GOVERNMENT RESPONSE TO KEYNOTE ADDRESS

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American society and the national economy have changed dramatically over the years. It would indeed be surprising if the food sector did not exhibit many of the same changes. The forces unleashed by the industrial revolution 200 years ago are still at work, but each age sees different manifestations of change.

The key element in the development of the modern economy--and that of other industrial nations--is the vast increase in specialization of economic activity. Farm firms are vastly more specialized that they were a hundred years ago when self-sufficiency was still the major goal or more than fifty years ago when three-quarters of all farms had at least one milk cow and a flock of farm chickens. Nonfarm economic activity has also become much more specialized in terms of the functions performed by a particular plant or unit of the firm. In recent years, of course, firm specilization has declined as conglomerates grew.

Inextricably bound up with technological change and specialization is the shift in economies of scale...the cost advantage of larger-scale units has increased greatly, sometimes dramatically, over the years. The sources of change are, first and foremost, technology... but not just in the production and distribution of goods. Information technology--most recently the computer--has been a major contributor to the ability of management to encompass larger economic units.

In the food sector, we have been fairly adept at measuring economies of scale in production and distribution, but not in measuring management economies. Elsewhere in the economy, measures of any kind are comparatively scarce. Regardless of success at measurement, the effects are there to be seen.

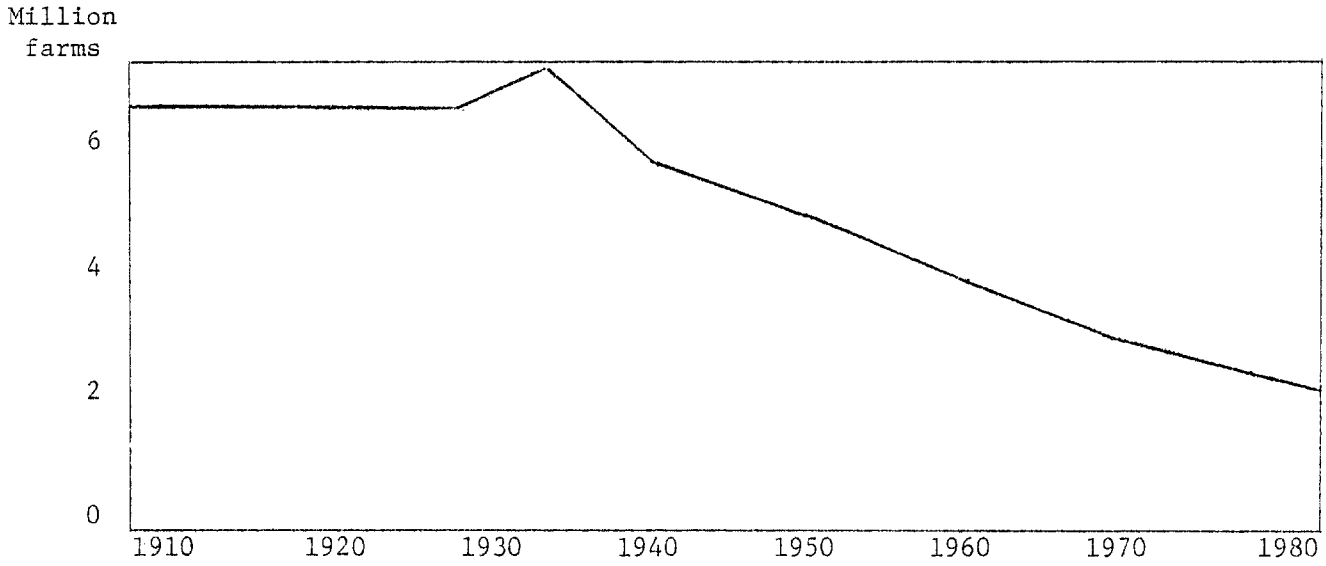
Farming

Farming has been gradually entering the market economy ever since the beginnings of settlement on this continent, but the pace dramatically increased after World War II. Today, farming is very largely a specialized economic activity, although there are still nearly 2 million farm families whose main living does not come from agriculture.

The number of farms in the United States peaked during the Great Depression and has been declining ever since (Figure 1). The most rapid rate of decline was during the 1950's. The 1960's saw some slowing in the rate of decrease; the 1970's a very marked slowing. During the 1950's and 1960's, many of the excess human resources moved out of agriculture.

