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FOOD PRICES IN PERSPECTIVE: A SUMMARY ANALYSIS

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U.S. Department of Agriculture
Economics, Statistics, and Cooperatives Service

ESCS-53

FOOD PRICES IN PERSPECTIVE: A Summary Analysis. National Economic Analysis Division, Economics, Statistics, and Cooperatives Service, U.S. Department of Agriculture, ESCS-53.

PREFACE

Retail food prices in the United States rose an average of over 9 percent annually from 1973 to 1979. Examining why these increases occurred and what can be done to slow their rate of increase is the subject of this report. The authors conclude that substantially reducing the upward movement in food prices is going to require the same long-term effort needed for doing so in the economy generally. In addition, actions to reduce the volatility in commodity prices appear needed.

This report, prepared at the request of Senator George McGovern, presents a summary assessment of food price behavior, component costs, consumer demand, and food availability. It is issued to fill an immediate need for such information while the full report is in the publishing process. If you wish a copy of the full report, "Food Prices in Perspective," fill in the request form on the back cover of this publication and send it to: ESCS Information, Room 1664-S, U.S. Department of Agriculture, Washington, D.C. 20250.

FOOD PRICES IN PERSPECTIVE:

A Summary Analysis

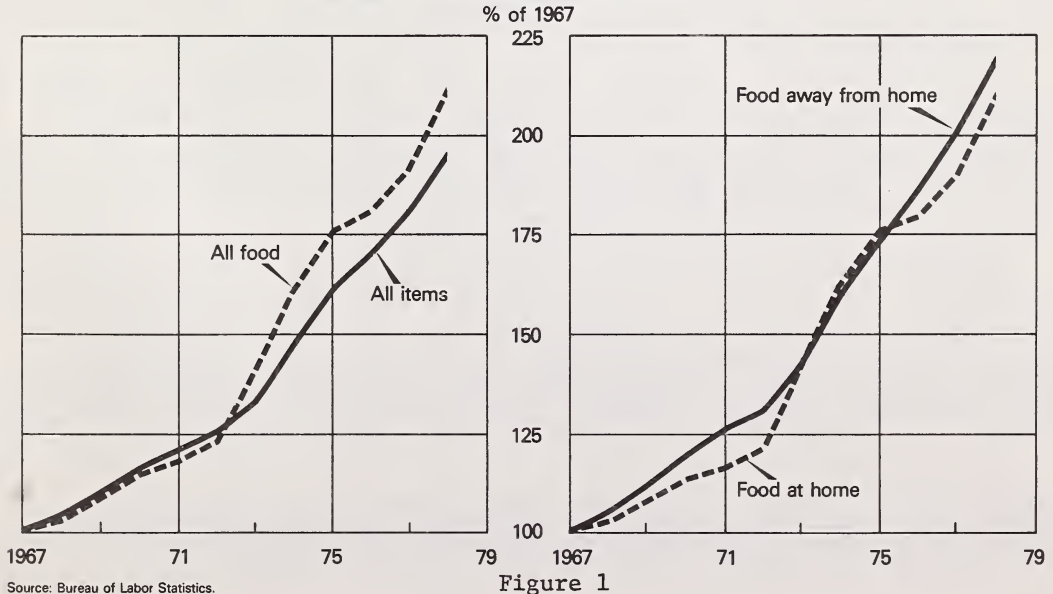
Food prices rose 10 percent in 1978. Since 1973, they have risen an average of 9 percent a year, a rate nearly double that in 1967-72. Such sustained increases have made food prices a visible economic problem.

This report summarizes the results of a year-long study by economists in the U.S. Department of Agriculture who focused on the causes of food price inflation. It examines the contribution of food prices to general inflation, their impact on consumers, and provides an overview of the food system. The report isolates those factors which will likely put upward pressure on prices in the decade ahead. Actions are suggested that could help to slow the rate of price increase. The full report contains important information for consumers, farmers, and policymakers and facilitates a better understanding of the causes of food price inflation.

