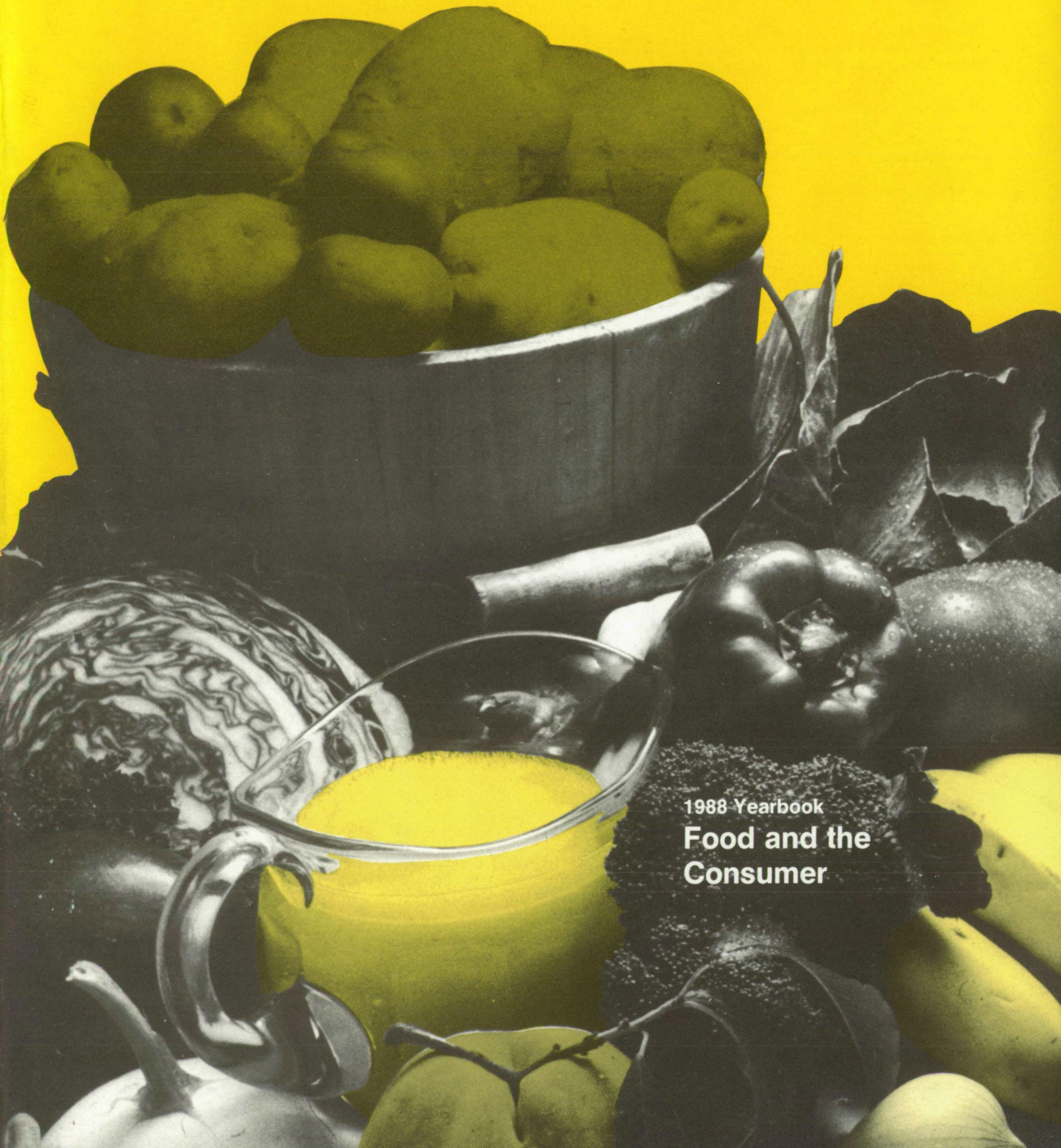


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1988 Yearbook  
**Food and the  
Consumer**



# Contents

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## 1988 Yearbook Food and the Consumer



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## Food Consumption

The mix of foods we eat has changed dramatically since 1970, as per capita consumption has increased for some foods and declined for others (*table 1*). For instance, of all the meat we consumed in 1986, two-thirds was red meat, compared with three-fourths during the early 1970's. Instead, we ate more poultry, fish, grains, and cereal products. We also cut back on whole milk, while consuming more low-fat milk and yogurt. Fresh fruit and vegetable consumption rose as well.

However, the changes in our diets have been somewhat inconsistent. While there was a general shift toward foods perceived as low in fat or calories, our cheese consumption increased during the period. In addition, consumption rose for fats and oils, frozen potatoes, and corn sweeteners and soft drinks. We ate fewer eggs and fresh potatoes and drank less coffee. Many factors influence food consumption, including higher incomes, new production and marketing technologies, and shifts in consumer preferences.

During the 16 years, increases in poultry consumption more than offset declines in red meat, pushing total meat consumption gradually upward. Red meat dropped from an average of 151 pounds per capita annually during 1970-74 to 143 pounds annually during 1980-84. In contrast, poultry consumption increased steadily from 49 pounds per capita annually during 1970-74 to 63 pounds during 1980-84. In 1986, Americans each ate an average of 140 pounds of red meat and 72 pounds of poultry.

Poultry's rise stemmed largely from retail prices that remained well below



those for red meats, primarily because of savings passed on from the farm and processing levels. As a result, poultry was used to a greater extent in frozen entrees and convenience foods than red meats were. But poultry's price advantage was not the only factor affecting consumer choices.

The poultry industry has been a leader in marketing innovations for several years. Cut-up birds and heavily advertised, branded items—like those of Holly Farms, Perdue, Louis Rich, and Tysons Foods—became popular in the 1970's. The proliferation of precooked, pan-ready, and other upscale raw products, like boneless breast fillets, also boosted poultry's popularity with consumers. Processors also started offering chicken and turkey franks, turkey breakfast sausages, and turkey ham and salami in an attempt to appeal to consumers concerned about fat.

Other food processors and retailers joined the move toward value-added items. Dairy processors introduced fresh and microwave pizzas, a variety of

flavored and textured yogurts, Mexican-flavored cheeses, fruit and onion flavored cream cheeses, upscale frozen dairy products, and ready-to-make quiche mixtures. Frozen vegetable processors offered consumers new combinations, a selection of sauces, and single-serving products in microwave containers.

Product innovations occurred at the retail level as well. Supermarkets carry a much wider variety of fresh fruits and vegetables than they did in the 1970's. Many consumers have the opportunity to buy items—like kiwi fruit, papaya, chinese cabbage, and snow peas—that they had never heard of 10 years ago. In addition to the greater variety, supermarkets have become more convenience oriented. For instance, many offer time-saving soup and salad bars.

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**Table 1. The Mix of Foods We Eat Has Changed**

Item	Per capita consumption <sup>1</sup>				
	1970-74	1975-79	1980-84	1985	1986
	<i>Pounds</i>				
Red meat <sup>2</sup>					
Beef	83.9	87.8	77.3	78.8	78.4
Veal	2.0	2.8	1.6	1.8	1.9
Pork	62.1	55.8	63.0	62.0	58.6
Lamb	2.6	1.5	1.5	1.4	1.4
Fish <sup>3</sup>					
Fresh and frozen	7.0	7.9	8.0	9.0	9.0
Canned and cured	5.1	5.0	5.0	5.4	5.7
Poultry					
Chicken	40.5	44.6	52.5	57.6	58.8
Turkey	8.6	9.1	10.9	12.1	13.3
Eggs	37.9	34.6	33.5	32.2	31.7
Dairy					
Fluid whole milk	205.2	168.4	135.6	122.8	115.8
Fluid lowfat milk	59.1	81.2	94.4	104.6	110.4
Cream	3.6	3.3	3.6	4.3	4.8
Cheese <sup>4</sup>	12.9	16.0	19.5	22.5	23.0
Frozen desserts	28.1	27.5	26.7	27.8	28.7
Specialty products <sup>5</sup>	2.9	4.4	5.4	6.8	7.2
Fats and oils					
Butter	5.0	4.4	4.6	4.9	4.6
Margarine	11.0	11.4	10.9	10.8	11.4
Shortening	17.1	17.7	19.0	22.9	22.1
Salad and cooking oils	16.7	19.5	21.6	23.5	24.1
Fresh fruits					
Citrus	27.2	26.4	25.6	22.7	25.2
Noncitrus	48.8	54.4	60.2	63.7	66.9
Honeydew melons	1.0	1.2	1.6	1.9	2.5
Fresh vegetables <sup>6</sup>	65.0	68.4	74.2	78.5	79.4
Potatoes <sup>7</sup>					
Fresh	54.0	49.0	45.3	45.7	49.9
Processed	21.8	27.2	26.3	29.7	29.7
Wheat flour	111.0	116.3	117.0	123.3	129.6
Rice	7.1	7.5	10.1	9.1	11.6
Pasta	8.5	10.1	10.3	12.9	14.3
Refined sugar	100.5	91.5	75.0	63.0	60.2
Corn sweeteners	26.5	40.4	64.1	87.0	87.4

<sup>1</sup>Retail-weight equivalent. Based on U.S. total population, including armed forces overseas. Fluid milk and cream based on U.S. resident population, and fish, on U.S. civilian population. <sup>2</sup>Excludes consumption of game and edible offals. <sup>3</sup>Edible weight. <sup>4</sup>Product weight, excludes cottage cheese. <sup>5</sup>Includes yogurt, sour cream, and eggnog. <sup>6</sup>Includes asparagus, broccoli, carrots, cauliflower, celery, corn, lettuce, onions, and tomatoes. <sup>7</sup>Excludes sweetpotatoes.

Source: *Food Consumption, Prices, and Expenditures, 1986*, ERS, USDA, in process.

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### Soft Drinks, Coffee, and Tea

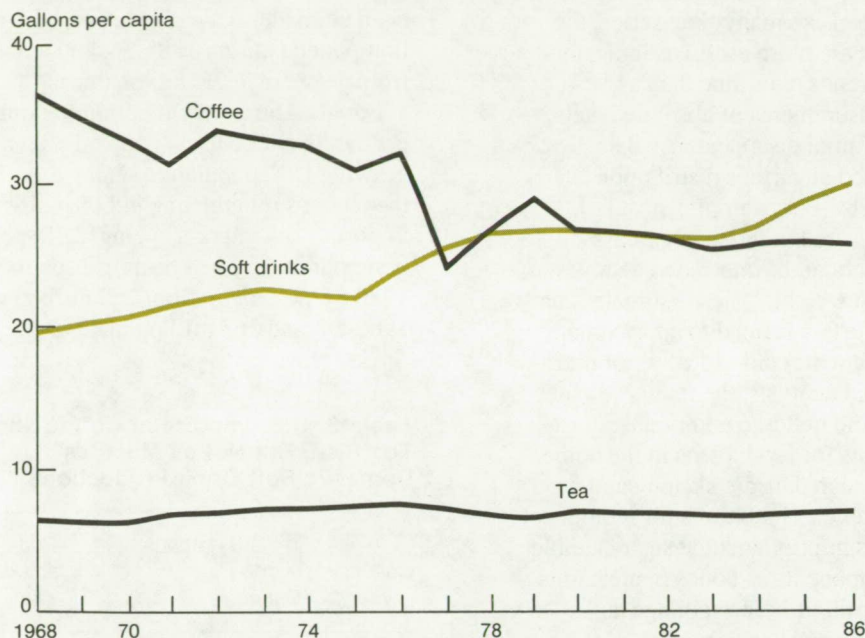
Per capita U.S. beverage consumption during the past 20 years has changed for some products and remained virtually the same for others. Soft drinks rose from 20 gallons per person in 1968 to an estimated 30 gallons in 1986, while coffee dropped from more than 36 gallons to 26 in the same period (*figure 1*). On the other hand, consumption of tea in 1986 was about the same as in 1968—around 7 gallons per person annually.

Several factors contributed to these trends. For instance, soft drink consumption rose sharply during the past two decades as the baby boom generation dominated the population, lifestyles changed, incomes rose, and soft drink firms advertised and promoted their products more aggressively. Soft drinks—which often appear as the major beverage on fast-food menus—also benefited from the growth of the foodservice industry. These carbonated beverages appeal to consumers interested in nonalcoholic drinks and offer low-calorie beverage alternatives. More than 20 percent of total sales are now low calorie, up from 10 percent a decade ago. Many firms have further boosted sales by offering products containing 10 percent real fruit juice. The upward trend in soft drink consumption may slow but will likely continue. Several National Soft Drink Association surveys indicate children drink more and more soft drinks at younger and younger ages.

The rise in soft drink consumption has been accompanied by a massive shift away from sugar as a sweetening agent (*figure 2*). The development of high fructose corn sirup (HFCS) in the 1970's—and particularly the rapid adoption of HFCS-55 (55-percent fructose content) in the early 1980's—led to an almost complete abandonment of sugar use in soft drinks. HFCS is cheaper to produce

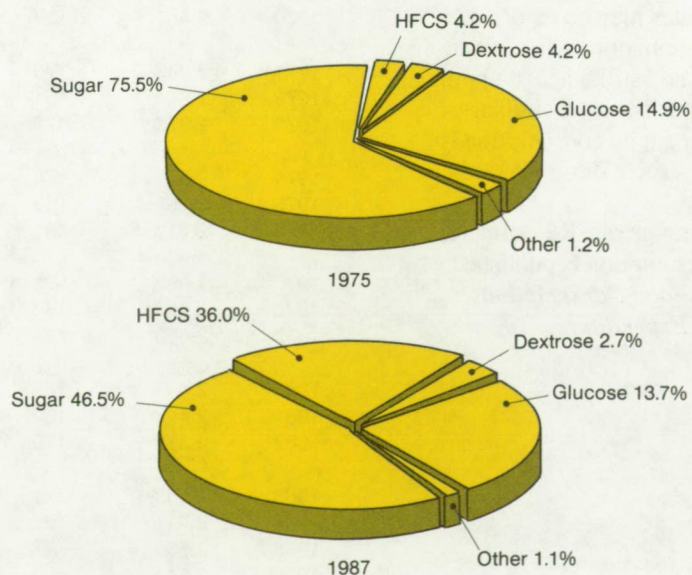


**Figure 1. Per Capita Soft Drink Consumption Rose While Coffee Consumption Declined**



Contact: Fred Gray (202) 786-1888 or Judy Putnam (202) 786-1870.

**Figure 2. High Fructose Corn Sirup (HFCS) Replaced Sugar As A Sweetener<sup>1</sup>**



<sup>1</sup>Pies represent total per capita consumption of caloric sweeteners.  
Contact: Peter Buzzanell (202) 786-1886.

and has a sweetening quality nearly equivalent to sugar.

In 1980, HFCS accounted for 30 percent of sweetener use in nondiet soft drinks. HFCS domination was almost complete by 1987, at about 97 percent of the total. Only about 200,000 tons of sugar are now used in soft drinks—mostly in Hawaii—versus 2.2 million tons as recently as 1980.

Coffee is no longer America's beverage of first choice. In 1977, when retail prices for roasted coffee jumped 85 percent because of a freeze in Brazil, soft drinks surpassed coffee in per capita consumption for the first time. Although coffee consumption rebounded somewhat in the late 1970's due to low prices, by 1984 soft drinks had firmly captured first place.

Coffee consumption has declined in recent years for many reasons. While the decrease hit bottom in 1983, the fact remains that Americans now start drinking coffee later in life than preceding generations. These new coffee drinkers also drink less than those in corresponding age groups 30 years ago. Several surveys conducted for the International Coffee Organization suggest this trend is evident in every age group, except the over-60 population.

Tea is a versatile drink. It can be steeped from loose leaves or bags, made from instant crystals or a mix with sweetener, or purchased by the six-pack ready to drink. The increase in per capita tea use in the early to mid-1970's appears to have been partly replaced in recent years by rising use of herbal teas. However, these less traditional teas are not included in official data and, therefore, tea consumption in 1987 appears practically unchanged from 20 years ago. Nevertheless, tea—characterized by one firm as a "change of pace" drink—fills an important niche in today's array of American beverages.

The changes in consumption have had significant effects on the beverage industry. Total U.S. soft drink production



### The System for Measuring Food Consumption

The Economic Research Service annually estimates the amount of food available for human consumption in the United States. The U.S. food supply historical series measures national aggregate "consumption" of several hundred foods. It is the only source of time-series data on food and nutrient availability in this country.

The system for measuring food consumption is based on a commodity-flow concept. It starts with commodities produced on U.S. farms, caught by U.S. fishermen, or imported. The products then move through processing and manufacturing plants, the distribution system, retail outlets, and finally to the consumer.

Food consumption is calculated as a residual by taking the total supply (production estimates, imports, and beginning stocks) and subtracting other uses (exports, shipments to U.S. territories, seed requirements, nonfood industrial use, livestock feed, year-end stocks, and waste). Thus, food consumption is often called food disappearance since it is not a measure of actual consumption or the quantity ingested. However, because most foods are perishable, changes in disappearance presumably are associated with changes in actual con-

sumption, providing that the disappearance estimates are reliable. Like many time series, the data are more useful as indicators of trends over time than as measurements of absolute levels.

Initial disappearance data are obtained at various distribution levels. For example, meat is measured in terms of carcass weight and fruits and vegetables in farm weight. These estimates can be further refined to approximate weight at retail. Ideally, for nutritional analysis, the retail estimates should undergo additional adjustments for food losses in the home, but such data are sketchy and unreliable. The figures for retail level consumption include such inedible components as bones in meat, pits in fruit, in-home spoilage and waste, and use as pet food.

Per capita food consumption (disappearance) data are being revised to include U.S. military use here and overseas. In the interim, some estimates may be reported on total population, others on civilian population, and still others on both. The difference between civilian and total per capita consumption is quite small, except during World War II.

A wider range of ERS estimates on food consumption is published annually in *Food Consumption, Prices, and Expenditures*.

increased nearly 85 percent from 4.0 billion gallons in 1968 to 7.3 billion in 1986 (table 2). Total net coffee imports (green bean equivalent) averaged nearly 2.6 billion pounds during 1985-86, an increase from an average 2.4 billion during 1980-84. The apparent bottoming out of per capita coffee use—coupled with a growing U.S. population—may explain the recent strengthening in U.S. coffee imports. Tea imports averaged 188 million pounds (dry leaf basis) during the 1985-86 period, up from 182 million in 1980-84, and 165 million in 1970-76.

**Table 2. U.S. Imports of Coffee and Tea Rise, But Not as Much as Domestic Soft Drink Production**

Calendar year	U.S. imports		Domestic soft drink output
	Coffee	Tea	
	Million pounds		Million gallons
1968	2,387	155	3,957
1969	2,714	140	4,074
1970	2,667	137	4,250
1971	2,942	175	4,514
1972	2,874	151	4,674
1973	2,977	173	4,853
1974	2,603	178	4,762
1975	2,767	159	4,779
1976	2,718	181	5,259
1977	1,992	202	5,623
1978	2,495	152	5,904
1979	2,656	175	6,054
1980	2,443	185	6,154
1981	2,448	190	6,228
1982	2,352	170	6,233
1983	2,259	171	6,310
1984	2,411	195	6,424
1985	2,550	177	6,944
1986	2,644	200	7,309

Contact: Fred Gray (202) 786-1888.



### Fat Consumption Up Sharply in Past Decade

Interest in the fat content of the American diet has increased with the growing understanding of the relationship between dietary fat and health. People are now paying more attention to the types and amounts of fats and oils they consume.

Per capita consumption of fat in the United States rose 15.4 percent from 119.9 pounds in 1965 to 138.4 pounds in 1985. Most of the increase occurred after 1975.

But while we are using more total fat, the kinds of fats we use have changed. Animal fats still dominate, but the growth in fat use can be attributed to vegetable products. Fat from vegetable sources increased by more than half, from 49 grams per capita per day in 1965 to 75 grams in 1985, reflecting increased use of margarines, vegetable shortenings, and edible oils. In 1985, vegetable sources accounted for 43 percent of the total fat in the U.S. food supply, compared with 33 percent in 1965. At the same time, fat from animal sources declined 3 grams between 1965 and 1985—from 100 to 97 grams per capita per day. As a

result, the contribution to total fat from animal sources declined from 67 to 57 percent over the 20-year period.

Fats in the diet can also be classified as "invisible" and "visible" (*table 3*). The invisible ones—those naturally in foods such as meat, eggs, or dairy products—accounted for 53 percent of all fat consumed in 1985, down from a 60-percent share in 1965. Visible fats and oils are those added to foods, either directly in the form of spreads and salad dressings, or as ingredients in meals, bakery products, and other processed foods. They were 47 percent of total

**Table 3. Fats Can Be Found in a Wide Variety of Foods**

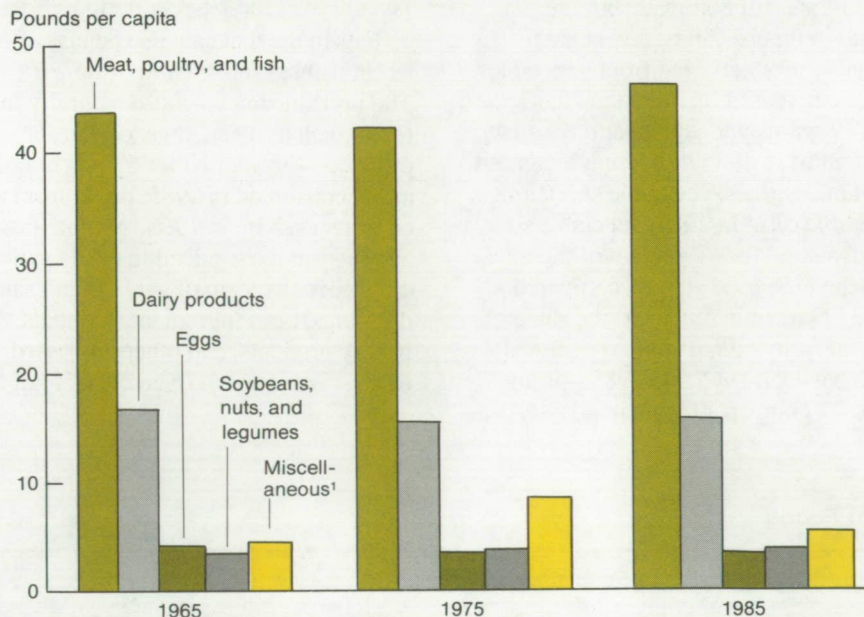
Item	Per capita consumption <sup>1</sup>								
	1965	1968	1971	1974	1977	1980	1983	1984	1985
<i>Pounds</i>									
Visible fats									
Baking and frying fats	14.2	16.3	16.8	16.9	17.2	18.2	18.5	21.3	22.9
Lard and edible tallow <sup>2</sup>	6.3	5.5	4.2	3.2	2.2	3.7	4.0	3.8	3.7
Margarine	7.9	8.7	8.9	9.1	9.2	9.2	8.4	8.4	8.6
Butter	5.2	4.6	4.1	3.7	3.5	3.7	4.0	4.0	4.0
Salad, cooking, and other edible oils	14.1	15.9	17.8	19.9	21.1	22.6	25.1	21.0	25.2
Total	47.7	51.0	51.8	52.8	53.2	57.4	60.0	58.5	64.4
Invisible fats									
Meat, poultry, and fish	43.6	47.7	49.8	46.9	45.4	47.5	45.7	45.5	46.1
Dairy products	16.7	15.2	15.2	15.0	14.8	14.7	15.4	15.7	15.7
Eggs	4.0	4.1	3.9	3.5	3.4	3.4	3.2	3.2	3.2
Fruits and vegetables	.8	.9	.9	.9	1.0	1.0	1.2	1.2	1.2
Soybeans, nuts, and legumes	3.6	3.7	3.6	3.8	3.6	3.2	3.8	4.0	3.8
Grains	1.7	1.7	1.7	1.6	1.7	1.7	1.7	1.8	1.8
Miscellaneous <sup>3</sup>	1.8	2.0	1.9	1.8	1.6	1.5	1.8	2.2	2.2
Total	72.2	75.3	77.0	73.5	71.5	73.0	72.8	73.5	74.0
Total	119.9	126.3	128.8	126.3	124.7	130.4	132.8	132.0	138.4

<sup>1</sup>Per capita consumption on a fat content basis. <sup>2</sup>Direct use, excludes use in margarine and shortening (baking and frying fats). <sup>3</sup>Includes chocolate, cocoa, coffee, tea, and spices.

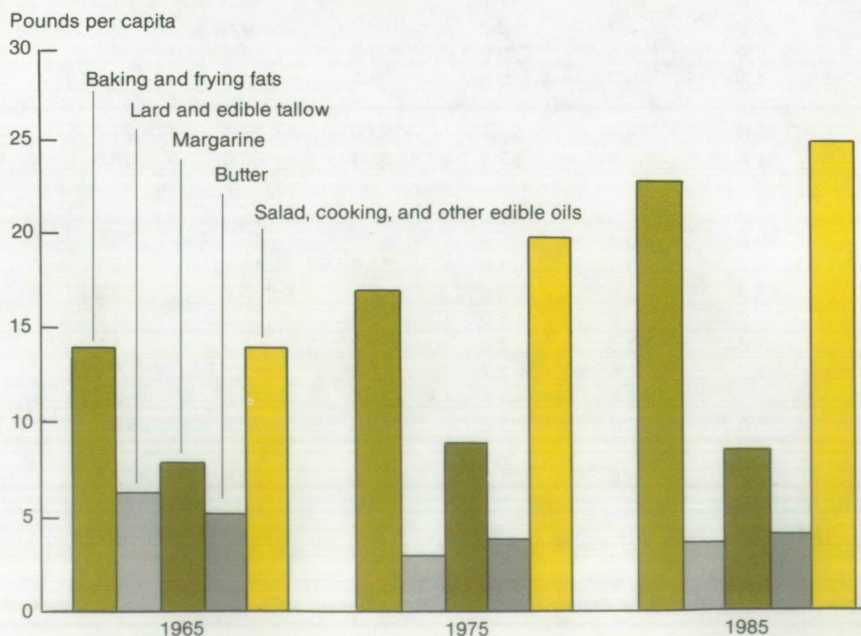
Source: Roger L. Hoskin and Judy J. Putnam, "Trends in U.S. Food Fat Consumption," *Oil Crops Situation and Outlook Report*, OCS-15, ERS, USDA, October 1987, p. 16.

Contact: Roger Hoskin (202) 786-1840 or Judy Putnam (202) 786-1870.



**Figure 3. Meat, Poultry, and Fish Provided Most of Our Invisible Fat**

¹Includes grains, fruits, vegetables, chocolate, cocoa, coffee, tea, and spices.  
 Source: "Trends in U.S. Fat Consumption," p. 16.  
 Contact: Roger Hoskin (202) 786-1840 or Judy Putnam (202) 786-1870.

**Figure 4. Salad and Cooking Oils Accounted for Most Visible Fat**

Source: "Trends in U.S. Food Fat Consumption," p. 16.  
 Contact: Roger Hoskin (202) 786-1840 or Judy Putnam (202) 786-1870.

dietary fat in 1985, up from 40 percent in 1965.

Red meat, poultry, and fish are the major sources of invisible fat (*figure 3*). They accounted for 60 to 65 percent of all invisible fat each year during 1965-85. However, this group's contribution to total dietary fat declined from 36.4 to 33.3 percent during 1965-85. Red meat's share dropped from 32.1 to 27.7 percent over the 20-year period, while poultry's share increased from 3.4 to 4.9 percent. Fish's share slid from 0.9 to 0.7 percent.

Dairy products—accounting for 21 percent in 1985, down from 23 percent in 1965—are the second biggest source of invisible fat. The dairy group's contribution to total dietary fat also declined from 13.9 to 11.3 percent during the period. Whole milk's share dropped from 7.5 to 2.9 percent, while cheese's share jumped from 2.5 to 4.6 percent, and lowfat milk's share increased from 0.4 to 1.2 percent.

The most significant change in U.S. fat use patterns is the 35-percent rise in per capita consumption of visible fats. Consumption of foods from this group—which includes salad and cooking oils, shortening, table spreads, lard, and edible beef tallow—rose from 47.7 pounds per person in 1965 to 64.4 in 1985. In comparison, per capita consumption of invisible fats rose a little over 2 percent, from 72.2 to 74 pounds.

