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Food Prices From Farm to Retail

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Retail food prices in 1990, as measured by the consumer price index (CPI), posted the same 5.8-percent increase as in 1989. These back-to-back annual increases were the largest since 1980 and 1981. Price gains in 1990 were greatest early in the year, advancing by nearly a 14-percent annual rate in the first quarter.

This striking increase stemmed in part from a December 1989 freeze in Florida and Texas that sharply reduced citrus and vegetable supplies. Meat and dairy prices also rose sharply, reflecting tight market supplies. Increases in the CPI for food abated over the remainder of the year, but prices throughout 1990 averaged above 1989 levels.

The two major components of the food index—food sold in grocery stores for use at home and meals and snacks consumed away from home—advanced by much different rates in 1990. Food prices in grocery stores climbed 6.5 percent in 1990, while prices for restaurant meals advanced 4.7 percent. Last year was the fourth consecutive year the price rise was greater for the grocery food index. One possible explanation is that grocery store food prices are more sensitive to changes in farm and wholesale commodity prices.

Farm prices for commodities and costs for processing and distributing foods directly influence retail food prices, and both played a role in pushing up food prices last year. Average farm prices of commodities advanced almost 6 percent. Higher livestock prices resulting from reduced production accounted for much of this increase. Processing and distribution costs increased almost 8 percent. Processing and distribution costs, or

marketing charges, make up most of the retail price of foods. As a result, the rise in marketing charges pushed up food prices much more than higher farm prices last year, and nearly every other year of the decade.

Strong consumer demand for food through the first half of 1990 also contributed to the upward movement in food prices. This was tempered in the second half, however, by a decline in real disposable income.

Higher costs of red meat, dairy products, and fresh fruit accounted for half of the rise in grocery prices in 1990 (table 1). Red meat generated about one-

third of the rise in costs for food consumed at home. Price increases for these three food groups in 1990 were much larger than in 1989. However, increases were more moderate for most other foods, particularly eggs, fresh vegetables, cereals and bakery products, and fats and oils. The smaller increases of these other foods partly reflected a return to more normal crop production after the 1988 drought.

For the fourth year in the past five, food prices in 1990 rose by more than the CPI for all consumer products and services.



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Table 1.
Red Meat, Fresh Fruit, and Dairy
Prices Rose the Most in 1990

Food	1988	1989	1990
<i>Annual percent change in the CPI</i>			
All food	4.1	5.8	5.8
Food at home	4.2	6.5	6.5
Meat	2.4	4.0	10.1
Beef and veal	5.5	6.4	8.0
Pork	-3.0	.6	14.7
Poultry	7.2	9.9	-.2
Fish and seafood	5.8	4.5	2.2
Eggs	2.3	26.6	4.7
Dairy products	2.4	6.6	9.4
Fresh fruit	8.3	6.6	12.1
Fresh vegetables	6.3	10.7	5.6
Processed fruit and vegetables	7.9	6.3	6.2
Cereals and bakery products	6.4	8.4	5.7
Sugar and sweets	2.7	4.7	4.4
Fats and oils	4.6	7.2	4.2
Nonalcoholic beverages	0	3.5	2.0
Other prepared foods	3.7	6.4	4.5
Food away from home	4.1	4.6	4.7

Source: U.S. Department of Labor, Bureau of Labor Statistics.
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Retail Price Components

Retail prices can be broken down into two components: farm value and the farm-to-retail price spread (see box). The farm-to-retail price spread is the difference between the retail price and the farm value. The price spread covers processing, distributing, and retailing charges. A related concept is the farm value share—the average percentage farmers get from each dollar consumers spend in retail grocery stores.

Farm value represents the price farmers receive for the raw-commodity equivalent of foods in the "market basket." USDA uses the market basket concept to track price changes for commodities farmers sell and foods consumers buy in retail grocery stores. The market basket is representative of foods purchased by urban consumers in grocery stores in 1982-84. The basket excludes fish, seafood, and beverages. Changes in retail prices of the market basket are components of the CPI for food at home.

What Farmers Received

The farm value of USDA's market basket of foods averaged 5.8 percent higher in 1990, but failed to match the 7.1-percent increase in retail prices of these foods (table 2). However, the 1990 increase in the farm value was the second largest since 1984, and exceeded the rise in retail food prices during the first half of the year. But the farm value then declined for 6 consecutive months, the longest period of decline since January-May 1985, while small increases continued in retail prices.

