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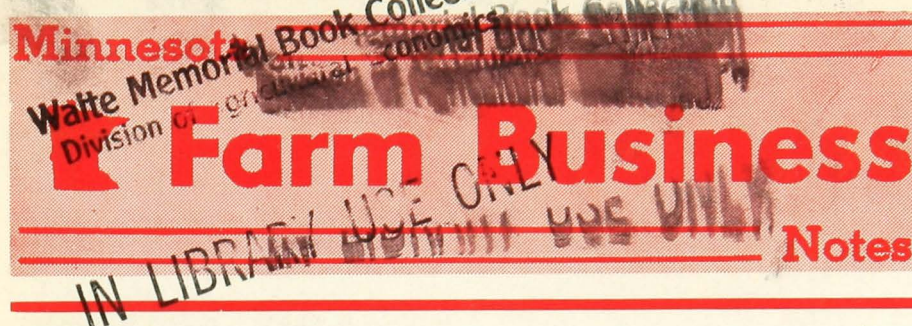
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## A Brief Analysis of Postwar Changes In Food Expenditures

Marguerite C. Burk



This article contains a discussion of changes in the major sectors of the U.S. food market. The data come from several surveys of American households. Although the nationwide averages reveal little change, quite significant changes have occurred in the demand for food by urban families.

### AN OVERVIEW OF THE CHANGES

Total U.S. consumption expenditures for food have doubled in the last 17 years, an increase that seems favorable for future food demand. But at least a third of the dollar increase was due to the postwar growth in population resulting from the baby boom of the forties. Food prices increased more than 30 percent during the period — about as much as retail prices for all consumer goods and services.

These factors are taken into account in the U.S. Department of Commerce data on per capita food expenditures in **constant 1958 dollars**. These data show a 19 percent increase in per capita "real" food expenditures from 1950 to 1967. These data exclude business expenditures for food, but they include the declining amounts of home-produced food on farms.

Practically all of this increase in real expenditures has been in **purchases** of food for home use. Apparently, average per capita consumption of meals and snacks away from home has remained constant. The quantity of **all** food consumed per capita (including home-produced food) measured by the retail and farm level U.S. Department of Agriculture

(USDA) price-weighted indexes has risen only about 5 percent. But the average quantities of food **purchased** and of food marketing services have gone up around 15 percent.

### The U.S. Food Market

Expenditure data from the 1955 and 1965 Household Food Consumption Surveys by the USDA permit the appraisal of changes in the U.S. food market that lie behind these overall indexes. Changes in the regional, urbanization, and income dimensions of the U.S. food market measured by expenditures are summarized in table 1. The increased importance of the U.S. urban market is not at all surprising. However, the growth of the urban market in the South and West is striking.

The impact of increased real incomes on the food market is demonstrated by the sharp decreases in the shares of the under \$3,000 and \$3,000 to \$6,000 in-

come groups. In 1965, about a tenth of the people in the United States lived in urban households with incomes of \$10,000 or more, but they accounted for 15 percent of the nation's food sales (21 percent of the urban share of 73 percent, table 1). In contrast, the tenth of the population in urban households with incomes below \$3,000 spent only half as much for food for home use and meals, snacks, and beverages away from home.

### Share of Consumer Dollars for Food

The decline in the share of total consumer expenditures allocated to food is quite well known. The figure dropped from 24 percent in 1950 to 21.5 percent in 1961 and then to 20 percent in 1967. Such declines commonly are attributed to rising incomes that permit more discretionary spending. In addition, data from two Bureau of Labor Statistics (BLS) surveys of urban incomes and expenditures in 1950 and in 1960-61 reveal a 10 percent decrease in the share of total expenditures allocated to food and beverages by families with real incomes comparable to \$10,000 or more in 1960-61. Increased outlays and the costs of housing, transportation, and personal and medical care apparently cut into their demand for food.

### CHANGES IN HOUSEHOLD FOOD EXPENDITURES, 1955 TO 1965

Discovery of the relative decline in upper income urban food expenditures revealed by these BLS surveys prompted careful study of two USDA food surveys taken 5 years later.

Table 1. Percentage distributions of U.S. total expenditures for food by region, urbanization, and income, spring 1955 and 1965\*

Category	Total		Urban		Rural nonfarm		Farm	
	1955	1965	1955	1965	1955	1965	1955	1965
United States .....	100	100	69	73	24	22	7	5
By region .....	..... as percentage of regional total .....							
Northeast .....	31	29	77	78	20	21	3	1
North Central .....	32	28	69	71	22	22	9	7
South .....	24	28	55	64	34	29	11	7
West .....	13	15	74	88	21	9	5	3
By disposable income, in 1964 dollars .....	..... as percentage of urbanization total .....							
Under \$3,000 .....	16	11	11	10	22	15	41	21
\$3,000 to \$6,000 .....	47	32	46	30	52	35	38	43
\$6,000 to \$10,000 .....	26	39	29	39	20	38	17	25
\$10,000 and over .....	11	18	14	21	6	12	4	11

\* Derived from USDA's Household Food Consumption Survey data on food expenditures for home use and on expenditures for food and beverages away from home. Information on estimating procedures is given in technical note 1 at the end of this article.