INCREASES ARE NOT NEW

Food prices have risen more over the past decade than the Consumer Price Index (CPI) for all goods and services (fig. 1). The CPI for all items rose 95 percent from 1967 to 1979, but the food CPI increased 111 percent. Food prices went up more slowly early in the decade than did those for all goods and services. However, in 1973 and 1974, food price increases greatly exceeded those for other goods and services. The index of food prices has continued to be higher than the all-item CPI, although the rate of increase slowed from 1975 through 1977.

CHANGE IN CONSUMER FOOD PRICES



Prices for food purchased and consumed away from home also increased faster during the past decade than prices for food in the grocery store. The 1978 CPI for food away from home was 119 percent higher than in 1967. The CPI for food consumed at home rose 110 percent.

A further look into history shows that the underlying rate of increase has closely paralleled the rate of inflation in the general economy, particularly since 1967 (fig. 2). Fluctuations in the annual rate of change, however, primarily reflect changes in the prices of important farm commodities.

ANNUAL PERCENTAGE CHANGES IN FOOD PRICES

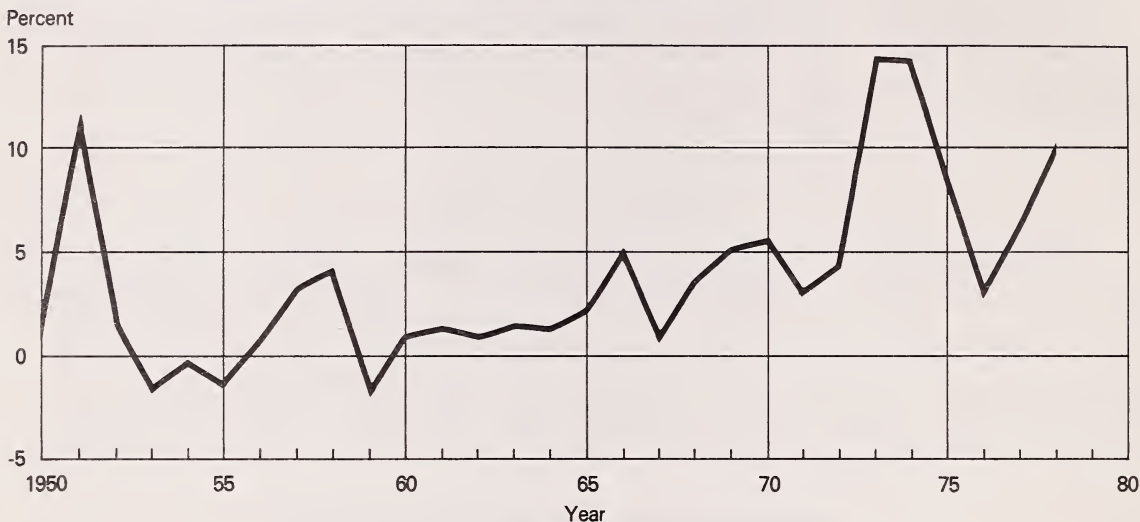


Figure 2

But examining price increases does not tell the entire story. Incomes have also increased sharply during the past 30 years. In 1950, consumers spent an average 22 percent of their disposable income on food.^{1/} This share dropped to nearly 17 percent by 1978, indicating that incomes generally have risen faster than retail food prices. Even in 1978 when food prices increased 10 percent, disposable income increased 11 percent.

Of course, that 17-percent average masks the effects of higher food prices on different income groups. The poor allocate a greater proportion of their income to food, and they are affected more than other income groups by food price inflation. Families earning less than \$5,000 per year spent about 40 percent of their income on food, while those earning over \$20,000 per year spent less than 10 percent, based on latest available data. If, for example,

^{1/} U.S. Department of Agriculture. Food Consumption, Prices, and Expenditures. Econ. Res. Serv., Agr. Econ. Rpt. 138, July 1968. All facts used in this summary are documented in the full report.

food prices increase 10 percent, families earning under \$5,000 per year must reduce by 6 percent the proportion of their income spent on items other than food. Families earning over \$20,000 annually must reduce the share they spend on other items by only 1 percent.