The process of commercialization of agriculture is reflected in the bottom part of Figure 1. Consumption of home-produced foods and imputed rental value of housing accounted for 20 percent or more of all gross farm

Number of farms, United States



Percent of gross farm income from farm sales

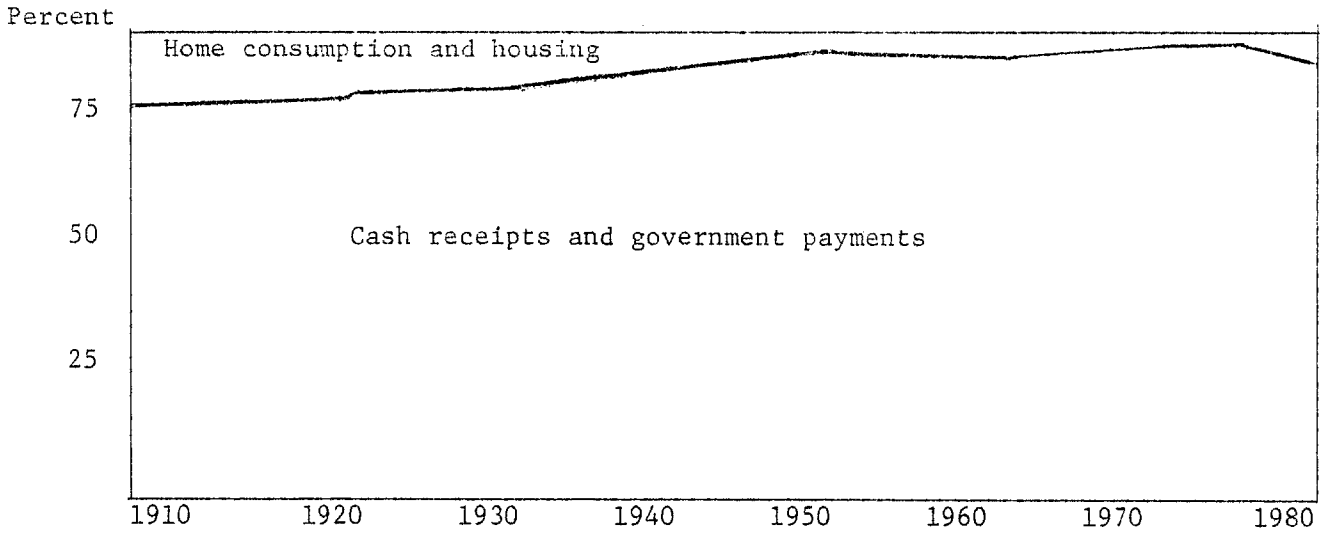


FIGURE 1

income up through the Depression. It is now about 7-8 percent of gross farm income.

The biggest share of the decline from 7 million farms in 1935 to 2.7 million today is in part-time and subsistence farms. While the number of commercial farms has declined, the drop is not nearly as sharp.

The most important fact affecting the structure of farming is technological change. Some developments increased output from the same bundle of resources, e.g., hybrid corn. But most--tractors, herbicides, mechanical harvesting, for example--caused major shifts in the bundle of resources used in farming, because of changes in the relative productivity of factors. The most recognizable is the substitution of capital in the form of mechanical power for human and animal power.

Technological developments outside of agriculture also have had an impact, e.g., bulk handling of fertilizer reduces fertilizer prices to the farmer, especially to the larger farmer. (1)

Most of the technology adopted in farming has shifted the cost curve toward larger sizes. Between 1930 and 1970, the farm size which achieved minimum cost increased 500 percent for wheat farms. (10) The effect of technological change and the shift in the scale curve has been to provide further impetus to the specialization of farming. The farmer increasingly devotes his attention and resources to the enterprise where he can make use of the technology available and reduce his costs. Other sideline enterprises are discontinued. Fifty years ago, livestock were found on most farms; today, largely on specialized farms. The combination of livestock and crops that characterize the corn-hog and corn-beef economy of the Midwest until recently is now fading. Increasingly, Corn Belt farmers specialize in crops or livestock. More than half of beef feeding is now carried out in feedlots where that is the only activity.

The relative profitability of specialization vs. diversification results both from the costs as influenced by technology and scale economies and from the degree of risk. The greater the degree of risk due either to natural disaster or to price fluctuation the greater the attraction of diversifying to spread risk. If risks are reduced, farmers will specialize to achieve economies. Most of the farm programs have the effect of reducing risk to the farmer. Exchange arrangements may also reduce risk, e.g., forward contracting. If risks are reduced, specilization and larger scale are encouraged. At the same time, the reduction of risk makes investment in those activities more attractive and lending institutions more willing to make capital available.