**Table 2. Shares of major foods in value of all food used at home in a week for U.S. urban families at comparable real income levels, spring 1955 and 1965\***

Item	Spring 1955, families of two or more persons with disposable incomes in 1964 dollars of		Spring 1965, all families with disposable incomes in 1964 of	
	\$5-6,000	\$10,000 or more	\$5-6,000	\$10,000 or more
	percentage			
Dairy products, excluding butter .....	15.1	13.4	12.9	11.7
Fats and oils, including butter .....	3.8	3.9	3.4	2.9
Flour and cereal products .....	3.0	2.1	3.4	2.6
Bakery products .....	7.2	6.2	8.0	8.1
Meat, poultry, and fish .....	33.0	33.2	33.7	31.3
Eggs .....	3.8	3.7	2.9	2.3
Sugar and sweets .....	2.8	2.6	3.0	2.4
Fruits and vegetables, total				
Fresh .....	9.9	11.3	8.6	9.7
Potatoes and sweet potatoes .....	1.9	1.7	2.4	2.1
Commercially canned .....	3.6	2.9	3.7	2.8
Commercially frozen .....	1.0	1.5	.7	1.2
Juices .....	1.6	1.9	2.0	2.4
Dried .....	.4	.3	.3	.2
Beverages, nonalcoholic .....	5.6	5.2	6.2	5.8
Average value of food used, in 1965 dollars	dollars			
Total .....	38.00	60.50	35.26	55.20
At home .....	31.00	42.00	29.49	40.06
Away from home .....	7.00	18.50	5.77	15.15

\* The procedures used in deriving these data are described in technical notes 2 and 3 at the end of this article.

### Values for Urban Food in Spring 1955 and 1965

Based on data from USDA's surveys for 1955 and 1965, urban families with incomes over \$10,000 (in 1964 dollars) actually reduced their food purchases almost a tenth, in terms of constant dollars, from spring 1955 to spring 1965 (table 2).<sup>1</sup> Much of this decrease was in away from home eating. The 18 percent decline in this category reflects some consumer response to the 28 percent increase in the price of restaurant meals. There also may have been some shift in preference toward entertaining at home. The proportion of away from home food expenditures relative to the total value of family food for the survey week dropped from 31 to 27 percent. These changes were slightly larger for the upper income groups than for the middle income group (\$5,000 to \$6,000).

A number of significant shifts in the commodity shares of the value of food used at home occurred between spring 1955 and spring 1965 (table 2). The shares of home food dollars of upper income families allocated to dairy products; fats and oils; meat, poultry, and fish; eggs; and fresh fruits and vegetables declined. In contrast, the shares allocated to flour and cereal products, bakery products, potatoes and sweet potatoes, juices, and nonalcoholic beverages increased.

Among these shifts, only the decline in the share for dairy products and the increase for juices could have been predicted from examination of the simple expenditure-income relationships of spring 1955. The average quantities of rice, breakfast cereals, frozen potatoes, and soft drinks consumed increased notably. The prices of these foods rose substantially more than the overall food price index. Apparently, the increased availability of convenient forms of these foods, a higher proportion of children within families, and generally rising prices for housing and services contributed to the relative reductions in food expenditures.

Comparison of the commodity shares in the value of food at home for 1955 and 1965 consumed by the middle and upper income groups reveals little change in these two sets of relationships for flour and cereal products, all the forms of fruits and vegetables, and nonalcoholic beverages. The shares allocated to dairy products (excluding but-

<sup>1</sup>The procedure used in adjusting the 1955 expenditures to be comparable with the 1965 data is summarized in the technical notes at the end of this article.



ter) by the two income groups have come closer together, with the upper income group's share still below that for the middle income group. The relative importance of expenditures for bakery products rose for both groups. Moreover, the greater increase for upper income families brought the two bakery product shares together at 8 percent.

In contrast, the declines in the shares allocated to fats and oils, eggs, and sugars and sweets by upper income families were significantly greater than those for the middle income group. Hence, the two income groups moved farther apart in these commodity groups. For the meat, poultry, and fish group, the share allocated by the middle income group was virtually unchanged from 1955 to 1965. However, the allocation by upper income families decreased from 33.2 to 31.3 percent.