WHAT MAKES FOOD PRICES INCREASE?

Changes in marketing costs and commodity prices cause the year-to-year changes in food prices. The rapid food price increases in 1973 and 1978 were due largely to higher farm-level commodity prices. In contrast, higher marketing costs accounted for most of the food price increase from 1973 to 1977.

Several factors that create the fluctuations in farm commodity prices and the increases in food marketing costs can be isolated. Food production costs, trade policies, food marketing costs, and structural changes appear controllable in varying degrees. However, certain fluctuations stem from weather conditions and the biological nature of the food production process, and their control is unlikely.

Producing Food Is Costly

Farmers spend about 80 percent of their cash receipts on production inputs. They have become increasingly dependent over the years on purchased inputs such as fertilizer, pesticides, fuel, and equipment (fig. 3). Changes in supplies of inputs and their prices critically influence production costs, food output, farm income, and retail food prices.

Prices farmers paid for production inputs more than doubled from 1967 through 1978 (fig. 4). Farm wage rates and machinery costs increased even faster, 150 percent. Although fertilizer prices stayed below their 1967 level until 1973, they rose sharply after that because of higher energy prices. Fertilizer prices declined somewhat after 1975, yet in 1978 were 81 percent above the level in 1967.

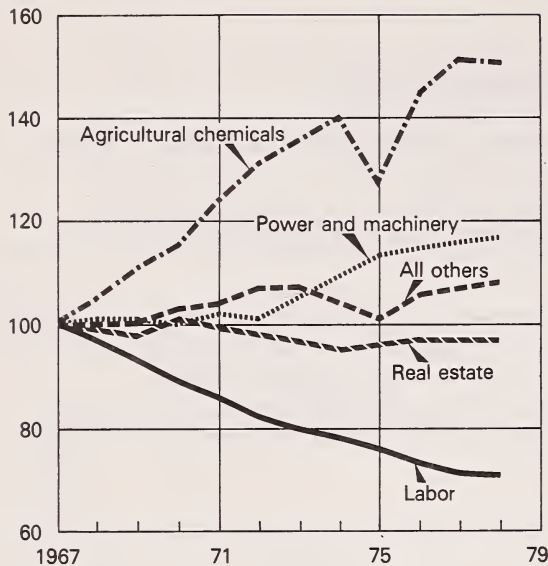
The increased reliance on purchased inputs makes conditions in the farm sector more dependent on conditions in the general economy. Farm commodity prices are not directly tied to the rate of increase in farm input prices. The changed nature of farming, however, pressures farmers to develop arrangements that will assure consistency between prices they pay and prices they receive. The increased use of futures markets and price-specified forward deliverable contracts are examples.

Some farm input industries are dominated by a few large firms. Those producing machinery, herbicides, and insecticides are examples. In 1976 (most recent data available), four firms made 78 percent of all tractor sales and 84 percent of all combine sales. The two leading firms producing corn herbicides and cotton insecticides sold 74 and 56 percent, respectively, of the total.

As industries become more concentrated, per unit production costs may fall because of increased efficiencies. But the potential for sustained price increases grows. Greater concentration may reduce price competition and

USE OF SELECTED INPUTS

% OF 1967



1978 preliminary.

Figure 3

increase the likelihood that firms will pass on any increases in production costs. While no unambiguous evidence indicates that farm input prices are generally higher than can be justified, more emphasis on monitoring profits, labor payments, and returns to management may be needed to ensure that price increases are not excessive.

Land and water have been abundant for agricultural use. But these natural resources are becoming more limited. In some cases a growing population is making it necessary to convert them to nonagricultural uses. These conditions, plus increased energy and labor costs, will raise farm production expenses. Unless productivity gains occur, commodity prices will need to increase to maintain the economic health of the farm sector.