Salad, cooking, and other edible oils are now our greatest source of visible fat (*figure 4*). These oils accounted for 39 percent of visible fat in 1985, compared with 30 percent in 1965. During that period, per capita consumption of edible oils jumped from 14.1 pounds per person to 25.2. Salad and cooking oils are widely used in convenience foods, frozen and prepared foods, and snack foods, as well as salad dressing and mayonnaise. All of these food categories have experienced strong growth. Edible oils' contribution to total dietary fat also increased from 11.8 to 18.2 percent.



Shortening—baking and frying fats—is the second biggest source of visible fat in the diet, accounting for 36 percent of the total in 1985 compared with 30 percent in 1965. Per capita consumption of shortening rose during 1965-85 from 14.2 pounds per person to 22.9. This 8.7-pound increase was partially offset by a 4.5-pound decrease in per capita consumption of lard, which has historically been used as baking and frying fat. Shortening's contribution to total dietary fat rose during 1965-85 from 11.8 to 16.5 percent.

Table spreads, including butter and margarine, are the third largest source of visible fat, accounting for 20 percent of the total in 1985 compared with 27 percent in 1965. Overall per capita table spread use did not change much during 1965-85, but per capita butter consumption dropped 23.2 percent, and margarine increased 8.9 percent. In addition, technological improvements in the hydrogenation process—which makes liquid vegetable oils solid at room temperature—spawned increasing use of soft and liquid margarines. The contribution of table spreads to total dietary fat declined during 1965-85 from 10.9 to 9.1 percent.

Lard and edible beef tallow accounted for 6 percent, 3.7 pounds, of visible fat consumed in 1985, compared with 13 percent, 6.3 pounds, in 1965. Consumption of lard dropped from 6.3 pounds per person to 1.8. In contrast, consumption of edible beef tallow—used in fast food restaurants and commercially prepared foods—increased from less than 0.1 pound per person to 1.9 pounds. The contribution to total dietary fat from lard and edible beef tallow declined during 1965-85 from 5.3 percent to 2.7.

At some point, the rise in per capita use of salad and cooking oils should level off. If so, edible vegetable oil use will be determined almost entirely by population growth. Furthermore, much of the growth in soybean oil use will be a result of it replacing other fat sources.

### Domestic Consumption of Red Meat, Poultry, and Fish

Of all the meats, only beef and pork lack a clear upward or downward trend in consumption (*table 4*). Veal, lamb, and mutton all decreased by more than half during the last 25 years, while both chicken and turkey almost doubled. At the same time, fish consumption increased steadily but not as dramatically.

After a long climb, beef consumption peaked in 1976 and then dropped. Between 1980 and 1986, consumption increased very slowly. Last year, however, beef fell about 3 pounds and will be

down another 3 pounds or so in 1988. A combination of factors may have reduced production and consumption after the mid-1970's. At that time, people were consuming more beef than ever before because it was available at reasonable prices. However, relatively low cattle prices and higher feed costs prompted producers to cut back. Smaller increases in real income, high unemployment, and high levels of consumer debt encouraged people to look for lower priced meats, and plenty of poultry was available.

Pork consumption fluctuated from year to year without an apparent upward

**Table 4. Red Meat Consumption Has Fallen Since 1970, But Total Meat and Fish Consumption Has Risen**

Item	Per capita consumption <sup>1</sup>						1960-64 to 1985-87
	1960-64	1965-69	1970-74	1975-79	1980-84	1985-87	
	Pounds						Percent change
Beef	67.9	79.4	83.9	87.8	77.3	77.6	14
Veal	4.6	3.5	2.0	2.8	1.6	1.7	-63
Pork	60.1	58.4	62.1	55.8	63.0	59.8	0
Lamb and mutton	4.2	3.3	2.6	1.5	1.5	1.4	-67
Total red meat	136.8	144.6	150.6	147.9	143.4	140.5	3
Young chicken	26.0	32.2	36.9	41.6	49.5	57.2	120
All chicken	29.9	36.0	40.5	44.6	52.5	59.6	99
Turkey	7.0	8.1	8.6	9.1	10.9	13.5	93
Total poultry	36.9	44.1	49.1	53.7	63.4	73.1	98
Total red meat and poultry	173.7	188.7	199.7	201.6	206.8	213.6	23
Fish <sup>2</sup>	10.6	10.9	12.1	12.8	13.0	14.6 <sup>3</sup>	8
Total red meat, poultry and fish	184.3	199.6	211.8	214.4	219.8	228.2	24

<sup>1</sup>Meat is on retail weight equivalent basis, poultry on ready-to-cook equivalent, and fish on edible weight basis. Totals may not add due to rounding. <sup>2</sup>Based on civilian population, excludes game fish. <sup>3</sup>1985-86 average.

Contact: Lawrence Duewer (202) 786-1710.

or downward trend. Production, and thus consumption, started to increase during the last half of 1987 and is expected to rise about 7 percent this year. This increase resulted as producers—in a typical cyclical response—reacted to favorable returns in late 1986 and most of 1987.

During the last 25 years, consumption of broilers—young chickens—more than doubled, while consumption of other types of chicken—mostly old hens—decreased slowly. The shift to broilers has been encouraged by gains in broiler production. More and more broilers were available at lower prices relative to competing meats. Turkey consumption also increased rapidly, as people turned to the economically priced meat for meals other than the traditional Thanksgiving dinner. Product innovations, like packaged turkey lunch meats, and value-added products, such as deboned and breaded chicken breasts, also encouraged the consumption of poultry products.

Fish and shellfish come in a variety of forms—fresh, frozen, canned, and cured. Consumption has risen steadily over time as new products were introduced, and as fresh fish became more available. Shellfish and canned tuna were particularly big gainers.

### Poultry Leads the Increase in International Meat Consumption

Per capita meat consumption in the major producing countries increased about 11 percent over the last decade (carcass-weight equivalent), and the types of meat available for consumption have changed (*table 5*). For instance, most of the increase came from poultry and pork, while beef declined. Consumption of lamb, mutton, and goat stagnated worldwide.

Per capita consumption of meat is affected by many factors—local and world economies, religion, social customs, and even climate. Most meat is produced and consumed in high-income countries. However, new technologies, like improved refrigeration and transportation, in developing countries have opened the door for meat imports and improved the distribution of such products.

Religion, on the other hand, sometimes restricts the kinds of meat that are acceptable in certain countries. For example, Moslems and Jews shun pork, and Hindus eschew all meat. In other societies, these meats are very popular. Pork is the predominate meat consumed in Europe, especially Eastern Europe, as well as in China, Japan, and other Asian nations. In China alone, where about one-third of the world's pork is produced, consumption rose from about 18 to 35 pounds per capita during the past decade.

Poultry consumption has shown the greatest gain, however. One reason is that it takes less time and feed to produce a pound of poultry than other grain-fed meats. This means that poultry producers can respond quickly to changes in demand. It also means that in most countries poultry meat is relatively less expensive compared with other meats. This has made it attractive in international trading circles. Countries which want to rapidly increase meat consumption but have limited resources, can not only import poultry products but also

**Table 5. World Consumption Trends Favor Poultry and Pork**

Country and Item	Per capita consumption <sup>1</sup>		
	1975-77	1980-82	1985-87
<i>Pounds</i>			
United States			
Beef and veal	127	106	106
Pork	59	69	63
Lamb, mutton, goat	2	2	2
Poultry	51	63	73
EC-12			
Beef and veal	52	50	50
Pork	62	72	76
Lamb, mutton, goat	8	8	8
Poultry	29	33	35
Eastern Europe			
Beef and veal	42	39	35
Pork	102	102	99
Lamb, mutton, goat	3	3	3
Poultry	24	28	27
USSR			
Beef and veal	59	58	62
Pork	43	44	48
Lamb, mutton, goat	9	8	7
Poultry	14	21	23
Australia			
Beef and veal	153	105	92
Pork	28	34	37
Lamb, mutton, goat	47	44	52
Poultry	32	44	50
Japan			
Beef and veal	9	12	14
Pork	25	31	33
Lamb, mutton, goat	6	3	3
Poultry	17	24	28
Saudi Arabia			
Beef and veal	4	14	14
Lamb, mutton, goat	39	41	50
Poultry	27	58	73
Egypt			
Beef and veal	16	19	23
Lamb, mutton, goat	2	2	3
Poultry	7	10	12
Argentina			
Beef and veal	187	175	174
Lamb, mutton, goat	7	7	6
Poultry	18	18	17
Brazil			
Beef and veal	43	35	32
Pork	15	17	11
Poultry	11	21	22

<sup>1</sup>Carcass-weight equivalent.

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import the technology needed to produce chicken.

Beef consumption predominates in North and South America and in Australia and New Zealand, where an abundance of forage is available for ruminant livestock production. Ruminants—like cattle, sheep, and goats—can be raised without any grain, but this requires reliable sources of cheap forage. Livestock grown only on forage take longer to reach slaughter weight than if they were fed grain.

Argentina retains the lead in the amount of beef eaten per capita. A number of Asian and Middle Eastern countries, such as Egypt, have increased their per capita consumption of beef, but the rise has come mostly from imports of highly subsidized products from the European Community (EC). The EC has used subsidized export sales to lower burdensome stocks of beef from their dairy herd reduction program. In some cases, the subsidized prices were lower than the export prices for poultry.

The key to further increases in per capita consumption of meat lies in continued economic growth and research and development. In many developing countries, poultry industries are just getting started. In other nations, these industries have matured, and the spectacular gains in output seen in past years are not likely to continue. Research in pork production has led to leaner hogs and more pigs per litter. In the future, we may see pork being produced on even less feed. These developments could mean that beef could lose more of its market share in many parts of the world, as supplies of poultry and pork expand.

### Dairy Products

Per capita civilian consumption of dairy products fluctuated a bit between 1966 and 1986, reflecting changing consumer preferences, incomes, and relative prices between different dairy and non-dairy products. In 1986, per capita consumption was 594.4 pounds (milk equivalent on a fat basis), up less than half a pound from 1985 but second only to the 603.9 pounds consumed in 1966. About 7 percent of the 1986 total consisted of Government donations, compared with 8 percent in 1984 and 1985 and an average of about 3 percent during the 1966-83 period. Changes in per capita consumption continue to be dominated by growth in commercial sales.

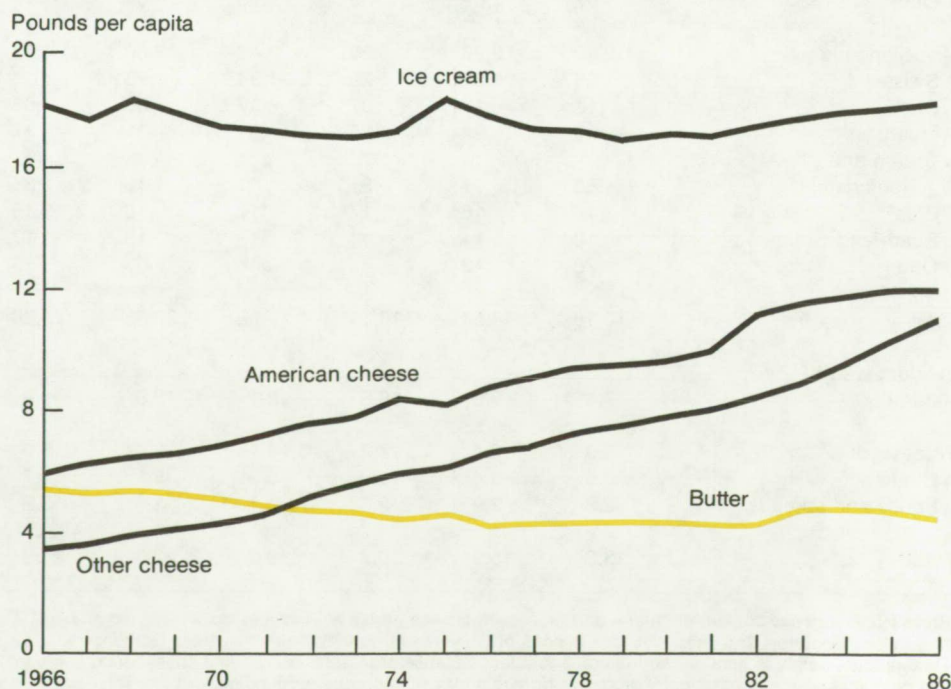
Between 1966 and 1986, per capita butter consumption fell almost 20 percent

for several reasons (*figure 5*). Margarine was substituted for butter, as margarine prices averaged well below retail butter prices. Concerns about fat and cholesterol in the diet may also have prompted consumers to switch to margarine. Furthermore, varying levels of Government donations influenced butter consumption during the period. Lower donations in 1986 trimmed use by 6 percent from 1985's 4.9 pounds.

Per capita ice cream consumption in 1986 was almost 2 percent above 1985's 18 pounds, but only one-tenth of a pound more than in 1966. During these years, ice cream consumption fluctuated a bit, ranging from a high of 18.5 pounds in 1975 to a low of 17.1 pounds in 1979.

Consumption of cheese from both commercial and Government sources hit 23.2 pounds per capita in 1986, up 0.6

**Figure 5. People Ate More Cheese in 1986 Than They Did 20 Years Earlier<sup>1</sup>**



<sup>1</sup>Per capita civilian consumption.

Source: *Dairy Situation and Outlook Yearbook*, DS-411, ERS, USDA, September 1987, p. 17.

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pounds from 1985 and more than twice the 1966 level. The increase between 1985 and 1986 was due to an almost 7-percent rise in the consumption of all cheeses except American. Lower

Government donations reduced per capita consumption of American cheese about 1 percent.

Between 1971 and 1986, Italian cheese consumption grew the fastest,

with per person use more than tripling (table 6). Per capita consumption of Mozzarella rose almost 300 percent between 1971 and 1986. Americans use as much Mozzarella now as they did Cheddar in the mid-1960's. An expanding pizza industry accounts for much of the increase. Provolone and Ricotta sales also experienced healthy gains.

Consumption of American cheese reached 12.13 pounds per person in 1986, more than 60 percent higher than the amount consumed in 1971. Since the mid-1970's, almost all of the growth in American cheese has come from Cheddar. Among other varieties, use of Cream and Neufchatel more than doubled since 1971. In 1986, Cream cheese passed Swiss to become the third most popular variety.

Between 1971 and 1986, per capita consumption of cheese in natural form rose by almost 130 percent, while use of processed cheese products only grew by about 35 percent. In contrast with this long-run trend, 1986's increase in consumption was about evenly split between processed and natural cheese.

Growth in cheese sales has been the primary cause of rises in total commercial use of dairy products since 1970. Cheese offers a great deal of convenience, variety, and versatility—characteristics that consumers probably value highly. With favorable prices, cheese sales can be expected to rise in coming years.

Cheese imports have held to about 5 to 7 percent of U.S. civilian consumption since 1966. The other 93-95 percent was produced by American dairy farmers. Imports of American-type, various Italian, Edam and Gouda, Blue Mold, and Swiss-type cheeses compete directly with those made in the United States. To prevent the undercutting of the U.S. milk price support program, imports of these cheeses—as well as other manufactured dairy products—are curtailed by quotas.

**Table 6. Italian Cheeses Gained in Popularity**

Type of cheese	Per capita civilian consumption					
	1971	1974	1977	1980	1983	1986 <sup>1</sup>
	<i>Pounds</i>					
<b>Natural equivalent<sup>2</sup></b>						
American	7.42	8.56	9.29	9.68	11.66	12.13
Cheddar	6.00	6.38	6.86	6.90	9.17	9.80
Other <sup>3</sup>	1.42	2.18	2.44	2.78	2.49	2.33
Italian	2.31	2.99	3.77	4.47	5.33	7.04
Provolone	.22	.28	.35	.42	.50	.58
Romano	.14	.15	.16	.15	.16	.16
Parmesan	.20	.25	.27	.28	.33	.34
Mozzarella	1.40	1.88	2.49	3.05	3.71	5.22
Ricotta	.28	.34	.41	.47	.54	.64
Other	.07	.09	.09	.10	.09	.10
Miscellaneous	2.40	2.96	3.05	3.47	3.66	4.03
Swiss <sup>4</sup>	.95	1.21	1.22	1.34	1.26	1.30
Brick	.11	.11	.07	.07	.06	.09
Muenster	.19	.23	.25	.31	.31	.37
Cream and Neufchatel	.63	.71	.81	1.01	1.16	1.35
Blue <sup>5</sup>	.14	.16	.17	.17	.16	.16
Edam and Gouda	.10	.11	.11	.13	.18	.17
Other	.28	.43	.42	.44	.53	.59
<b>Total</b>	<b>12.13</b>	<b>14.51</b>	<b>16.11</b>	<b>17.62</b>	<b>20.65</b>	<b>23.20</b>
<b>Product-weight</b>						
Natural	7.4	9.5	10.5	12.1	13.9	16.9
Processed	5.9	6.4	7.2	7.1	8.4	8.0
Cheese	3.6	3.4	3.9	3.9	5.1	4.7
Foods and spreads	2.3	2.9	3.3	3.1	3.4	3.2
<b>Total<sup>6</sup></b>	<b>13.3</b>	<b>15.9</b>	<b>17.7</b>	<b>19.2</b>	<b>22.3</b>	<b>24.8</b>

<sup>1</sup>Preliminary. <sup>2</sup>Cheese content of natural and processed cheese products. <sup>3</sup>Includes colby, washed and stirred curd, Monterey, and jack. <sup>4</sup>Includes imports of Gruyere and Emmentaler. <sup>5</sup>Includes Gorgonzola.

<sup>6</sup>Total product-weight is greater than natural equivalent because processed cheese and cheese food is made from natural cheese and other dairy products. Numbers may not add due to rounding.

Source: *Dairy Situation and Outlook Yearbook*, p. 18.

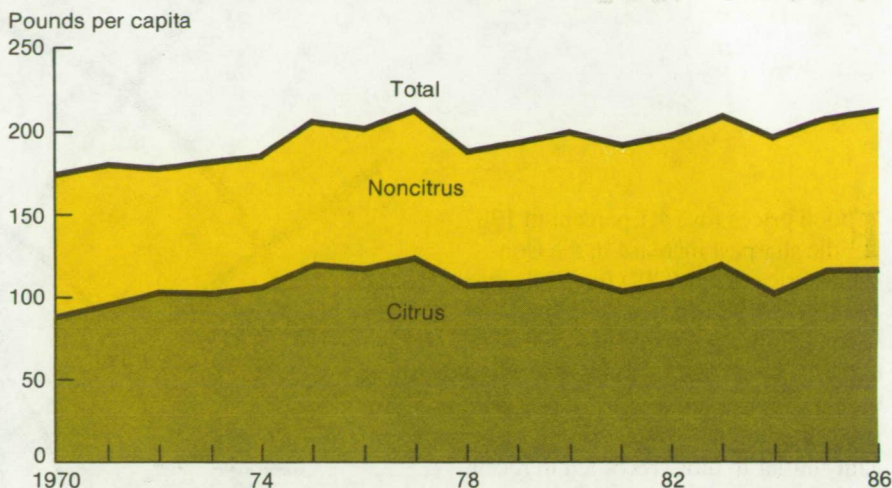
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## Food Consumption. . . At a Glance

Between 1970 and 1986, U.S. per capita fruit consumption varied from a low of 173 pounds (farm-weight equivalent) in 1970 to a high of 213 pounds in 1977. Since 1970, U.S. per capita fruit consumption has grown at a moderate 1.3-percent a year, reaching 212 pounds in 1986. Most of the increase since 1970 has been in processed fruit, mainly citrus juices. The increased consumption resulted from improved distribution and availability, new product forms, better storage, higher disposable personal income, better marketing techniques, more brands, increased advertising and promotion, and changes in consumer tastes and preferences.

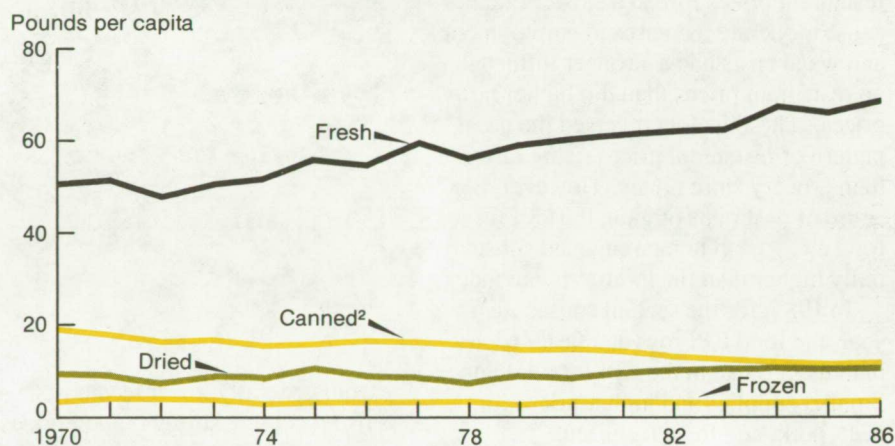
### Consumption of Fruit Varied<sup>1</sup>



<sup>1</sup>Farm-weight equivalent. Data for 1986 is preliminary.

Fresh fruit consumption gained 13 pounds per capita from 1970-72 to a total of 92 pounds (farm-weight equivalent) in 1984-86. The rise was due entirely to sharp increases in consumption of fresh noncitrus fruits like bananas, avocados, grapes, and strawberries. Per capita use of processed noncitrus fruit dropped substantially from the early 1970's. The decrease is primarily attributed to reduced canned fruit consumption, which fell more than 5 pounds to 9.6 pounds in 1984-86.

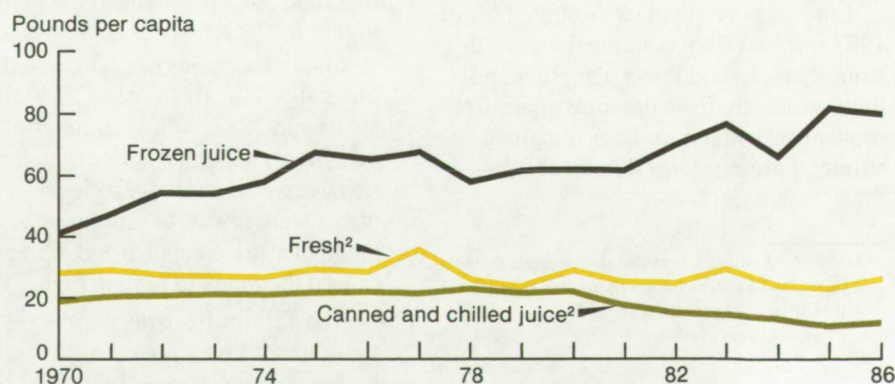
### Fresh Noncitrus Consumption Gained Most<sup>1</sup>



<sup>1</sup>Farm-weight equivalent. Data for 1986 is preliminary. <sup>2</sup>Includes juice.

Because of freeze damage in Florida and Texas, citrus production has decreased and, as a result, per capita fresh citrus consumption fell 4 pounds to 24 pounds from 1970-72 to 1984-86. On the other hand, processed citrus consumption gained significantly. By 1984-86, it reached 87 pounds per capita (farm-weight equivalent) from 68 pounds in 1970-72. The increase was led by a sharp rise in frozen juice, reaching a record 81.2 pounds, farm equivalent, in 1985. Chilled citrus juices, particularly chilled orange juice, increased in popularity. Canned citrus juice, however, continued its downward trend.

### Frozen Juice Led Processed Citrus Consumption<sup>1</sup>



<sup>1</sup>Farm-weight equivalent. Data for 1986 is preliminary. <sup>2</sup>Crop, or pack, year begins October or November prior to year indicated.  
Source: *Fruit Situation and Outlook Yearbook*, TFS-242, ERS, USDA, July 1987, p. 26.  
Contact: Ben Huang (202) 786-1884.



## Food Prices

**F**ood prices rose 4.1 percent in 1987, the sharpest increase in the Consumer Price Index (CPI) for food since 1981. The CPI for food sold in grocery stores climbed 4.3 percent, also the highest since 1981. Meanwhile, prices of food sold in restaurants and fast-food outlets moved up 4.0 percent (*table 1*), a gain similar to those recorded in recent years for away-from-home foods.

The upturn in grocery store prices last year reflected stronger farm prices and rising marketing costs. At the same time, restaurant prices rose at a slower rate because moderate increases in employment and wage costs had a stronger influence on restaurant prices than did higher farm prices. These factors reversed the usual pattern of restaurant prices rising faster than grocery store prices. However, because of past rates of gain, the CPI for food away from home remained substantially higher than the food-at-home index.

In 1987, for the second consecutive year, the food CPI rose at a faster pace than the 3.6 rise in the CPI for all items. Smaller supplies and higher prices for beef, pork, and fresh fruits and vegetables, were the primary farm foods responsible for pushing up the index. A large increase in fish and seafood prices also helped advance the index.

Limited pork supplies through most of 1987 resulted from continued low cold-storage stocks and lower slaughter and import rates than the previous year. Consequently, demand for hogs remained strong. Farmers, who were benefiting



from generally lower feed costs, were also receiving strong market prices, and therefore had the incentive to increase hog production. However, the expansion did not come until the fourth quarter of last year. Retail pork prices fell some at that time but still averaged 8.2 percent higher in 1987.

Smaller supplies of oranges and apples caused the fresh fruit CPI to rise sharply in 1987. While supplies of summer peaches, plums, apricots, and cherries were well above 1986 levels and prices were lower, the strong influence of the higher priced apples and oranges caused the index to remain high.

The CPI for fresh vegetables—strongly influenced by a poor lettuce crop and higher potato prices—climbed 12.9 percent above 1986. Throughout the year

and particularly during the fall, wet weather, disease from white fly infestations, and destruction of fields by birds plagued lettuce growers. Consequently, lettuce prices averaged above 1986 levels all year, with retail prices more than doubling during the fourth quarter of 1987. The annual average for the year was 21 percent higher than in 1986. Potato prices also rose nearly 21 percent above 1986. However, this increase was less an actual price rise than it was a return to normal market conditions because an abnormally large supply of potatoes depressed prices during 1986.

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### Retail Price Components

Retail prices can be broken down into two components—the farm value and the farm-to-retail price spread. The farm value represents the price farmers receive for the raw-commodity equivalent of foods in the market basket.

The farm-to-retail price spread is the difference between the retail price and the farm value. The price spread is the charge for processing, distributing, and retailing foods. A related concept is the farm value share—the percentage

farmers get, on average, from each dollar consumers spend in retail foodstores.

In 1987, farm value—boosted by higher cattle prices—averaged 2.7 percent above 1986, but still trailed the 5.0-percent rise in retail prices for foods that originated on U.S. farms (*figure 1*). This was the first increase in the farm value of the market basket since 1984, when reduced supplies of many commodities pushed up the farm value. The farm value fell 8 percent during 1985 and 1986.

Farmers received about 7 percent more for red meat in 1987 than in 1986. One pound of USDA Choice grade beef sold at retail for \$2.43 in 1987, and cattlemen received \$1.38 for the equivalent quantity (2.4 pounds) of live animal. This was 14 cents more than they received in 1986. Also increasing the farm value of the market basket in 1987 were higher grower prices for fruits and vegetables.

The farm-to-retail price spread for the market basket rose 6 percent in 1987, a larger increase than in 1986. Several factors widened the price spread. Among these were higher input prices for the food industry, greater use of some inputs such as labor in food retailing and advertising, and larger profit margins on food sales. Handling, processing, and retailing input prices, as measured by an ERS food marketing cost index, increased an average of 2.2 percent in 1987. The biggest contributor, food packaging materials—such as paperboard shipping boxes—rose 4 percent. Hourly labor costs followed with about a 2-percent rise.