Higher commodity prices boosted the farm value of all but 2 of the 10 food groups in the market basket. Increases were largest for fresh fruit (18 percent), red meats (13 percent), and processed fruit and vegetables (10 percent). Farm values were sharply lower for poultry, and cereals and bakery products.

Red meat accounted for about 36 percent of the farm value of USDA's market basket. The higher farm value for red meat in 1990 mainly reflected 6-percent higher steer-cattle prices and 24-percent higher hog prices. The farm value of beef rose 11 cents to \$1.68 per pound (table 3)

as beef supplies shrank 1.5 percent. Retail price of Choice beef averaged \$2.81 per pound. A decline of 3 percent in pork supplies resulted in a 17-cents per pound increase in the farm value for pork. An average pound of pork sold at retail in 1990 for \$2.13, of which hog producers received 87 cents.

Higher producer prices for milk used in fluid products pushed up the farm value of dairy products by an average of about 3 percent. A half-gallon of fluid milk retailing for \$1.42 returned the producer about 64 cents in 1990, 5 cents more than in 1989.

Although poultry producers increased their broiler and turkey output, farm prices rose until mid-1990. But by the fourth quarter, the more than 7-percent rise in output caused farm prices to fall more than 8 percent. Broiler chicken producers received 46 cents of the average retail price of 90 cents per pound of whole frying chicken, about 5 cents less than in 1989.

The farm value of eggs rose only fractionally in 1990, following a dramatic 41-percent increase in 1989. The farm value of cereals and baked goods declined 11

"Market Basket" Tracks Price Changes

USDA tracks changes in the prices of food commodities that originate on U.S. farms through a fixed set of foods representing consumer purchases. These foods, called the market basket, account for about 88 percent of all food eaten at home. Excluded from the market basket are fish, seafood, and nonalcoholic beverages.

The cost of the market basket is divided into two components: the farm value and the farm-to-retail price spread. USDA's Economic Research Service (ERS) calculates the farm value of food by multiplying the price farmers receive for commodities by the quantities of farm products equivalent to foods sold at retail. For example, it takes 2.4 pounds of live cattle to yield 1 pound of Choice beef at the meat counter. Thus, the farm value of 1 pound of Choice beef is equal to the payment the farmer receives for 2.4 pounds of cattle.

The second component of food prices, the farm-to-retail price spread, reflects the cost of processing and distribution. ERS developed a food marketing cost index (FMCI) for monitoring and analyzing changes in labor costs and prices of other inputs used in food processing and distribution. The FMCI measures price changes for supplies and services used in processing, wholesaling, and foodstore retailing of domestically produced foods. It does not cover input prices for doing business at eating places. The FMCI represents all nonfarm food marketing costs except depreciation of buildings and equipment, long-term interest, and profits.

Prices in the index are weighted by the quantities used in 1972. The purpose is to ensure that price changes of individual input items affect the index proportional to the use of each input by the food industry. Labor, for instance, is weighted more heavily than packaging materials because of the food industry's proportionally greater dependence on labor.

Table 2.
Farm-to-Retail Price Spread Widened for All Food Groups in the Market Basket in 1990

Group and price components	1980	1989	1990	Annual change	
				1980-90	1989-90
	Index (1982-84=100)			Percent	
Market basket:					
Retail price	88.0	124.6	133.5	4.2	7.1
Farm value	96.7	107.1	113.3	1.6	5.8
Farm-to-retail spread	83.5	134.1	144.4	5.6	7.7
Meats:					
Retail price	92.7	116.7	128.5	3.3	10.1
Farm value	96.7	103.3	116.6	1.8	12.9
Farm-to-retail spread	88.8	130.4	140.6	4.7	7.8
Dairy:					
Retail price	90.9	115.6	126.5	3.3	9.4
Farm value	96.2	99.1	101.9	.6	2.8
Farm-to-retail spread	85.9	130.8	149.2	5.7	14.1
Poultry:					
Retail price	93.7	132.7	132.5	3.5	-.2
Farm value	95.5	117.1	107.6	1.2	-8.1
Farm-to-retail spread	91.5	150.6	161.1	5.8	7.0
Eggs:					
Retail price	88.6	118.5	124.1	3.4	4.7
Farm value	88.3	107.5	108.0	2.0	.5
Farm-to-retail spread	89.0	138.1	153.2	5.5	10.9
Cereal and bakery:					
Retail price	83.9	132.4	140.0	5.2	5.7
Farm value	110.7	101.7	90.5	-2.0	-11.0
Farm-to-retail spread	80.6	136.7	146.9	6.1	7.5
Fresh fruit:					
Retail price	83.9	154.7	174.6	7.6	12.9
Farm value	83.7	108.5	128.0	4.3	18.0
Farm-to-retail spread	84.2	176.0	196.0	8.8	11.4
Fresh vegetables:					
Retail price	79.0	143.1	151.1	6.7	5.6
Farm value	73.4	123.3	124.2	5.4	.7
Farm-to-retail spread	81.3	153.2	165.0	7.3	7.7
Processed fruit and vegetables:					
Retail price	82.6	125.0	132.7	4.8	6.2
Farm value	96.6	133.6	147.2	4.3	10.2
Farm-to-retail spread	79.1	122.3	128.1	4.9	4.7
Fats and oils:					
Retail price	89.3	121.2	126.3	3.5	4.2
Farm value	95.8	95.6	107.1	1.1	12.0
Farm-to-retail spread	86.9	130.6	133.4	4.4	2.1
Other prepared food:					
Retail price	97.0 ¹	125.5	131.2	3.0	4.5
Farm value	97.3 ¹	114.5	116.7	1.8	1.9
Farm-to-retail spread	96.9 ¹	127.2	133.4	3.2	4.9