Corporate Farming

Industrial corporations are not taking over the ownership and operation of American farms. The 1974 Census of Agriculture found 3,460 business-associated corporate farms. These were farms owned by corporations more than half whose business income came from nonfarm sources. This was less than 0.1 percent of all farms, 0.6 percent of all land in farms, and 3.4 percent of the value of agricultural products sold. These business-associated corporate farms were most important in Other Field Crops where they accounted for 13.5 percent of sales. This is largely sugarcane in Hawaii, Florida and Louisiana. Other commodity groups were such business-associated corporate farms accounted for more than 5 percent of sales included:

	Percent
Seeds, hay, forage	11.2
Poultry	8.3
Fruit and nuts	8.0
Other livestock	7.8
Nursery and greenhouse	7.7
Vegetables	7.1
Beef	5.2

There have been a few celebrated cases of nonfarm corporations going into agricultural production in recent years. United Brands decided to transfer what it had learned about banana and vegetable production in Central America to California. It purchased a large producer-shipper of lettuce in the Salines Valley. Kentucky Fried Chicken purchased an integrated broiler operation. This production operation supplies only a portion of the broilers the company sells at retail and now has nearly all of the broilers produced sold through Kentucky Fried Chicken outlets. These and other similar activities have not started a trend.

Food Processing

Numbers of food processing plants and of companies have dropped sharply (Figure 2). But the biggest part of the decline has come in the local-market industries and in nonfoods. The local-market food industries include fluid milk, ice cream, bread, and soft drink bottling. The two nonfood industries--ice manufacturing and feed mixing--are also local.

The changes in plant numbers reflect mainly technological change in manufacturing and physical distribution and the consequent effects on economies of scale. The minimum efficient size of plant in every food processing industry has increased several-fold since World War II.

These same factors of technology and scale economies play a part in the declining number of companies in food processing, but many other factors are at work. The principle advantages of size are found in marketing, finance, and management.

In marketing, only the large company has the possibility of developing strong branded product lines, the product differentiation of economists.

Tremendous outlays on product development have been made by processors of dry grocery items in an effort to differentiate their products sufficiently to ensure a better grip on a share of the market. This is a continuous process, since success always breeds imitators. A successful new product will lead to numerous imitations or slight variations by other processors. A really successful new product leads inevitably to private label versions of it under chainstore brands. Faced with a constant erosion of margins, profits and sales of each successful new product--not to mention the numerous failures--a manufacturer embarks on a continuous program of new product development so that he is never without several new strings in his bow.

The reactions of marketers of perishable products were somewhat different. Many sought to broaden their lines. Fluid milk processors, for instance, have added new dairy products and fruit drinks. Some have developed their own outlets through dairy stores or convenience food markets in order to retain a place in the market.

Ice cream manufacturers have seen their outlets change from drug stores and confectionery stores to supermarkets in the past 20 years, with sharply increased emphasis on price competition at the retail level. They responded by developing their own outlets--soft-serve ice cream stands and ice cream stores (many of them franchise opera-

