U.S. Food Expenditures, 1954-78

New Measures at Point of Sale and by Type of Purchaser

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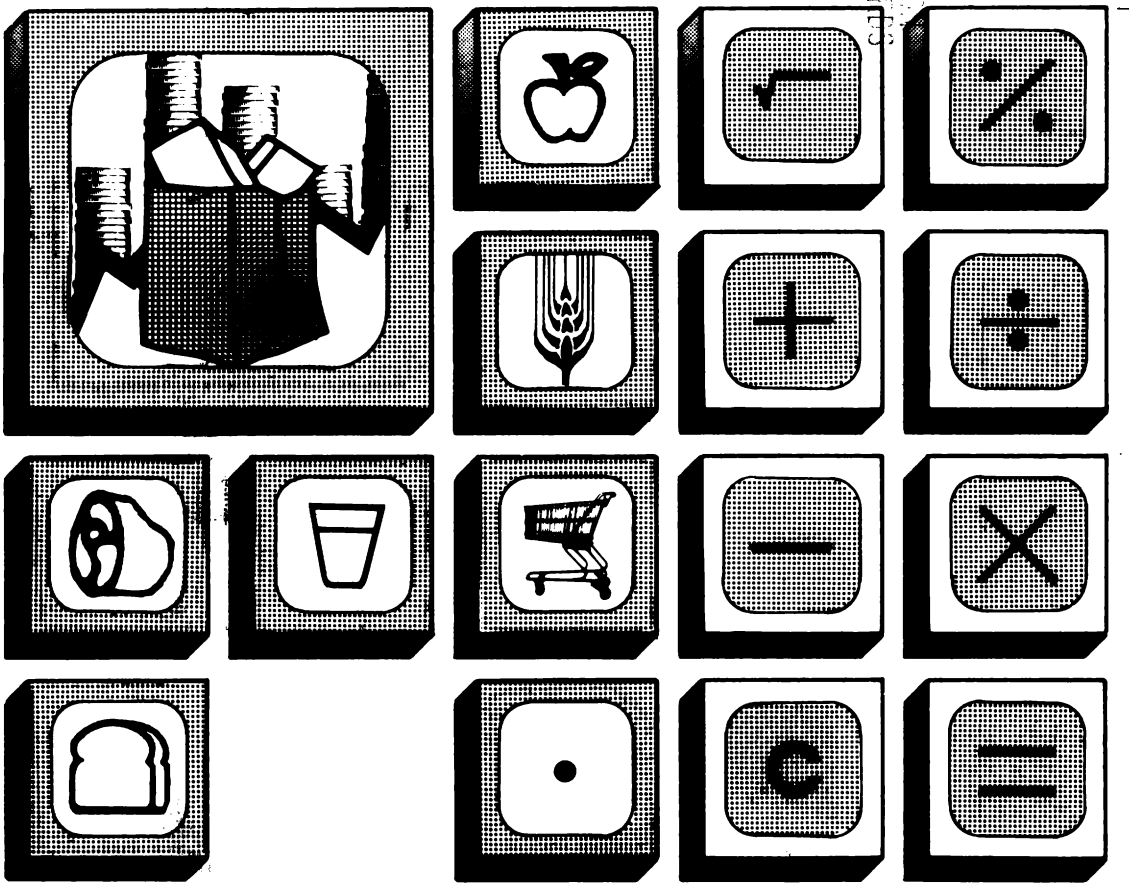

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ABSTRACT

The series currently used to estimate food expenditures yield incomplete and often conflicting data. The new series described here is more comprehensive. Called the total expenditures series, it reports total U.S. food sales by all retailers of food consumed both on- and off-premises. The series also includes food provided to military personnel, and food served in hospitals, institutions, and schools, where separate sales figures for food are unavailable. The series separates the total figures by different types of sellers and different food categories and provides estimates of total U.S. food expenditures between 1954 and 1978.

Keywords: Food sales, food expenditures, food retailers.

CONTENTS

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SUMMARY

This report presents a new, more comprehensives series measuring total expenditures (TE) for food in the United States. The series includes all food purchased by both civilians and military personnel for consumption off-premises, meals and snacks (whether purchased or furnished) consumed on-premises, and all home-produced food. The existing series omit one or more components of food expenditures.

A whole-system measure of food expenditures will help in the analysis of many issues. Being more comprehensive, it will give processors, wholesalers, and retailers an accurate record of changes in aggregate demand and will help farmers and others to ascertain the total size of the food market.

Total expenditures for food in all forms rose from $60 billion in 1954 to $238 billion in 1978. During that period, food for off-premise use rose from $44 billion to $155 billion. Expenditures for meals and snacks grew more rapidly, from $15 billion to $84 billion. Expenditures for alcoholic beverages increased nearly fourfold, from $10 billion in 1954 to $40 billion in 1978.