¹Data for 1982.

Source: *Food Cost Review, 1991*, AER-651, USDA, ERS, June 1991.
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percent in 1990, reflecting lower prices of wheat and rice.

Charges Beyond the Farm Gate

The farm-to-retail price spread for the market basket rose 7.7 percent in 1990 because of higher prices of most inputs, such as energy used in the food industry,

and greater use of other inputs per unit of output. For example, labor costs rose as foodstores offered more labor-intensive prepared foods and services. Packaging costs also rose because new products, such as microwaveable foods, often require additional packaging materials. Increased spending on advertising and promoting branded food products also added to the costs.

Prices of inputs used in processing, wholesaling, and retailing foods increased by an average of about 3.3 percent in 1990, as measured by an ERS food marketing cost index. A 3.6-percent rise in the labor component and an 8.4-percent rise in the energy component contributed most to the increase. Prices of packaging materials advanced by less than 1 percent. Short-term interest rates declined about 9 percent, moderating the rise in the overall index.

Price spreads increased for all 10 food groups in the market basket, presumably reflecting higher food industry labor costs, higher prices of other inputs, and the lag in the retail price adjustment to the decline in farm value after mid-1990.

The farm-to-retail price spread for red meats widened about 8 percent, mainly reflecting increases for pork. The price spread for pork increased about 11 percent, a likely adjustment to reduced pork sales and much higher inventory costs because of the dramatic rise in prices. In 1989, the price spread for pork had declined about 2 percent, and both the farm value and retail prices were relatively stable.

The farm-to-retail price spread for Choice beef increased about 4 percent in 1990, likely reflecting the relatively small rise in the farm value and the fact that there was an increase in the price spread in 1989. Fluctuations in the price spread for beef and pork partly reflect retail merchandising practices designed to maximize total meat department sales and profits.

Cereals and bakery products accounted for 21 percent of the farm-to-retail price spread of the food market basket. The price spread for these foods widened 7.5 percent in 1990 as farm prices fell and retail prices rose. It is unlikely that all of the price spread increase was due to rising processing and marketing costs. Profit margins also may have increased.

Industry advertising and product development costs for cereals and bakery products rose probably to capitalize on growing demand for products that consumers perceive to be nutritionally beneficial. However, the growth in product sales slowed in 1990 in likely response to rising retail prices that have largely consisted of increases in the farm-to-retail spread.

Food Prices and Expenditures

The price spread for poultry, which increased 13 percent in 1989, widened by 7 percent in 1990. The spread between retail poultry prices and farm prices has widened much more in recent years than earlier in the 1980's.

The price spread for eggs rose 11 percent in 1990, resulting from a 4.7-percent rise in retail egg prices and nearly stable farm egg prices. The volatility in market prices during the year was likely behind some of this large increase in the price spread.

The price spread for dairy products widened 14 percent, the largest increase among the 10 food groups in the market basket. The price spread for dairy products grew more in 1990 than at any time since 1980. Dairy's annual increase is usually less than most foods because of the fluid milk processing industry's large annual increase (4.5 percent) in labor productivity.

For much of 1990, the dairy price spread was about a tenth higher than a year earlier. But the farm value of milk dropped sharply during the fourth quarter, and the spread widened to 21 percent above a year earlier. The unusually large increase in 1990 reflects the instability of markets created by record-high farm prices of milk early in the year, low cheese stocks, and strong consumer demand that resulted in nearly a 3-percent increase in commercial use of all dairy products in 1990.