Number of food manufacturing companies and plants, 1954-1972

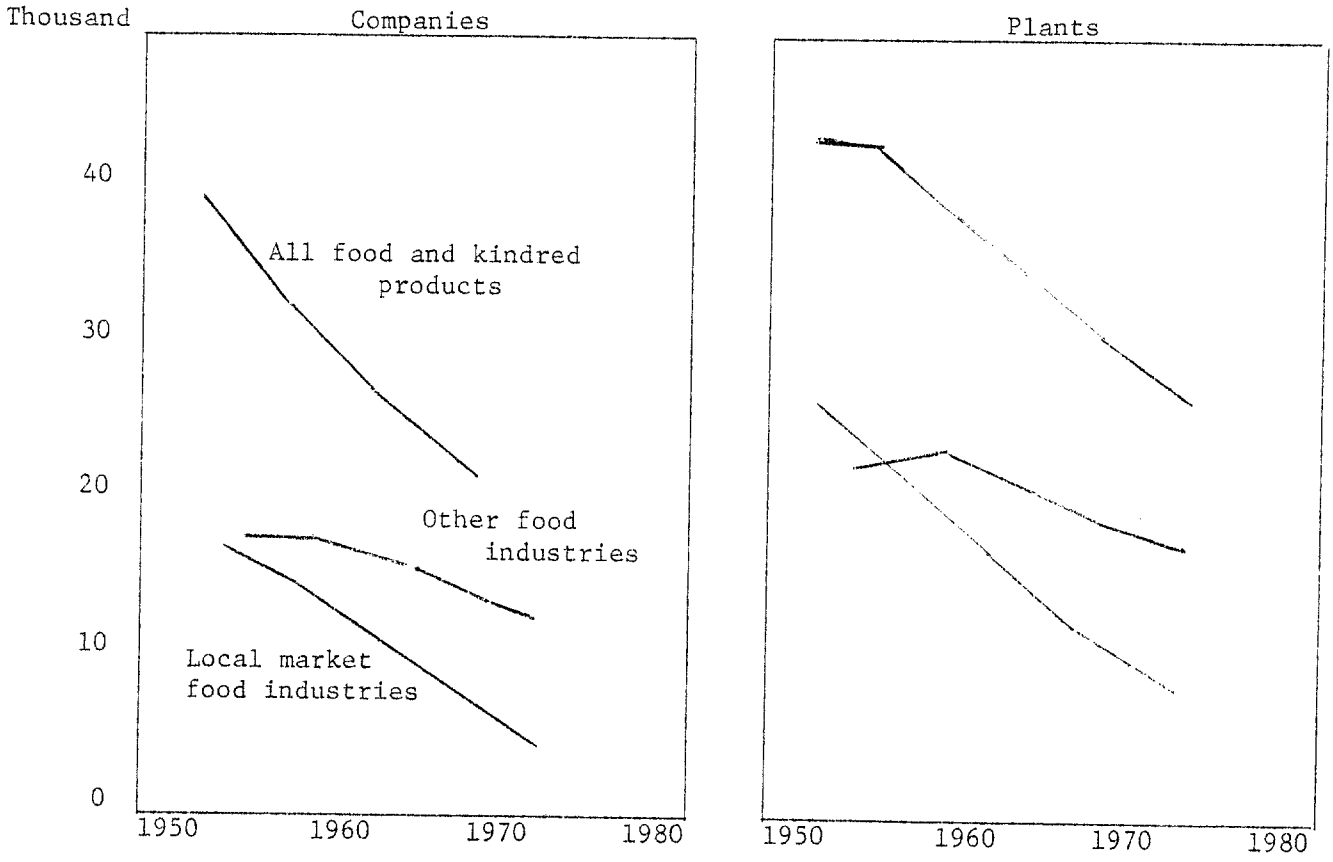


FIGURE 2

tions) with emphasis on quality ice cream at relatively high prices.

In the broiler business, competitive pressures have led to a search for profits through integration into allied businesses such as feed mixing and distribution. Turkey processors have attempted to develop a line of "quality" turkeys as a differentiated product at substantially higher prices. The movement into further-processed poultry items is in part a search for differentiated products.

Meat packers have also engaged in a search for differentiated products which can be branded. To the extent that it has been successful, it has been mostly in processed products. The recent emphasis on centralized meat cutting is partly an effort of meat packers to gain control of the marketing process at the point where the final package is applied to fresh meat, making it possible to differentiate the product.

In finance, the large company has access to other parts of the capital market, most notably the stock market. Public ownership imposes a very different set of constraints as well as opening up many new possibilities. More of these later.

Management consists of the rational assessment of a situation and the systematic selection of goal and purposes...; the systematic development of strategies to achieve those goals; the marshalling of the required resources; the rational design, organization, direction, and control of the activities required to attain the selected purposes; and, finally, the motivating and rewarding of people to do the work. (8, pp. 72-73)

Management as a practical art developed in the conduct of war. The industrial revolution gradually adopted and expanded these concepts and procedures. Today management is understood and acknowledged as the unique and central characteristic of that revolution, by those who really know the inner workings of modern industry. Management is the primary engine of progress, as progress is generally defined. (8, pp. 72-73)

Concentration

The standard measure of market structure is the four-firm concentration ratio--the share of the market held by the four largest firms. In too much of industrial organization economics, the truism has become...concentration - competition. (See, for example (5).) The fact is that, like any other statistic, the concentration ratio tells only a part of the story and what is left out may be much more important than what is included.

With these reservations in mind, let us look at what has happened to concentration ratios in food manufacturing since World War II. The data for 1963 and 1972 include all of the industries in Food and Kindred Products except Pet Food. The earlier years include varying numbers of industries, depending on the availability of data. The figures for these earlier years are calculated as percent-of-change for identical sets of industries between years and linked to the 1963 values.