### Factors Contributing to Expenditure Changes

Comparable estimates of average expenditures per family member for all food for a week in the spring of 1955 (converted to 1965 prices) and 1965 are:

	1955	1965
United States .....	\$ 8.95	\$9.15
Urban .....	10.40	9.80
Rural nonfarm .....	7.70	8.25
Farm .....	4.85	6.20

The upward shift in real incomes and the increase in urbanization were expected to result in somewhat higher food expenditures per person. The author's analysis indicates that the rural-urban population shift should have resulted in a 3 percent increase in average food expenditures. A further 6 percent rise in food expenditures was expected from the upward movement in the distribution of the population among family income groups.<sup>2</sup>

The critical element here is the decrease in the average real expenditures for food by urban families all across the

<sup>2</sup>Data used in the following analysis also were adjusted to include one-person households and to convert 1954 incomes into 1964 dollars (using graphic methods). To take account of price increases indicated by Bureau of Labor Statistics price data for 1955 and 1965, the 1955 data on value of food purchased for home use were increased by 14 percent and expenditures for food and beverages away from home were increased by 28 percent.

<sup>3</sup>These analyses involve reweighting 1955 average food expenditures (in 1965 dollars) for each income group within each urbanization category by 1965 percentage distributions of the population among the income groups and urbanization categories. Procedures for making such estimates are described in section 4.3.3 of *Measures and Procedures for Analysis of U.S. Food Consumption*, by Marguerite C. Burk, USDA, Agr. Handbook No. 206, June 1961.

income scale. These decreases at each income level were sufficient to offset the upward shifts in family incomes from 1954 to 1964 (the years before the spring surveys). Except for urban households with incomes below \$4,000, the larger part of the decrease was in expenditures for food away from home. Apparently, families at each level of real income reduced their eating out in response to the increased price of restaurant meals.

When additional reports with the 1965 survey data are published, it will be possible to pursue these analyses further. If the Economic Research Service prepares 1965 cross section index numbers to match the retail price weighted time-series index (as was done for 1955), a comprehensive analysis of changes in the regional, urbanization, and income dimensions of the markets for major commodities can be made.

### BRIEF TECHNICAL NOTES

1. Regional data for 1955 in table 1 were taken from pages 8-9 of *Agricultural Marketing*, November 1956, published by USDA. Comparable data for 1965 were calculated from the regional averages of household food expenditures in *Food Consumption of Households in the United States, Spring 1965: A Preliminary Report*, USDA, ARS 62-16, August 1967, and the weighted distribution of households in the appendix of 1965 Household Food Consumption Survey Report No. 1, Jan. 1968.

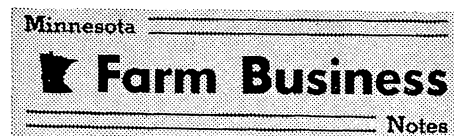
Estimates of the distribution of the 1965 food market were calculated from data reported in 1965 Survey Report No. 1. Computation of comparable data from 1955 Survey Report No. 1 involved adjustments to include one-person households, to shift food expenditures from 1955 to 1965 price levels,

and to shift income class limits from the 1954 price level to that for 1964. The adjustments for prices were made graphically.

2. The proportions of money value of all home-consumed food allocated to each food group by urban households with incomes above \$4,000 were calculated for spring 1955 and 1965 from the 1955 and 1965 Household Food Consumption Survey Reports No. 1. Adjustments of the spring 1955 value data and 1954 income class limits to 1965 food prices and income class limits in 1964 consumer prices also utilized graphic procedures.

3. The conversions of 1955 food expenditure averages to 1965 prices were based on changes in BLS price indexes for food consumed at home and for food consumed away from home. The adjustment to income class limits in 1964 dollars also was accomplished graphically. ■

Explanations of the graphic procedures used in these adjustments are available upon request for detailed technical notes regarding graphic procedures and data used in July 1968 article. Write to:  
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### Recent Publications

*Economic Aspects of Flexible Dairy Manufacturing Plants*. Sta. Bull. 487. Orval G. Kerchner. Univ. of Minn. Agr. Exp. Sta. Apr. 1968.

For a copy of the above publication, write: Bulletin Room, Institute of Agriculture, University of Minnesota, St. Paul, Minnesota 55101.

*The Minnesota Rural Real Estate Market, 1967*. Econ. Study Rpt. S-68-1. Jerome V. Bambenek and Philip M. Raup. Dept. of Agr. Econ., Univ. of Minn. Feb. 1968.

*The Impact of Expanding the Minneapolis-St. Paul Federal Milk Market Order Area*. Econ. Study Rpt. S-68-2. Jerome W. Hammond. Dept. of Agr. Econ., Univ. of Minn. May 1968.