Price spreads increased for each of the 10 major food groups in the market basket, reflecting higher costs as well as farm price variations and the normal lag in retail price adjustments. Increases ranged from about 2 to 19 percent. The farm-to-retail spread for red meats rose about 7.5 percent, more than double the 1986 rise. The price spread for cereal and bakery products widened about 4 percent as 1987 retail prices rose 5.8 percent for cereals and 3.5 percent for bakery products. Much of the price spread increase for cereals may stem from the industry's advertising and promotion efforts aimed at capitalizing on growing consumer demand for nutritional products. The increase in the cereal and

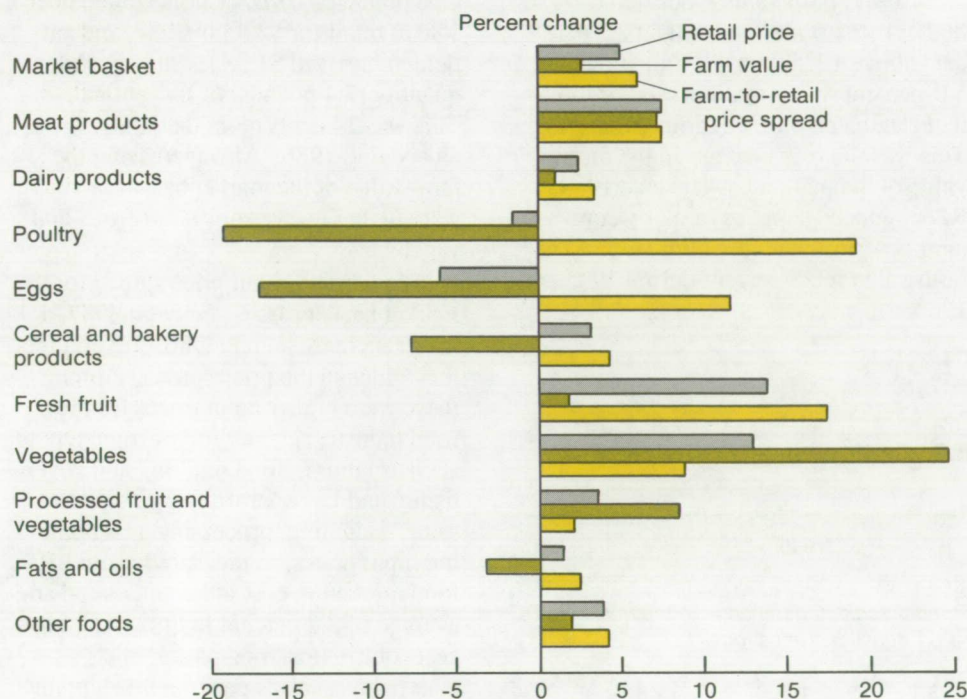
**Table 1. Higher Prices for Pork, Fish, Fresh Fruit and Vegetables Helped Push Up Food Prices in 1987**

Item	1983	1984	1985	1986	1987
<i>Annual percentage change in the consumer price index</i>					
Food at home	1.1	3.7	1.4	3.2	4.3
Beef and veal	-1.5	1.2	-2.1	0.6	7.6
Pork	0.9	-1.3	0.2	8.2	8.2
Other meats	-0.4	0.4	0.6	2.6	6.3
Poultry	1.2	10.6	-1.0	7.5	-1.4
Fish and seafood	1.2	3.2	4.9	9.2	10.6
Eggs	4.7	11.7	-16.6	6.9	-5.9
Dairy products	1.2	1.3	1.9	0.2	2.5
Fresh fruit	-4.3	11.1	10.1	2.1	11.2
Apples	-4.2	12.7	6.1	15.5	0.3
Bananas	10.3	-7.6	2.1	5.1	-0.8
Oranges	-20.4	35.3	6.5	-9.3	25.1
Processed fruit	1.5	7.2	4.1	-2.9	4.0
Fresh vegetables	3.6	10.7	-4.3	4.0	12.9
Potatoes	-1.5	27.0	-12.4	-5.3	20.7
Lettuce	2.5	-6.9	10.5	6.2	21.0
Tomatoes	7.7	4.9	-1.9	7.4	4.9
Processed vegetables	0.4	4.7	1.1	-0.2	2.8
Fats and oils	1.3	9.5	2.2	-2.2	1.5
Sugar and sweets	1.9	3.9	2.5	3.1	1.8
Cereal and bakery products	3.2	4.4	3.8	2.8	3.5
Nonalcoholic beverages	1.9	2.5	2.0	5.9	-2.6
Food away from home	4.4	4.2	4.0	3.9	4.0
All food	2.1	3.8	2.3	3.2	4.1

Source: Bureau of Labor Statistics, Department of Labor.

Contact: Ralph Parlett (202) 786-1870.



**Figure 1. Price Spreads Increased for All Food Groups Between 1986 and 1987**

Source: *Food Costs... From Farm to Retail*, ERS, USDA, April 1988.  
 Contact: Denis Dunham (202) 786-1870.

bakery spread also reflects declining farm values of food grains and other farm ingredients.

The farm value share is computed from retail food prices and farm values of foods. Over time, the farm value share reflects relative changes in farm and retail food prices. In 1987, farmers received about 29 cents of each dollar consumers spent for food in retail grocery stores (table 2). The remaining 71 cents—which represents the farm-to-retail price spread—paid for marketing services. The farm value share declined over the years because large supplies held farm prices down, while higher charges for marketing services drove retail food prices up.

The farm value share of retail price varies greatly among foods. In general, the more highly processed the product, the smaller the farm share. For example,

compare flour with bread. Wheat is the principal ingredient of each, but bread undergoes additional manufacturing. In 1987, farmers received 26 percent of the retail price for flour, compared with only 7 percent for white bread.

Foods from animal products tend to have a higher farm value share than those from crops. This is because farm production costs are relatively greater for animal products than crop products. Another factor is the degree of processing and packaging involved.

Other factors influencing the farm share include shipping distance between the farm and the consumer and the perishability of the product. These factors may partially explain why the farm value share is much lower for California fresh oranges than for frozen concentrated orange juice.

**Table 2. Farm Value Share of Food Prices Generally Declined**

Item	Farm value share of the at-home food dollar		
	1980	1983	1987
<i>Percent</i>			
<b>Animal products</b>			
Grade A large eggs, 1 doz.	60	64	62
Choice beef, 1 lb.	61	57	57
Broiler chicken, 1 lb.	54	52	50
Fresh milk, ½ gal.	53	53	49
Pork, 1 lb.	45	45	44
Natural cheddar cheese, 1 lb.	na	na	36
<b>Crops</b>			
Frozen orange juice, 12 fl. oz.	42	42	37
Sugar, 1 lb.	40	40	35
All purpose wheat flour, 5 lbs.	36	33	26
Northeast potatoes, 10 lbs.	35	35	26
Peanut butter, 1 lb.	na	na	26
Shortening, 3 lb. can	30	28	19
California oranges, 1 lb.	14	14	18
Lettuce, 1 lb.	10	10	17
Margarine, 1 lb.	28	na	17
Long grain rice, 1 lb.	30	24	15
Frozen french fried potatoes, 1 lb.	na	na	12
Canned tomatoes, 1 lb. can	12	10	9
White bread, 1 lb.	10	10	7
<b>Average of all foods</b>	<b>37</b>	<b>33</b>	<b>29</b>

na = not available.

Source: *Food Costs... From Farm to Retail*, April 1988.

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### USDA's Market Basket

USDA uses its market basket concept to track price changes for commodities farmers sell and the foods consumers buy in retail foodstores. The market basket contains the average quantities of domestically produced food for at-home consumption that were purchased in the 1982-84 base period. The basket excludes fish, seafood, and nonalcoholic beverages. Changes in retail prices of the market basket are components of the CPI for foods.

### Meat and Poultry Prices

The biggest trend in retail meat and poultry prices is that expensive cuts of meat are increasing in price faster than cheaper cuts.

Beef cuts priced at less than \$2.75 per pound decreased in price between 1980 and 1987. Those above \$2.75 increased in price, and those above \$3.50 increased even more (*table 3*). The higher priced pork cuts—bacon and pork chops—also rose more than cheaper cuts. Broiler and turkey retail prices were generally lower, with increases of only 10 to 15 percent. However, many value-added poultry products increased considerably more. The somewhat more expensive bone-in

chicken breasts rose 32 percent. Data on boneless breasts are not available, but those prices probably went up even faster.

If there is an exception to higher priced cuts increasing more, it is canned hams. Although the price did rise between 1980 and 1987, it still dropped from the most expensive pork cut to the second highest. Frankfurters and bologna prices rose slowly, while the price of beef liver fell.

There are several possible explanations for why prices of more expensive meat items climbed faster than their lower priced counterparts. The first is that people want more convenience and service, and they are willing to pay for them. Some of the higher priced cuts are considered simpler to fix. Broiling a T-bone steak is easier than braising a chuck roast.

A second explanation is that Americans, rather than paying higher prices for a low-priced cut of red meat, will substitute even lower priced poultry. In other words, while someone who wants a high-priced cut—like porterhouse steak—seems willing to pay for it, another person may forego buying cuts like chuck roast and switch to poultry, if the roast becomes too expensive.

A third explanation is that higher priced cuts are more price inelastic than are lower priced cuts. This means that when the quantity available falls, people are willing to pay more rather than reduce their consumption of the product.

**Table 3. Retail Prices Increased More for More Expensive Meat Cuts**

Item	Retail price		
	1980	1984	1987
<i>Dollars per pound</i>			
Choice beef			
Ground chuck	1.83	1.72	1.71
Ground beef	na	1.29	1.31
Chuck roast <sup>1</sup>	1.82	1.68	1.68
Round roast <sup>2</sup>	2.61	2.58	2.53
Rib roast <sup>1</sup>	2.95	3.35	3.54
Round steak <sup>2</sup>	2.77	2.91	2.89
Sirloin steak <sup>1</sup>	2.95	3.08	3.13
Chuck steak <sup>1</sup>	1.70	1.71	1.63
T-Bone steak <sup>1</sup>	3.61	3.95	4.24
Porterhouse steak <sup>1</sup>	3.73	4.06	4.35
Pork			
Sliced bacon	1.46	1.86	2.14
Center cut chops <sup>1</sup>	1.95	2.38	2.82
Ham, rump or shank-half <sup>1</sup>	1.23	1.32	1.54
Sirloin roast <sup>1</sup>	1.43	1.65	1.94
Shoulder picnic <sup>1</sup>	.99	1.01	1.12
Fresh, loose sausage	1.41	1.71	1.99
Canned ham, 3 or 5 lb	2.32	2.56	2.80
Poultry			
Whole broilers	.72	.81	.78
Chicken breasts <sup>1</sup>	1.37	1.70	1.81
Whole turkeys	.89	.99	1.01
Miscellaneous			
All meat frankfurters	1.72	1.80	1.99
Bologna	2.01	2.13	2.19
Beef liver	1.17	.98	1.03

na = not available. <sup>1</sup>Bone in. <sup>2</sup>Boneless.

Source: Bureau of Labor Statistics, Department of Labor.

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## Fresh Fruit

The marketing system for fresh fruit involves assemblers, packers, shippers, wholesalers, and retailers. Because these marketing costs are passed on through the system, and eventually to the consumer, all of these charges directly affect the retail prices of fresh fruit.

Retail and wholesale prices of Red Delicious apples rose across the country between 1980 and 1986. Wholesale prices averaged from a low of \$19.30 for a 42-pound carton in the West to a high of \$20.47 in the Northeast during 1986 (table 4). Higher transportation costs

from Washington State production areas to eastern cities seemed to push wholesale prices up in the Northeast.

Freezes in Florida and Texas reduced the supply of fresh oranges and resulted in sharp price increases between 1980 and 1986. Wholesale prices of Florida oranges in Baltimore rose 32 percent. Retail prices in Baltimore climbed 65 percent, primarily because of higher transportation, labor, and marketing costs.

Wholesale prices of California navel oranges rose 39 percent in the West during the 6-year period. In the Northeast, wholesale prices climbed 53 percent, reflecting higher transportation

costs. Likewise, retail prices only increased 37 percent in the West, compared with a 47-percent rise in the Northeast.

About 40 percent of California grapes grown for fresh consumption are of the raisin variety—most of which are Thompson seedless. Between 1980 and 1986, wholesale prices rose in all regions except the Northeast, which experienced a 12-percent decline. Retail prices of Thompson seedless grapes increased slightly to moderately across the country, ranging from \$22.92 a 23-pound lug in the West to \$24.43 in the Northeast and North Central regions.

**Table 4. Fresh Fruit Prices Rose Between 1980 and 1986**

Items and area	Wholesale price <sup>1</sup>		Retail price		Items and area	Wholesale price <sup>1</sup>		Retail price	
	1980	1986	1980	1986		1980	1986	1980	1986
<i>Dollars</i>					<i>Dollars</i>				
Washington Red Delicious apples (42-lb carton)					California navel oranges (37.5-lb carton)				
Northeast	16.67	20.47	24.86	29.84	Northeast	8.18	12.51	13.00	19.17
North Central	16.34	19.68	26.77	28.26	North Central	9.12	12.49	14.40	18.65
West	16.97	19.30	25.75	29.69	West	6.57	9.14	11.24	15.43
Baltimore	15.84	19.48	25.51	30.95	Baltimore	8.26	11.40	14.65	16.98
White seedless grapefruit (42.5-lb carton)					California valencia oranges (37.5-lb carton)				
Northeast	5.63	6.96	11.83	15.77	Northeast	8.86	12.03	13.60	18.03
North Central	6.71	8.38	13.26	17.33	North Central	10.17	12.19	15.80	19.58
South	4.56	6.14	12.71	17.93	South	6.96	9.63	13.34	18.52
Baltimore	5.19	6.64	9.64	13.09	West	6.56	8.51	11.95	14.63
Lemons (38-lb carton)					Baltimore	9.11	11.82	15.37	18.61
Northeast	9.85	17.17	30.39	31.72	Thompson seedless grapes (23-lb lug)				
North Central	13.31	18.67	24.74	33.94	Northeast	15.73	13.83	22.60	24.43
South	12.26	18.49	24.93	35.67	North Central	14.26	14.81	23.22	24.43
West	9.90	19.10	20.26	37.44	South	12.24	12.64	22.69	23.28
Baltimore	14.68	20.30	31.11	38.74	West	11.61	12.02	19.51	22.92
Florida oranges (45-lb carton)									
Baltimore	5.67	7.46	10.93	18.04					

<sup>1</sup>Price paid for a commodity by retailers at wholesale markets.

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### Fresh Vegetables

In the first 7 years of this decade, retail prices for various fresh vegetables rose more than wholesale prices (*table 5*). This was also true of foods in general. The CPI for food increased 26 percent from 1980 to 1986, while the Producer Price Index for consumer foods rose just 16 percent. The price increases for vegetables generally reflected higher production and marketing costs, with handling and marketing costs increasing at a

faster rate and fueling the rise in retail prices.

Cabbage was one exception to the trend. At retail outlets, prices increased 36 percent during the period, while average wholesale prices rose even more, about 42 percent. Retail carrot prices gained over 15 percent, with wholesale prices increasing almost 11 percent.

Retail prices for celery increased about 23 percent from 1980 to 1986. Wholesale prices rose about 18 percent.

Higher production and marketing costs in California prompted the rise.

The retail price of cucumbers rose 15 percent, and wholesale prices, 14 percent. Lettuce, another exception to the general trend, increased almost 17 percent at retail, but rose nearly 24 percent at wholesale.

During the winter months, prices are generally higher due to reduced supplies and higher transportation costs. Many fresh vegetables come from southern locales, where warmer weather allows continued production.

**Table 5. Retail Prices for Fresh Vegetables Generally Increased More Than Wholesale Prices**

Items and area	Wholesale price <sup>1</sup>		Retail price		Items and area	Wholesale price <sup>1</sup>		Retail price	
	1980	1986	1980	1986		1980	1986	1980	1986
<i>Dollars</i>					<i>Dollars</i>				
Cabbage (1-3/4 bushels)					Sweet corn (4-3/4 bushels)				
Northeast	5.25	7.07	11.45	15.80	Baltimore	7.49	6.57	13.05	13.25
North Central	4.72	7.37	12.07	15.96	Cucumbers (bushel)				
South	4.02	5.83	10.40	13.84	Northeast	10.77	12.22	23.53	26.75
Baltimore	5.09	6.71	13.30	18.49	North Central	11.51	13.97	24.68	29.73
Carrots (48 1-lb film bags)					Baltimore	12.25	13.25	29.78	32.62
New York City	8.89	10.37	16.93	19.13	Lettuce (24-head carton)				
North Central	9.72	10.72	17.03	19.07	New York City	9.73	12.21	16.56	19.40
West	7.39	7.63	13.38	16.15	North Central	8.30	11.20	20.06	24.24
Baltimore	8.79	9.79	22.08	22.14	South	8.03	9.79	21.36	24.70
Celery (2-3 doz crates)					West	6.60	7.91	15.86	19.57
Northeast	10.78	11.54	23.92	29.11	Baltimore	8.77	10.21	17.76	22.59
North Central	11.43	12.49	25.14	27.81	Potatoes (100 lbs)				
West	6.63	9.47	19.51	26.60	Baltimore (round white)	12.20	10.42	27.50	26.25
Baltimore	10.59	11.77	21.00	24.65	Baltimore (russets)	23.08	22.56	46.50	48.28
Dry onions (50 lbs) <sup>2</sup>					Sweet potatoes (100 lbs)				
New York City	7.30	7.57	19.12	20.35	Baltimore	11.57	11.44	20.95	24.30
North Central	7.55	7.41	17.71	17.84	Tomatoes (carton)				
Baltimore	7.20	7.23	17.85	19.57	Northeast	11.61	13.39	21.42	23.12
Green peppers (bushel)					North Central	12.69	11.44	21.51	24.14
Northeast	9.96	12.85	20.95	25.91	South	8.82	11.10	20.04	20.36
North Central	12.30	14.32	27.82	33.41	Baltimore	11.12	12.12	21.93	26.51
Baltimore	11.03	12.89	24.06	29.32					

<sup>1</sup>Price paid for a commodity by retailers at wholesale markets. <sup>2</sup>Wholesale prices are summer only.

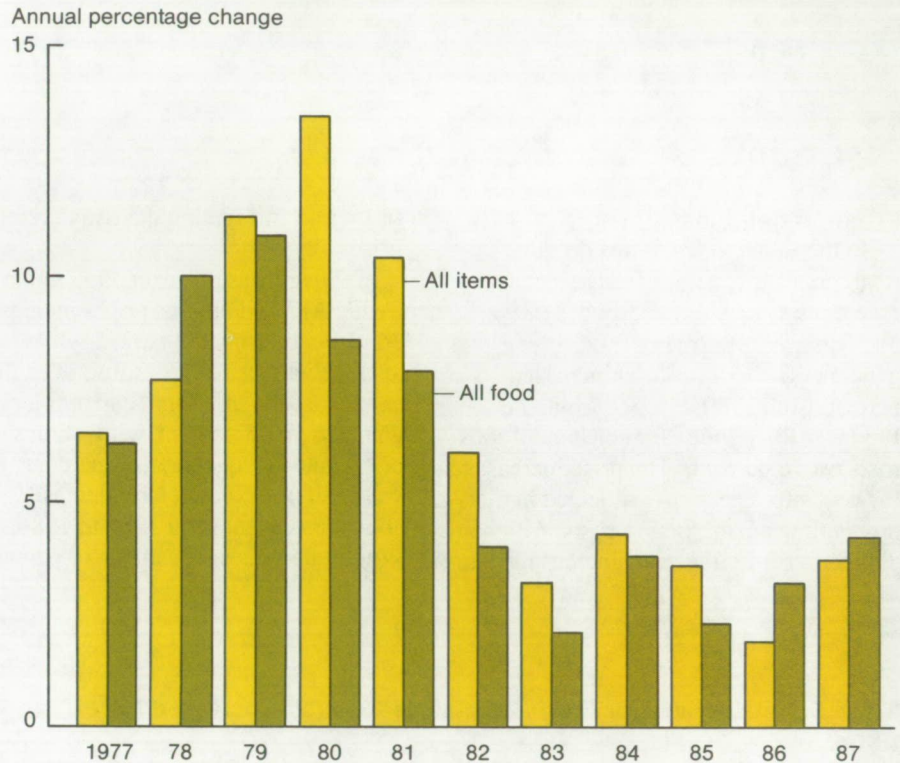
Contact: Amy Allred (202) 786-1886.



## Food Prices. . .At a Glance

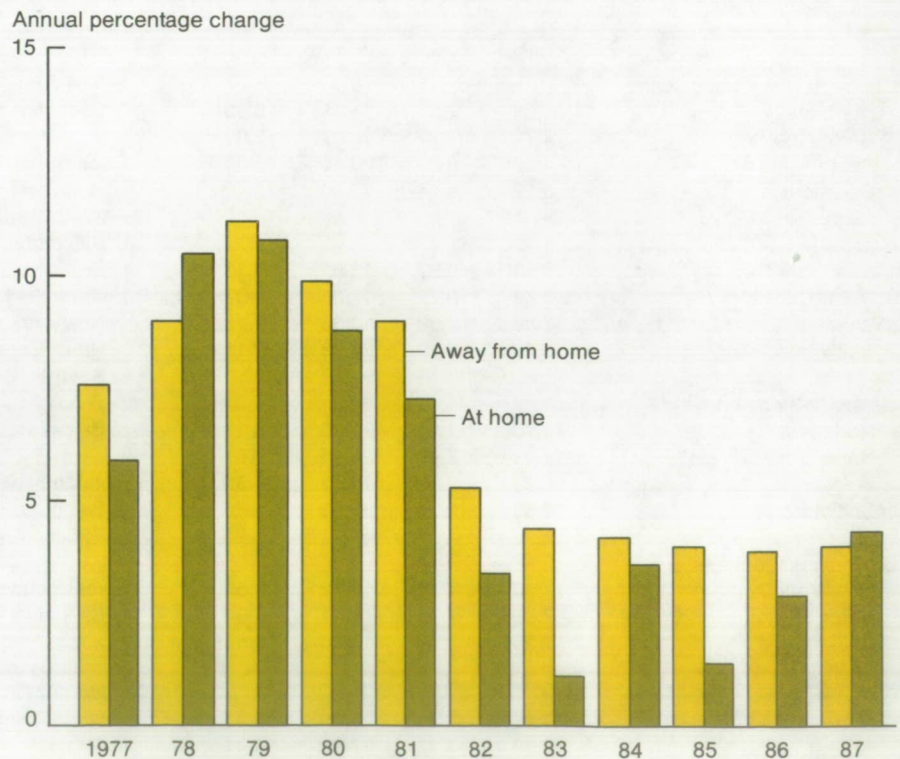
In contrast to the previous 7 years, food prices rose faster than the Consumer Price Index (CPI) for all items in 1986 and 1987. However, this does not indicate a change in food price trends. The CPI for all items is a weighted average of prices for all goods and services. Therefore, in 1986, when energy prices dropped dramatically, the CPI for all items was held to a 1.9-percent increase, while the CPI for food rose 3.2 percent. Had energy prices not changed, the CPI for all items would have increased 3.9 percent. The 1987 CPI for all items, less energy, increased 4.1 percent, compared with the 3.6 percent rise in the CPI for all items. Higher prices for meats, fruits, and vegetables pushed the CPI for food up 4.1 percent last year.

### Consumer Price Index for Food and All Items



Last year, for the first time since 1978, the CPI for food at home rose faster than the away-from-home index—4.3 and 4.0 percent, respectively. The change in the trend stemmed from stronger farm prices in 1987 and relatively small increases in food processing and marketing costs. The effect of farm price changes on the CPI for food at home is about double what it is for food away from home. Farmers received about 30 percent of food expenditures spent at grocery stores and 15 percent of expenditures at restaurants and fast-food establishments. The residual in both cases went for processing and marketing.

### Consumer Price Index for Food At Home and Away



Source: Bureau of Labor Statistics, Department of Labor.  
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## Food Expenditures

**T**otal U.S. food expenditures reached \$450 billion in 1987, up 5 percent from 1986 and 420 percent from 1965 (table 1). These figures encompass everything that was spent on food, regardless of who paid. They include food for home use paid for with food stamps or donated by the Government, meals in military and prison mess halls, and expense-account meals while traveling or entertaining customers.

Spending for food to be eaten at home rose 3 percent from 1986 to 1987 and 305 percent from 1965. Spending for meals and snacks away from home rose 8 percent from 1986 and 683 percent from 1965, more than double the at-home rates. People are eating out more as incomes rise and as more women enter the work force. Another reason for larger away-from-home increases is that prices for meals and snacks rose faster than prices for at-home food.

The share of food spending for away-from-home meals and snacks rose from 30 percent in 1965 to 39 percent in 1980, and to 46 percent in 1987. Since prices of meals and snacks include the cost of preparing and serving food, the amount of food is lower in away-from-home expenditures. This is why the away-from-home share of the quantity of food purchased was only 24 percent in 1965. It increased to 29 percent in 1980 and 32 percent in 1987.

Spending for alcoholic beverages—beer, wine, and liquor—rose 1 percent



from 1986 to 1987 and 352 percent from 1965 to 1987.

In real terms (adjusted for inflation), overall food expenditures increased 37

percent between 1965 and 1987, while population increased 25 percent. Real spending for food at home went up 22 percent over the same period, while meals and snacks increased 86 percent.

**Table 1. Food Expenditures Increased 5 Percent Between 1986 and 1987**

Item	1965	1970	1975	1980	1985	1986	1987 <sup>1</sup>
<i>Billion dollars</i>							
All food	86.7	117.1	188.0	306.2	408.8	429.2	450.4
At-home food	60.5	77.5	119.9	185.7	231.6	238.7	245.2
Sales	56.6	73.4	113.9	177.4	224.5	231.0	237.5
Home production and donations	3.9	4.1	6.0	8.3	7.1	7.7	7.7
Away-from-home meals	26.2	39.6	68.1	120.5	177.2	190.5	205.2
Sales	22.2	33.9	58.1	104.0	156.1	168.5	182.2
Supplied and donated <sup>2</sup>	4.0	5.7	10.0	16.5	21.1	22.0	23.0
Alcoholic beverages	15.6	22.0	31.8	50.1	66.0	69.5	70.5
Packaged	9.0	12.9	19.3	29.4	38.5	39.8	39.7
Drinks	6.6	9.1	12.5	20.7	27.5	29.7	30.8

<sup>1</sup>Preliminary. <sup>2</sup>Includes child nutrition subsidies.

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### Food Spending and Income

In 1986, Americans spent \$372 billion on food (*table 2*). This figure includes food paid for by families and individuals, but excludes Government and business purchases. It does, however, include food bought with food stamps since they are counted as income. Food spending was up 5 percent from 1985 and 383 percent since 1965. Food purchased for home use accounted for 64 percent of personal food expenditures in 1986, compared with 79 percent in 1965.

Food took 12.3 percent of disposable personal income (income after taxes) in 1986, compared with 12.5 percent in 1985, 13.7 percent in 1975, and 15.8 percent in 1965. The proportion of income spent on food was much higher in low-income households than in those with higher incomes, averaging 42 percent in the 20 percent of households with the lowest before-tax incomes and 9 percent in the 20 percent with the highest incomes.

As income rose during the past two decades, most of the increase was spent on services like housing, transportation, and medical care. Spending on medical care alone rose from \$26 billion to \$320 billion. Since 1965, the share of income spent on services climbed from 38 to 48 percent.

**Table 2. How Disposable Personal Income Is Spent<sup>1</sup>**

Component	1965	1975	1985	1986
<i>Billion dollars</i>				
Disposable personal income	486.8	1,142.8	2,841.1	3,022.1
Total personal consumption expenditures	440.8	1,012.8	2,629.3	2,799.8
Nondurables	191.9	416.2	913.1	939.4
Food	76.9	157.1	354.6	371.5
At home	60.4	119.8	230.5	237.7
Away from home	16.5	37.3	124.1	133.8
Alcoholic beverages	13.5	28.1	58.9	61.9
At home	9.0	19.3	38.5	39.8
Away from home	4.5	8.8	20.4	22.1
Cleaning and household supplies	5.7	12.5	26.2	27.3
Toiletries	4.5	10.3	23.0	24.2
Tobacco	8.1	15.1	32.0	34.2
Drugs	5.2	12.0	27.9	29.7
Clothing and shoes	34.1	70.8	157.2	167.5
Gasoline and oil	14.8	39.7	92.6	75.3
Fuel oil and coal	4.4	8.4	17.5	16.0
Other	24.7	62.2	123.2	131.8
Durables	63.5	135.4	368.7	402.4
Motor vehicles and parts	29.9	55.8	177.6	194.9
Furniture and household equipment	25.1	54.5	128.7	139.9
Other	8.4	25.1	62.4	67.6
Services	185.4	461.2	1,347.5	1,458.0
Housing	65.4	148.4	402.4	436.9
Household operation	26.5	63.5	174.7	178.6
Transportation	14.5	35.7	88.6	95.1
Personal care	8.2	13.2	32.7	35.3
Medical care	25.9	84.2	291.5	319.8
Personal business service	20.2	52.2	174.0	195.1
Recreational services	9.4	24.7	74.2	79.4
Other	15.3	39.3	109.5	117.9
Savings	34.3	104.6	127.1	130.6
Other <sup>2</sup>	11.7	25.4	84.7	91.6

<sup>1</sup>Reflects data as of December 18, 1987. Totals may not add due to rounding. <sup>2</sup>Includes interest paid by consumers to businesses and personal transfer payments to foreigners.