In 7 consumer food industries with weak product differentiation--meat packing, poultry dressing, fluid milk, flour, rice, cane and beet sugar refining--the weighted average market share of the four largest firms increased from 1947 to 1954 and has dropped in every year since. It was lower in 1972 than in 1947. The 24 consumer food industries with differentiated products, concnetration rose from 1947 to 1954, stayed about the same until 1963, and then rose, ending up more than 10 points higher in 1972 than it was in 1947.

Intermediate food products--those which are principally ingredients in other foods--includes 7 industries: wet corn milling, raw cane sugar, 4 fats and oils industries, and flavoring extracts (primarily syrup for soft drinks). In these industries, weighted average concentration declined slightly from 1947 to 1958 and then rose to 54 percent in 1972.

In alcoholic beverages, the picture is mixed. The average first declined and then rose, but it is the result of a continuous increase for beer and wine and a steady decline for distilled beverages. The two nonfood industries (prepared feeds and ice) rose somewhat.

Mergers and Conglomerates

Much of the increase in concentration, where it occurred, is the result of mergers and acquisitions, principally by the large firms. The postwar merger movement pervaded the entire economy. In the food industry, the first phase was characterized by the acquisition of thousands of smaller companies, chiefly but not entirely by the handfull of very large companies in the same industry. After the passage of the Celler-Kefauver Act in 1950, the Justice Department, the Federal Trade Commission and the courts gradually brought a virtual halt to such mergers. At first, the principal tool was suits against individual companies, but in the sixties merger guidelines in effect prohibited any large company from acquiring any other company of any size in the same industry. In effect, there was created a per se prohibition against horizontal and vertical mergers. (11, p. 480)

Much of the attraction of conglomerate mergers arises from the money to be made in the stock market, not from any economies of the firm itself. There are a number of methods of financial "pyramiding" by which mergers become very profitable with no change at all in the sales or profits of the companies involved (7, pp. 58-59)

The imperative of the modern large, publicly held corporation is growth. Time was when a modest growth in sales--keeping up with or slightly exceeding the industry average--and a respectable profit rate was enough to satisfy the stockholders, "most of (whom) took a relatively disinterested view of their company so long as it paid dividends regularly, did not go broke, and the management gave evidence of being reasonably alert." (7, p. 61) No longer so. Nowadays, a majority of all stocks is held in great blocks by institutional investors--mutual funds, trust funds, investment funds. (7, p. 61) Over a third of all common stocks are held by private pension funds. (3, p. 1) The standards by which these large institutional investors, securities analysts, and increasingly the remaining individual stockholders judge corporate performance are much different and much tougher. "The future value of the securities they own, which stocks to buy and which to sell, and whether a given company (is) moving or standing still are the criteria by which these institutional owners of securities judge corporations in these times." (7, p. 61)

The pressure for rapid growth and quick returns is heightened by inflation.

"An inflationary period, by definition, is one that erodes and destroys both industrial and political capital. In an inflationary period the existing value of future results is subject to the exceedingly high discount rate of inflation which, in effect, means that no results more than a year or two ahead have any present value whatever, whether value is defined in economic or in political terms. It is, therefore, not a period in which either industry or the policymaker can take risks." (4, p. 807).

The effect of tax laws is even more serious..."through the combined working of corporation income tax and capital gains tax, the system greatly favors short-term, immediate gains and makes long-term investments in an uncertain future unattractive and unrewarding."

"Tax laws and regulations also push industry away from technology focus and toward financial conglomeration. Under the tax laws of the United States--laws which in this form do not exist in many countries--the proceeds of liquidating yesterday are considered profit and are taxed as such both to the company and to the investor. Hence, businesses, instead of liquidating the obsolete, have to find new investments in new businesses for whatever cash is being released by the shrinkage of an old technology, an old product line, or an old market. And this, in effect, imposes conglomeration on them. This policy makes it increasingly difficult to shift resources from low and diminishing areas of productivity to areas of high and increasing productivity and this impedes innovation; it also shifts businesses from a technological to a financial focus. It makes management increasingly a matter of finding the right financial investment." (4, p. 807, see also 2, p. 85)

Retail Markets

Total food expenditures in the United States were $238 billion in 1978 (Table 1). In the first half of 1979, they were running at an annual rate of $165 billion. Thirty-five percent of the 1978 dollars went for food away-from-home; because of higher prices for food away-from-home, 27.5 percent of all food was consumed in restaurants, schools, institutions, hospitals, etc., up from 22 percent in 1954.