The farm-to-retail price spread increased 11 percent for fresh fruits and about 8 percent for fresh vegetables. The price spread for fruits and vegetables tends to vary directly with farm values. When the farm values for these products increase (as in 1990), the price spread increases. Movement in the same direction of the price spread and farm prices suggests that retail pricing is based largely on a constant percentage markup of costs rather than a constant dollar markup.

Farm Value Share

The farm share is computed from retail prices and farm values of foods. The farm value share reflects changes in farm and retail food prices over time. The 1990 farm value share was stable, because the increase in the farm value was nearly as large as the rise in retail prices.

1990 was the fourth year in succession that the farm value share averaged 30 per-

Table 3.

Farm Value Share Was Highest for Animal Products in 1990

Food	Retail price	Farm value	Farm value share of retail price ¹	
			Dollars	Percent
Animal products:				
Eggs, Grade A large, 1 doz.	1.01	0.65		64
Beef, Choice, 1 lb.	2.81	1.68		60
Chicken, broiler, 1 lb.	.90	.46		51
Milk, 1/2 gal.	1.42	.64		45
Pork, 1 lb.	2.13	.87		41
Cheese, natural cheddar, 1 lb.	3.50	1.19		34
Fruits and vegetables:				
Fresh—				
Lemons, 1 lb.	1.07	.27		25
Potatoes, Northeast, 10 lbs.	3.38	.76		22
Grapefruit, 1 lb.	.66	.16		25
Oranges, California, 1 lb.	.57	.13		23
Apples, Red Delicious, 1 lb.	.72	.16		22
Lettuce, 1 lb.	.60	.09		16
Frozen—				
Orange juice concentrate, 12 fl. oz.	1.62	.56		34
Broccoli, cut, 1 lb.*	1.21	.25		21
Corn, 1 lb.*	1.07	.12		11
Peas, 1 lb.*	1.06	.12		11
Green beans, cut, 1 lb.*	1.09	.11		10
Canned and bottled—				
Apple juice, 64-oz. bottle*	1.36	.28		21
Apple sauce, 25-oz. jar*	.90	.17		19
Pears, 2-1/2 can*	1.14	.20		18
Peas, 303 can (17 oz.)*	.61	.10		16
Corn, 303 can (17 oz.)*	.51	.08		16
Peaches, cling, 2-1/2 can*	1.07	.17		16
Green beans, cut, 303 can*	.49	.06		12
Tomatoes, whole, 303 can	.60	.05		8
Dried—				
Beans, 1 lb.*	.70	.30		43
Raisins, 15-oz. box*	1.30	.39		30
Crop products:				
Sugar, 1 lb.	.40	.15		38
Flour, wheat, 5 lbs.	1.25	.30		24
Shortening, 3 lbs.	2.75	.69		25
Margarine, 1 lb.	.84	.19		23
Rice, long grain, 1 lb.	.50	.10		19
Prepared foods:				
Peanut butter, 1 lb.	1.89	.48		25
Pork and beans, 303 can (16 oz.)*	.41	.09		22
Potato chips, regular, 1-lb. bag	1.99	.29		15
Chicken dinner, fried, frozen, 11 oz.*	1.40	.18		13
Potatoes, french fried, frozen, 1 lb.	.84	.11		13
Bread, 1 lb.	.70	.04		6
Corn flakes, 18-oz. box*	1.56	.10		6

*January-June 1989 average. ¹Computed from unrounded data.

Source: *Food Cost Review*, 1990, AER-651, USDA, ERS, June 1991.
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cent. This contrasts with the early 1980's, when abundant food supplies held down farm prices, while rising food processing and distributing charges boosted retail prices. These opposing forces caused a

decline in the farm value share from 37 percent in 1980 to 30 percent in 1987.

Farm value shares vary greatly among foods (table 3). In general, the more highly processed the product is, the smaller the farm share. For instance, wheat is the

principal ingredient in both flour and bread, but additional manufacturing processes are required for bread. Foods derived from animal products tend to have a higher farm value share than those derived from crops, because more farm inputs are required for animal products

than for crop products. For example, the 1990 farm value share was 64 percent for eggs, 60 percent for Choice beef, but only 6 percent for corn flakes cereal.

Other factors influencing the farm value share include costs of transportation from the farm to the consumer,

product perishability, and the amount of shelf space occupied in retail foodstores. These factors partly explain why the farm share for California fresh oranges is lower than that for frozen concentrated orange juice. ■