capita between 1909-13 and 1981. In addition, changes in breeding and feeding practices during the 1960's contributed to a higher fat content of chicken.

Fish and shellfish provided a low and relatively stable 2 to 3 percent share of the fat in the meat, poultry, fish group. Both the use and the fat content of fish and shellfish are low compared with that of meat and poultry.

Dairy product group—Fat from dairy products was almost the same in 1981 as in 1909-13 (table 6). However, the proportion of fat in the food supply provided by dairy products declined from 15 to 11 percent during that period. Fluid whole milk, the major component of the group in terms of use, was the leading source of

Table 4. Fats and Oils Group: Fat Contributed by Components, Per Capita Per Day

Year	Table spreads				Cooking fats				Salad, Cooking oils		Total ³	
	Butter		Margarine ¹		Lard ²		Shortening ¹					
	Grams	Per-cent	Grams	Per-cent	Grams	Per-cent	Grams	Per-cent	Grams	Per-cent	Grams	Per-cent
1909-13	17.7	38	1.5	3	14.7	32	10.4	23	1.9	4	46.1	100
1947-49	10.6	20	5.7	11	15.4	29	11.9	23	9.0	17	52.6	100
1967-69	5.6	9	10.7	17	6.6	10	20.4	32	19.7	31	62.9	100
1981	4.5	6	11.1	16	3.2	4	23.0	33	28.8	41	70.5	100

¹Includes small amount of fat from lard and beef fat.

²Excludes lard used in some margarine and shortening.

³Components may not add to total because of rounding.

Table 5. Meat, Poultry, Fish Group: Fat Contributed by Components, Per Capita Per Day

Year	Pork		Beef		Other meats		Poultry		Fish		Total ¹	
	Grams	Per-cent	Grams	Per-cent	Grams	Per-cent	Grams	Per-cent	Grams	Per-cent	Grams	Per-cent
1909-13	28.0	60	11.6	25	3.3	7	2.3	5	1.2	3	46.4	100
1947-49	28.9	62	11.2	24	3.1	7	2.7	6	1.0	2	46.8	100
1967-69	30.5	52	18.6	32	2.2	4	5.6	10	1.5	3	58.5	100
1981	29.6	51	17.8	30	1.6	3	7.6	13	1.7	3	58.2	100

¹Components may not add to total because of rounding.

Table 6. Dairy Products Group: Fat Contributed by Components, Per Capita Per Day

Year	Whole		Fluid milks, cream Lowfat		Cream		Processed Milks		Ice cream, Frozen desserts		Cheese		Total ¹	
	Grams	Percent	Grams	Percent	Grams	Percent	Grams	Percent	Grams	Percent	Grams	Percent	Grams	Percent
1909-13	10.9	60	0.3	1	4.5	25	0.7	4	0.3	1	1.6	9	18.2	100
1947-49	14.2	57	0.3	1	3.2	13	2.2	9	2.4	9	2.8	11	24.9	100
1967-69	9.8	51	1.0	5	1.1	6	1.0	5	2.4	13	4.0	21	19.3	100
1981	5.7	31	2.0	11	0.8	4	0.6	3	3.0	16	6.5	35	18.5	100

¹Components may not add to total because of rounding.

American Eating Places

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fat in the group from 1909-13 until 1980. However, fat from whole milk has declined substantially because of a smaller proportion of children in the population in the last decade, the increased use of other beverages, such as lowfat milks and soft drinks, and perhaps consumer concern about weight reduction and other health issues.

In 1980, cheese narrowly surpassed whole milk to become the leading source of fat in the dairy product group for the first time. Between 1909-13 and 1981, per capita use of cheese rose from 5 to 23 pounds per year, with most of the increase occurring within the last two decades. In 1981, cheese contributed 35 percent of the fat from dairy products.

Frozen desserts, lowfat milks, cream, and processed milks, in that order, were the other major sources of fat from the dairy product group in 1981. In the first half of the century, fat from the frozen desserts and processed milks increased sharply; fat from cream began to decline; and fat from lowfat milks remained stable. But beginning with 1947-49, fat from processed milks and cream declined markedly, and fat from lowfat milks increased. In 1981, lowfat milks, despite their low fat content, provided 11 percent of the fat in this group. This contribution was particularly noteworthy since in 1909-13, these milks contributed less than 2 percent of the fat from the dairy group. Consumer concern about dietary fat may be a contributing factor in this apparent shift from whole to lowfat milks.

Over the years, foods other than fats and oils; meat, poultry, fish, and dairy products have contributed about 10 percent of the fat in the food supply. Grains and eggs each accounted for 4 percent in the early years, compared with 1 and 3 percent, respectively, in 1981. Dried beans, dried peas, nuts, and soy products accounted for almost the same proportion of total fat in 1981 (3 percent) as in 1909-13 (2 percent). Fruits and vegetables contributed negligible amounts of fat despite relatively high use. □

Americans are spending more of their food dollar to "eat out" today than they did two decades ago. In 1981, Americans spent 37 cents of each food dollar at sitdown service restaurants, fast food outlets, and other foodservice operations. In 1960, it was 26 cents. Family buying power has increased with rising per capita income, more multiple-earner households, and smaller households. U.S. food expenditures totaled \$320 billion in 1981, of which \$120 billion was for food purchased away from home, compared with \$72 billion and \$19 billion in 1960.

The mix of eating places is changing as well. "Eating places" are establishments that derive revenue mainly from the sale of meals and snacks. Such places account for 56 percent of the retail value of all food consumed away from home (see box). Fast food eating places, which increased from 39,650 to 122,552 outlets between 1963 and 1982, netted much of the gain in foodservice sales. In 1963, about 1 in 7 eating-place dollars found its way into fast food outlets. Today, 2 in 5 eating-place dollars are spent in such outlets. Franchised firms, prevalent in the fast food domain, also now receive approximately 2 in 5 eating-place dollars.