Supermarkets account for 56 percent of the sales of food for home use (omitting home production and donations), a doubling of their share in 20 years (Table 2). The usual image that supermarkets account for nearly all food sales for home use is partly the result of considering all supermarket sales, not just sales of food. Food accounts for only a little over three-quarters of supermarket sales.

A commonly used definition of a supermarket is a food store with sales of $1 million per year or more. Any definition using a fixed dollar sales minimum counts an increasing number of stores as supermarkets as prices rise. For this calculation, we set the definition of supermarket sales at $1 million per store in 1967, adjusted annually with the prices of food and other items that supermarkets sell.

Convenience stores increased their share of the market from almost nothing in 1955 to nearly 5 percent in 1975. The share of smaller grocery stores declined fairly steadily for two decades. The rise of the supermarket and the decline of smaller grocery stores reflect many factors including the demise of the independent grocery store and the growth of chains, cooperative and voluntary groups, and franchise operations. Other foodstores--meat markets, fruit and vegetable stores, bakeries--declined from 1955 to 1965 but increased modestly afterward.

The share of home delivery, primarily of bread and milk, dropped sharply. A labor-intensive business, home delivery can compete with the store sales only in increasingly specialized markets.

In the away-from-home market, the big increase was in sales, as distinguished from food furnished. The big gainers in market share in recent years have been refreshment places--the fast food restaurants which are so numerous today. Their share rose from 5 to 28 percent in 20 years (Table 3). The share of schools and colleges peaked in

Table 1. Expenditures for Food and Alcoholic Beverages

Year	Food for off-premise use			Meals and snacks			All food	Alcoholic beverages		
	Sales	Home production, donations	Total	Sales	Supplied[1]	Total		Packaged	Drinks	Total
	- Million dollars -									
1954	40,446	4,094	44,540	11,981	2,867	14,848	59,388	5,254	4,910	10,164
1955	41,769	4,020	45,789	12,682	2,690	15,372	61,170	5,483	5,030	10,513
1956	43,370	3,976	47,346	13,505	2,715	16,220	63,585	5,965	5,262	11,227
1957	46,209	3,995	50,204	14,172	2,813	16,985	67,218	6,376	5,398	11,774
1958	48,051	4,116	52,167	14,360	2,944	17,304	69,511	6,658	5,462	12,120
1959	48,561	3,876	52,437	15,365	2,904	18,269	70,757	7,046	5,619	12,665
1960	49,735	3,804	53,539	16,084	2,973	18,997	72,600	7,207	5,693	12,900
1961	50,349	3,762	54,111	16,692	3,093	19,785	73,971	7,175	5,665	12,840
1962	51,400	3,709	55,109	17,756	3,209	20,965	76,164	7,674	5,922	13,596
1963	51,790	3,631	55,421	18,646	3,263	21,909	77,434	7,984	6,106	14,090
1964	55,076	3,620	58,696	19,957	3,400	23,357	82,174	8,472	6,320	14,792
1965	56,982	3,653	60,635	21,899	3,538	25,437	86,210	8,963	6,615	15,578
1966	59,508	3,761	63,269	23,907	4,026	27,933	91,366	9,656	7,008	16,664
1967	59,989	3,637	63,626	25,267	4,351	29,618	93,244	10,120	7,337	17,457
1968	63,297	3,847	67,144	27,971	4,562	32,533	99,677	10,938	7,801	18,739
1969	67,805	4,186	71,991	30,130	4,916	35,046	107,037	11,666	8,058	19,724
1970	73,836	4,591	78,427	33,227	5,118	38,345	116,772	12,799	8,892	21,691
1971	77,581	4,809	82,390	35,210	5,520	40,730	123,120	13,907	9,308	23,215
1972	82,084	5,079	87,163	38,506	5,927	44,433	131,596	15,037	10,199	25,236
1973	92,219	6,009	98,228	42,363	6,614	49,477	147,705	16,001	11,197	27,198
1974	104,482	6,719	111,201	47,320	7,953	55,273	166,474	17,383	11,940	29,323
1975	113,988	7,155	121,143	53,377	8,872	62,249	183,392	18,675	13,194	31,869
1976	124,545	7,625	132,170	59,575	9,622	69,197	201,367	20,377	14,368	34,745
1977	132,945	8,179	141,124	66,263	10,544	76,807	217,931	21,525	15,710	37,235
1978	145,971	8,648	154,619	72,144	11,588	83,732	238,351	23,225	17,006	40,231

[1] Includes child nutrition subsidies.