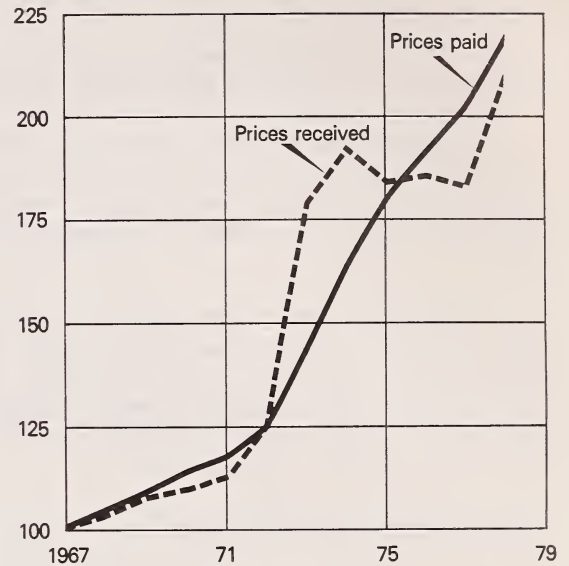
Regulatory constraints agriculture faces today make dramatic increases in output per unit of input less likely. Previously, these productivity increases lowered per unit production costs and reduced the impact of rising input prices on retail food prices. Productivity in the farm sector increased 18 percent between 1967 and 1978, for example. But productivity growth in the years ahead could be limited somewhat by societal concerns that restrict land use and the use of some agricultural chemicals and animal drugs.

Weather

Poor weather in recent years reduced domestic and worldwide production of fruits, vegetables, grains, oilseeds, and coffee. As a result, retail prices increased at rapid rates. The weather remains uncontrollable, which makes it difficult to manage commodity production. However, the influence of weather

PRICES RECEIVED AND PAID BY FARMERS

% of 1967



Prices paid includes commodities and services, interest, taxes, and wage rates.

Figure 4

and other natural phenomena on retail food prices can be reduced by establishing and managing commodity reserves. An important step was taken in 1977 with establishment of the farmer-owned grain reserve. These reserves can be used, in times of adverse weather, to augment food supplies and limit fluctuations in retail food prices. In years when relatively large crops depress commodity prices, part of the crop can be used to replenish the reserves as needed and to keep the farm sector economically healthy.

Trade Policies

U.S. grain stocks accumulated during the fifties and sixties. But these stocks were not managed as a price stabilizing reserve. As a result, and because of production shortages in other countries, export sales of corn, wheat, sorghum, barley, and soybeans increased sharply from 1972 to 1974. This led to record-high domestic prices for grains and oilseeds and triggered the beginning of the liquidation of the domestic cattle herd in 1975.

Recently, progress has been made to safeguard consumers and farmers against disruptive fluctuations in grain prices. As indicated, the farmer-owned grain reserve greatly reduces the likelihood of extreme changes in grain prices similar to those from 1972 to 1974. More emphasis is also being given to the development of trade agreements with other countries. The agreements offer the potential of significantly reducing the possibility of extreme year-to-year fluctuations in commodity prices.

Biological and Genetic Constraints

The biology and genetics of plants and animals limit farmers' ability to increase production quickly in response to higher prices. After the decision is made to expand output, it takes about 43 months for significantly more beef, 36 months for more milk, 18 months for more pork, and 3 months for more broilers to reach the retail shelf. Altering characteristics of plants and animals to speed up response time seems unlikely. Increased emphasis on agricultural research and extension programs may help to provide partial solutions in the long run.

Lower beef supplies, triggered by relatively high grain prices in the mid-seventies, caused cattle prices to rise in 1977 and 1978. These higher prices have given cattlemen the impetus to rebuild their herds. Because of the biological nature of livestock production, the rebuilding process takes time. As a result, retail beef prices will continue to increase for the next few years.