Changes also are occurring in ownership patterns. Chains now control about 33 percent of eating-place sales, compared with 11 percent in 1963. Independents, which still account for half of eating-place sales, accounted for 80 percent in 1963. Restaurant diners—establishments which usually provide waiter-waitress service at counters and booths—accounted for 23 percent of all eating places 15 years ago and now comprise less than 10 percent.

And outlets also are increasing volume. The sales-per-eating-place average has grown about 1.2 percent annually since 1963, after adjustment for inflation. Fast food places grew twice as fast as non-fast food places, at 2.5 percent annually.

Such changes have profoundly altered the nature of the foodservice industry and have transformed the mix of foods consumed away from home, the types of services provided to patrons, the compo-

sition of the foodservice labor force, and the efficiency of the food delivery system.

Growth in Fast Foods

Growth in fast food outlets has significantly outpaced that of other types of eating places and has substantially exceeded population and income increases. Fast food outlets are limited-menu eating places that primarily offer drive-up or carryout services, or counter purchases with seating or standup facilities for eating located elsewhere on the premises. They currently account for about 45 percent of all eating places, up from 22 percent in 1963.

Fast food sales in 1982 were \$34 billion, or 39 percent of total eating-place sales. Sales at fast food places have increased at an average annual rate of 16 percent since the mid-1960's, compared with 10 percent for all eating places.

Many fast food outlets are small operations and, therefore, their sales-per-establishment average is only three-quarters that for all other eating places, \$280,000 compared with \$367,000. And yet, sales per fast food outlet increased at a faster rate than sales per other eating places between 1963 and 1977—10.7 percent versus 8.3 percent per year.

However, since 1977, fast food outlets have not fared as well, according to ERS estimates, with sales per establishment rising an average 6.5 percent compared with 8.2 percent for other eating places. For two reasons, this disparity belies the strength of the fast food sector whose total sales have outpaced those of other eating places since 1977.

The closing of many diners with low sales volumes (and the construction of fewer but larger restaurants) has boosted the sales-per-establishment average for non-fast food eating places. The fast food segment, with a higher-than-average percentage of outlets built since 1977, was particularly hard pressed to establish customer bases and to build sales at these new outlets during a period of slow industry growth. Real (adjusted for inflation) annual sales at eating places grew at an

Table 1. Meal and Snack Sales-Away-from-Home

	Percent of total	Percent of sector
Foodservice industry sector		
Industry total	100.0	N/A
Public sector	75.2	100.0
Eating places ¹	56.4	75.1
Other	18.8	24.9
Institutional sector	24.8	100.0
Schools	7.2	28.8
Hospitals	4.3	17.3
Other institutions	13.3	53.9

NA = not applicable.

¹Eating places (SIC 5812 with payroll) are retail establishments that derive most of their revenue from sales of prepared meals and snacks for on-premise or immediate consumption. Eating facilities that are subordinate parts of other kinds of businesses (for example, a hotel restaurant or bowling alley snack bar) are excluded from eating places unless they are leased to and run by outside operators; otherwise, they are included under Other.

Source: Economic Research Service, USDA.

average rate of only 1 percent from 1977 to 1982, compared with 4.2 percent from 1963 to 1977. With more new outlets and the U.S. consumer's preference for convenience, the fast food industry is positioned to further increase its share of the eating-place market.

Franchising has become a popular vehicle for foodservice growth, mushrooming from 33,000 outlets in 1970 to 60,000 in 1980. The relationship between franchising and fast foods is close; about 80 percent of franchised eating places currently provide fast food service.

Franchising enables the parent firm to expand its operations with limited capital investment. A franchisee makes an initial investment for the right to conduct business under the franchise logo and continues to pay a royalty and advertising fee to the parent firm of roughly 7 percent of gross sales. A franchise enables the independent owner (the franchisee) to enter the foodservice business with limited experience and managerial information. However, franchise arrangements tend to restrict managerial discre-

tion in procurement, menu offerings, and sales practices. Also, a franchise is likely to require a sizable investment. For example, the total investment for one major hamburger franchise is \$500,000 plus. But the amounts specified by other firms may vary substantially, depending upon land, building, and equipment costs. The franchisee, who actually owns and operates the outlet, agrees to maintain specific uniform products, services, and practices in the operation of the business. Both franchisor and franchisee can operate one or many eating places.

Increase in Multi-Unit Firms

Foodservice chains—firms with 11 or more outlets—are growing in number and importance. But single-unit firms (including those operating under a franchise and independently) still account for a greater number of outlets and a larger proportion of eating-place sales, although their share in both categories is declining rapidly. Single units accounted for 80 percent of sales in 1963, 66 percent in 1972, and an estimated 53 percent in 1982.

Chains captured most of the market share lost by single-unit firms, increasing their own share from 11 percent in 1963 to an estimated 33 percent in 1982. Sales by chains would have shown an even larger increase if the sales by single-unit firms operating under a franchise had been included with franchise chains. Instead, such sales are categorized in the single-unit group. Single-unit firms affiliated with but not owned by McDonald's, Burger King, or Wendy's, for example, are grouped with independent single-unit firms rather than with the chains with whom they are affiliated. Single-unit franchise establishments typically operate more like outlets of chains than as independents; that is, they use trademarks, uniform identification symbols and store-fronts, and standardized prices and products. Franchise-affiliated firms account for roughly one-fifth of single-unit sales.

Sales per establishment increased at a faster rate for single-unit firms than for chains during each of the census periods from 1963 to 1977. Between 1977 and 1982, however, the chains' sales per establishment grew faster. Single-unit firms performed relatively well prior to 1977, when overall industry growth was exceptional, but subsequently faltered in the wake of a sluggish economy and a declining rate of increase in disposable personal income.