Table 2. Sales of food for home use, 1955-75.

Type of seller	1955	1960	1965	1970	1975
			Percent		
Supermarkets	27.4	37.2	44.5	50.2	55.9
Convenience stores	.1	.6	.9	2.4	4.5
Other grocery stores	43.0	36.8	32.6	27.3	21.7
Other food stores	11.1	9.9	8.4	8.6	8.9
Other stores	5.9	5.1	5.2	5.1	4.7
Home delivered	8.3	6.5	4.6	3.2	1.7
Farmers, processors, wholesalers, other	4.2	3.9	3.8	3.2	2.7

Table 3. Shares of away-from-home food market sales, 1955-75.

Type of seller	1955	1965	1975
		Percent	
Restaurants, lunchrooms, cafeterias	57.0	50.2	41.0
Refreshment places, ice cream and frozen custard stands	5.3	12.1	27.8
Hotels and motels	6.4	6.3	5.7
Schools and colleges[1]	7.0	10.0	7.6
Stores and bars	13.0	7.9	6.1
Recreational places	2.4	2.3	2.2
Others[2]	8.9	11.2	9.6

[1] Excludes child nutrition subsidies.

[2] Includes military outlets.

the sixties and then declined as school enrollments leveled off and subsidies (which are not counted in sales) accounted for a rising share of school lunch costs. While dollar sales increased for all types of outlets, the shares of all other sellers declined or showed little growth because of the rapid rise in sales by refreshment places.

Consumers and Demand

Consumers--the customers who are the reason for the existence of the

entire food system--are as different from those of the Depression years as our farmers. Galbraith's phrase "the affluent society" is the best short characterization of the present era. Affluent does not mean rich, at least by American standards, but it does mean well past the subsistence stage.

Total consumer income rose faster than food prices for most of the period since 1947. This means that our old friend the percent of income spend for food declined or was unchanged in all but two years since then. Over the entire period, it decreased from more than 25 percent to less than 17 percent.

The general picture furnished by this old reliable statistic is correct. But the personal consumption expenditure series of the Department of Commerce which is the basis for these computations does not tell the entire story.[1] Comparing total food expenditures from our newly developed series with the cost of three different food plans developed by the Science and Education Administration provides a comparison of the amounts that consumers and the entire society decide to spend for food with the costs of fixed quantities of food at three different levels. Each of the three food plans provide a nutritionally adequate diet. They are designed so that the low-cost food plan costs about 80 percent as much as the moderate-cost food plan and the liberal food plan about 20 percent more. These relationships vary a bit from year to year, as the general picture is accurate over time. Aggregating the cost of each food plan for the population of 1960 and that of 1976 gives the picture shown in Figure 3. In 1960, actual expenditures for food (with all food at retail store prices, as it is in the SEA food plans) was almost exactly the same as the aggregate cost of the moderate-cost food plan. By 1976, actual expenditures had risen well above the level of the moderate-cost food plan. They had moved 42 percent of the distance from the moderate-cost food plan to that of the liberal food plan.

Thus, we see that, while consumers on the average were well beyond the subsistence level in 1960, in the next 16 years they had moved significantly toward good eating. In addition to the shift shown in these figures they were also eating a significantly larger share of their meals away-from-home at substantially higher cost.

Total quantities of food per person do not vary greatly from year to year or over the long run. The old saw about the limited size of the human stomach does have some applicability. What does change is the composition of the diet. The proportion of meat and other higher priced foods is significantly greater than it was in earlier times.

Changing lifestyles are less well documented than demographic changes, for obvious reasons. The first thing to be said about life-styles is that the great bulk of the American population has a standard American middle-class lifestyle (6). Purchasing and consumption behavior is heavily conditioned by the common base of information and attitudes conveyed by the media, principally television. In this kind of society with a dominant lifestyle, the potential utility of searching out differences in lifestyles as a classification variable in analyses of consumption and expenditure behavior seems small. On the other hand, changes in the dominant lifestyle over time have very obvious effects on consumption behavior. The changes in the clothing market in recent years provide an excellent example. The boom in casual clothing reflects the same change in lifestyles as the rapid growth in fast food establishments.