Sources: Bureau of Economic Analysis, Department of Commerce; USDA for food and alcoholic beverage data.

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## Meat, Poultry, and Fish Expenditures

According to the Continuing Consumer Expenditure Survey, conducted by the Labor Department's Bureau of Labor Statistics, real spending on food at home declined about 2.6 percent between 1980 and 1984 (*table 3*). Real at-home consumer expenditures for meat, poultry, and fish, however, declined about 10 percent during the period. Pork dropped the most, 22.6 percent. Beef followed with a 14.3-percent decrease, and poultry fell 3.5 percent. Other meats—which include frankfurters, bologna, liverwurst, salami, and other lunch meats, plus lamb and miscellaneous meats—decreased 5.4 percent. Fish and seafood was the only category that bucked the downward trend. Comparable expenditures for this category increased 14.6 percent. These at-home expenditure data for meat, fish, or seafood exclude processed meat products such as TV dinners.

Expenditures on these foods are affected by the prices of the commodities and their substitutes. Since red meat, poultry, and fish are substitutes for one another, changes in their relative prices affect how much of each consumers buy. For example, if beef prices increase, consumers may buy more chicken if its price remains lower than beef.

Changes in demand and supply can also affect prices and per capita expenditures. The Consumer Price Index (CPI) provides one tool for tracking price changes. For meat, poultry, and fish, the CPI increased about 9 percent between 1980 and 1984. Considered separately, beef increased 2 percent, pork jumped 21 percent, poultry rose 15 percent, and fish climbed about 17 percent.

While the prices of all these commodities rose, pork's jumped the most, at least partially explaining the drop in pork consumption. Fish and seafood in-

creased in price relative to beef and poultry, but not relative to pork. Looking at this relationship, it is apparent that non-price factors—such as income, demographics, and health—also influenced the changes in consumption.

Another way to examine consumer spending trends is to look at the proportion of the food budget that various items account for over time. Consumers spent

a consistently smaller share of their budgets on meat, poultry, and fish during the period—from 32.8 percent in 1980 to 28.4 percent in 1984. Much of the drop was due to a loss in beef's share of the total meat and seafood budget, down 4.5 percentage points from 1980 (*table 4*). Pork dropped about 1 point. Poultry increased almost 2 percentage points, and fish and seafood gained over 3 points.

**Table 3. Real Seafood Expenditures Rose 15 Percent Since 1980<sup>1</sup>**

Item	Real per capita expenditures				
	1980	1981	1982	1983	1984
	Percent of 1980				
Food at home	100.0	98.3	98.9	97.4	97.4
Meat, poultry, and fish	100.0	97.7	92.7	92.3	89.8
Meat	100.0	96.5	90.9	89.4	85.6
Beef	100.0	98.3	93.8	89.6	85.7
Pork	100.0	88.4	78.4	81.7	77.4
Other meats	100.0	102.4	99.5	98.2	94.6
Poultry	100.0	101.1	103.0	98.3	96.5
Fish and seafood	100.0	104.4	100.8	111.1	114.6

<sup>1</sup>The data indicate how national at-home food expenditures changed over time. The figures were deflated and then divided by the base year (1980) quantity to provide an approximate measure of changes in amounts purchased.

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**Table 4. Beef and Pork Spending Fell as a Percent of Total Meat Spending**

Item	1980	1981	1982	1983	1984
	Percent				
Beef	41.4	40.3	39.6	37.6	36.9
Pork	22.0	20.8	21.1	22.1	20.9
Poultry	13.6	14.1	14.2	13.9	15.3
Fish and seafood	9.0	10.1	10.2	11.5	12.4
Other meat	14.0	14.7	14.9	14.9	14.5

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### How We Spend Our Food Dollars

Consumer food expenditures include items bought at foodstores and those purchased at eating places. They can be broken down into two components based on where the dollars go—the farm value and the marketing bill. The farm value is an estimate of what the farmer receives from the consumer's food dollar. The marketing bill is the difference between the farm value of domestically produced foods and what a consumer pays for them. It represents processing, transportation, and distribution costs of foods after they leave the farm. Imported foods and seafood are excluded from these estimates.

Higher marketing costs were the primary cause of the rise in consumer ex-

penditures over the past decade (*figure 1*). Consequently, the marketing bill accounted for an increasingly larger share of food spending. For instance, consumer expenditures on food increased \$191.3 billion since 1976, but the farm value rose only \$36.6 billion. During the same period, the marketing bill climbed \$154.7 billion.

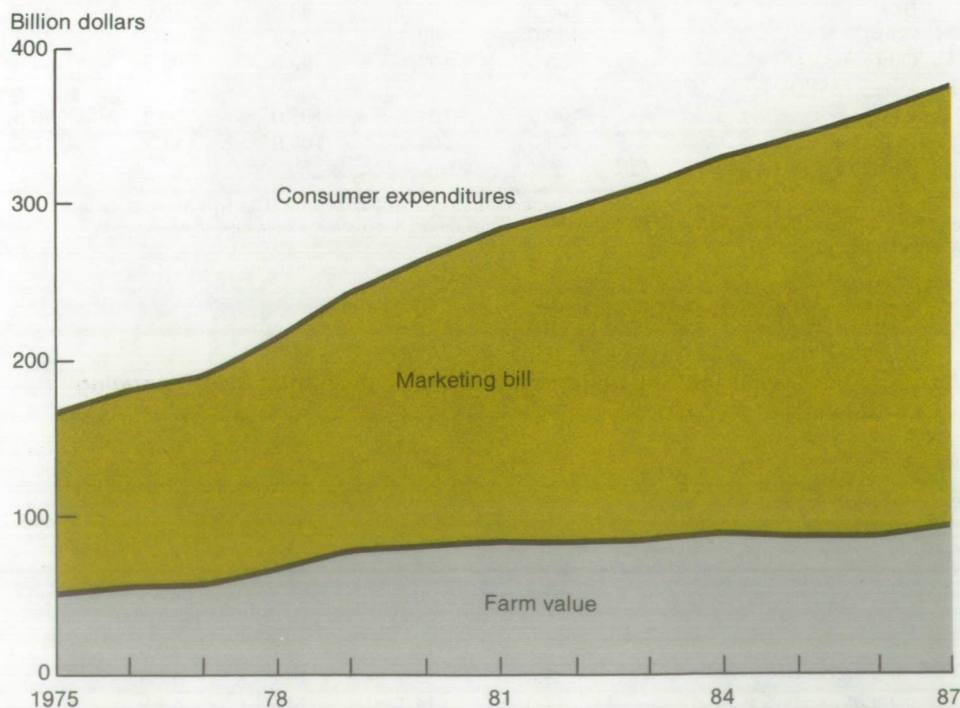
In 1987, American consumers spent \$374.6 billion for U.S. farm foods. The marketing bill rose 3.6 percent from 1986 to 1987 and accounted for about 75 percent of consumer food expenditures. Farm value rose 5.8 percent and represented the remaining 25 percent of food expenditures.

### The Marketing Bill

The 1987 marketing bill added up to \$279.7 billion. Direct labor costs—wages, salaries, employee health and welfare benefits, imputed earnings of proprietors and family workers, and tips for foodservice—accounted for the largest share of the marketing bill. In 1987, 34 cents of every food dollar paid for labor (*figure 2*). Food containers and packaging materials, the second largest food marketing cost, accounted for 8 cents. Corporate profits added 3 cents to the food dollar. Taken together, the farm value and labor costs accounted for over half of consumer food expenditures.

The marketing bill rose only 3.6 percent from 1986 to 1987 (*table 5*). This is the smallest increase of the past decade, largely due to the lowest labor cost increase—3.5 percent—of the past 10 years. The cost of labor was held back by lower inflation and pressure on food industry management to reduce labor costs. Wage concessions, part-time workers, two-tiered and backloaded wage contracts helped hold labor costs down. Cost-of-living adjustments, which are generally tied to the inflation rate, were lower. Packaging costs rose 6.5 percent reflecting large increases in the prices of plastic products, corrugated boxes, paper bags, and glass containers. Transportation and energy costs also showed relatively small increases. Other costs—which include property taxes and insurance, accounting and professional services, promotion, advertising, bad debts, interest, rent, and depreciation—rose 2.8 percent.

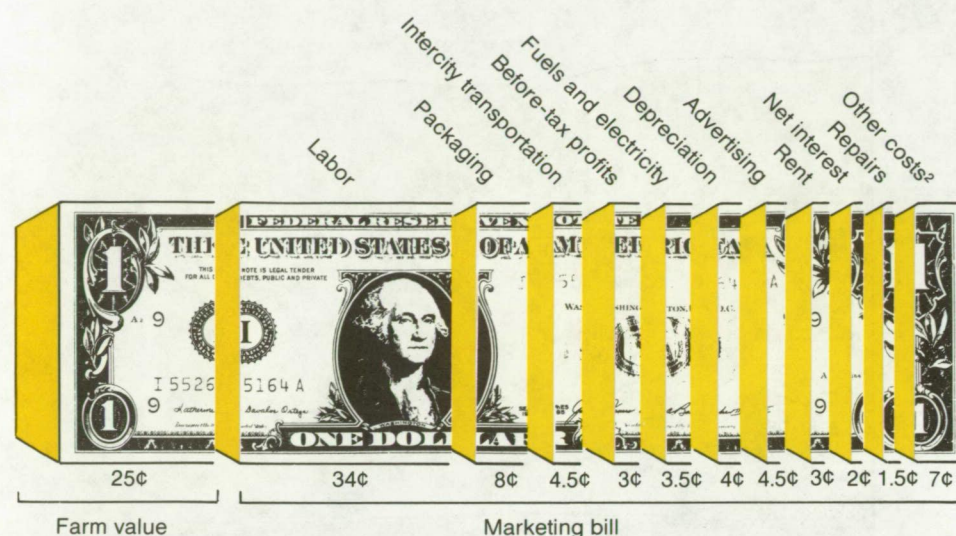
**Figure 1. Higher Marketing Costs Caused Most of the Increase in Consumer Expenditures<sup>1</sup>**



<sup>1</sup>1987 preliminary. Data for domestically produced farm foods purchased by civilians for consumption at home and away.

Contact: Howard Elitzak (202) 786-1870.



Figure 2. What a Dollar Spent on Food Paid for in 1987<sup>1</sup>

<sup>1</sup>Includes food at home and away. <sup>2</sup>Includes property taxes and insurance, accounting and professional services, promotion, bad debts, and miscellaneous items.  
Contact: Howard Elitzak (202) 786-1870.

Table 5. Labor is the Largest Component of the Marketing Bill

Component	1975	1980	1984	1985	1986	1987
<i>Billion dollars</i>						
Labor <sup>1</sup>	48.3	81.5	109.3	116.5	124.2	128.5
Packaging materials	13.3	21.0	26.2	26.9	27.7	29.5
Rail and truck transportation <sup>2</sup>	8.4	13.0	15.9	16.5	16.8	17.2
Fuels and electricity	4.6	9.0	12.5	13.1	13.3	13.6
Pre-tax corporate profits	7.1	10.2	9.7	9.5	9.3	10.0
Other <sup>3</sup>	29.7	48.0	67.0	74.6	78.7	80.9
Total marketing bill	111.4	182.7	240.6	257.1	270.0	279.7

<sup>1</sup>Includes employee wages or salaries and their health and welfare benefits. Also includes imputed earnings of proprietor, partners, and family workers not receiving stated remuneration. <sup>2</sup>Excludes local hauling charges. <sup>3</sup>Includes depreciation, rent, advertising and promotion, interest, taxes, licenses, insurance, professional services, etc.

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### Historic Expenditures for Food

More than a century ago, 33 percent of all U.S. food never entered the marketing system. That food was produced and consumed at home, 10 percent by non-farm households and 23 percent by farm families (*figure 3*). Such home production still provided a sixth of all food 50 years ago. It has declined since then, accounting for only 1.5 percent of all food expenditures in 1986. Most of this came from nonfarm family gardens.

The rest of U.S. food goes through the marketing system, bringing together fish and imported foods with those originating on American farms. Farm sales—food that enters the marketing chain from U.S. farms—was about 60 percent of all food expenditures 100 years ago, around 65 percent through the 1920's, and 75-80 percent since World War II.

Fish and imports supplied 9-10 percent of our food a century ago, increasing to 13-14 percent from the 1920's through the 1960's, and rising to 20-23 percent in the 1980's. Imported sugar accounted for most of the total in the 19th century. By 1980, higher prices for fish and imported foods, like sugar and cocoa, drove up the share of expenditures for these commodities.

As home-grown foods declined, so did the amount of fresh foods we eat. However, the rate at which manufactured foods replaced fresh items has slowed in the last 25 years. In the 19th century, much of our food was fresh with most of it being produced at home. The fresh share stayed about the same until 1940 but has since declined to 12 percent (*figure 4*).

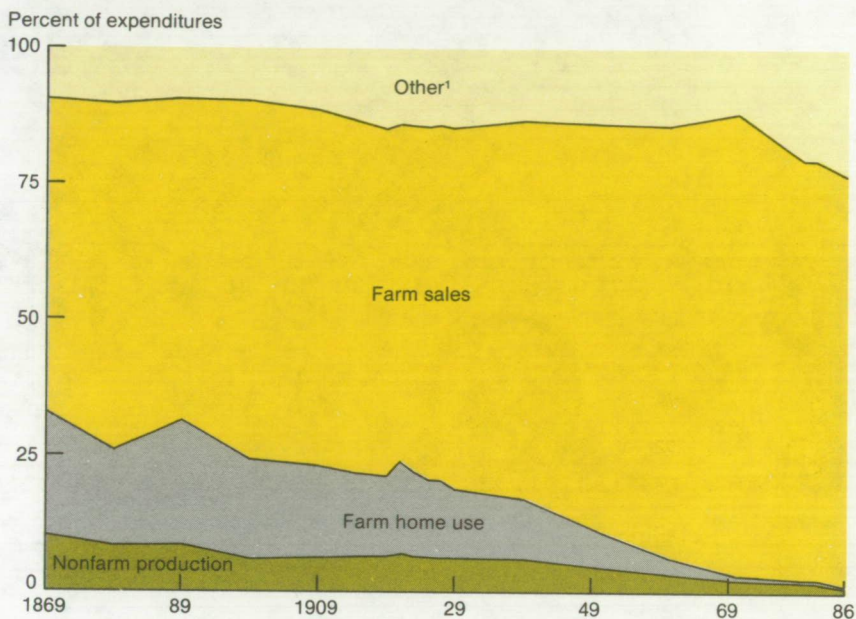
Foods manufactured or slaughtered at home also declined. In the 19th century, substantial amounts of butter, cheese, and meat were produced and processed on the farm. These products, produced on the farm or by retail butchers, represented 49 percent of total food expenditures in 1869, but 15 percent was



consumed on the same farm where they were produced. Currently, farm and retail food manufacture—consisting primarily of fluid milk sold by producer/dealers and meat, most of which is custom slaughtered—accounts for 1 percent of our food spending.

The composition of consumer food items produced by manufacturers changed dramatically over the years. The important manufactured products in 1869 were flour, corn meal, and other grain mill products—which accounted for more than half of the total. The next most important product was sugar. Since World War II, flour and flour mixes have declined to about 3 percent of manufactured products. However, the shift from home-baked goods to factory products caused the value of finished-baked goods, including cookies and crackers, to climb to 9 percent. In the 1970's, the most important group of manufactured products was fresh meat and poultry. Fruits, vegetables, and specialty foods were also significant.

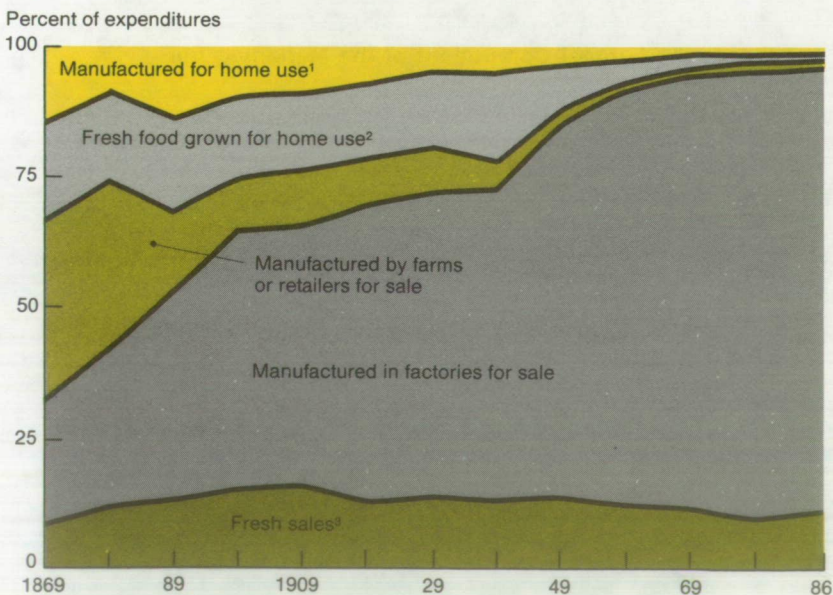
**Figure 3. Home Production of Food Declined in Importance Since 1869**



<sup>1</sup>Includes fish and imports.

Source: *Developing an Integrated Information System for the Food Sector*, p. 25.  
Contact: Alden Manchester (202) 786-1880.

**Figure 4. Manufactured Food Rapidly Replaced Home-Grown Food**



<sup>1</sup>Includes butter, cheese, meat, and poultry. <sup>2</sup>Includes fish, games, milk, eggs, fruits, vegetables, and honey. <sup>3</sup>Includes shell eggs, fresh fruit and vegetables, honey and fresh seafood not handled by manufacturers.

Source: *Developing an Integrated Information System for the Food Sector*, p. 30.  
Contact: Alden Manchester (202) 786-1880.

### Food Expenditure Projections

The changing age distribution of the U.S. population is one of the factors that will affect food expenditures during the next few decades. By themselves the projected population shifts would cause per capita expenditures for all major food groups, except away-from-home foods and alcoholic beverages, to increase steadily from 1990 to 2020 (*table 6*). Spending for food to be eaten at home would likely increase 2.6 percent until 2000 and increase another 2.6 percent from 2000 to 2020.

Four major food groups will be most affected by the changing age distribution of our population. From the 1980 base year to 2020, per capita meat, poultry, fish, and egg expenditures could rise 6.4 percent. Fruits could climb 7.2 percent, vegetables, 6.7 percent, and fats and oils, 6.2 percent. The groups least affected would be total food, up 2.2 percent, dairy products, up 2.9 percent, and miscellaneous foods, up 0.7 percent.

As the American population ages, some expenditures are expected to decline. Older people generally eat out

**Table 6. An Older U.S. Population Will Likely Affect Spending on Most Major Food Groups**

Item	Projected per capita expenditures				
	1980 <sup>1</sup>	1990	2000	2010	2020
	<i>Percent</i>				
Food away from home	100.0	99.7	98.4	96.9	96.1
Food at home	100.0	100.8	102.6	104.5	105.2
Meat, poultry, fish, and eggs	100.0	101.0	103.2	105.7	106.4
Beef	100.0	100.3	102.0	103.9	104.4
Pork	100.0	101.3	104.1	107.0	108.3
Other meat	100.0	100.7	102.5	104.3	105.1
Poultry	100.0	101.9	104.1	106.6	107.6
Fish	100.0	101.0	102.9	104.6	105.4
Eggs	100.0	101.0	103.1	105.4	106.4
Cereals and bakery products	100.0	100.5	102.3	103.7	104.5
Dairy Products	100.0	100.5	101.6	102.6	102.9
Milk and cream	100.0	99.8	100.9	101.9	102.1
Cheese	100.0	101.1	101.9	102.6	103.1
Other dairy products	100.0	100.5	102.1	102.8	103.6
Fruits	100.0	101.1	102.9	105.4	107.2
Fresh	100.0	101.0	103.2	106.0	108.2
Processed	100.0	101.3	102.5	104.2	105.4
Vegetables	100.0	101.4	103.3	105.5	106.7
Fresh	100.0	101.6	103.7	106.2	107.6
Processed	100.0	100.9	102.7	104.4	105.2
Sugars and sweeteners	100.0	100.2	101.7	102.7	104.1
Nonalcoholic beverages	100.0	100.7	102.5	103.9	103.9
Fats and oils	100.0	101.2	103.1	105.1	106.2
Butter	100.0	101.1	101.8	102.3	103.3
Margarine	100.0	101.8	105.2	108.2	110.3
Other	100.0	100.4	102.2	103.9	104.6
Miscellaneous	100.0	100.1	100.0	100.4	100.7
Alcoholic beverages	100.0	99.4	97.4	96.0	94.2
Total food	100.0	100.5	101.2	102.0	102.2

<sup>1</sup>Base year.

Source: Blaylock, James R. and David Smallwood, *U.S. Demand for Food: Household Expenditures, Demographics, and Projections*, TB-1713, ERS, USDA, February 1986, p. 27.

Contact: Jim Blaylock (202) 786-1862.



**Table 7. Regional Population Changes Should Have Little Effect on Food Expenditures**

Item	Projected per capita expenditures				
	1980 <sup>1</sup>	1990	2000	2010	2020
	<i>Percent</i>				
Food away from home	100.0	100.1	100.2	100.3	100.4
Food at home	100.0	99.9	99.9	99.8	99.8
Meat, poultry, fish, and eggs	100.0	99.8	99.5	99.3	99.1
Beef	100.0	99.8	99.7	99.6	99.5
Pork	100.0	99.9	99.7	99.6	99.5
Other meat	100.0	98.9	97.8	96.9	96.0
Poultry	100.0	100.0	100.0	100.1	100.2
Fish	100.0	100.0	100.0	100.0	100.2
Eggs	100.0	100.0	100.0	100.0	100.0
Cereals and bakery products	100.0	99.6	99.3	98.9	98.6
Dairy Products	100.0	99.9	99.9	99.8	99.8
Milk and cream	100.0	99.9	99.8	99.7	99.6
Cheese	100.0	99.8	99.6	99.5	99.3
Other dairy products	100.0	100.1	100.3	100.4	100.6
Fruits	100.0	100.1	100.3	100.4	100.6
Fresh	100.0	100.2	100.4	100.7	100.9
Processed	100.0	100.0	99.9	99.9	100.0
Vegetables	100.0	100.2	100.5	100.7	101.0
Fresh	100.0	100.2	100.5	100.7	101.0
Processed	100.0	100.2	100.4	100.6	100.8
Sugars and sweeteners	100.0	99.9	99.9	99.8	99.8
Nonalcoholic beverages	100.0	100.0	100.0	100.1	100.1
Fats and oils	100.0	100.0	99.9	99.9	99.9
Butter	100.0	99.3	98.7	98.1	97.7
Margarine	100.0	99.9	99.9	99.8	99.8
Other	100.0	100.3	100.6	100.8	101.1
Miscellaneous	100.0	100.3	100.6	100.8	101.1
Alcoholic beverages	100.0	99.8	99.6	99.5	99.3
Total food	100.0	100.0	100.0	100.1	100.1

<sup>1</sup>Base year.

Source: U.S. Demand for Food: Household Expenditures, Demographics, and Projections, p. 29.

Contact: Jim Blaylock (202) 786-1862.

less often, and they drink fewer alcoholic beverages. Consequently, spending on food eaten away from home is projected to drop about 3.9 percent between 1980 and 2020. Expenditures on alcoholic beverages may fall about 5.8.

Food items that may be most affected by the projected age changes are pork, fresh fruits and vegetables, and margarine. Least affected items include milk and cream, cheese, butter, and other dairy products.

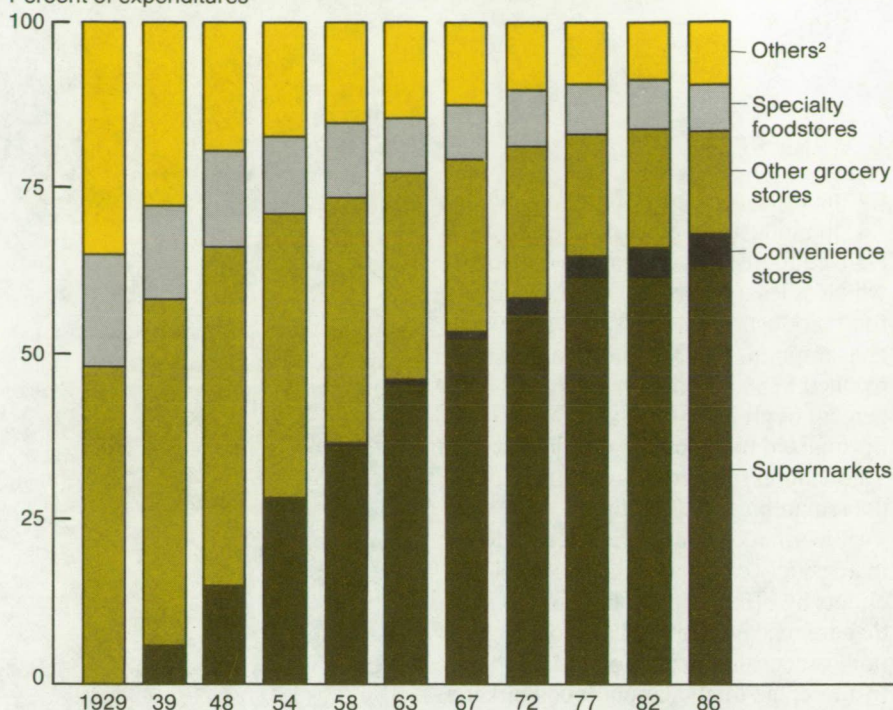
Projected changes in the regional distribution of the U.S. population—such as a shift in the population to the South and West—are expected to have minor effects on per capita food spending (*table 7*). All other things being equal, total per capita food expenditures would likely rise only 0.1 percent. Away-from-home-food spending would increase 0.4 percent per person between 1980 and 2020, but at-home spending would decline 0.2 percent. The food groups that may benefit most from regional population changes are fresh fruits and vegetables. Those expected to decline the most include other meats such as lamb and mutton, cereals and bakery products, and butter.

## Food Expenditures. . . At a Glance

Where Americans buy the food they eat at home has changed over time. Supermarkets are a relatively recent phenomenon. In 1929, there were a few grocery stores with enough sales to be classified as supermarkets, but they probably had none of the other features of modern supermarkets, especially self-service meat departments. The supermarket boom began during the depression and took off after World War II. In 1986, 63 percent of all food sales for home use were through supermarkets. Convenience stores were developed in the late 1950's, with many starting as dairy stores. In the last decade, however, the fastest growing items in convenience store sales have been carryout foods, such as hot sandwiches, and gasoline. Specialty foodstores—such as meat markets, bakeries, fruit and vegetable stores, and candy stores—have lost ground to supermarkets. In 1929, most of the “other stores” were general stores, the majority of which are now gone.

### At-Home Food<sup>1</sup>

Percent of expenditures

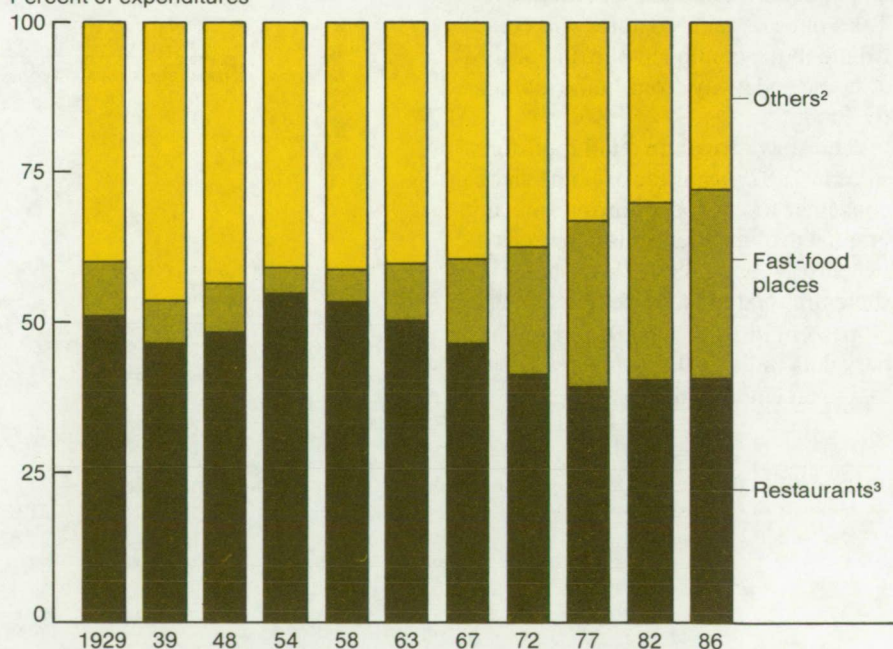


<sup>1</sup>Sales of food for home use by type of outlet. <sup>2</sup>Includes other stores, home deliveries, mail order, and sales by farmers, manufacturers, and wholesalers.