Chains enjoy certain efficiencies and cost advantages over independents that better equip them to attract customers during periods of slow economic growth, when competition intensifies. Costs for advertising and promotion, purchasing, inventory control, accounting, administration, and others are distributed over all outlets of the chain but must be borne by the independent alone.

Currently, the sales-per-establishment average of chains, \$688,000, is triple that of single-unit firms and 13 percent above that for firms with 2 to 10 outlets. Between 1977 and 1982, firms with 2 to 3 outlets experienced the greatest increase in average sales per establishment (up 77

percent), followed by firms with 4 to 10 outlets (65 percent), chains (62 percent), and single-unit firms (54 percent). The figure for single-unit firms has been buoyed by the rapid decline in the number of establishments with low sales volumes and by the inclusion of franchise-affiliated firms.

The exceptional rate of increase in per-establishment sales of firms with 2 to 10 outlets may have been due to their ability to draw customers by projecting a unique restaurant personality, motif, or theme. Furthermore, they are small enough to exercise direct control over each of their outlets and adapt quickly to changing market conditions and consumer preferences. And yet, they are large enough to gain advantage of size in purchasing and advertising. This group of firms accounts for less than 15 percent of sales of eating places.

The Significance of Change

Changes in industry structure and organization have had a varied impact on the demand for agricultural products and the manner in which they are processed, packaged, and marketed. Growth in the size of foodservice firms since 1963 has been phenomenal: several firms have grown sevenfold or more in sales volume even after allowing for inflation.

The purchasing power of large firms enables them to impose standards and conditions on their suppliers. For example, they may establish the lean content in hamburger patties, the type and amount of breading on fish and chicken, the variety and moisture content of potatoes used to make french fries, the portion size of syrup and catsup containers, and levels for steak tenderization. Farmer marketing cooperatives and other suppliers who recognize the special requirements of foodservice firms and are able to adapt to these needs gain an advantage.

In 1981, about 62 billion pounds of food and nonalcoholic beverages were consumed away from home, up from 49 billion pounds in 1969. Vegetables ac-

Table 2. Distribution of Eating Places by Type of Food Service and Firm Size, Selected Years 1963-82¹

Type of food service	1963	1967	1972	1977	1982
Percent of establishments					
Fast food eating places	21.9	28.8	37.5	42.3	45.3
Others	78.1	71.2	62.5	57.7	54.7
Percent of sales					
Fast food eating places	14.6	19.0	30.3	37.6	38.7
Others	85.4	81.0	69.7	62.4	61.3
Sales per establishment (\$1,000)					
Fast food eating places	49	63	114	204	280
Others	81	108	156	247	367
Firm size ²					
Percent of establishments					
Single unit	90.8	90.4	85.3	80.0	76.4
2 to 3 units	4.0	3.0	4.0	3.9	3.9
4 to 10 units	1.4	1.6	2.4	3.3	3.9
11 or more units	3.8	5.1	8.4	12.8	15.8
Percent of sales					
Single unit	80.4	77.4	65.9	59.5	52.5
2 to 3 units	5.8	5.3	6.3	6.8	7.1
4 to 10 units	2.9	3.7	4.7	6.1	7.2
11 or more units	11.0	13.6	23.2	27.6	33.2
Sales per establishment (\$1,000)					
Single unit	55	68	93	146	225
2 to 3 units	91	142	189	340	601
4 to 10 units	127	185	238	364	599
11 or more units	180	214	332	425	688

¹Eating places (SIC 5812 with payroll) are retail establishments that derive most of their revenue from sales of prepared meals and snacks for on-premise or immediate consumption. Eating facilities that are subordinate parts of other kinds of businesses (for example, a hotel restaurant or bowling alley snack bar) are excluded unless they are leased to and run by outside operators.

²Prior to 1972, firm size was based on the number of outlets operated by the same firm in the same general kinds of business rather than the same business, as in 1972 and subsequent years.

Source: U.S. Bureau of the Census, Census of Business, 1963-77. The 1982 figures are preliminary estimates of the Economic Research Service, USDA.

counted for approximately 18 percent of the 1981 total; flour and cereals, 5 percent; bakery items, 13 percent; dairy products, 16 percent; and meats, 11 percent. Use of vegetables, flour, and bakery products as a proportion of all foods used in the foodservice sector has increased since 1969; proportionate use of dairy products and meats has declined.

Sixteen foods accounted for half of all food consumed away from home in 1981: white fluid milk, potatoes, flour, beverage fountain syrup, bread, ground meat, cheese, shortening, buns, and eggs topped the list, each accounting for more than a billion pounds; steak, lettuce, cream, tomatoes, crackers, and roasts each contributed over 600 million pounds. The variety of foodservice fare has narrowed; 21 leading foods accounted for roughly half of the total in 1969, compared with only 16 in 1981.

The rapid decline in diners that specialize in varied American plate meals, employ cooks, and provide waiter/waitress service has contributed to the decline in the diversity of foods purchased by eating places. Concurrently, the nation-wide proliferation of fast food firms that mass produce and serve a limited variety of items has spawned marked uniformity and consistency of quality in foodservice across America. The fast food burger available in New York or Chicago is essentially the same as the one offered in Des Moines or Denver by the same franchise firm.