Food Marketing Costs

Retail food prices are also affected by manufacturing, transporting, and selling costs. Monitored and reported by the U.S. Department of Agriculture, these costs are commonly referred to as the "marketing bill."

The marketing bill increased from \$61.7 billion in 1967 to \$140.5 billion in 1978, a 128-percent gain (table 1). This change includes not only the cost for marketing an increasing quantity of food, but also the increase in the unit cost of marketing food. For each dollar consumers spent on domestically

produced foods in 1950, 40 cents went to farmers and 60 cents to food marketing firms. These shares had changed to 32 and 68 by 1979.

Table 1--Cost components of the marketing bill for farm foods

Item	1967	1973	1974	1975	1976	1977	1978 <u>1/</u>
	<u>Billion dollars</u>						
Labor	25.9	40.6	44.2	48.5	54.0	49.8	66.0
Packaging material	7.2	10.9	12.1	13.4	15.0	16.2	17.5
Rail and truck transportation	4.3	6.0	7.2	8.3	9.5	10.0	10.8
Corporate profits before taxes	3.4	5.4	6.1	7.9	7.9	8.5	9.5
Business taxes	2.4	3.5	3.8	4.4	4.8	5.1	5.6
Depreciation	1.8	2.5	2.8	3.2	3.5	3.7	4.0
Rent (net)	1.5	2.1	2.5	2.8	3.2	3.5	3.8
Advertising	1.5	1.8	2.1	2.4	2.7	2.8	3.0
Repairs, bad debts, contributions	.9	1.4	1.6	1.8	2.0	2.1	2.2
Interest (net)	.4	.9	1.2	1.4	1.5	1.6	1.7
Residual	12.4	10.3	12.0	15.2	17.1	15.6	16.4
Total	61.7	85.4	95.6	109.3	121.2	128.9	140.5

1/ Estimated, subject to minor revision.

Direct labor costs, about half of the marketing bill, reached \$66 billion in 1978, a 155-percent increase since 1967. Labor costs made up 50 percent of the total increase in food marketing costs between those years.

An increase in inflation is often used as a reason to raise wage rates and negotiated fringe benefits. Such increases add to the rate of inflation. Thus, labor costs can be expected to increase unless inflation in the general economy is controlled or labor productivity goes up. Adoption of available labor-saving technology by food manufacturers and retailers would help increase productivity. But few gains are likely soon for several reasons, among them continued demand for labor-intensive grocery store services and initial costs of adopting technology.

Packaging and transporting food products have more than doubled in cost since 1967. These costs will likely continue to increase as energy prices rise although modifications of Federal transportation regulations could offset some of the increase.

Packaging, though obviously necessary to help prepare and protect food, is also used to promote sales by differentiating similar products. All these costs may not be needed from a societal point of view. Adoption of standardized containers and recycling materials, or hybrid packaging that combines scarce metals or plastics with renewable packaging materials, would help to reduce such costs.

Profits before taxes for firms marketing U.S. farm-produced food totaled \$9.5 billion (7 percent of all food marketing costs) in 1978, nearly triple their amount in 1967. Compared with other industries, profits of food manufacturers and retailers generally do not appear unreasonable. Yet in certain markets where competition is low and market shares are high, consumers may be paying more for grocery items than in more competitively structured markets, according to a recent study for the Congress' Joint Economic Committee.^{2/}

Structural Changes in Food Processing and Retailing

Changes underway in food processing and retailing could also be affecting the availability of food and related services, and food marketing costs. Concentration in food processing and retailing is growing. The involvement of conglomerates, away-from-home eating establishments, and convenience stores in food processing and retailing is increasing.

Conglomerates have been part of the food industry barely 20 years. Such firms cannot be readily categorized within an industry, but they generally produce products which seem unrelated--bread and telecommunications, for instance. The relationship between the growth in conglomeration and the increase in prices needs to be resolved. However, judging from previous studies, higher levels of conglomeration do seem to be related to the upward movement in prices.