The most striking development in the away-from-home food market is the growth of fast-food places. Their share grew from less than 10 percent before the mid-1960's to 31 percent in 1986. More traditional restaurants, lunchrooms, cafeterias, and caterers still have almost 41 percent of the market, down from a 55-percent share in 1954. Hotels and motels maintained their share of the away-from-home market at about 5-6 percent since the mid-1950's, down from 10-11 percent in the 1930's. Schools and colleges, which peaked at 14 percent in 1967 with the post-World-War-II baby boom, held about 9 percent of the total in 1986.

### Away-From-Home Food<sup>1</sup>

Percent of expenditures



<sup>1</sup>Sales of away-from-home food by type of outlet. <sup>2</sup>Includes other eating places, hotels and motels, schools, colleges, stores, bars, vending machines, recreational places, and military outlets.

<sup>3</sup>Includes lunchrooms, cafeterias, and caterers.

Source: *Developing an Integrated Information System for the Food Sector*, p. 40.  
Contact: Alden Manchester (202) 786-1880.



## Food Retailing

The basic segments of the food retailing industry—grocery stores and specialized foodstores—are retail outlets in which at least 50 percent of sales are in food products intended for off-premise consumption. Grocery store sales reached \$286.6 billion in 1987, or 94.3 percent of all foodstore sales (table 1). Specialized foodstores—which have seen a slowing in real growth—accounted for the remaining \$17.2 billion.

Supermarkets and convenience stores increasingly compete with foodservice outlets by offering more take-out foods that are ready for immediate consumption. According to the Food Marketing Institute, the total take-out food market in 1986 was \$62.4 billion. Restaurants' share of this market was 64 percent, while foodstores captured 36 percent. However, when asked where they go to buy take-out food, only 2 out of 10 respondents mentioned supermarkets. Take-out sales at foodstores will contribute to the continued blurring of the at-home and away-from-home markets for food.

The slow growth in retail foodstore sales in 1987 means the at-home share of consumer food expenditures resumed its gradual decline after a short pause between 1984 and 1985. The at-home share dropped to 56 percent in 1986 from 57 percent in 1984 and 1985. Preliminary data indicate the at-home share fell to 54 percent in 1987.

Authors Chuck Handy and Phil Kaufman are agricultural economists in the Commodity Economics Division.



Courtesy of Giant Food, Inc.

**Table 1. Supermarkets Account for Most Foodstore Sales<sup>1</sup>**

Year	Grocery store sales				Specialized foodstore sales	Total foodstore sales
	Supermarkets	Convenience stores <sup>2</sup>	Mom and pop stores	Total		
Million dollars						
1958	23,562	na	na	43,696	6,567	50,263
1963	31,484	na	na	52,566	4,688	57,254
1967	43,433	na	na	64,215	5,156	69,371
1972	63,791	4,200	24,282	92,273	6,762	99,035
1977	110,849	8,722	28,188	147,759	10,182	157,941
1982	171,966	24,867	33,863	230,696	15,426	246,122
1983	183,301	27,677	28,651	239,629	16,049	255,678
1984	190,515	33,320	31,019	254,854	16,424	271,278
1985	197,924	33,707	35,374	267,004	16,983	283,987
1986	206,427	32,339	39,717	278,483	17,557	296,040
1987 <sup>3</sup>	214,684	33,956	37,919	286,559	17,178	303,737

na = not available. <sup>1</sup>Total sales, including nonfood items. Excludes sales taxes after 1972. <sup>2</sup>Includes gasoline sales. <sup>3</sup>Preliminary.

Source: *Food Marketing Review*, 1987, ERS, USDA, in process.

Contact: Phil Kaufman (202) 786-1866.

## Foodstore Numbers

Grocery stores—which include supermarkets, convenience stores, and mom-and-pop stores—numbered an estimated 165,887, or 70.4 percent of all foodstores, in 1987. Specialized foodstores—such as retail bakeries, produce markets, meat and seafood markets, and health food stores—numbered 69,867, and accounted for the remaining 30 percent.

While foodstore capacity in total square footage has risen, both grocery stores and specialized foodstores have declined in number (*table 2*). Fewer but larger supermarkets are replacing older, conventional stores that are too small to provide the specialized and service departments of modern outlets. As a result, the number of supermarkets in 1986 remained well below the 1977 peak. Among grocery stores, convenience stores grew to 47,000 in 1986.

The greater variety of products and services offered by larger stores has cut into the market traditionally held by specialized outlets like butcher shops and bakeries. Expanded deli and baked good counters, gourmet coffee sections, and gourmet meat counters are currently offered by many large supermarkets. Consequently, specialized foodstores are experiencing declines in both number and total square footage. As consumers seeking greater convenience turn to one-stop shopping, the trend will likely continue.

**Table 2. The Number of Foodstores Has Declined**

Year	Grocery stores				Specialized foodstores	Total foodstores
	Supermarkets	Convenience stores	Mom and pop stores	Total		
	<i>Number</i>					
1958	15,282	na	na	259,796	95,712	355,508
1963	21,167	na	na	244,838	74,595	319,433
1967	23,808	na	na	218,130	76,113	294,243
1972	27,231	na	na	194,346	73,006	267,352
1977	30,831	30,000	118,515	179,346	72,625	251,971
1982	26,640	38,700	102,701	168,041	73,696	241,737
1983 <sup>1</sup>	26,821	40,400	100,394	167,615	72,914	240,528
1984 <sup>1</sup>	26,947	42,950	97,289	167,186	72,140	239,326
1985 <sup>1</sup>	27,266	45,400	94,089	166,755	71,347	238,129
1986 <sup>1</sup>	26,995	47,000	92,327	166,322	70,616	236,938
1987 <sup>1</sup>	na	na	na	165,887	69,867	235,754

na = not available. <sup>1</sup>Estimated.

Source: *Food Marketing Review*, 1987.

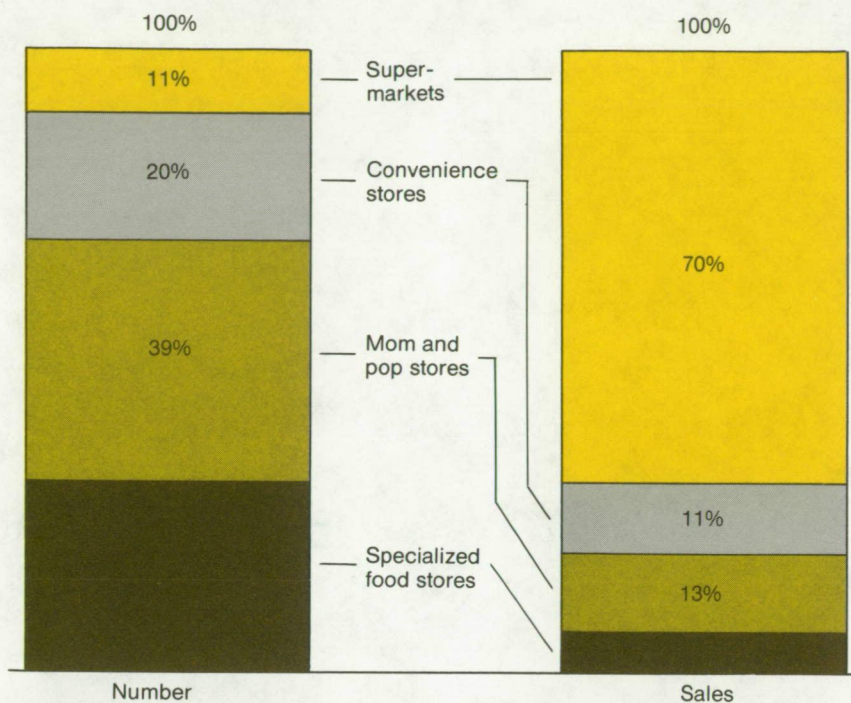
Contact: Phil Kaufman (202) 786-1866.

## Number Versus Sales

For different types of foodstores, the number of outlets contrasts sharply with their corresponding share of total sales. For example, while mom-and-pop stores accounted for 39 percent of all foodstores in 1986, they rang up only 13 percent of foodstore sales. Conversely, supermarkets, the smallest segment by number, captured the largest share of sales (*figure 1*).

Supermarkets—larger grocery stores—account for 70 percent of all foodstore sales. Sales in 1986 increased by 4.3 percent to reach \$206.4 billion. Mom-and-pop grocery store sales totaled \$39.7 billion, a 12.3-percent increase from 1985. Convenience store sales, at \$32.3 billion, declined somewhat during 1986, largely due to lower gasoline prices. Excluding gasoline, their sales rose 5.9 percent from 1985 to \$21.6 billion in 1986.



**Figure 1. Foodstore Numbers Contrasted Sharply With Sales Shares in 1986**

Source: *Food Marketing Review*, 1987.  
Contact: Phil Kaufman (202) 786-1866.

**Table 3. Supermarket Formats Vary in Number and Sales Share**

Format	Percent of all stores		Percent of sales	
	1980	1986	1980	1986
Conventional	85.0	63.6	73.1	47.4
Superstore	8.9	18.5	17.7	27.5
Warehouse/limited assortment	4.7	12.3	4.2	12.3
Combination food and drug	.9	4.2	4.0	8.0
Superwarehouse	.5	1.1	1.0	3.2
Hypermarket	<sup>1</sup>	.3	<sup>1</sup>	1.6
Total	100.0	100.0	100.0	100.0

<sup>1</sup>Less than 0.1 percent.

Source: *Food Marketing Review*, 1987.

Contact: Phil Kaufman (202) 786-1866.

### Supermarket Formats

Supermarkets continue to evolve as food retailers experiment with price and merchandising strategies in an attempt to be competitive. Retailers have offered consumers an ever-expanding number of food shopping alternatives since the late 1970's. For instance, low-price, high-volume supermarkets have been subject to increasing competition from wholesale club stores in recent years. Although small business customers accounted for the majority of wholesale outlet sales, most of these outlets were open to the public as well.

The number of conventional format stores declined from 85 percent of supermarkets in 1980 to 64 percent in 1986 (table 3). Meanwhile the larger superstore—highly favored by chains like Safeway and Winn-Dixie—has grown considerably in the last 10 years to become the second most popular format. Superstores captured more than one-fourth of total supermarket sales in 1986. Their numbers more than doubled between 1980 and 1986.

The sales share of warehouse and limited assortment stores almost tripled between 1980 and 1986, largely due to their low-price appeal. The growth of these "no-frills" stores has slowed somewhat with the advent of the larger superwarehouse format.

Food and drug combination stores offer extended grocery variety and service departments, while including prescription pharmacies. They increased their share of total supermarkets from 1.0 to 4.2 percent between 1980 and 1986, while their share of sales doubled to reach 8 percent during the same period.

Superwarehouse stores are an expansion of the warehouse store. They include more perishables—meat and produce, for example—and service departments, such as delicatessens and bakeries. Superwarehouse stores, however, differ from superstores in that



they retain warehouse store shelving for dry groceries, carry fewer brands within a product category, have a less expensive decor, and generally offer lower prices. These stores—Cub, based in Stillwater, Minnesota, is one example—owe their growth to large full-service food wholesalers that most often franchise their operations to independent retailers. The number of superwarehouse stores increased to 305 in 1986, and they accounted for 3.2 percent of grocery stores sales.

The introduction of the hypermarket by foreign food retailers has inspired imitation by domestic retailers. For example, Walmart, based in Bentonville, Arkansas, opened the first of several planned Hypermarket USA stores in December 1987. Fred Meyer of Portland, Oregon, also operates hypermarket-type stores in Oregon and Washington State. These very large stores, of up to 200,000 square feet, offer a greater variety of general merchandise—like clothes, hardware, and seasonal goods—and personal care products than other grocery stores. The number of hypermarkets increased to 80 by 1986.

### Concentration in Food Retailing

Sales of the 20 largest food retailers reached \$106.7 billion in 1986. Their share of total grocery store sales reached 38.3 percent, up from 37.4 percent in 1985. The four top companies captured 18.6 percent of all grocery sales, about the same as their 1985 share, while the eight largest food retailers accounted for 27.3 percent, a slight increase from the previous year (*figure 2*). Because none of these top retailers operate in all regions of the country, measures of national concentration in food retailing are less revealing than for industries with nationwide markets, such as many of the food manufacturing industries. Yet, aggregate concentration is a useful in-

dicator of the importance of the largest retailers.

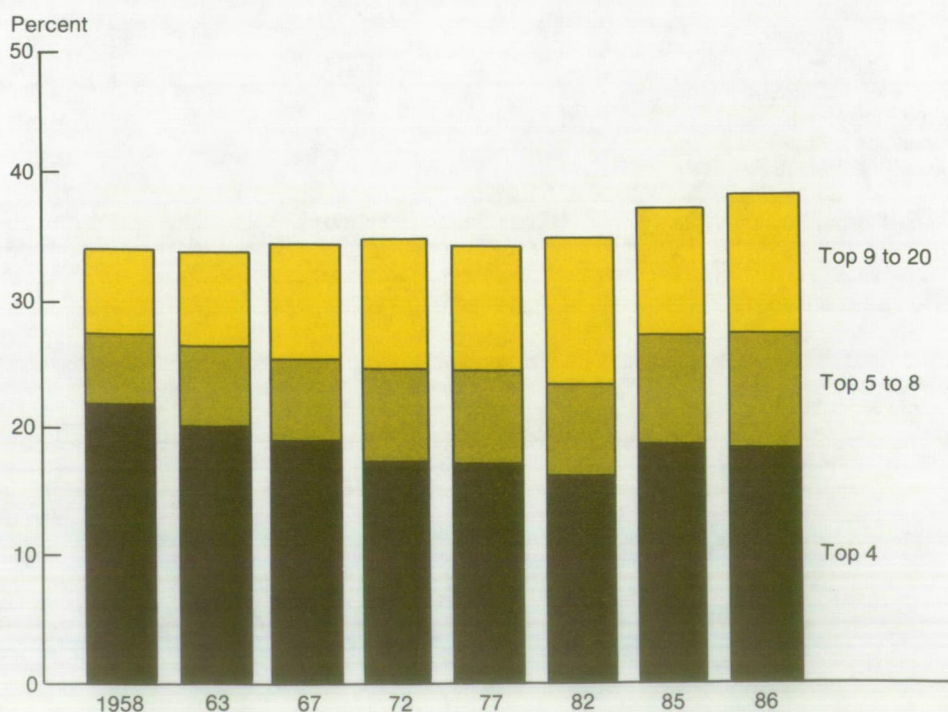
Kroger overtook Safeway in 1985 as the leading U.S. food retailer (*table 4*). Safeway likely maintained its number two position in 1987, despite recent "spinoffs" of several stores and other assets. Safeway sold more than 962 supermarkets in 1987 to reduce some of its debt. Some of these assets are being sold to other top 20 retailers, including Vons in Los Angeles and San Diego.

In 1986, divestitures, like those of Safeway, played a role in stabilizing the market share of the four top firms. Kroger closed or sold more than 100 supermarkets, and American Stores sold its White Hen Pantry convenience stores.

Among the fifth through eighth largest, Lucky Stores sold its Chicago-based Eagle Supermarket division, as well as supermarkets in Houston. The Atlantic and Pacific Tea Company (A & P) acquired Shopwell and Waldbaums during the second half of 1986, boosting A & P grocery sales by 20 percent above 1985.

Internal expansion was responsible for all sales growth among the 9th through 20th ranked retailers in 1986. Their share of grocery store sales grew by a significant 12 percent and was responsible for three-fourths of the increase in sales for the top 20 between 1985 and 1986. Food Lion, which ranked 14th, boosted sales by 26.8 percent in 1986.

**Figure 2. Sales Share of the 20 Top Retailers Was Up in 1986**



Source: Food Marketing Review, 1987.  
Contact: Chuck Handy (202) 786-1866.



**Table 4. Kroger Company Led Foodstore Sales in 1986<sup>1</sup>**

Company	1985		1986	
	Rank	Sales <i>Million dollars</i>	Rank	Sales <i>Million dollars</i>
Kroger Company	1	15,677	1	16,492
Safeway Stores, Inc.	2	15,399	2	15,910
American Stores Company	3	11,190	3	11,096
Winn-Dixie Stores Company	4	7,774	4	8,225
The Southland Corporation <sup>2</sup>	5	6,593	5	6,946
The Atlantic and Pacific Tea Company <sup>3 4</sup>	7	5,164	6	6,179
Lucky Stores, Inc.	6	5,496	7	5,705
Albertson's, Inc.	8	5,060	8	5,380
Supermarket General Corporation	9	4,575	9	4,846
Public Supermarkets, Inc.	10	3,446	10	3,760
Vons Grocery Company	11	2,652	11	2,954
Grand Union Company <sup>4</sup>	12	2,612	12	2,746
Giant Food, Inc.	13	2,247	13	2,528
Food Lion <sup>4</sup>	15	1,857	14	2,355
Circle K Corporation <sup>2</sup>	18	1,682	15	2,111
H. E. Butt Grocery Company	14	1,936	16	2,055
Ralphs Grocery Company	16	1,814	17	2,046
The Stop & Shop Companies, Inc.	17	1,810	18	1,999
Fred Meyer, Inc.	19	1,584	19	1,688
Dominick's Finer Foods	22	1,300	20	1,700
Ahold International (BI-LO and Giant Food Stores) <sup>4</sup>	20	1,562	21	1,656
First National Supermarkets	21	1,400	22	1,500
Hy-Vee	na	1,244	23	1,400
Super Valu	na	1,008	24	1,353
Shaw's Supermarkets <sup>4</sup>	na	812	25	1,200

na = not available. <sup>1</sup>U.S. grocery store sales only. All other company sales excluded. <sup>2</sup>Convenience store retailers. <sup>3</sup>Includes part-year sales of Shopwell and Waldbaum, food retailers that were acquired during 1986. <sup>4</sup>Foreign-owned companies.

Source: *Food Marketing Review*, 1987.

Contact: Chuck Handy (202) 786-1866.

### Mergers and Divestitures

In 1986, the number of acquisitions within the food retailing industry increased sharply to 91 compared with 52 in 1985 (*table 5*). These acquisitions range from buying one or two stores to purchasing entire divisions or subsidiaries. They included food retailing assets acquired by nonfood retailing firms as well as all assets acquired by U.S. food retailing firms. Fifty-six of the purchases were made by domestic food retailers, while the other 35 were made by firms outside the industry.

Retailers continued to restructure themselves by divesting assets, as well as acquiring them. In 1986, Kroger sold its drugstore operations and over 100 supermarkets, but the firm also acquired supermarkets from four other companies. Large food wholesalers frequently buy stores spun off by chains and then sell them to independent food retailers. For example, Super Valu acquired supermarkets from four chains in 1986, while Wetterau acquired stores from Kroger and Cooks.

Following a \$4.3-billion leveraged buyout in August 1986, Safeway restructured considerably as it sold off assets to reduce debt. Since the buyout, Safeway sold its Dallas, Salt Lake City, and El Paso divisions, as well as Liquor Barn, its seven Florida Brentway super-warehouse stores, and its supermarket operations in the United Kingdom. Safeway is also in the process of selling its Oklahoma, Kansas City, Little Rock, and Southern California divisions. At the same time, Safeway acquired 23 Woodwards Food Stores in western Canada. By the end of 1987, Safeway stores numbered 1,369, down from 2,331 before the buyout.

**Table 5. Mergers and Divestitures Have Picked Up in Recent Years**

Activity	1982	1983	1984	1985	1986
<i>Number</i>					
Acquisitions	38	45	60	52	91
By food retailers <sup>1</sup>	25	35	37	36	56
By other firms <sup>2</sup>	13	10	23	16	35
Divestitures	22	33	28	33	57

<sup>1</sup>All assets acquired by U.S. food retailing firms. <sup>2</sup>Food retailing assets acquired by nonfood retailers and other firms.

Source: *Food Marketing Review*, 1987.

Contact: Chuck Handy (202) 786-1866.

**Table 6. Food Retailing Employs About One-Fourth of All Food Marketing Workers**

Year	Processing	Wholesaling	Retailing		Eating and drinking places <sup>1</sup>	Total
			All foodstores	Grocery stores		
Thousands						
1963	1,752.0	472.9	1,383.8	na	1,747.9	5,356.6
1967	1,786.3	513.0	1,571.6	na	2,191.4	6,062.3
1972	1,745.2	536.3	1,805.1	1,577.8	2,860.2	6,946.8
1977	1,711.0	611.7	2,106.3	1,837.2	3,948.6	8,377.3
1982	1,635.9	666.9	2,477.6	2,152.8	4,831.2	9,611.6
1983	1,614.8	682.4	2,556.2	2,234.6	5,041.8	9,895.2
1984	1,612.2	707.3	2,637.1	2,298.1	5,388.0	10,344.6
1985	1,607.9	734.3	2,778.6	2,427.0	5,715.1	10,835.9
1986	1,616.9	757.7	2,872.9	2,522.9	5,878.8	11,126.3
1987	1,635.8	764.9	2,954.4	2,599.2	5,993.6	11,348.7

na = not available. <sup>1</sup>Excludes all noncommercial eating facilities and such commercial outlets as hotel restaurants, department store coffee shops, and ball park food concessions. These eating facilities numbered over 343,000 in 1977 and over 397,000 in 1982.

Source: *Food Marketing Review*, 1987.

Contact: Chuck Handy (202) 786-1866.

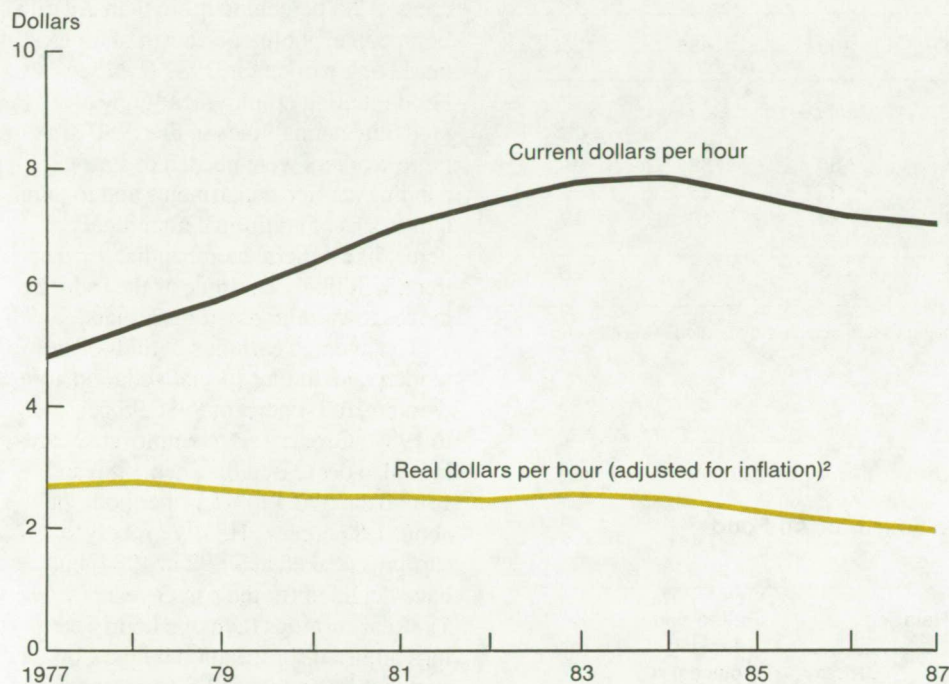
## Employment and Wages

Employment in food retailing increased 2.8 percent to more than 2.9 million people, about one-fourth of all food marketing workers in 1987 (*table 6*). Food retailing employment grew at moderate annual rates in the 1980's, as more workers were needed to staff expanding service departments and to maintain stocks of additional nongrocery items, like general merchandise. This trend will likely continue as the industry moves toward larger store formats.

The average earnings of all foodstore workers, including specialized foodstore workers, fell 4 percent to \$6.95 per hour in 1987. Grocery store employees' earnings also decreased between 1986 and 1987 from \$7.24 to \$7.11 per hour, or about 1.8 percent. Hourly grocery store earnings peaked at \$7.92 in 1984, but have declined for the past 3 years (*figure 3*). Real earnings (average hourly earnings adjusted for inflation by the Consumer Price Index) fell 5.1 percent in 1987. Factors affecting average industry earnings include the outcome of wage negotiations, the extent of part-time employment, the percentage of nonunion employment, and the substitution of incentive pay for wage increases, which is not included in average earnings statistics. Over longer periods, changes in the minimum wage and inflation will also affect average earnings.

About one-third of union workers renegotiate their wage and benefit agreements in any given year. But the sale of



**Figure 3. Grocery Store Wages Peaked in 1984<sup>1</sup>**

<sup>1</sup>Average hourly earnings for grocery store employees. <sup>2</sup>Based on 1967 dollars.  
 Source: *Food Marketing Review*, 1987.  
 Contact: Phil Kaufman (202) 786-1866.

Safeway divisions to other food retailers prompted additional union negotiations in 1987. Significant wage concessions, amounting to \$2.17 per hour for top-scale employees, were made by Safeway workers in the Richmond and Norfolk areas of Virginia. Wage freezes were imposed for others, while severance pay of

up to \$2,000 per employee was given to workers at stores slated to close. In Houston, Safeway reached an agreement to cut full-time wages by \$1.75 per hour and part-time wages by 60 cents. Kroger, a major competitor in Houston, also received concessions amounting to \$1.25 per hour for full-time employees, a

reduction to 1-1/4 time for pay on Sundays, an increase in the share of part-time hours, and the establishment of severance pay.

By far the largest single group of food retailing workers to reach new agreements was in southern California. There, some 65,000 employees negotiated a 3-year contract providing for a \$500-lump sum at the end of the first year, \$1,000 at the end of the second, and a 50-cent per hour wage increase in the third.

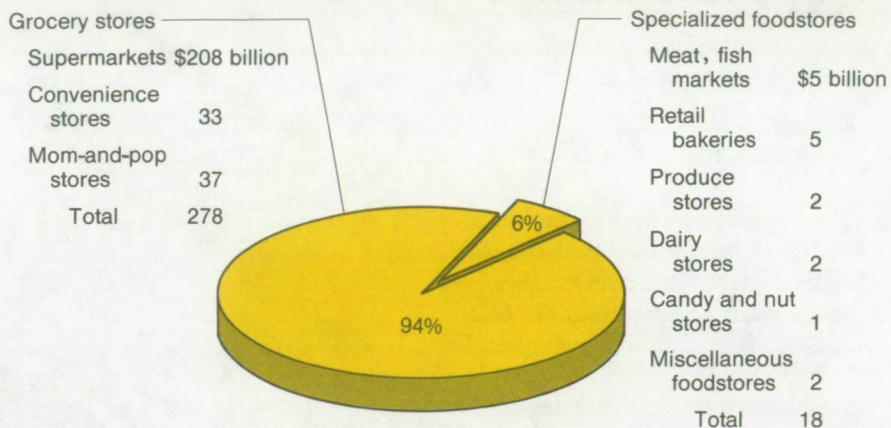
Agreements reached in 1987 have produced mixed effects on the direction of industry wages. It appears likely that wage rates will rise slowly through the end of the decade and into the 1990's. Two-tier pay rates are being phased out in many new contracts. However, lump-sum and incentive pay plans, which to some extent substitute for the lack of wage increases, are gaining in popularity. While some workers have made concessions on premium pay for Sundays and holidays, others have won a greater share of full-time hours relative to part-time. Still other workers have seen entry-level wages increase because of low unemployment in some areas. Minimum wage increases were approved in 10 States during 1987, including California, Massachusetts, and Texas. Congress and some other State legislatures may also raise the minimum wage.