Demand for convenient-to-prepare foods throughout the foodservice industry is growing. Until recently, the cost of labor had climbed steeply, and skilled cooks are reportedly hard to find. Convenience foods—frozen prepared, partially precooked, and fabricated—offer accurate portion control, no waste, time-saving efficiency, and reduced need for trained manpower. Advances in technology produce more sophisticated convenience foods tailor-made for foodservice industry use, such as bags of prechopped fresh vegetables for salad bars, rolls of hard cooked eggs that can be sliced as

needed, relatively inexpensive flaked beef and chicken formed to look like steak and chicken pieces, and gourmet specialties such as surf and turf (lobster and steak), beef stroganoff, fish almondine, veal parmigiana, and stuffed cabbage that need only be heated quickly in a microwave oven. Fabricated foods such as imitation cheeses for pizza, nondairy creamers and

Market Composition

More than 500,000 public and institutional foodservice establishments operate in the United States. Public foodservice establishments exist primarily for profit and account for 75 percent of the retail value of all food consumed away from home (table 1).

A public foodservice operation is either an eating place—a separate entity which derives revenue mainly from sales of meals and snacks—or a part of a larger facility whose foodservice sales are less than other revenues (a bowling alley snack bar or a department store coffee shop). Eating places account for about 75 percent of the retail value of meals and snacks sold in the public sector; the other eating establishments account for the remaining 25 percent.

The institutional sector includes foodservice operations associated with other activities and are often nonprofit, such as the military, universities, and orphanages. The typical institutional establishment serves more people than does a public eating facility. But, because of relatively small numbers, institutions account for only 25 percent of the retail value of all food consumed away from home; schools and hospitals, the largest markets in the institutional sector, account for 7 percent and 4 percent, respectively. □

whipped toppings, imitation sour cream, imitation mayonnaise, sugar substitutes, and soy analogs mixed with meat in prepared entrees are making inroads against traditional food products.

Conclusions

As real income rises, consumers probably will continue to spend an increasing portion of their food dollar eating away from home. However, the foodservice industry's rapid rate of expansion since the early 1960's appears to be yielding to one of slower growth, and, in some areas, saturation. Higher food, labor, and energy costs in the past several years, reflected in higher menu prices, slowed the trend toward eating out. Since 1975, menu prices have risen 67 percent, compared with 54 percent for at-home foods. In addition, the increased costs of other goods and services, such as housing and medical care, which compete with food-away-from-home for the consumer's dollar, also may have slowed the growth of the foodservice industry. In fact, sales at eating places in 1980 and 1981, after adjusting for inflation, fell below 1979 sales. Real sales in the first half of 1982 were up slightly from a year earlier, but were still below the 1979 sales level.

Fast food firms probably will continue taking sales from traditional, unaffiliated full-service restaurants and diners, some of which can be expected to leave the industry. Industry strategy in the face of slower growth is likely to include price cutting; bigger advertising budgets for coupons, games, premiums, and other promotions; innovative menus; remodeling of store interiors; and an increase in mergers and acquisitions. As the competition for the consumer's dollar intensifies, an increase in head-to-head advertising may be expected. □

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Food Spending and Income

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Each month, the U.S. Department of Commerce releases estimates of Disposable Personal Income (DPI), and its allocation among Personal Consumption Expenditures (PCE), Personal Savings, Interest Paid by Consumers to Business, and Personal Transfer Payments to Foreigners.

In addition, expenditures on individual items composing DPI and PCE are deflated by their respective consumer price indices, and then reaggregated to obtain "constant dollar" DPI and PCE. Movement in the constant dollar series over time indicates changes in quantities of goods and services consumed, since the effect of price changes has been removed.

In the third quarter of 1982, seasonally adjusted disposable personal income (DPI) reached an alltime high of \$9,478 per person per year—an increase of approximately \$930 since the first quarter of 1981 (table 1).

The proportion of DPI allocated to total food expenditures remained constant at 16.1 percent throughout the first three quarters of 1982. Consumers allocated a slightly smaller proportion of their incomes to at-home food in the third quarter, but the proportion allocated to away-from-home food increased by an offsetting amount.

From the beginning of 1981 until the third quarter of 1982, consumer expenditures on goods and services rose about \$700 per person, and savings were up about \$200. The remainder of the increase in DPI was allocated to higher interest payments to business and personal transfer payments to foreigners (gifts, charities, etc.).

However, after adjusting for price increases, DPI rose by only \$50 per person in the same period (table 2). In spite of the increased purchasing power, consumers chose to buy fewer goods and services. Constant (1972) dollar expenditures on goods and services were actually \$29 less per person in the third quarter of 1982 than they were in the first quarter of 1981. The decrease in constant dollar personal consumption expenditures (PCE) was concentrated in the durable goods component, which fell from about \$634 per person to \$587. The increased quantity of services consumed, as indicated by an increase of about \$22 per person in the constant dollar series, was not enough to offset the reduced consumption of goods.

Two-thirds of the increase in services was attributable to greater use of medical services.

Except for a slight decline in away-from-home food expenditures during the second quarter of 1981, per person expenditures measured in current dollars increased for both food at home and food away from home for each quarter between first quarter 1981 and third quarter 1982.

Constant dollar food expenditures did not follow the same pattern. Away-from-home constant dollar food expenditures decreased throughout 1981, indicating that the quantity of food purchased in the Nation's eating establishments declined for that year, but increased sharply in the first quarter of 1982 and were at a record level by the third quarter of 1982. In contrast, constant dollar at-home food expenditures increased to an alltime high level in 1981, but they fell sharply in the first quarter of 1982. By third quarter 1982, they had regained a level slightly below the fourth quarter 1981 peak. □

Table 1. Per Capita Personal Consumption Expenditures: Quarterly, Seasonally Adjusted at an Annual Rate, 1981-82