Fast food outlet sales have increased more rapidly than in other segments of the total food market since the early sixties. Foodstore sales rose 140 percent between 1967 and 1977, and sales of all away-from-home eating establishments grew 193 percent. Sales in refreshment places (primarily fast food outlets) increased over sixfold, from \$3.1 billion in 1967 to \$20.3 billion in 1977.

The mix of food purchased in fast food outlets differs markedly from that purchased elsewhere (table 2). Some leading products include hamburger, chicken, potatoes, buns and rolls, and deep-fry shortening. This market will, in all probability, continue to grow. The increased demand for the commodities used will put upward pressure on their prices.

^{2/} Marion, Bruce W., Willard F. Mueller, Ronald W. Cotterill, Fredrick E. Geithman, and John R. Schmelzer. The Profit and Price Performance of Leading Food Chains, 1970-74. U.S. Government Printing Office, Washington, D.C., 1977.

Table 2--Consumer expenditures for U.S. farm foods by food group, 1977

Food group	Place where consumed				Total
	At home	Public eating places 1/	Institu- tions 2/		
	<u>Million dollars</u>				
Red meat	30,339	21,726	3,196		55,261
Poultry	8,954	4,157	577		13,688
Dairy products	18,538	6,590	2,261		27,389
Fruits and vegetables	32,108	4,475	2,307		38,890
Grain mill products	4,480	809	287		5,576
Bakery products	13,012	5,291	1,284		19,587
All other	18,179	6,297	1,493		25,969
Total	125,610	49,345	11,405		186,360

1/ Includes restaurants, cafeterias, snackbars, and other eating establishments.

2/ Includes schools, colleges, hospitals, nursing homes, and other institutions.

The cost of meals purchased away from home includes not only the cost of the food served, but also serving and preparation costs. As a result, growth in this market will increase consumer food costs. Growth in this market will also make consumer food costs more responsive to inflationary pressures within the general economy since this market uses larger amounts of energy and labor per unit of food marketed than other retail food outlets.

Consumers are at least partly responsible for the food price increases over the past decade. Rising incomes and changing lifestyles increase the use of marketing services pushing up total costs for marketing and, thus, for food. Demand for such services is expected to increase further as population and consumer incomes grow, lifestyles continue to change, and more people become aware of the relationship between health and diet.

Consumers' general attitudes toward inflation also affect prices. Attitudes help shape buying patterns and accentuate or lessen the conditions that lead to inflation, whether in the food sector or the general economy.

CONCLUSIONS

Mitigating inflation in the food sector is going to require the same long-term effort necessary for doing so in the rest of the economy. While policy decisions can influence the rate of change in food prices in the short run, they cannot be expected to generate quick solutions.

Further, policies to generate quick solutions may not be in our best interest in the long term. We are entering a period where, once again, commodity prices will not likely be the primary force causing increases in food prices. An expansion in meat supplies is underway. And the food and feed grain reserves that have been built since 1977 will help offset increases that might otherwise result from bad weather.

The emphasis for the next decade can perhaps be most effectively focused on actions to temper increases in farm input prices and the costs of bringing food from the farm to consumers, including profits and returns to labor.

In this context, then, Government, the food industry, and consumers can help to slow food price increases in the decade ahead by--

- * Pursuing and supporting policies and programs to reduce the rate of inflation in the economy,
- * Monitoring merger activity and otherwise encouraging price competition in farm input supply, food manufacturing, and food retailing industries,
- * Improving nutrition information and education programs to help consumers evaluate the consequences of their food purchase decisions on their diets and health and on food marketing costs,
- * Developing agreements and pursuing policies to help increase trade and stabilize commodity trade flows,
- * Scrutinizing regulations to avoid increasing costs unnecessarily,
- * Encouraging the elimination of labor practices and policies that limit savings from greater mechanization and more flexible scheduling, and
- * Encouraging the adoption of available technology by the food industry, including more standardized packaging.

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