## Food Retailing... At a Glance

Americans buy most of their food for off-premise consumption in grocery stores. In 1986, these stores—supermarkets, convenience stores, and mom-and-pop operations—dominated the retail food market with a 94-percent sales share. Specialized foodstores—which accounted for only 6 percent of sales—have seen a slowing of real growth in recent years.

### 1986 Foodstore Sales

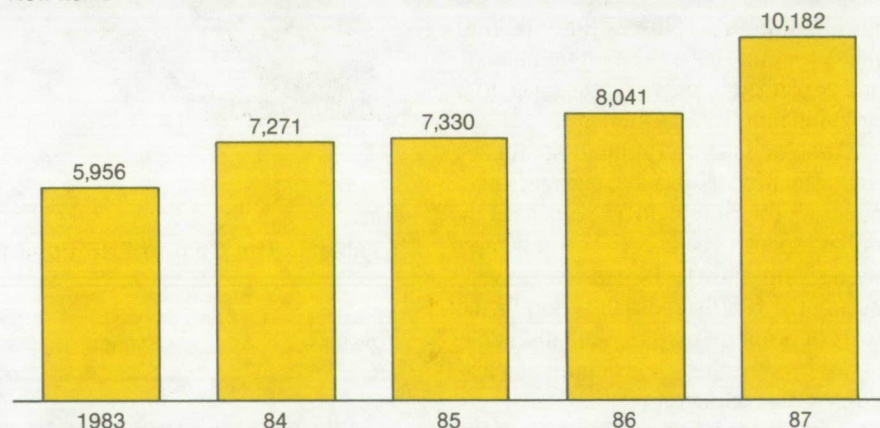


Contact: Phil Kaufman (202) 786-1866.

Foodstores are under continued pressure from manufacturers to add new products to their shelves. While the average size of supermarkets has grown—which allows more room for new products—many existing products must be dropped to make room for the new goods. Most new items have strong advertising and promotion support, yet many fail within the first year of introduction. The number of new products introduced in grocery stores grew from 5,956 in 1983 to 10,182 in 1987. The four most active categories in 1987 were personal care products at 2,039, condiments at 1,367, candy/gum/snacks at 1,145, and dairy products at 1,132.

### New Product Introductions

New items

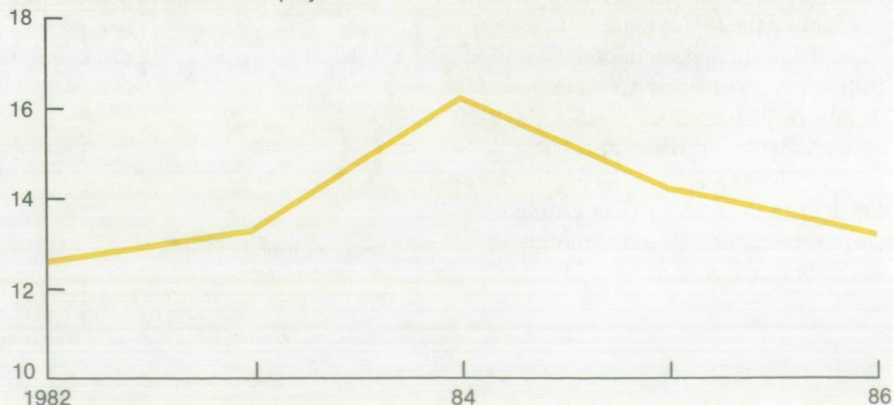


Contact: Tony Gallo (202) 786-1866.

Net profits after taxes for food retailers declined in 1986 to 13.1 percent of stockholders' equity, down from 14.2 percent in 1985 and 16.2 percent in 1984. Profits as a percent of sales remained unchanged at 1.2 percent. Profits increased slightly in the first half of 1987 compared with a year earlier. Profit rates are typically lowest in the first quarter and highest in the fourth because of holiday sales.

### Foodstore Profits

Percent of shareholders' equity



Source: Food Marketing Review, 1987.  
Contact: Phil Kaufman (202) 786-1866.



## Food Assistance

The United States spent approximately \$20.5 billion in fiscal year 1987 for domestic food and nutrition assistance programs. This represents a 142-percent increase in expenditures above the \$8.5 billion spent in 1977 (*table 1*). USDA food assistance programs are designed to improve the nutritional status of low-income persons, as well as other target groups such as the elderly. These programs—administered by the Food and Nutrition Service (FNS)—were initiated in the midst of the Great Depression to help feed the poor and hungry while disposing of farm surpluses. Since then, new programs have been implemented and expanded to provide assistance to a growing number of Americans.

The Food Stamp Program dominates domestic food assistance, currently accounting for more than 55 percent of the dollars spent. The late 1970's saw rapid food stamp growth. Expansion slowed during the 1980's under the combined effects of program maturity, an absence of major expansionary legislation, and an improved economy.

Three factors account for most of the increase in program expenditures since 1980. First of all, because of inflation, high cost-of-living adjustments were made in program benefits. Secondly, a recession in 1982-83—accompanied by substantial unemployment—increased levels of participation in domestic food programs, particularly food stamps. The Temporary Emergency Food Assistance Program is the third reason. The program was created at the beginning of the decade to distribute Government surplus commodities to the hungry throughout the Nation.

Authors Masao Matsumoto and Mark Smith are agricultural economists with the Commodity Economics Division.



**Table 1. The Cost of FNS Food Programs Rose More Slowly After 1983**

Fiscal year	Food Stamps <sup>1</sup>	Food Distribution <sup>2</sup>	WIC <sup>3</sup>	Child Nutrition <sup>4</sup>	Total <sup>5</sup>
<i>Million dollars</i>					
1977	5,461.0	61.9	255.9	2,678.3	8,457.1
1978	5,519.7	95.7	379.6	2,936.7	9,002.2
1979	6,939.8	150.0	525.4	3,467.8	11,157.0
1980	9,206.5	194.7	724.7	4,037.1	14,244.5
1981	11,225.2	239.1	868.6	4,216.6	16,627.3
1982	11,044.1	459.7	948.2	3,726.2	16,263.3
1983	12,675.8	1,353.4	1,123.1	4,077.9	19,312.1
1984	12,407.5	1,487.9	1,386.1	4,269.3	19,636.6
1985	12,531.9	1,440.1	1,478.6	4,388.2	19,925.0
1986	12,464.7	1,381.2	1,580.7	4,640.9	20,146.0
1987 <sup>6</sup>	12,508.3	1,301.9	1,681.4	4,903.5	20,512.9

<sup>1</sup>Includes benefits, State administrative and other costs, and Nutrition Assistance to Puerto Rico and the Northern Marianas (FY 1982-86). <sup>2</sup>Includes entitlement, bonus, and free commodities and cash-in-lieu of commodities; administrative expenses; and Temporary Emergency Food Assistance Program. Excludes child nutrition programs. <sup>3</sup>Includes bonus commodities (FY 1982-85). <sup>4</sup>Includes school programs, Child Care Food Program, Summer Food Service Program, child nutrition State administrative expenses, Nutrition Education and Training Program, nutrition studies, and Food Service Equipment Assistance Program (through FY 1981). <sup>5</sup>Includes program administration funds. <sup>6</sup>Preliminary.

Source: FNS Program Information Division.

Contact: Masao Matsumoto (202) 786-1864.

## Food Stamps

The Food Stamp Program helps low-income households purchase the foods they need for better nutrition. Participants spend stamps like cash to buy food. The current program began as a pilot operation in 1961. The Food Stamp Act of 1964 made the program available to every county. In 1973, Congress mandated nationwide expansion of the Food Stamp Program, thus replacing direct donations of food through the Commodity Distribution Program in most locations.

The program is available in all 50 States, the District of Columbia, Guam, and the Virgin Islands. Puerto Rico participated up to 1982, when a separate Nutrition Assistance Program was established for the Commonwealth. In order to be eligible for food stamps, people must meet income guidelines, asset limitations, and certain work requirements. Benefits are based on household size and income. The benefit levels are adjusted annually to reflect changes in the cost of food.

Around 12.9 million people participated in the Food Stamp Program in fiscal 1974, the first year of nationwide operation. Participation peaked at 22.4 million in fiscal 1981, then steadily declined. During fiscal 1987, participation averaged 19.1 million persons, 0.3 million less than during 1986 (*table 2*). These decreases were primarily due to favorable economic conditions. Unemployment fell from 10.1 percent in 1983 to 6.4 in 1987, and participation in the Food Stamp Program fell by 2.5 million during the same period.

The Food Stamp Program increases the food-buying power of participating households and indirectly supplements their income. These households can use a portion of the income they formerly spent on food to purchase nonfood items.

**Table 2. Food Stamp Benefits Have Nearly Doubled Since 1977**

Fiscal year	Average participation	Benefits per person <sup>1</sup>	Total benefits	Total Federal cost <sup>3</sup>
	<i>Millions</i>	<i>Dollars</i>	<i>Million dollars</i>	
1977	17.1	24.71	5,067.0	5,461.0
1978	16.0	26.77	5,139.2	5,519.7
1979	17.7	30.59	6,480.2	6,939.8
1980	21.1	34.47	8,720.9	9,206.5
1981	22.4	39.49	10,629.9	11,225.2
1982 <sup>2</sup>	21.7	39.17	10,208.6	10,836.7
1983	21.6	42.98	11,152.3	11,847.1
1984	20.9	42.74	10,696.1	11,578.8
1985	19.9	44.99	10,743.6	11,703.2
1986	19.4	45.49	10,605.2	11,641.0
1987 <sup>4</sup>	19.1	45.82	10,508.5	11,651.8

<sup>1</sup>Represents monthly benefits. <sup>2</sup>Puerto Rico excluded after June 1982 when its own Nutrition Assistance Program began. <sup>3</sup>Includes State administrative expenses and other program costs. <sup>4</sup>Preliminary.

Source: FNS Program Information Division.

Contact: Masao Matsumoto (202) 786-1864.

## Child Nutrition Programs

USDA operates five programs to provide meals and snacks to preschool and school-age children. These programs are the National School Lunch Program, School Breakfast Program, Special Milk Program, Child Care Food Program, and the Summer Food Service Program.

In fiscal 1987, Federal expenditures for these five programs totaled \$4.9 billion, 5.6 percent above the previous year. Child nutrition program costs declined sharply between fiscal years 1981 and 1982 due to program changes. Pro-

visions were implemented to reduce benefits to full-price and reduced-price participants in the National School Lunch Program. Other provisions limited the scope of the Special Milk Program and the Summer Food Service Program. However, since 1982, Federal expenditures have climbed nearly 32 percent, primarily due to inflation. Also contributing to the increase were the significant expansion of the Child Care Food Program and the increased volume of surplus (bonus) commodities distributed to schools.

Expenditures for the National School Lunch Program have increased steadily



**Table 3. Schools Receive Both Cash and Commodities**

Fiscal year	Cash				Commodities			Total cost
	National School Lunch	School Breakfast	Special Milk	Total	Entitle- ment <sup>1</sup>	Bonus	Total	
Million dollars								
1977	1,570.3	148.6	150.0	1,868.9	540.8	<sup>2</sup>	540.8	2,409.7
1978	1,808.3	181.2	135.3	2,124.8	485.3	57.6	542.9	2,667.7
1979	1,983.7	231.0	133.6	2,348.3	675.3	69.6	744.9	3,093.2
1980	2,279.4	287.8	145.3	2,712.5	772.5	132.0	904.5	3,617.0
1981	2,380.6	331.7	100.9	2,813.2	578.9	316.3	895.2	3,708.4
1982	2,185.4	317.3	18.3	2,521.0	426.1	339.9	766.0	3,287.0
1983	2,401.8	343.8	17.4	2,763.0	433.7	378.7	812.4	3,575.4
1984	2,507.7	364.0	16.6	2,892.3	445.8	374.8	820.6	3,712.9
1985	2,578.6	385.3	15.9	2,980.0	466.0	345.7	811.7	3,791.7
1986	2,714.6	406.3	15.4	3,136.3	460.7	376.2	836.9	3,973.2
1987 <sup>3</sup>	2,821.8	457.9	15.5	3,295.2	448.5	440.0	888.5	4,183.7

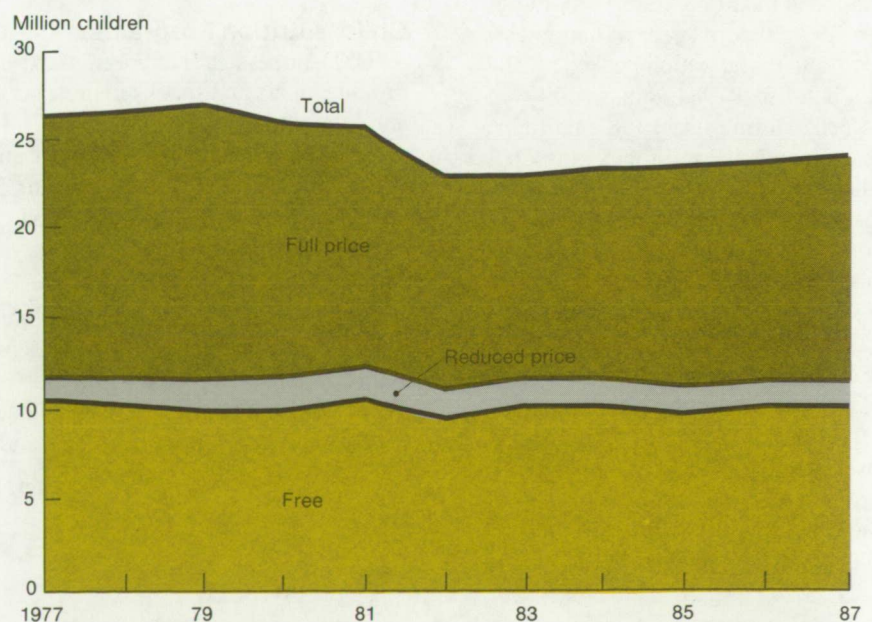
<sup>1</sup>Includes cash-in-lieu of commodities and schools receiving only commodities. <sup>2</sup>Distribution of bonus commodities began in 1978. <sup>3</sup>Preliminary.

Source: FNS Program Information Division.

Contact: Masao Matsumoto (202) 786-1864.

since 1982 (*table 3*). Over this period, bonus commodities rose by 29.4 percent, while total costs for the school programs increased by 27.3 percent. Expenditures for the Special Milk Program have declined since 1982.

Participation in the National School Lunch Program (NSLP) during fiscal 1987 averaged 24.0 million children, 1.0 percent above a year earlier. As a result of decreasing school enrollment and more restrictions on NSLP benefits and eligibility, participation declined from a high of 27.0 million children in 1979 to 22.9 million in 1982 (*figure 1*). Since then, participation has gradually increased. Free meals accounted for 41.7 percent of all lunches in fiscal 1987, reduced price meals for 6.7 percent, and full-price meals for 51.6 percent. These

**Figure 1. Over Half the Children Participating in the NSLP Received Full-Priced Meals**

Source: FNS Program Information Division.  
Contact: Masao Matsumoto (202) 786-1864.



percentages have remained about the same since 1982.

The School Breakfast Program was initiated in 1966 and permanently authorized in 1975. The program expanded steadily until 1981 when it served 3.8 million students. In 1982, participation fell to 3.3 million. Participation gradually increased to 3.5 million in fiscal year 1986.

The Child Care Food Program expanded 133 percent during the last 10 years from 311 million meals served in 1977 to 725 million in 1987. The program provides meals and snacks to preschool children in public and private child-care facilities. Total costs for the program rose 340 percent over the same period from \$124.6 million to \$547.9 million. One reason for the rapid increase was the large rise in the number of private day-care homes participating in the program.

### Supplemental Food Programs

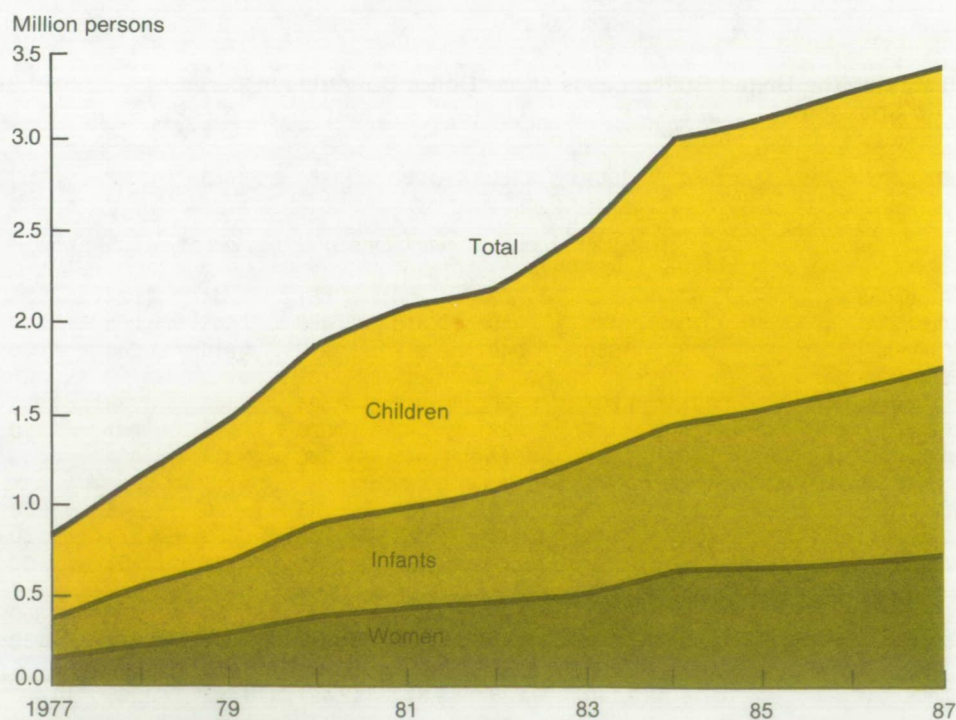
The Special Supplemental Food Program for Women, Infants, and Children (WIC) was established as a pilot program in 1972 to improve the nutrition and health of pregnant, breastfeeding, and postpartum women, as well as infants and children to age 5. In 1974, it received official program status.

Average monthly participation in fiscal 1987 was 3.4 million, 3.4 percent above 1986. Since 1980, participation has increased 79.2 percent from 1.9 million. In fiscal 1987, women accounted for 21.9 percent of the total participants, infants for 29.7 percent, and children for

48.4 percent. These percentages have remained relatively stable over the years (figure 2).

The Commodity Supplemental Food Program (CSFP)—whose recipients are similar to those who participate in WIC—began in 1969. Like WIC, the CSFP has expanded over the last decade. Participation grew substantially after 1982 when elderly persons were included as eligible participants in a limited number of projects. Program costs, which now include all elderly feeding and bonus foods, increased from \$14.3 million in 1977 to \$54.7 million 10 years later, a 282-percent increase.

**Figure 2. The WIC Program Has Served More and More People**



Source: FNS Program Information Division.  
Contact: Masao Matsumoto (202) 786-1864.



### U.S. Food Aid Abroad

Food aid shipments by donor countries increased several years ago in response to the 1984-85 African famine and have remained at relatively high levels ever since. World cereal aid declined sharply in the 1973-75 period, partly because commodity prices increased and countries with fixed aid budgets could not donate as much food. But in the early 1980's, higher food aid budgets helped cereal aid shipments approach the 10-million-ton target set by the 1974 World Food Conference. The goal was exceeded for the first time in the 1984/85 marketing year, and the United Nations' Food and Agriculture Organization estimates that shipments will

exceed the target in 1987/88 for the fourth consecutive year.

The United States consistently donates more food than all other countries combined (*table 4*). The bulk of all food aid is cereals—wheat, flour, rice, corn, and sorghum. The United States is estimated to provide about 65 percent of these cereal aid shipments in the 1987/88 marketing year. The European Community follows with nearly 15 percent, Canada with almost 10 percent, and Japan and Australia with about 3 percent each.

The United States currently provides food aid under the Public Law (P.L.) 480 program and Section 416(b) of the Agricultural Act of 1949. P.L. 480 really consists of three programs. Title I

provides long-term credit at low interest rates to designated countries for purchase of specified U.S. agricultural commodities. The Food Security Act of 1985 reinstated sales of U.S. farm products for local currencies under Title I. The money is then used in the private sector to generate economic growth. Title III—also called the Food for Development Program—allows a Title I loan to be forgiven if specified development measures are carried out by the recipient government. Such self-help measures can increase farm production and improve storage, transportation, and distribution of farm products.

P.L. 480 Title II is a donation program, where the commodities are distributed either through the recipient government, private voluntary organizations, or the World Food Program.

Section 416 is also a donation program. Surplus commodities owned by USDA's Commodity Credit Corporation, such as dairy products, wheat flour, and other grains, have been shipped overseas.

**Table 4. The United States Leads Other Donor Countries in Cereal Aid Shipments<sup>1</sup>**

Donor	1980	1981	1982	1983	1984	1985	1986 <sup>2</sup>	1987 <sup>2</sup>
<i>Thousand metric tons, grain equivalent<sup>3</sup></i>								
Argentina	67	20	33	30	51	44	24	35
Australia	370	485	349	460	466	345	368	300
Canada	600	600	843	817	943	1,216	1,240	1,000
European Community <sup>4</sup>	1,291	1,602	1,596	1,917	2,504	1,562	1,738	1,600
Finland	29	9	28	40	20	5	41	20
Japan	914	507	517	445	280	374	434	350
Norway	40	36	36	17	45	16	46	30
Sweden	94	119	87	83	88	69	74	80
Switzerland	16	22	29	30	39	22	53	30
United States	5,212	5,341	5,375	5,655	7,536	6,675	7,861	6,800
Others	309	399	345	355	522	477	326	250
Total	8,942	9,140	9,238	9,849	12,494	10,805	12,205	10,495

<sup>1</sup>Years run from July 1 to June 30. <sup>2</sup>Estimates based on minimum contributions under the 1986 Food Aid Convention, budgetary allocations, historical patterns, current food aid policies, and other sources. <sup>3</sup>Wheat, rice, and coarse grains are on a one-to-one basis. Conversion factors are used for grain products to determine grain equivalent. <sup>4</sup>Aid from individual members as well as Community action. Ten member countries, prior to addition of Portugal and Spain.

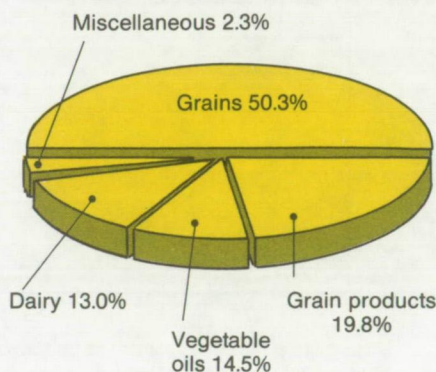
Source: Food and Agriculture Organization, United Nations.

Contact: Mark Smith (202) 786-1822.

### What Food Does the United States Provide?

In fiscal years 1984-86, grains comprised half the value of U.S. food aid shipments (*figure 3*). Much of that was wheat, followed by rice, corn, and sorghum. Grains were distantly followed by grain products, which comprised about 20 percent of the total. These processed cereal products include flour, bulgur wheat (cracked wheat), and mixtures such as corn-soya-milk. Vegetable oils, used for cooking and as a food ingredient, comprised nearly 15 percent of the total. Most of this was soybean oil. Dairy products, chief of which was non-fat dry milk, made up about 13 percent. Miscellaneous commodities included cotton, tallow, and other products.

**Figure 3. The United States Provided a Wide Variety of Food Aid During 1984-86<sup>1</sup>**



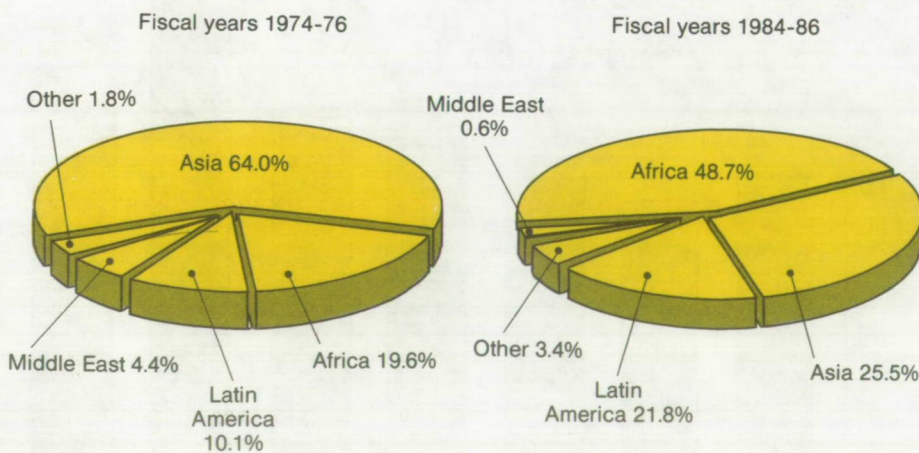
<sup>1</sup>Average composition of food aid by value, fiscal years.  
Contact: Mark Smith (202) 786-1823.

### Who Receives U.S. Food Aid?

The regional distribution of U.S. food aid has shifted over the last 10 years (*figure 4*). In the mid-1970's, most of the aid was shipped to Asian countries, primarily Bangladesh and India. These two countries together accounted for about 30 percent of the value of all U.S. food aid over the fiscal 1974-76 period. African countries received about 20 percent, with Egypt getting the most at 8 percent of the U.S. total. Ten percent of the value of the commodities went to Latin America, where Chile was the largest recipient. Israel, Jordan, and Syria received most of the shipments to the Middle East. A few European countries and other destinations received the remaining aid.

Since the mid-1970's, the agricultural situation in developing countries has changed, and consequently, the distribution of U.S. food aid has shifted. Gains in per capita grain production witnessed in Asian countries were not seen in Africa and Latin America. Foreign exchange reserves—used to buy food imports—were also depleted, especially during the early 1980's. In fiscal 1984-86, Asian countries received one-quarter of all U.S. aid. Improved agricultural sectors in Bangladesh and India cut these countries' needs, and together they received less than 15 percent of the U.S. total. African countries, on the other hand, received nearly half of all U.S. food aid. Egypt alone accounted for more than 15 percent. The share of U.S. food aid shipped to Latin America grew to about 22 percent, reflecting unsteady growth in per capita grain production and higher debt burdens there. The reduced share distributed to the Middle East in part reflects the graduation of Israel from the P.L. 480 Title I program.

**Figure 4. Africa Replaced Asia as the Dominant Recipient of U.S. Food Aid**



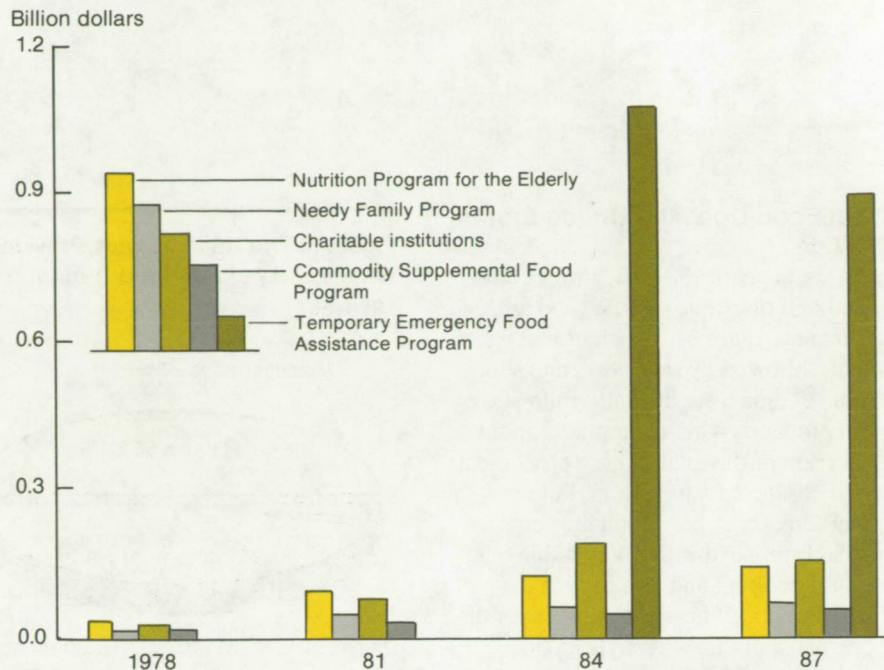
Contact: Mark Smith (202) 786-1823.