Item ¹	1981				1982		
	I	II	III	IV	I	II	III ²
	Dollars (Current)						
Total personal consumption expenditures	7,856.5	7,927.6	8,118.4	8,165.2	8,301.7	8,406.7	8,555.7
Nondurables	3,145.5	3,179.2	3,220.1	3,234.6	3,240.0	3,258.7	3,305.7
Food, beverages, and other groceries ³	1,864.4	1,882.8	1,908.0	1,928.4	1,944.1	1,979.2	2,003.6
Food exc. alcoholic beverages	1,409.1	1,420.7	1,440.2	1,455.1	1,474.0	1,498.8	1,522.2
At home	1,034.4	1,048.3	1,065.6	1,078.0	1,080.5	1,097.1	1,107.7
Away from home	374.7	372.4	374.6	377.1	393.5	401.8	414.5
Alcoholic beverages	200.5	200.5	201.7	201.4	203.9	206.1	205.1
At home	125.0	124.5	125.7	126.3	126.8	128.6	126.0
Away from home	75.4	76.0	76.0	75.1	77.1	77.5	79.0
Cleaning and household supplies	90.4	92.2	93.9	95.3	94.8	96.6	97.3
Toiletries	68.6	69.7	70.8	71.3	71.1	72.6	73.0
Tobacco	95.8	99.8	101.4	105.3	100.4	105.1	106.0
Drugs	79.5	80.4	82.0	82.5	82.1	84.4	84.8
Clothing and shoes	490.2	496.6	503.5	502.8	508.2	510.8	513.0
Gas and oil	415.5	421.5	424.4	422.6	412.2	393.8	405.3
Fuel oil and coal	87.5	86.6	86.5	83.1	74.7	74.6	78.6
Other	208.4	211.2	215.7	215.3	218.6	215.9	220.4
Durables	1,034.0	1,004.0	1,048.0	995.0	1,028.8	1,038.9	1,033.7
Motor vehicles and parts	445.6	410.6	451.7	407.0	446.3	445.9	448.5
Furniture and household equipment	406.3	406.5	407.6	404.2	393.7	402.3	399.0
Other	182.2	186.8	188.6	183.8	188.8	190.7	186.2
Services	3,677.0	3,744.4	3,850.3	3,935.6	4,032.9	4,109.1	4,216.4
Housing	1,241.5	1,269.1	1,297.5	1,330.0	1,360.3	1,382.8	1,413.0
Household operation	526.8	545.7	577.0	593.2	611.6	607.2	625.2
Transportation	288.9	280.2	284.5	284.7	289.3	300.1	302.6
Personal care	75.0	75.6	76.0	76.2	75.1	74.5	74.2
Medical care	697.2	727.0	762.9	786.5	806.2	829.2	858.3
Personal business service	429.6	430.8	435.0	440.9	449.7	460.3	474.6
Recreational services	165.4	166.5	169.1	170.1	174.9	179.6	182.5
Other	252.6	249.4	248.4	253.9	265.8	275.3	286.1
Savings	462.2	531.6	583.8	687.2	601.6	622.8	664.7
Other	230.9	240.1	247.2	252.2	253.0	256.4	257.4
Disposable personal income	8,549.5	8,699.3	8,948.7	9,104.9	9,157.0	9,285.7	9,477.8

¹Due to rounding of individual items, totals may not equal to the sum of the individual items.

²Preliminary.

³Contains some items not normally purchased in grocery stores.

Table 2. Per Capita Personal Consumption Expenditures: Quarterly, Seasonally Adjusted at an Annual Rate, 1981-82

Item ¹	1981				1982		
	I	II	III	IV	I	II	III ²
Dollars (Constant 1972)							
Total personal consumption expenditures	4,151.5	4,116.1	4,133.1	4,087.4	4,105.2	4,121.6	4,122.5
Nondurables	1,578.3	1,576.1	1,577.0	1,573.1	1,566.4	1,573.1	1,574.5
Food, beverages, and other groceries ³	925.5	924.0	920.2	923.1	914.9	919.9	924.7
Food exc. alcoholic beverages	671.4	671.3	668.6	672.3	670.5	674.0	681.5
At home	495.0	499.3	498.1	502.6	496.1	497.8	502.1
Away from home	176.5	172.0	170.5	169.7	174.4	176.2	179.5
Alcoholic beverages	120.3	118.5	117.3	116.3	115.6	116.0	114.2
At home	76.7	75.5	75.0	75.0	73.7	74.2	72.4
Away from home	43.6	43.1	42.3	41.3	41.9	41.8	41.8
Cleaning and household supplies	36.8	36.8	36.9	36.9	35.8	36.2	36.2
Toiletries	36.5	36.0	36.0	35.8	34.8	34.6	34.3
Tobacco	60.4	61.3	61.4	61.9	58.2	59.1	58.4
Drugs	47.0	46.1	45.8	44.9	43.8	43.8	43.0
Clothing and shoes	358.2	359.8	360.9	359.8	362.6	362.7	362.0
Gas and oil	111.0	110.6	113.7	111.6	113.3	117.2	114.0
Fuel oil and coal	15.8	15.0	15.0	14.3	13.1	13.7	14.0
Other	120.9	120.6	121.4	119.3	118.6	115.7	116.8
Durables	634.2	603.9	617.6	581.0	594.6	597.0	587.4
Motor vehicles and parts	255.7	227.4	243.9	216.5	237.4	234.9	232.0
Furniture and household equipment	273.2	269.4	266.5	261.8	252.9	256.6	253.5
Other	105.3	107.2	107.2	102.7	104.2	105.5	101.9
Services	1,938.9	1,936.0	1,938.4	1,933.3	1,944.3	1,951.5	1,960.6
Housing	704.2	707.4	707.6	708.3	711.7	713.0	713.4
Household operation	272.3	274.4	278.3	279.0	279.1	273.6	275.5
Transportation	146.3	140.7	139.5	137.3	138.0	140.4	141.1
Personal care	34.8	34.3	33.7	33.2	32.4	31.8	31.2
Medical care	335.8	341.8	345.8	344.0	343.6	347.2	349.6
Personal business service	220.7	217.7	215.8	213.9	216.0	217.0	219.0
Recreational services	103.6	103.7	104.1	102.9	104.5	106.2	106.1
Other	121.1	116.0	113.7	114.6	119.1	122.1	124.7
Disposable personal income	4,517.7	4,516.8	4,556.0	4,557.6	4,528.1	4,552.4	4,566.9

¹Due to rounding of the individual items, and the exclusion of items that are not available, totals may not equal the sum of the individual items.