*Bargaining Power for Farmers*. Staff Paper P-68-1. Vernon W. Ruttan. Dept. of Agr. Econ., Univ. of Minn. May 1968.

For copies of the above publications, write: Department of Agricultural Economics, Institute of Agriculture, University of Minnesota, St. Paul, Minnesota 55101.



# Outlook Corner

## Economic Regulation of Fluid Milk Substitutes

Jerome W. Hammond

Sales of filled and imitation milks continue to expand.<sup>1</sup> However, economic regulation of these products by both the state and federal governments will influence the rate at which they are adopted. This article reviews the recent growth of these products and the status of regulations pertaining to them.

Complete statistical data on fluid milk substitutes are not available, but federal order milk market reports probably are indicative of the current trends. The accompanying table lists information for filled milk which, when compared with regular milk sales, is almost insignificant. But these sales are growing rapidly: They represented .08 percent of all federal order fluid milk sales in November 1967 and .17 percent by March. The number of handlers in order markets selling either filled or imitation milk increased from 44 in November to 80 in March.

Imitation milk apparently has been less successful than filled milk. The number of federal order markets carrying the nondairy imitation product increased from 3 in November 1967 to 15 in December and then declined to 10 in March 1968. In the Twin Cities, for example, several chains that once handled imitation milk now have withdrawn it from their shelves.

Both the state and federal governments impose economic controls on milk substitutes. Such controls include outright restrictions on manufacture and sale and the imposition of compensatory pricing programs under state and federal orders. The Federal Filled Milk Act of 1923 prohibits the sale of filled milk in interstate commerce. At least 30 states have similar prohibitions. Several states also prohibit the sale of non-dairy substitutes.

The constitutionality of the filled and imitation milk acts is uncertain.<sup>2</sup> The Federal Filled Milk Act was challenged in 1938 and 1944 in the U.S. Supreme Court, but was upheld in both instances. The Court also has upheld two state filled milk laws: the Ohio Act in 1918 and the Kansas Act in 1944.

The state laws have not fared as well in the state courts. In 1931, the Illinois

**Filled milk sales in federal order milk markets**

Month	Volume, thousand pounds
November 1967 .....	2,368
December 1967 .....	3,329
January 1968 .....	3,959
February 1968 .....	4,566
March 1968 .....	5,190

Source: federal order market statistics.

Filled Milk Law was declared unconstitutional. In 1936, another Illinois law and the Nebraska and Michigan laws were declared unconstitutional. The Washington and Arizona laws were declared void in 1967. The Texas law was declared illegal this year and suit has been brought against the Wisconsin Act. The validity of a filled milk law has been upheld in only one state court case — Pennsylvania in 1938.

Thus, the ability of the dairy industry to maintain legislative restrictions on fluid milk substitutes appears to be declining. Nondairy substitutes already are outside the purview of the federal act and outside of most state acts.

The dairy industry also has sought to control the sale of filled and imitation milks through state and federal order programs. These programs do not provide for outright restrictions, but they do impose pricing requirements on the ingredients used in milk substitutes. In

the central Arizona federal order milk market, any nonfat dry milk used in filled milk is priced so that the value of the fluid skim milk equivalent of the nonfat dry milk at least equals the price of fluid skim milk from the local supply area. The continuing growth of filled milk sales in that market indicates that it has not been effective in eliminating the incentive to produce and sell filled milk.

Hawaii is attempting to impose pricing provisions on any fluid beverage sold as a milk substitute that displaces local fluid milk sales. This provision requires that processors pay for the ingredients at a price that will make their product equal in price to locally produced fluid milk. If the ingredients are purchased at less than local fluid milk prices, the difference is paid into an equalization fund. Proceeds are paid back to milk producers to compensate them for fluid milk sale losses.

The constitutionality of the pricing provisions of federal and state orders concerning filled milk also is uncertain. The Hawaii state program already is in court. The possibility of expanding the central Arizona type federal order provision to all federal orders now is being considered.

These, then, are some of the statutory and judicial determinations that have influenced and will influence the development of markets for filled and imitation milk. A large system of state and federal laws will have to be broken down before a great amount of substitution can take place. Nevertheless, the experience to date indicates that this could occur in a relatively short time. Absolute legal barriers to the sale of these products are not likely to be effective indefinitely if there are sizable economic advantages in shifting to fluid milk substitutes. Thus, the share of the fluid beverage market that the dairy industry can maintain over the long run will depend on how competitive the industry can become in producing and marketing fluid milk.

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<sup>1</sup> Filled milk is skim or nonfat dry milk recombined with vegetable fat. Imitation milk is produced entirely from nondairy ingredients.

<sup>2</sup> These legal developments were detailed in a paper by Emil Steck presented at the 1968 annual meeting of the Southwestern Dairy Industry Conference.