## Food Assistance. . . At a Glance

The cost of various food distribution programs, excluding child nutrition, rose from \$95.7 million in fiscal 1978 to \$1.3 billion in 1987. Program costs increased as participation expanded and greater quantities of USDA surplus commodities were distributed. However, the most significant factor in the expansion of food distribution was the initiation of the Temporary Emergency Food Assistance Program in 1982. The purpose of TEFAP is to reduce the expense of maintaining Government inventories by distributing these commodities to needy households. USDA commodities are also distributed through the Nutrition Program for the Elderly operated by the Department of Health and Human Services, the Needy Family Program which operates on Indian reservations and in the Trust Territories of the Pacific, the Commodity Supplemental Food Program, and charitable institutions which serve meals to needy people on a regular basis.

### Domestic Food Donation Costs<sup>1</sup>



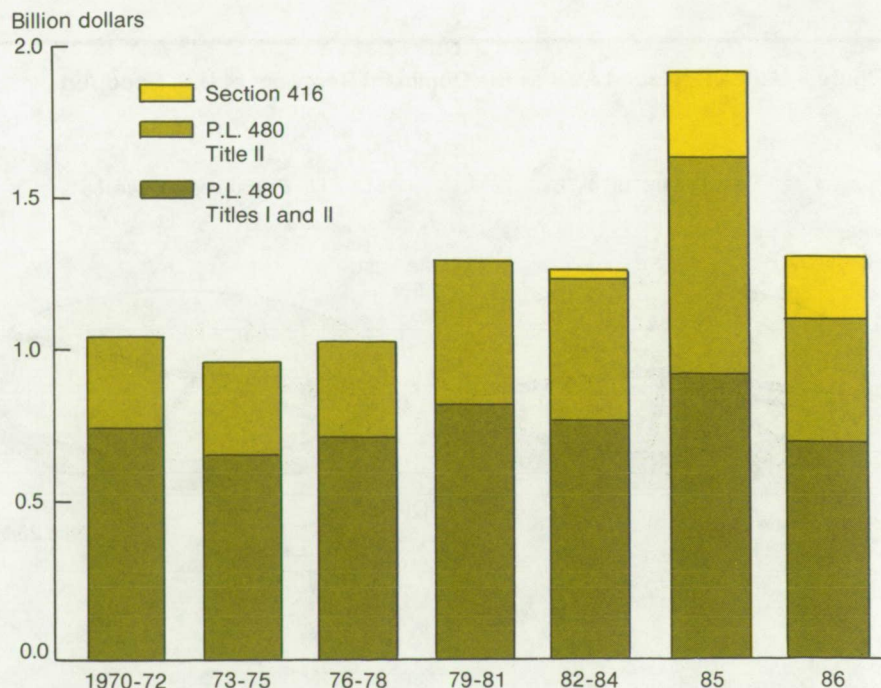
<sup>1</sup>Fiscal years. Includes entitlement, bonus, and cash-in-lieu of commodities, and Federal share of State administrative expenses for the Needy Family Program, Commodity Supplemental Food Program including all elderly, and the Temporary Emergency Food Assistance Program.

Source: FNS Program Information Division.  
Contact: Masao Matsumoto (202) 786-1864.

Most of U.S. food aid shipped overseas is provided through Public Law (P.L.) 480 programs. The majority of that aid is Title I credit sales. During the 1970's, Title I and Title III—the Food for Development Program—accounted for over two-thirds of our food aid shipments, ranging from a low of \$575 million in 1974 to a high of \$793 million in 1979. Aid levels have generally been higher in the 1980's, hitting a record \$1.9 billion in 1985. P.L. 480 Title II donations also increased during this time. They reached record proportions during the height of the 1984-85 African famine.

Section 416 donations started in 1983 and have become an important part of U.S. food aid—ranging from 9 to 15 percent of total shipments.

### U.S. Food Aid Shipments<sup>1</sup>



<sup>1</sup>Fiscal years. 1986 data are preliminary.  
Contact: Mark Smith (202) 786-1823.



## International Trade

The 1980's have been disappointing for exporters of many raw materials, including agricultural exporters.

For the United States, the problems of sluggish agricultural trade were exacerbated by a strong dollar and high commodity support prices. In 1986, our share of the value of world agricultural trade—12 percent—reached its lowest point in nearly 30 years. It recovered slightly when U.S. farm exports rose to \$28.6 billion last year, but was still below the 19-percent share we held only a few years earlier.

World agricultural trade also changed. The European Community (EC), Japan, and the USSR are the largest net importers of farm products. Each purchases as much as \$20 billion annually from world markets. Together they bought \$13 billion worth of agricultural goods from the United States in 1987.

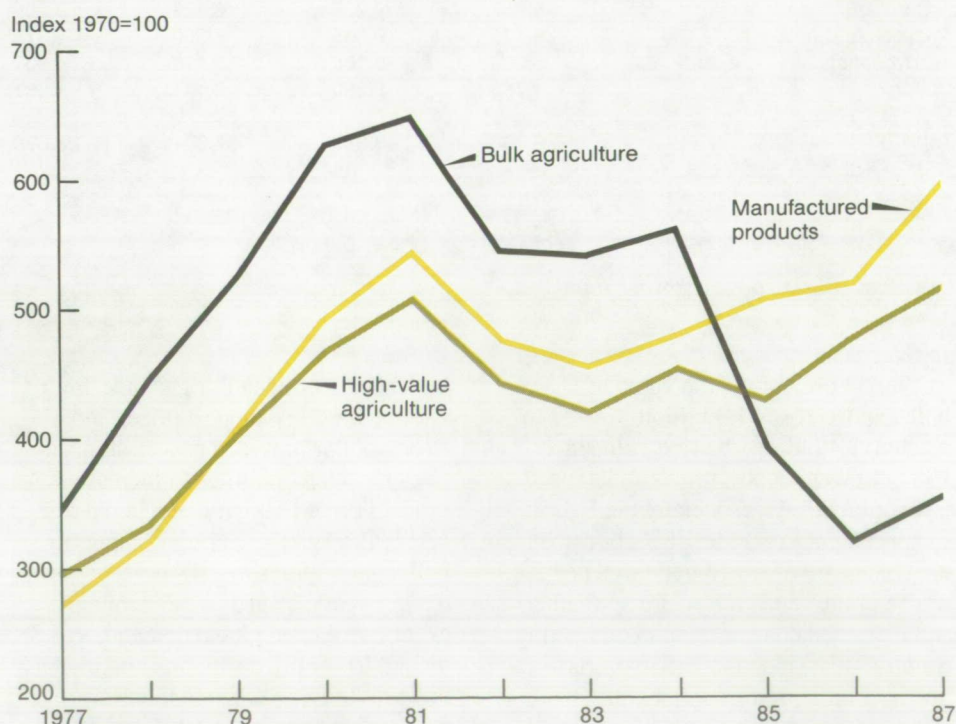
However, since the 1970's, the EC has increased its agricultural production, and in 1982 began to export more grain than it imported. At the same time, Soviet grain imports—which expanded rapidly during the 1970's—dropped off. Furthermore, farm exports fell as economic policies in the industrial countries reduced the amount of credit available to developing countries.

Between 1981 and 1986, world trade in raw materials and other low-priced, bulk agricultural products fell \$22 billion or about 30 percent.

For the United States, bulk products constituted 60-75 percent of all agricultural exports during the 1980's. Bulk exports—such as grains, oilseeds, and cotton—led the U.S. export boom in the late 1970's (*figure 1*). They also led the decline in agricultural exports from 1981



**Figure 1. U.S. Bulk Exports Saw a Sharp Drop in the Mid-1980's**



Contact: Stephen MacDonald (202) 786-1827.

Authors Amy Allred, Catherine Greene, Shannon Hamm, Ben Huang, Gary Lucier, Stephen MacDonald, and Steve Milmo are agricultural economists with the Commodity Economics Division.



**Table 1. U.S. High-Value Farm Exports Reached Record Levels in 1987**

Item	U.S. Exports			
	1978	1981	1984	1987 <sup>1</sup>
<i>Million dollars</i>				
<b>High-value products</b>	7,273	11,068	9,831	11,207
Livestock products	3,032	4,239	4,228	5,154
Beef	187	280	470	771
Poultry	216	487	282	404
Edible offals	206	311	275	348
Hides and skins	915	1,024	1,383	1,731
Horticultural products	2,042	3,631	2,849	3,445
Fresh fruit	566	855	758	938
Processed fruit, including juices	448	642	485	545
Fresh vegetables	224	354	295	269
Processed vegetables	479	1,199	707	888
Nuts	324	581	604	804
<b>Bulk products</b>	22,109	32,271	27,973	17,431
Grains and feeds	12,194	20,456	17,163	9,423
Wheat	4,335	7,844	6,473	3,043
Corn	5,257	7,935	6,999	3,209
Oilseeds and products	8,175	9,555	8,369	6,378
Soybeans	5,208	6,186	5,418	4,307
Cotton	1,740	2,260	2,441	1,631
<b>Total</b>	<b>29,382</b>	<b>43,339</b>	<b>37,804</b>	<b>28,638</b>

<sup>1</sup>Preliminary.Source: *Foreign Agricultural Trade of the United States*, ERS, USDA, various issues.

Contact: Stephen MacDonald (202) 786-1827.

to 1986. Fortunately, the value of U.S. bulk exports rose \$1.3 billion in 1987 to reach \$17.4 billion, the first gain since 1984. Lower support prices and export promotion efforts, especially the Export Enhancement Program (EEP), boosted the U.S. share of world trade in wheat, coarse grains, and cotton. Poor weather and increased consumption in competing countries also added to U.S. exports. Still, our bulk product shipments remained well below the 1981 record of \$32 billion.

The agricultural policies of the United States and the EC significantly affected

bulk product trade. For instance, high U.S. commodity support prices and a strong dollar provided powerful incentives for other countries to increase their production of bulk products in the first half of the 1980's. Foreign output of bulk commodities rose 18 percent during those 5 years, even as other economic events weakened global demand. Although lower price supports and increasingly favorable exchange rates improved our competitiveness in 1986 and 1987, EC production and subsidized exports of bulk products remained high, and large foreign debts still restrained many countries' imports.

In contrast, high-value products (HVP's)—such as produce, livestock products, and processed foods—have been the most resilient agricultural exports of the 1980's. World trade in HVP's reached a record \$173 billion in 1986. U.S. shipments reached a record \$11 billion in 1987 (*table 1*). Markets for HVP's are very different from bulk markets. There is a greater variety of products, and they cannot be as easily substituted for one another. Consequently, their sales often remain stable even if their prices rise. On the other hand, there is greater similarity among bulk products, particularly among commodities used in livestock feed. For example, soybeans have been increasingly substituted for grains during the 1980's, and soybeans from Brazil have increasingly replaced soybeans from the United States.

High-value agricultural products and manufactured goods share trade and market characteristics. The low degree of substitution possible within these groups and the geographic distribution of their markets helps sustain demand and prices. For example, washing machines are poor substitutes for airplanes, just as oranges are poor substitutes for raisins.

Another similarity between HVP's and manufactured goods is that both are largely purchased by wealthier customers. World bulk product trade soared when centrally planned and developing countries increased their purchases during the 1970's, but HVP trade remained focused on industrialized markets. Nearly 70 percent of all HVP's and manufactured goods sold on world markets go to industrialized countries. Relatively strong economic growth in these countries sustained trade during the 1980's. Increasingly favorable exchange rates with the industrialized countries further helped our high-value exports after 1985.

## The Fruit Trade

Fruit is shipped overseas in many forms. Fresh, dried, and canned are the predominant types, with fresh by far the most important. Although the United States is a major producer of many fruits, we export more fresh citrus—oranges, grapefruit, and lemons—than any other fruit except apples (*figure 2*).

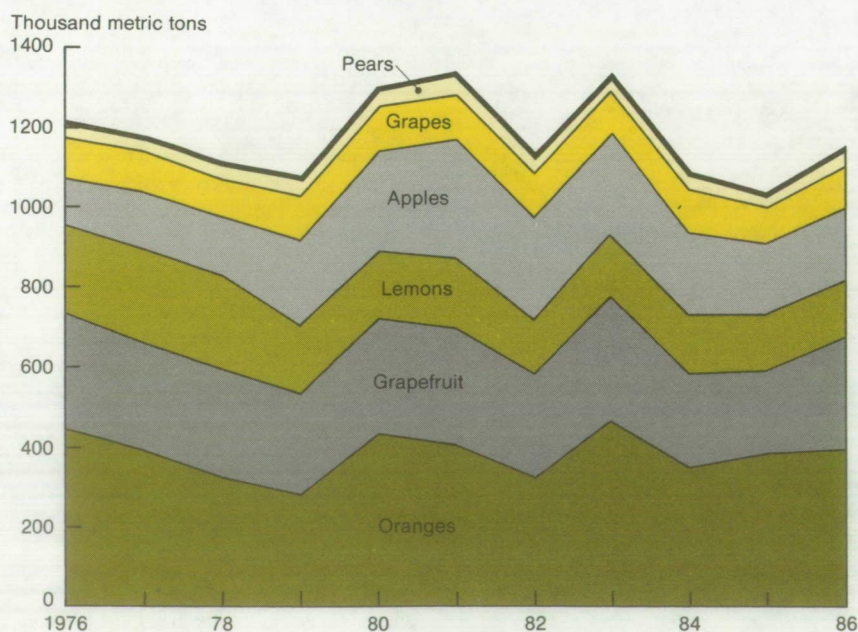
U.S. fresh citrus exports generally declined in the first half of the 1980's, compared with the level of the second half of the 1970's, primarily because of reduced supplies and increased prices here at home. Freezes in Florida and Texas affected orange and grapefruit production in the early 1980's. Consequently, the price of fresh oranges and grapefruit rose substantially above mid-1970's levels. Reduced supplies and strong domestic demand strengthened fresh lemon prices in the last decade.

Exports of fresh oranges fluctuated from a low of 281,318 metric tons (mt) in 1979 to a high of 462,710 mt in 1983. However, because exports tend to vary from year to year, averages sometimes offer a better comparison. For example, between 1976-78 and 1984-86, fresh orange exports fell 3 percent. Furthermore, the destinations for U.S. oranges changed. Canada was a leading customer until 1985. But with the appreciation of the U.S. dollar against the Canadian dollar, exports to Canada declined substantially. Hong Kong replaced Canada as the leading importer of U.S. fresh oranges (*table 2*). Since the United States and Japan signed a new trade agreement in 1984 to increase the Japanese quota for fresh oranges, that country became a major importer of U.S. oranges. In 1986, five countries—Hong Kong, Canada, Japan, Singapore, and Malaysia—accounted for 95 percent of our fresh orange exports.

**Table 2. Canada and Pacific Countries Are Leading Importers of U.S. Fresh Fruit**

Commodity and importing country	U.S. exports	
	1980	1986
<i>Metric tons</i>		
<b>Oranges</b>		
Hong Kong	110,575	125,168
Canada	145,525	112,957
Japan	62,738	109,987
Singapore	17,908	16,312
Malaysia	5,065	8,371
Other	91,033	18,553
<b>Grapefruit</b>		
Japan	128,992	156,200
France	41,799	46,479
Canada	57,714	26,710
Netherlands	38,586	23,137
Taiwan	0	7,495
Other	20,417	22,046
<b>Lemons</b>		
Japan	101,638	122,792
Canada	15,393	9,405
Hong Kong	4,423	5,574
Netherlands	4,834	1,689
South Korea	106	1,157
Other	42,096	4,661
<b>Apples</b>		
Taiwan	49,412	42,759
Canada	54,915	30,566
Hong Kong	17,435	19,863
Saudi Arabia	21,814	15,364
United Kingdom	9,521	9,224
Other	97,794	60,042
<b>Grapes</b>		
Canada	88,144	57,011
Hong Kong	7,966	14,007
Taiwan	802	12,784
Japan	1,355	4,821
Singapore	3,408	3,791
Other	16,206	16,082
<b>Pears</b>		
Canada	19,626	15,898
Sweden	6,588	7,988
Saudi Arabia	955	3,666
Mexico	2,758	1,878
United Arab Emirates	2,260	1,763
Other	11,834	5,799

**Figure 2. U.S. Fresh Fruit Exports Fluctuated**



Source: Bureau of the Census, Department of Commerce.  
Contact: Ben Huang (202) 786-1884.

Source: Bureau of the Census, Department of Commerce.

Contact: Ben Huang (202) 786-1884.



### Processed Fruit Exports

Raisins and prunes are the two major dried fruits the United States exports (figure 3). Very large quantities were shipped to Japan, Canada, and Western Europe during the last 3 years. U.S. raisins lost some EC markets in the early 1980's because of large South African and Australian shipments to the Community. The weak dollar has boosted sales in recent years.

Because of increased competition in the world markets, promotional activities of the Targeted Export Assistance (TEA) Program—which helps some commodity groups promote their products overseas—contributed to the rise in U.S. raisin and prune shipments in 1986. Japan—our major customer for these two dried fruits—along with the United Kingdom, West Germany, Denmark, and Sweden accounted for 65 percent of all raisin ex-

ports that year (table 3). Approximately 55 percent of all prune exports went to Japan, Italy, West Germany, the United Kingdom, and Canada.

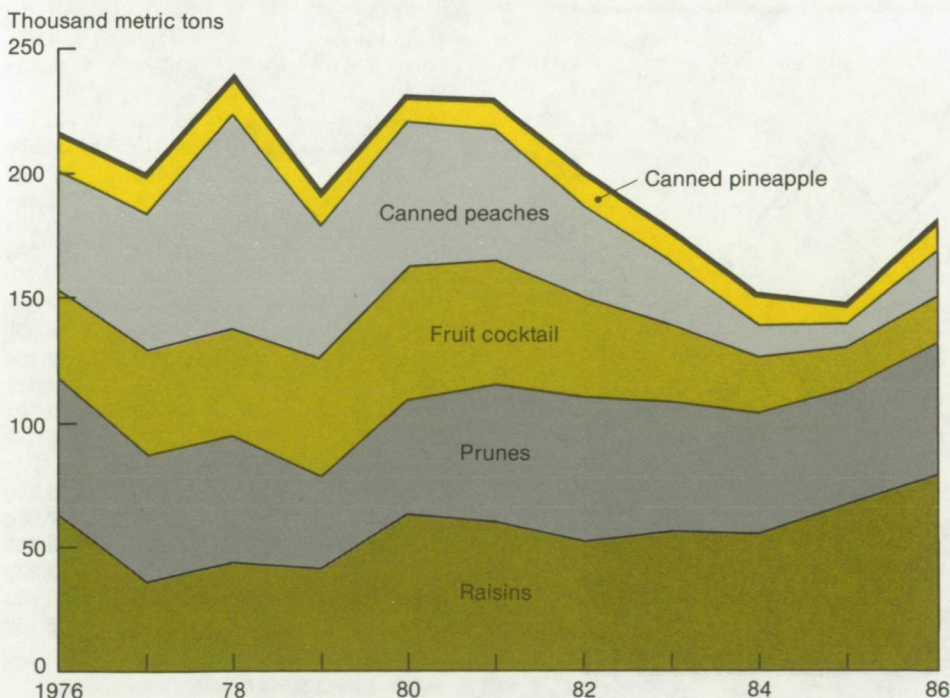
Our exports of canned fruit generally remained strong from the mid-1970's to 1981. But competition from other major producing countries, such as Greece, Italy, Spain, and South Africa, forced our exports down sharply between 1982 and 1985. EC subsidies also affected U.S. sales. In addition, several other factors reduced shipments, namely increased noncitrus production in Western Europe and Latin America, the strong U.S. dollar in the mid-1980's, tariff and nontariff barriers imposed by importing countries, and export subsidies in other producing countries. The weak dollar and the TEA Program helped exports improve significantly in 1986. Nevertheless, comparisons of the 1976-78 and 1984-86

averages show that exports of canned fruit cocktail, canned peaches, and canned pineapple fell 53, 78, and 33 percent, respectively.

**Table 3. Japan Is a Leading Importer of U.S. Processed Fruits**

Commodity and importing country	U.S. exports	
	1980	1986
<i>Metric tons</i>		
<b>Dried Fruit</b>		
Raisins		
Japan	15,157	20,815
United Kingdom	7,348	13,057
West Germany	7,570	6,657
Denmark	2,010	5,131
Sweden	3,275	5,129
Other	27,430	26,959
Prunes		
Japan	3,482	8,055
Italy	8,166	7,921
West Germany	4,749	7,003
United Kingdom	1,227	3,181
Canada	3,385	3,110
Other	25,300	24,388
<b>Canned Fruit</b>		
Fruit cocktail		
Japan	3,881	3,827
Canada	15,709	3,586
Hong Kong	3,132	2,640
Panama	1,153	1,063
Singapore	2,833	961
Other	27,230	6,667
Peaches		
Japan	12,921	10,000
Canada	19,299	2,905
Taiwan	1,150	1,251
Panama	570	686
Norway	1,309	473
Other	22,281	2,575
Pineapples		
Canada	5,067	4,744
Philippines	0	2,585
Hong Kong	11	841
Netherlands	687	741
West Germany	762	530
Other	2,654	627

**Figure 3. U.S. Processed Fruit Exports Gained in 1986**



Source: Bureau of the Census, Department of Commerce.  
Contact: Ben Huang (202) 786-1884.

Source: Bureau of the Census, Department of Commerce.

Contact: Ben Huang (202) 786-1884.



### U.S Imports of Fresh Fruit

U.S. imports of three major noncitrus fruits—apples, bananas, and pineapples—rose sharply between 1976 and 1986 (figure 4). Increased demand for these fruits and high orange prices contributed to the rise. Our imports of fresh apples during the 10 years fluctuated from a low of 49,437 metric tons in 1977 to 71,870 mt in 1982 and then steadily increased to a high of 131,851 in 1986. Canada was still a leading supplier that year, but large quantities of Granny Smith apples from Southern Hemisphere countries and France boosted our fresh apple imports. Canada, Chile, New Zealand, South

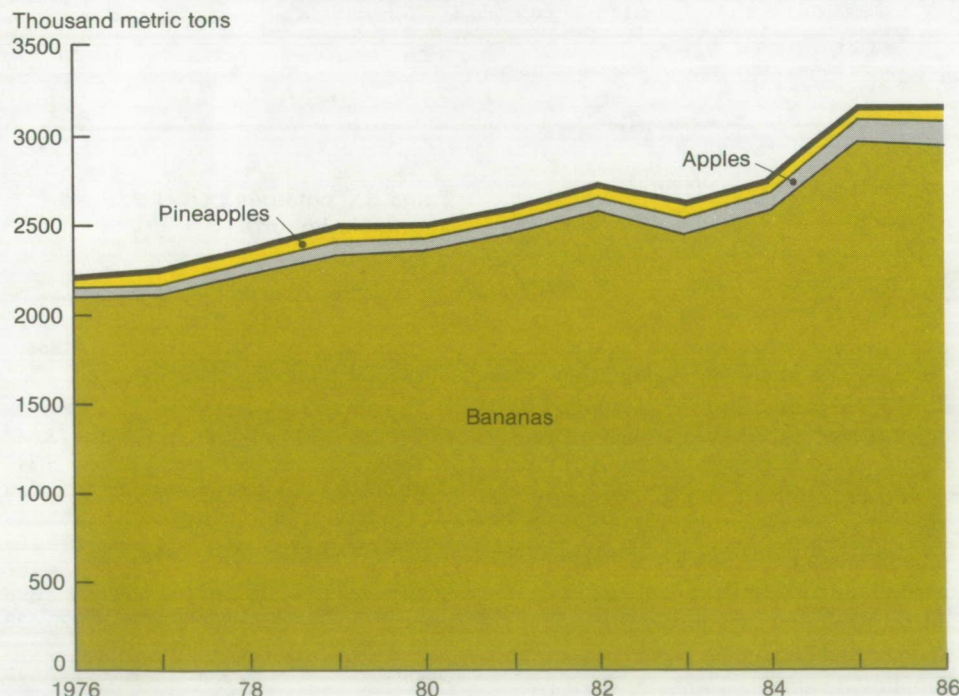
Africa, and France accounted for 97 percent of the apples we imported in 1986.

The United States has also been importing more and more bananas recently. The sharp rise in fresh orange prices after the Florida and Texas freezes earlier in this decade caused consumers to shift to bananas. Imports rose 31 percent between 1976-78 and 1984-86. Ecuador is our leading supplier, with Costa Rica, Colombia, Honduras, and Guatemala rounding out the top five (table 4). Together, they accounted for 88 percent of our 1986 banana imports.

During those 10 years, fresh pineapple imports fluctuated from a high of 77,292

mt in 1983 to a low of 53,692 mt in 1985, but in comparing the 1976-78 average with the 1984-86 average, imports rose slightly. Most of these pineapples came from Mexico and other Central American countries. Imports from Costa Rica—now a leading supplier—increased from 520 mt in 1980 to 32,898 in 1986. Mexico was number one in 1980, providing 42,339 mt. But by 1986, Mexican shipments dropped to 3,012 mt. Five countries—Costa Rica, Honduras, Dominican Republic, Mexico, and Guatemala—supplied the United States with 98 percent of its fresh pineapple imports.

**Figure 4. U.S. Fresh Noncitrus Fruit Imports Rose Sharply Between 1976 and 1986**



Source: Bureau of the Census, Department of Commerce.  
Contact: Ben Huang (202) 786-1884.

**Table 4. Many Countries Provide the United States with Fresh Fruit**

Commodity and exporting country	U.S. imports	
	1980	1986
<i>Metric tons</i>		
<b>Apples</b>		
Canada	36,408	44,565
Chile	10,167	31,041
New Zealand	13,007	26,918
South Africa	8,320	13,454
France	2,813	11,250
Other	439	4,405
<b>Bananas</b>		
Ecuador	523,500	733,400
Costa Rica	476,100	561,500
Colombia	210,800	511,700
Honduras	667,800	507,600
Guatemala	221,700	282,300
Other	252,500	346,500
<b>Pineapples</b>		
Costa Rica	520	32,898
Honduras	26,105	24,302
Dominican Republic	0	11,516
Mexico	42,339	3,012
Guatemala	40	1,518
Other	2	1,282

Source: Bureau of the Census, Department of Commerce.

Contact: Ben Huang (202) 786-1884.



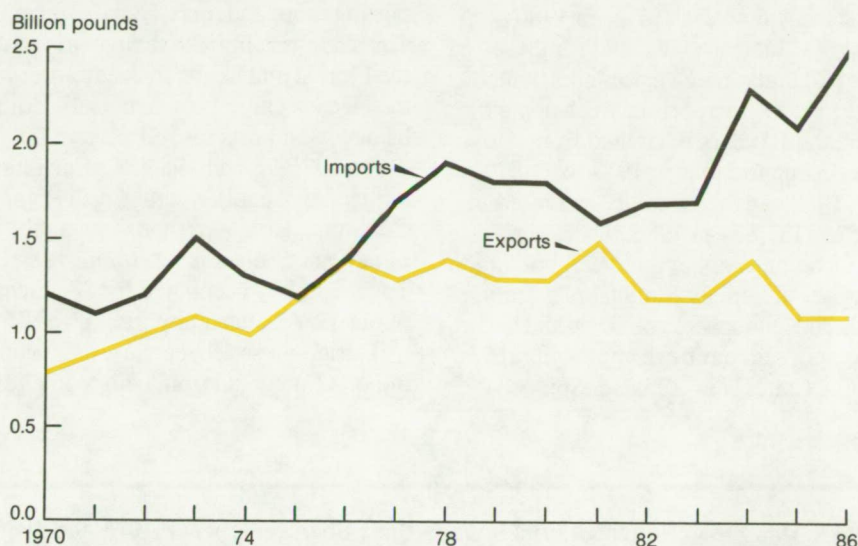
### The Fresh Vegetable Trade

U.S. exports of fresh vegetables increased between 1970 and 1986, growing slightly more than 2 percent per year, according to official U.S. counts (*figure 5*). However, the figures may be under-reported since official import data from Canada, our biggest fresh vegetable customer, have been higher than the comparable U.S. export numbers in recent years.

Of the major fresh vegetables we shipped during the period, lettuce, onions, tomatoes, and celery were the leaders (*table 5*). Increased demand for fresh vegetables in Canada—combined with a shorter growing season there—led to more vegetable imports into that country.

U.S. imports of fresh vegetables rose significantly between 1970 and 1986, approximately 4 percent per year. During

**Figure 5. The United States Imported More Fresh Vegetables Than It Exported in 1986<sup>1</sup>**



<sup>1</sup>Includes lima beans, other beans, beets, broccoli, brussel sprouts, cabbage, carrots, cauliflower, celery, corn-on-cob, cucumber, eggplants, endive, garlic, lettuce, okra, onions, peas, peppers, radishes, squash, tomatoes, and turnips.