²Preliminary.

³Contains some items not normally purchased in grocery stores.

Table 3. United States Population¹

Year	Quarter			
	I	II	III	IV
Millions				
1981	229.1	229.5	230.2	230.8
1982	231.2	231.7	232.3	

¹Total, including armed forces overseas.

Domestic Food Programs

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Total Federal expenditures for USDA's food programs amounted to \$3.5 billion in the third quarter of 1982, about a 2.2-percent decrease over the same period a year earlier. Regular cash expenditures (for the Food Stamp Program, the child nutrition programs, and the Special Supplemental Food Program for Women, Infants, and Children) and cash payments in lieu of commodities fell by 2.6 percent and 23.8 percent, respectively, between the third quarter of 1981 and the third quarter of 1982. In contrast, the value of commodities distributed to low-income persons, schools, and charitable institutions rose by 11.6 percent between the two periods.

Food Stamp Program

Preliminary data show that an average of 20.4 million persons participated in the Food Stamp Program (FSP) in the third quarter of 1982, down 1.8 million persons from the third quarter of 1981. Similarly, the value of food coupons was \$2.4 billion versus \$2.7 billion in the third quarter of 1981.

Puerto Rico switched from the FSP to a substitute nutrition assistance (block grant) program on July 1, 1982, which explains some of the decrease in participation and cost of the FSP. About 1.7 million persons in Puerto Rico received nutrition assistance benefits in the third quarter of 1982, compared with 1.8 million under the FSP a year earlier. Under the nutrition assistance program, which was authorized by the Omnibus Budget Reconciliation Act of 1981, Puerto Rico elected to provide cash assistance rather than food coupons. Benefits distributed under the nutrition assistance program amounted to \$200.1 million in the third quarter of 1982, down from \$225.6 million a year earlier under the FSP. Monthly per person benefits in Puerto Rico dropped from \$41.15 in the third quarter of 1981 under the FSP to \$40.12 in the same quarter of 1982 under the nutrition assistance program.

Prorating new food stamp participants' first month of benefits also contributed to the decline in program costs. Since Oc-

tober 1, 1981, food stamp benefits paid in the first month of participation are prorated daily based on the date of application. Thus, a household with no net income that applied for food stamps when only 1 week remained in the month received stamps equal in value to the weekly cost of the Thrifty Food Plan for the household size. Previously, the household received the full month's allotment of food stamps.

A 1-month survey of food stamp households indicates that about 6.5 percent of the households participating in the program during that period were new participants. USDA estimates that prorating benefits saves between \$400 and \$450 million per year. In addition, prorating may explain a decline in average monthly benefits under the FSP from \$40.47 per person in the third quarter of 1981 to \$38.56 during the same period in 1982.

Child Nutrition Programs

A decline in the number of schools operating the child nutrition programs, lower school enrollments, and increased meal prices contributed to lower participation in the child nutrition programs operated by USDA.

The most dramatic decline in participation occurred in the Special Milk Program (SMP). Only 56.4 million half pints of milk were served under this program in the July-September quarter of 1982, compared with nearly 144.9 million in the same quarter of 1981. This decline was due to a provision in the Omnibus Budget Reconciliation Act of 1981 that limits participation in the SMP to schools that do not participate in any other child nutrition program.

Participation in the School Breakfast Program during the third quarter of 1982 was 9.3 percent lower than in the same period of the previous year, with an average of 1.4 million students participating per day. Most of the decline in participation was among those receiving reduced-price breakfasts. Federal expenditures for the School Breakfast Program rose by 4.4 percent between the periods, from

\$42.8 million to \$44.7 million. Expenditures may have increased because of higher reimbursement rates or an increase in the number of serving days. Reimbursement rates are updated annually on July 1 based on changes in the Consumer Price Index for food-away-from-home for all urban consumers.

Preliminary data show that the number of participants in the National School Lunch Program decreased from 10.9 million in the third quarter of 1981 to 9.4 million in the same period in 1982, a 14 percent decline. A total of 475 million lunches were served in the third quarter of 1982, compared with 471 million in the third quarter of 1981. Federal cash expenditures for the National School Lunch Program increased from \$271.3 million to \$290.3 million, probably due to higher reimbursement rates and earlier school starting dates, which mean additional serving days. In addition to cash assistance, USDA donates commodities or cash in lieu of commodities to schools to help offset the cost of providing meals.

Participation in the Summer Food Service Program (SFSP) during July, August, and September 1982 was down 22.6 percent from a year earlier, primarily due to new provisions that restrict the program to areas where at least half of the children qualify for free or reduced-price school meals. Under previous legislation only a third of the children had to meet the criteria for free or reduced-price meals. The number of SFSP sites dropped from 20,588 in July 1981 to 14,144 in July 1982. Federal expenditures for the SFSP declined by 11.3 percent between the third quarter of 1981 and the third quarter of 1982, from \$84.7 to \$75.2 million.