Between 1954 and 1976, food expenditures per person increased from $366 to

Total cost of three food plans for U.S. population and actual food expenditures

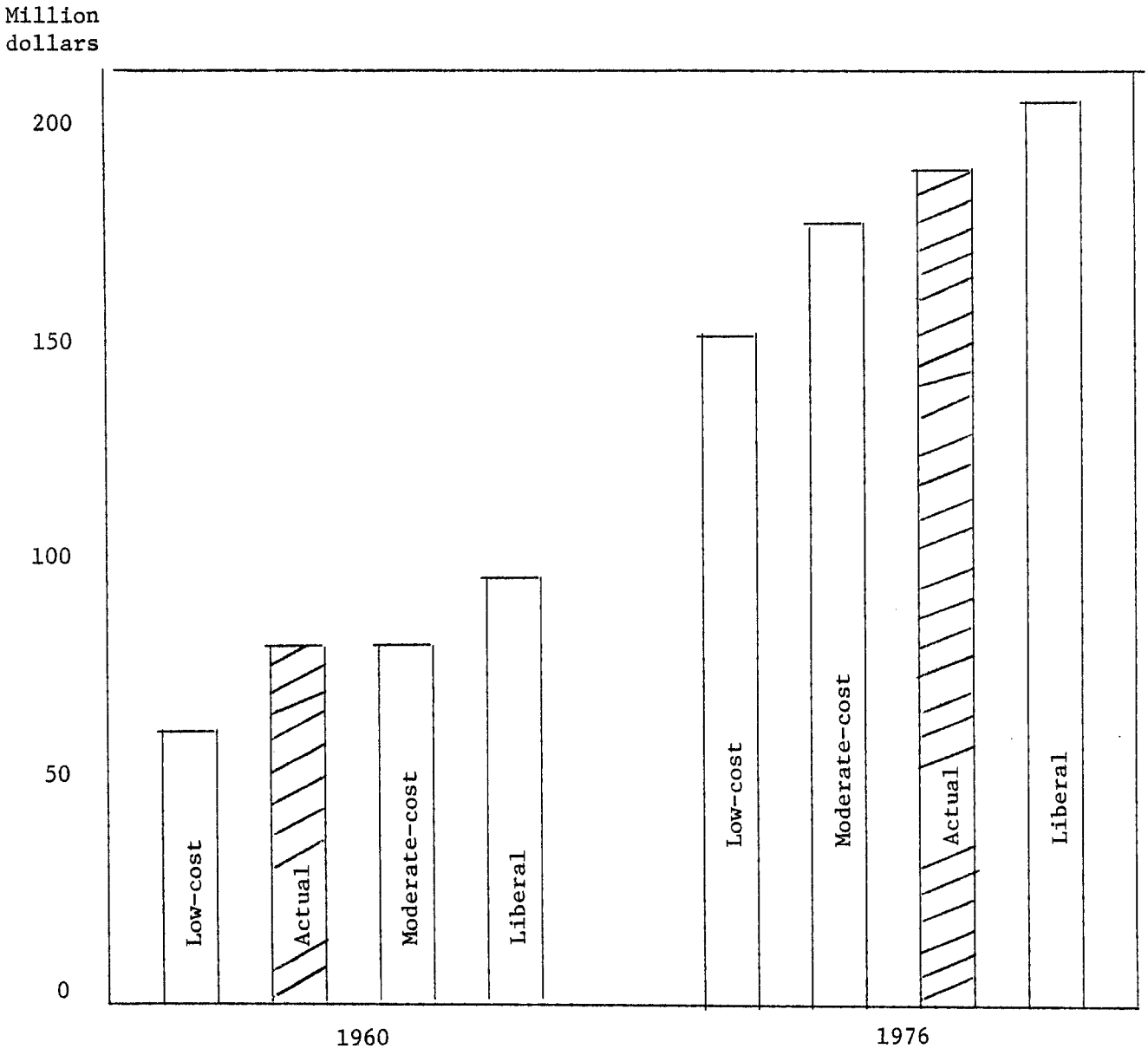


FIGURE 3

$939, over 150 percent. Most of the increase was due to rising prices, but shifts in outlets--mainly to away-from-home eating--and shifts among foods were also significant.

	Percent of Increase
Changes in prices	73
Shift in outlets	11
Shifts among foods	10
Changes in quantities	6

FOOTNOTE

[1]For a more comprehensive discussion of the Commerce series, see (9).

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