Source: Bureau of the Census, Department of Commerce.  
Contact: Amy Allred (202) 786-1886.

**Table 5. Lettuce Was An Important U.S. Export Between 1970 and 1986**

Item	U.S. exports		
	1970	1980	1986
<i>Thousand pounds</i>			
Asparagus	6,781	16,367	11,235
Broccoli	na	40,616	48,376
Carrots	50,628	62,464	58,956
Cauliflower	na	18,428	31,630
Celery	92,762	136,300	113,981
Sweet corn	na	34,648	29,460
Lettuce	250,518	302,106	311,537
Onions	147,160	256,554	164,407
Tomatoes	89,170	263,038	128,331
Melons <sup>1</sup>	52,339	37,588	84,126

na = not available. <sup>1</sup>Includes cantaloupe and honeydew.

Source: Bureau of the Census, Department of Commerce.

Contact: Amy Allred (202) 786-1886.

the 1970's, U.S. imports hit highs in 1973 and 1978 at 1.5 and 1.9 million pounds, respectively. During the 1980's, imports have been fueled by Americans' ever increasing desire for fresh vegetables. On average, per capita U.S. consumption rose from 79 pounds in 1981 to 90 pounds in 1986. Consequently, imports climbed from 1.6 billion to 2.5 billion pounds during the period.

Most of our fresh vegetable imports come from Mexico during the winter months when U.S. supplies are low. In general, imports peak in February, then drop to their lowest points in July, August, and September when domestic supplies are ample. Tomatoes were, by far, the leading fresh imported vegetable between 1970 and 1986 (*table 6*). Onion and carrot imports were also substantial. Of the other major fresh vegetables, we purchased smaller amounts of asparagus and lettuce.

**Table 6. Tomatoes Led U.S. Fresh Vegetable Imports**

Item	U.S. imports		
	1970	1980	1986
<i>Thousand pounds</i>			
Asparagus	na	7,242	23,647
Broccoli	na	666	8,349
Carrots	56,185	108,681	113,950
Cauliflower	57	7,293	13,126
Celery	19	4,863	14,767
Sweet corn	na	952	7,676
Lettuce	2,337	15,157	20,432
Onions <sup>1</sup>	76,333	132,831	247,647
Tomatoes	646,724	651,737	981,110

na = not available. <sup>1</sup>Includes pearl onions and onion sets.

Source: Bureau of the Census, Department of Commerce.

Contact: Amy Allred (202) 786-1886.

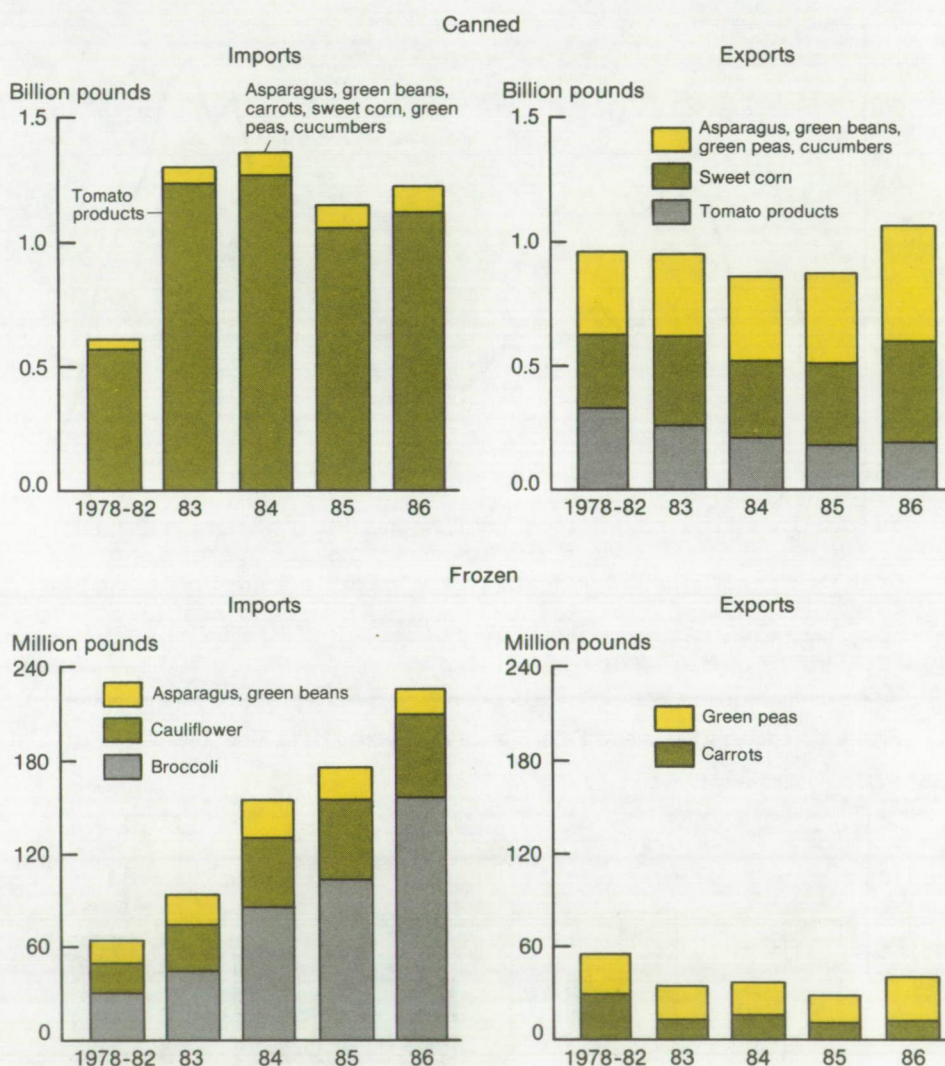


## Exports and Imports of Processed Vegetables

On the export side of the picture, U.S. canned vegetable shipments rose between 1978 and 1986 by almost 2 percent annually. Sweet corn and tomato products accounted for most of those exports (figure 6). However, the United States did supply other countries with smaller amounts of asparagus, green beans, cucumbers (pickles), and green peas. Our exports of frozen carrots were down almost 9 percent from 1978 to 1986. Green pea shipments were up just over 1 percent and frozen sweet corn, up over 8 percent. Overall, frozen vegetable exports increased 4 percent during the period. Foreign demand for frozen vegetables has paralleled that of the United States. The commodity promotional efforts of the TEA Program and the falling value of the dollar prompted the rise in both canned and frozen shipments.

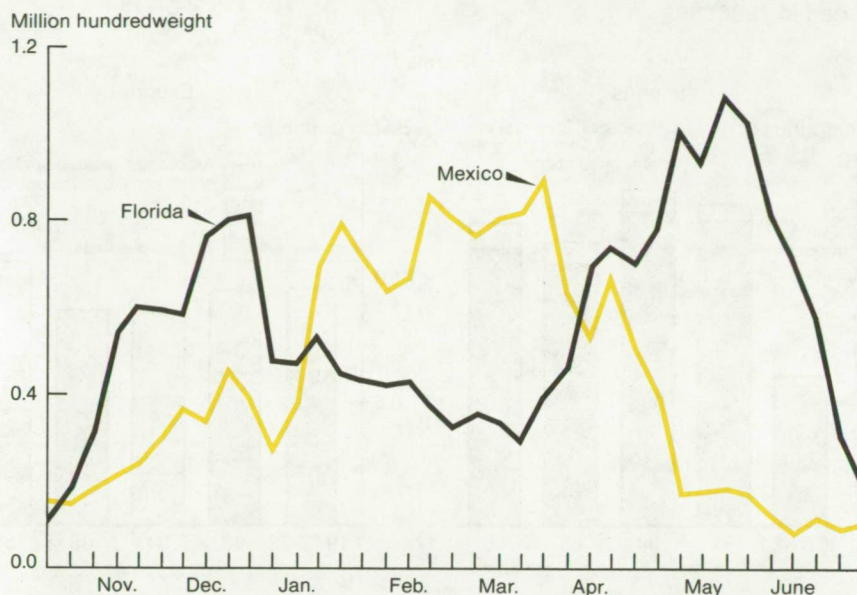
The United States increased its imports of canned vegetables over 11 percent from 1978 to 1986. Tomato products were the largest component. Other canned imports included asparagus, green beans, carrots, sweet corn, green peas, and cucumbers. The demand for canned vegetables was slower than the demand for their frozen counterparts. This follows the general consumer trend of buying more fresh and frozen vegetables and less canned. Our imports of frozen vegetables rose about 16 percent from 1978 to 1986. Broccoli and cauliflower were the dominant frozen imports, with lesser amounts of asparagus and green peas.

**Figure 6. The United States Imported More Canned and Frozen Vegetables Than It Exported in 1986<sup>1</sup>**



<sup>1</sup>Farm-weight basis for selected vegetables.  
Source: Bureau of the Census, Department of Commerce.  
Contact: Amy Allred (202) 786-1886.

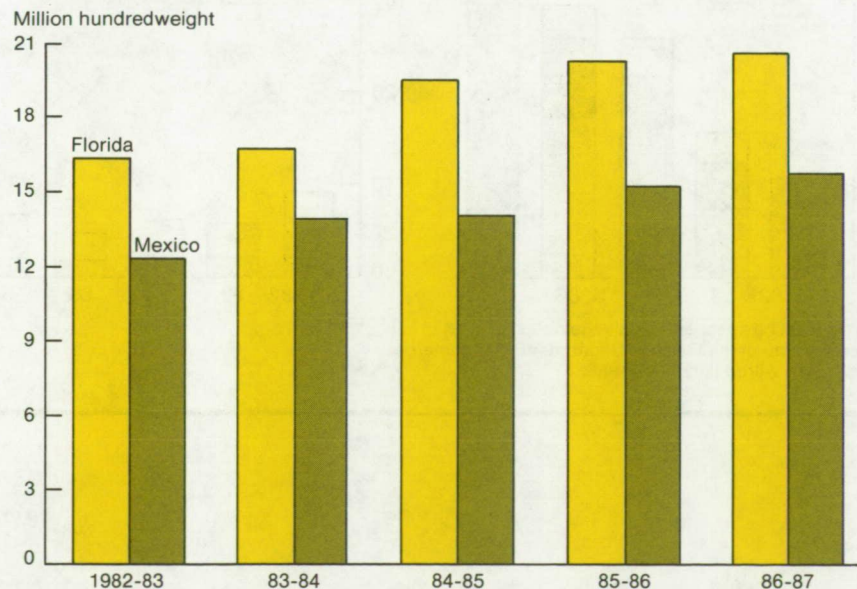


**Figure 7. Florida and Mexico Provide a Steady Supply of Winter Vegetables<sup>1</sup>**

<sup>1</sup>Winter shipments of fresh tomatoes, cucumbers, peppers, squash, eggplant, and green beans during 1986 and 1987.

Source: *Fresh Fruit and Vegetables: Weekly Summary—Shipments and Arrivals*, Agricultural Marketing Service, USDA, various issues.

Contact: Catherine Green (202) 786-1886.

**Figure 8. Vegetable Shipments From Florida and Mexico Have Risen Steadily<sup>1</sup>**

<sup>1</sup>October to June marketing year. Includes fresh tomatoes, cucumbers, peppers, squash, eggplant, and green beans.

Source: *Fresh Fruit and Vegetables: Weekly Summary—Shipments and Arrivals*, various issues.

Contact: Catherine Greene (202) 786-1886.

### Competition in the U.S. Winter Vegetable Market

Over 90 percent of U.S. tomato supplies from December through early May come from Florida and Sinaloa, Mexico. Other tender fresh vegetables from these two regions—which enjoy favorable winter-season growing conditions—include cucumbers, peppers, squash, eggplant, and green beans. Florida's shipments peak in December and early May. Mexico complements Florida's mid-winter dip in production with peak shipments during January through March (figure 7).

Winter supplies of these six vegetables increased steadily during the last 5 years because of increased consumer demand for fresh vegetables. Florida's shipments during the mid-October through June season grew 5 percent each year—from 16.3 million hundredweight (cwt) in the 1982/83 season to 20.6 million cwt in 1986/87 (figure 8). Mexican shipments also rose 5 percent during this period, from 12.3 million cwt in 1982/83 to 15.7 million cwt in 1986/87.

Although a highly competitive atmosphere surrounds the U.S. winter vegetable market, Florida and Mexico have maintained fairly constant market shares during the past five seasons. Florida's vegetable production averaged 51 percent of total shipments mid-October through June, while Mexico's shipments averaged 39 percent.

Mexican growers generally enjoy lower production costs than Florida growers and also benefit from having peak shipments during the period of high mid-winter prices. However, Florida growers remain competitive because Mexican growers face higher transportation costs and import and export duties. Despite periodic attempts by Florida growers to erect nontariff barriers, free trade essentially exists between the United States and Mexico during the winter months for fresh vegetables.



### Processed Vegetable Exports to Pacific Rim Countries

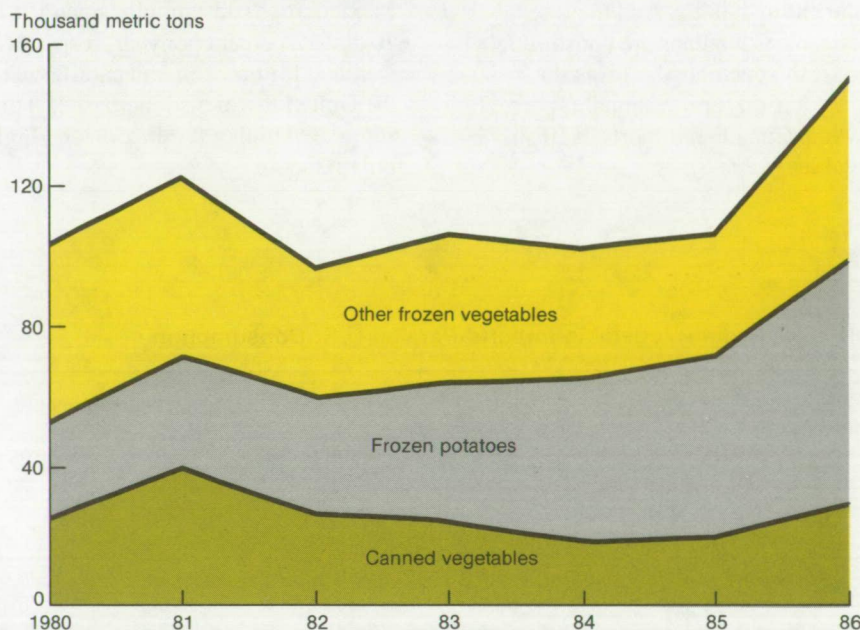
Frozen and canned vegetables accounted for about 19 percent of the volume of all U.S. vegetables exported in 1986. Shipments of processed vegetables to Japan, Hong Kong, Singapore, and Taiwan have been rising in recent years. In 1986, these four countries accounted for 26 percent of the total volume of U.S. agricultural exports, about 60 percent of all our processed vegetable exports, and 21 percent of total U.S. vegetable exports. Japan has been the most important market by far, especially in the frozen vegetable trade (figure 9).

The growing popularity of fast-food restaurants among the Japanese caused demand for frozen potatoes—specifically french fries—to jump 160 percent since 1980. Similar trends in frozen potato demand occurred in other Pacific Rim countries (table 7).

Another factor in demand for frozen foods could be the interest of Japanese consumers in large "American style" refrigerators and freezers. Small refrigerators were favored in the past because daily food shopping was a normal part of Japanese life, and there was little need to store food for long periods of time. These cultural changes bode well for future U.S. frozen food exports to Japan.

While exports of fresh and frozen vegetables from the United States rose, canned vegetables have lost some of their market share since 1980. The volume of canned vegetables exported in 1986 rose above 1985 levels, but at 129.2 million metric tons, was still 18 percent below the 1980 total. Roughly one-third of this volume was shipped to Japan, Hong Kong, and Taiwan. Japan—our largest customer for canned sweet corn—accounted for 23 percent of the U.S. canned vegetables exported in 1986, a 15-percent rise in volume above 1980.

**Figure 9. Japan Has Been an Important Market For U.S. Frozen Vegetables**



Source: *Foreign Agricultural Trade of the United States*, ERS, USDA, various issues.  
Contact: Gary Lucier (202) 786-1884.

**Table 7. Frozen Potatoes Are an Important U.S. Export to Pacific Countries**

Importing country and commodity	U.S. exports			
	Quantity		Value	
	1980	1986	1980	1986
	Metric tons		Thousand dollars	
<b>Japan</b>				
Processed vegetables	103,062	150,514	64,147	107,316
Frozen	77,530	121,224	45,617	84,167
Potatoes	26,546	69,272	17,354	48,311
Others <sup>1</sup>	50,984	51,952	28,263	35,856
Canned	25,532	29,290	18,530	23,149
<b>Hong Kong</b>				
Processed vegetables	11,670	14,864	9,355	11,871
Frozen	5,398	6,977	3,759	4,812
Potatoes	2,590	5,265	2,045	3,538
Others <sup>1</sup>	2,808	1,712	1,714	1,274
Canned	6,272	7,887	5,596	7,059

<sup>1</sup>Includes carrots, sweet corn, peas, and others.

Source: *Foreign Agricultural Trade of the United States*, various issues.

Contact: Gary Lucier (202) 786-1884.



### Canadian Vegetable Imports

Canadians and Americans share similar eating habits. And like Americans, Canadians are consuming more fresh vegetables. This is the primary reason for the annual 6-percent growth in Canadian imports of fresh vegetables (*table 8*).

Not surprisingly, Canadian broccoli and cauliflower imports, primarily from Mexico, rose substantially since 1981—10 and 12 percent per year, respectively. Demand for broccoli and cauliflower in the United States also increased. This stimulated higher production and higher imports.

Canadian imports of dried and canned vegetables declined between 1984 and 1986, again, matching U.S. trends. Shipments of these goods to Canada fell 5 and 14 percent, respectively, each year during the last 3 years.

**Table 8. Canadian Vegetable Imports Parallel U.S. Consumption**

Commodity	Canadian imports						Annual average growth rate
	1981	1982	1983	1984	1985	1986	
	<i>Thousand dollars</i>						<i>Percent</i>
Fresh vegetables <sup>1</sup>	444,686	458,626	483,687	528,078	531,093	601,339	6.04
Lettuce	67,697	83,057	83,503	75,182	85,471	107,490	9.25
Tomatoes	70,138	74,473	82,726	85,836	89,464	102,755	7.64
Celery	30,062	30,375	35,767	39,305	32,204	39,808	5.62
Peppers	22,619	22,036	28,159	26,717	29,158	33,063	7.59
Broccoli	19,300	21,406	24,381	27,690	29,003	32,074	10.16
Cauliflower	15,647	16,145	19,737	23,775	25,100	28,912	12.28
Dried vegetables	na	na	na	19,488	16,396	17,507	-5.36
Canned vegetables, including juices	na	na	na	8,984	7,027	6,801	-13.92

na = not available. <sup>1</sup>Total does not represent the sum of the individual vegetables.

Source: *Vegetable Market Review on Selected Commodities*, Market Information Service, Agriculture Development Branch, Agriculture Canada, Ottawa.

Contact: Shannon Hamm (202) 786-1886.

## The Spice Trade

The United States produces only three major spices—capsicum (red pepper), paprika, and mustard—in any profitable degree. The remaining spices need to be imported (*table 9*). Unground or unprocessed spices enter duty-free, while tariffs are generally applied to processed

spices. Most spices imported into this country are unground or unprocessed.

Four factors contributed to our expanded imports of spices—health concerns, taste, income, and price. In the last 10 to 15 years, Americans have become concerned about the use of salt in their diets. Salt—with its link to high

blood pressure—is a prime target for people looking to limit health risks. Manufacturers have met this need by offering consumers a variety of ready-to-use spice mixtures.

At the same time, Americans learned to flavor their foods with a wider variety of spices. This was the second factor—tastes were changing. Ethnic restaurants sprang up in every city and town in the United States, and with the ethnic cuisine came new ways of flavoring food.

Income growth was the third factor. Not only were Americans experimenting with new tastes, but higher levels of disposable income encouraged the growth of all kinds of restaurants, not just ethnic ones.

The fourth factor has been the relative price level of spices. Of the 22 spices listed, only five increased significantly in price. Mace, mustard, pepper, sage, and vanilla bean prices all rose at a rate exceeding the average inflation rate of 7 percent since 1970.

**Table 9. U.S. Spice Imports Rose During The Past Two Decades**

Spice	U.S. imports <sup>1</sup>				
	1965-69	1970-74	1975-79	1980-84	1985-86
<i>Thousand pounds</i>					
Anise seed	424	571	988	1,407	1,968
Capsicum	14,164	13,743	10,201	13,879	17,226
Caraway seed	6,970	5,910	6,458	7,511	8,033
Cassia	10,361	8,910	15,530	20,513	25,506
Celery seed	3,224	3,984	4,244	4,661	5,648
Cinnamon	4,216	5,007	3,056	2,870	2,736
Cloves	2,458	2,672	2,484	2,094	2,390
Coriander seed	2,998	3,425	6,796	10,387	6,380
Cumin seed	3,964	6,207	8,121	8,808	8,358
Fennel seed	893	1,261	1,927	3,400	4,230
Ginger root	4,229	5,901	7,842	9,477	11,850
Mace	579	567	543	644	562
Mustard seed	56,422	89,724	76,053	79,521	101,946
Nutmeg	4,233	4,166	4,442	4,767	4,364
Paprika	12,069	15,282	12,339	10,506	16,560
Black and white pepper	49,744	54,195	58,975	72,543	81,522
Pimento	1,131	1,370	1,482	1,650	1,625
Poppy seed	6,649	5,745	6,080	7,171	9,165
Sage	2,260	2,958	2,887	3,675	4,518
Sesame seed	32,472	49,077	62,525	80,373	79,233
Tumeric	3,096	3,321	3,202	3,706	4,460
Vanilla beans	1,871	2,194	2,298	1,625	1,920
Total <sup>2</sup>	224,427	286,190	298,473	351,188	400,200

<sup>1</sup>Annual averages. <sup>2</sup>Total is for spices listed. The United States also imports limited amounts of other spices.

Source: Bureau of the Census, Department of Commerce.

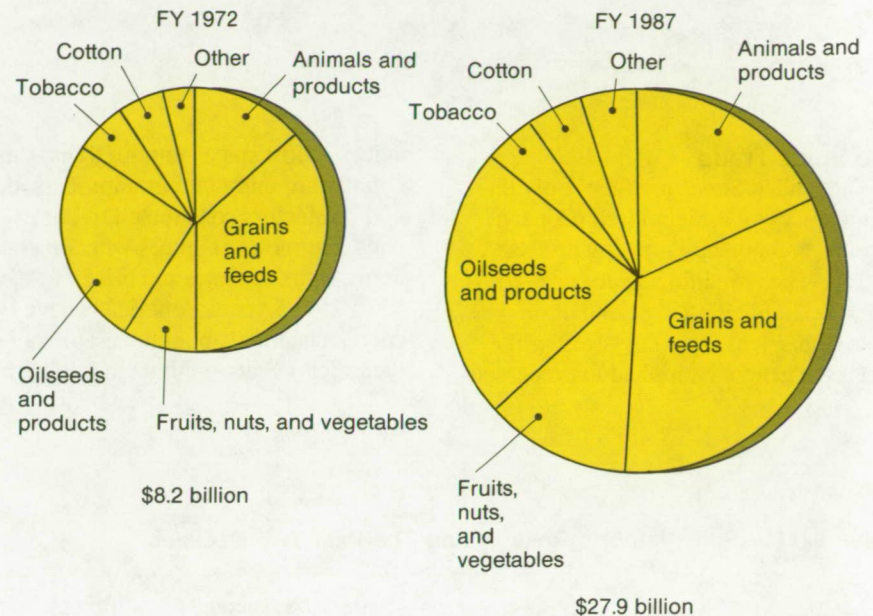
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## U.S. Agricultural Trade . . . At a Glance

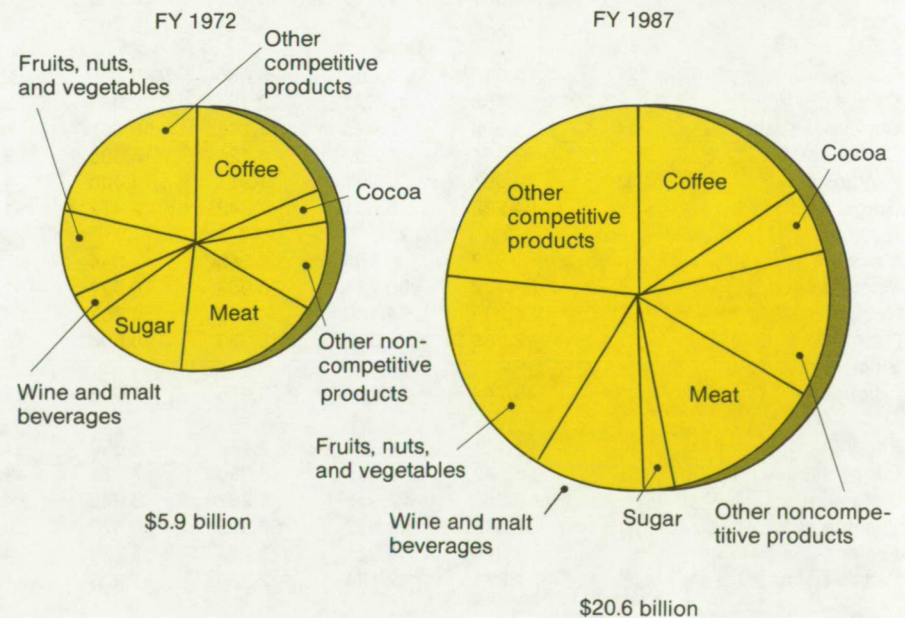
In fiscal 1972, the United States was on the brink of an export expansion that lasted 9 years. Led by grains and oilseeds, exports reached \$43.8 billion in 1981 before declining during the 1980's. Since 1981, animal products, fruits, nuts, vegetables, and other processed and semi-processed products played a more important role in U.S. exports. In fact, in fiscal 1987, a record amount—\$15.9 billion—of processed products were exported.

### Grains and Oilseeds Accounted for Most U.S. Farm Exports



Imports of agricultural products increased three and a half times in value between fiscal 1972 and 1987. Imports can be classified as competitive or noncompetitive, depending on whether the product can be produced profitably, on a large scale, in the United States. Although the ratio of competitive and noncompetitive products to total imports is the same for 1972 and 1987, substantial change occurred. Sugar imports fell 39 percent as a result of restrictive quotas in the last 5 years. Meat imports were also under quota, albeit a less restrictive one. Meanwhile, wine and malt beverages, fruits, nuts, vegetables, and other competitive products—which, when combined, came to one-third of all agricultural imports in 1972—accounted for over half of total imports.

### Competitive Products Made Up More Than Half of U.S. Agricultural Imports



Contact: Steve Milmo (202) 786-1825.

# National Food Review Index

This index covers the last 5 years—from NFR-22 (Spring 1983) to NFR Vol. 11, No. 1 (January-March 1988). The articles in issues NFR-22 to NFR-38 (Fall 1987) are referenced using the issue number and page. For example, 22/11 means NFR-22, page 11. Starting in 1988, the *National Food Review* is issued in volumes. Those articles will be cited by months and page. For example, Jan-Mar88/5 means the January-March issue of 1988, page 5.

Copies of articles are available by writing to *National Food Review*, 1301 New York Ave., NW, Room 1134, Washington, DC 20005-4788.

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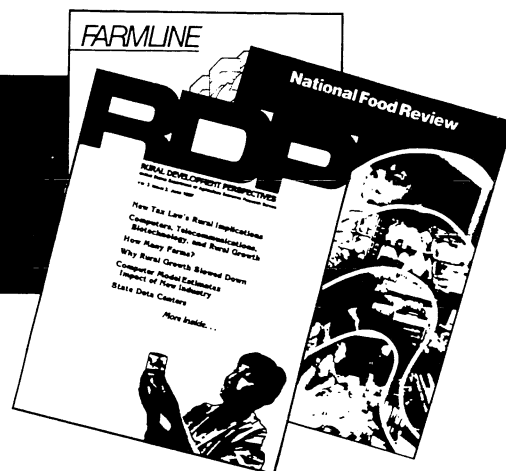
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