All children are eligible to participate in the school food service programs. The type of meal received (free, reduced price, or paid) depends on family income and size. Income eligibility standards for free school meals are set by Congress at 130 percent of the poverty level, and for reduced-price meals at 185 percent of the poverty level. For the 1982-83 school year, children from a family of four with

Table 1. Federal Cost of USDA Food Programs, Calendar Years

Program	1980	1981	1981				1982 ¹		
			I	II	III	IV	I	II	III
			\$ Million						
Food Stamp	9,004	10,968	2,856	2,817	2,698	2,597	2,647	2,601	2,361
Puerto Rico Assistance ²	—	—	—	—	—	—	—	—	200
Food Distribution									
Needy Families	23.5	33.0	12.2	6.3	6.1	8.4	25.9	31.1	25.0
Schools ³	967	824	328	59	116	221	259	118	112
Other ⁴	115	107	29	29	25	24	40	41	28
Cash in Lieu of Commodities	85	113	25	23	33	32	25	28	25
Child Nutrition ⁵									
School Lunch	2,395	2,285	778	569	271	667	709	528	290
School Breakfast	311	332	108	84	43	97	100	78	45
Special Food ⁵	342	402	76	98	156	72	67	81	139
Special Milk	137	72	34	25	8	5	6	5	5
Nonfood Assistance ⁷	18	9	3	3	3	—	—	—	—
WIC ⁸	783	869	232	209	214	214	237	244	264
Total ⁹	14,181	16,016	4,482	4,023	3,574	3,938	4,117	3,754	3,495

¹Preliminary.²Puerto Rico switched from the Food Stamp Program to a nutrition assistance program on July 1, 1982.³Includes child care centers and camps participating in the Child Care and Summer Food Service Programs.⁴Commodity Supplemental Food Program, Nutrition Program for the Elderly, and donations to charitable institutions.⁵Cash expenditures. Includes money donated for local purchase of food.⁶Divided into Child Care Food Program and Summer Food Service Program in fiscal 1976.⁷Nonfood assistance was terminated on October 1, 1981.⁸Special Supplemental Food Program for Women, Infants, and Children. Includes food and administrative costs.⁹May not add due to rounding.

Source: Computed from monthly data supplied by the Food and Nutrition Service.

annual income of up to \$12,090 are eligible to receive free meals. The maximum eligibility standard for reduced-price meals is \$17,210.

Supplemental Food Programs

The supplemental food programs for women, infants, and children were the only USDA food programs to experience an increase in participation between the third quarter of 1981 and the third quarter of 1982. Slightly more than 2.3 million persons participated in the Special Supplemental Food Program for Women, In-

fants, and Children (WIC) in the July-September quarter of 1982, an increase of 19.6 percent. Because of the increase in participation, program costs jumped from \$214.2 million to \$264.3 million.

Participation in the Commodity Supplemental Food Program (CSFP) reached an average of 127,000 persons a month in the third quarter of 1982, an increase of about 6.7 percent from the same period in 1981. The CSFP provides federally

purchased commodities to low-income pregnant, post-partum, or breast-feeding women, and to infants and children to age 6. Simultaneous participation in both WIC and CSFP is not permitted.

The number of CSFP projects rose from 21 in the third quarter of 1981 to 25 in the third quarter of 1982. About 14 million pounds of food valued at \$6.8 million were distributed at these sites in the third quarter of 1982. The quantity and varieties of commodities distributed are determined by the Secretary of Agriculture. □

Changes in the Food Stamp Program

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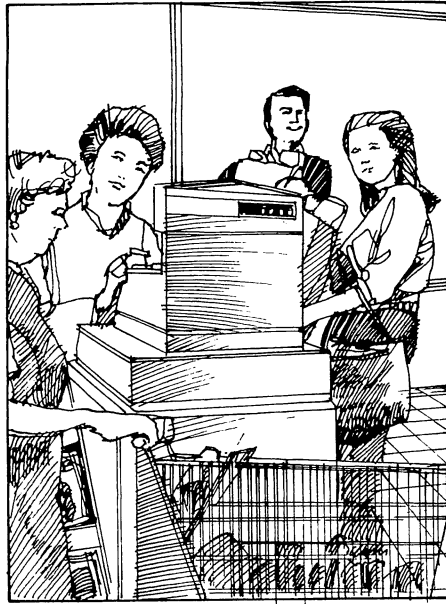
The Omnibus Budget Reconciliation Act of 1982 (P.L. 97-253), signed into law on September 8, 1982, authorizes changes in the Food Stamp Program (FSP) by altering the adjustment formula for the Thrifty Food Plan (TFP), establishing penalties for States that do not reduce error rates to acceptable levels, and revising income eligibility standards. In addition, the act authorizes funding for the FSP through September 30, 1985, with \$12.9 billion for fiscal 1983, \$13.1 billion for fiscal 1984, and \$13.9 billion for fiscal 1985.

On October 1, 1982, the value of monthly food stamp allotments was increased 8.6 percent to reflect changes in the cost of the TFP for the 21 months ending June 30, 1982. The TFP is a model food plan of economical and nutritious meals developed by USDA's Science and Education Administration and used as a base in calculating monthly food stamp allotments.

Prior to the 1982 act, households received the actual increase in the cost of the TFP. To save money, however, the act mandated that in determining the October cost-of-food adjustment in program benefits, the cost of the TFP as of June 1982 be reduced by 1 percent. Thus, the maximum monthly benefit for a four-person household is \$253 rather than \$256. Households would have received a 9.9-percent increase in food stamp benefits if the actual cost of the TFP had been granted.

The cost-of-food adjustments in food stamp benefits scheduled for October 1, 1983, and October 1, 1984, will also be 1 percent less than the changes in the actual cost of the TFP. On October 1, 1985, and each subsequent October, food stamp benefits will be updated based on the actual increase in the cost of the TFP for the 12 months ending the preceding June 30.

The 1982 act institutes a system of Federal sanctions for States with unreasonably high rates of error in coupon issuance. Errors include under-issuances, invalid eligibility decisions, and incorrect payments. Under the error-rate reduc-



tion program, maximum allowable error rates are established at 9 percent in fiscal year 1983, 7 percent in 1984, and 5 percent in 1985 or after. States exceeding these rates may have the federally funded share of their administrative costs (currently set at 50 percent) reduced, unless good cause is shown. State agencies with a rate below a specified percentage may receive a larger share of Federal funding of administrative expenses.

Tighter income eligibility standards are mandated by the act. Previously, households that did not have an elderly or disabled member were permitted to have a gross monthly income of no more than 130 percent of the poverty level (or \$1,008 for a family of four) to qualify for food stamps. Effective September 8, 1982, these households must also have a net monthly income (gross minus allowable deductions) of no more than 100 percent of the poverty level, or \$775 for a family of four.

In addition, the standard deduction and the deduction for housing and dependent care costs which exceed 50 percent of net income, which households are allowed to subtract from gross income, will be rounded down to the nearest whole dollar rather than rounded to the nearest \$5 when adjustments are made for inflation.

The new rounding procedure means that, in general, household net income will rise, resulting in lower food stamp benefits. Further, the scheduled July 1, 1983, adjustment in the standard deduction and the excess shelter/dependent care deduction is delayed until October 1, 1983.

Elderly and disabled recipients will benefit from a provision of the act requiring that annual July cost-of-living updates in Social Security, Supplemental Security Income (SSI), Veterans', and Railroad Retirement benefits not be counted as income until October, concurrent with the cost-of-food update in food stamp benefits. Since food stamp benefits equal the reduced cost of the TFP minus 30 percent of a household's monthly net income, inflation adjustments in social security benefits, SSI benefits, and other types of income transfers previously led to lower food stamp benefits from July through September for many elderly and disabled participants. Food stamp benefits for these participants generally rose in October due to the annual update for food price inflation. Coordinating inflation changes in the FSP with other programs means that elderly and disabled food stamp participants will no longer lose food stamp benefits because of the interaction of the FSP with other income maintenance programs.

Other changes mandated by the Omnibus Budget Reconciliation Act of 1982 are:

- Effective October 1, 1983, Puerto Rico will be prohibited from providing cash payments under the food assistance block grant program that replaced the FSP.

- Food stamp benefits of under \$10 are no longer issued for the initial month of eligibility.

- States are required to implement a system that allows a single interview to be conducted for determining eligibility for food stamps and for benefits under the Aid to Families with Dependent Children Program.□

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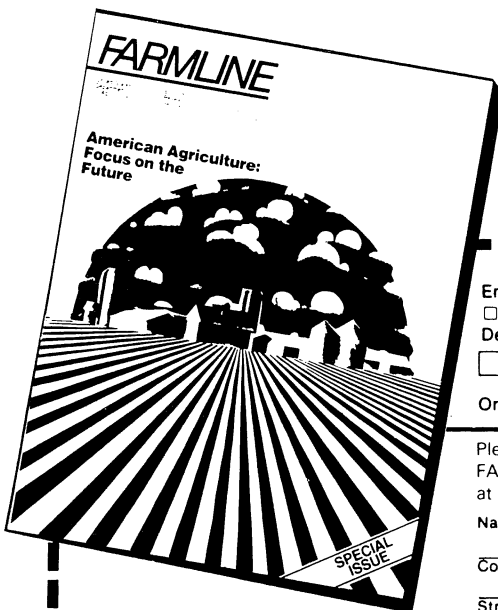
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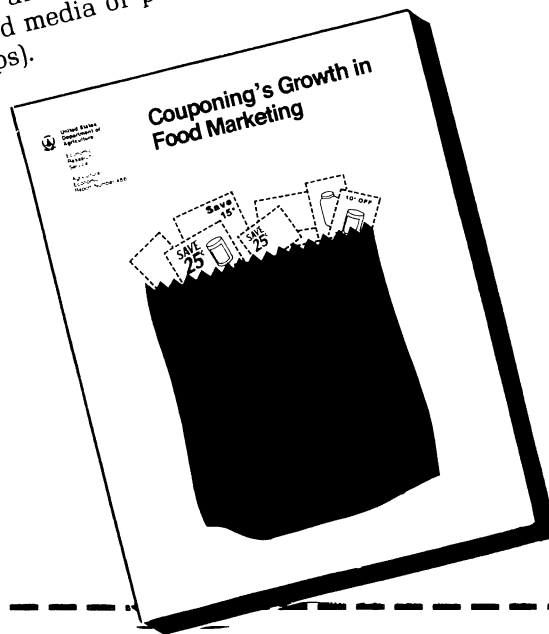
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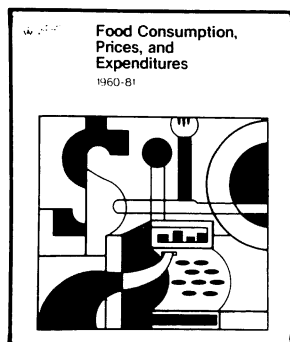
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- Per capita food consumption for 23 product categories,

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- Income, food expenditure, and population statistics.

What's more, narrative and charts highlight significant changes in key food-sector indicators during 1981. Of special interest are USDA's unique estimates of year-to-year changes in per capita food consumption. In total, food consumption dropped 7 pounds per person to 1,400 pounds in 1981. Per capita meat consumption was down 2.6 pounds, but poultry use increased 1.8 pounds; use of dairy products was off. Fresh fruit use rose 1.6 pounds per person, but fresh vegetable consumption fell by 1.9 pounds.

While total food spending by Americans rose by nearly 10 percent, it was the lowest since 1973 as a share of disposable income. The farmer's share of the retail food dollar dropped to the lowest in two decades.

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