The data obtained with the (TE) series are compared with those of other measures, including the personal consumption expenditures (PCE) series, input-output calculations for 1963 and 1967, civilian expenditures for U.S. farm-produced foods, and estimates based on consumer surveys. Food sold for use at home as a proportion of all food in 1976 ranged from 65 percent of the TE series to over 75 percent for the PCE series of the Bureau of Economic Analysis (BEA), U.S. Department of Commerce. BEA's estimate of personal consumption expenditures on food for off-premise consumption is about $20 billion larger than the other measures for 1976. Not only do the various measures differ in magnitude, but they also differ in changes from year to year.

The methods used to estimate national aggregate expenditures lend themselves readily to the development of regional series. The TE estimates could also be extended to provide information on subgroups of the population. Forecasts of future food expenditures might be improved by treating the different categories of food expenditure separately rather than as a single aggregate.

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Economists

INTRODUCTION

The United States has not had, in recent years, a comprehensive measure of the total value of all food consumed. Available data series have measured the expenditures for food by households and individuals out of their own funds (personal consumption expenditures series) and the total value of U.S. farm-produced foods consumed by civilians (the marketing bill series). Neither of these series was designed to cover all foods. With measures available of the total quantity of food consumed and of prices at various levels in the system, the logical complement is a measure of total expenditures on food.

This report describes a newly developed series, called the total expenditures (TE) series. It is based on sales of food by different types of sellers--foodstores, restaurants, schools, and 25 other types of sellers or providers. The new series estimates sales of food and alcoholic beverages by retailers and others, primarily on the basis of current sales figures from the Monthly Retail Trade Report and Selected Services Receipts of the Bureau of the Census. This new measure of total food expenditures is conceptually similar to national health expenditures data provided by the Social Security Administration which include all health expenditures by consumers, other private sources, and governments (11). 1/ The new series was made possible by data that were not available in the late fifties and early sixties when Marguerite Burk and her colleagues made pioneering efforts to measure the value of all food consumed (5, 6).

The following sections describe the new series total expenditures for food and identify its major components. Next, the methods used to develop the data are discussed in some detail. Then, the new series is compared with existing measures: (1) personal consumption expenditures (PCE) compiled by the Bureau of Economic Analysis, U.S. Department of Commerce, and (2) civilian expenditures for U.S. farm-produced foods (the marketing bill series) compiled by the Economics, Statistics, and Cooperatives Service (ESCS), U.S. Department of Agriculture. These measures are conceptually different and neither encompasses the entire food market. The concepts behind these two series and their estimation methods are discussed to point out differences among the three series now available and to help the user to decide which series is most appropriate for his purposes.

A comprehensive measure of total expenditures for food and its components makes possible many analyses. Some of these possibilities are discussed in the "Applications" and "Extensions" sections. For those who need a longer time series than 1954 to date, an extension of the total expenditures measures from 1929 is presented.

1/ Underscored numbers in parentheses refer to literature cited at the end of this report.

THE NEW SERIES--TOTAL EXPENDITURES FOR FOOD AND ALCOHOLIC BEVERAGES

The new series divides total expenditures into:

Food for off-premise use--food for preparation at home, on picnics and camping trips, and anywhere else except on the premises where it is sold.

Meals and snacks--for consumption on the premises where it is sold (in restaurants, snackbars, dining halls, airplanes, etc.).

Packaged alcoholic beverages--beer, wine, and liquor for consumption off-premises.

Alcoholic drinks--beer, wine, and liquor for consumption where sold.

Each category is divided between sales and food or meals acquired without payment specifically identified for food--home production, game and fish, donations, and meals in military messhalls, hospitals, and institutions.

Major Components of Food Expenditures

Total expenditures (TE) for food in all forms, as measured by the new series, rose from $60 billion in 1954 to about $238 billion in 1978 (table 1). 2/ Over the same timespan, expenditures for food for off-premise use rose from $44 billion to $155 billion. Expenditures for meals and snacks grew much more rapidly, from nearly $15 billion to $84 billion. Expenditures for alcholic beverages increased fourfold, from about $10 billion in 1954 to $40 billion in 1978.

Foodstore sales (after subtracting sales to restaurants and institutions) accounted for most of the expenditures for food for off-premise use (table 2). Other sellers included other retail stores, home delivery (primarily milk and bakery products), military outlets (commissary stores and exchanges), farmers, manufacturers, and wholesalers. A final category includes USDA donations of food to families, home production (both farm and nonfarm), and sport fish and game.

The biggest component of expenditures for meals and snacks is sales by eating and drinking places, which include restaurants, cafeterias, and refreshment places such as hamburger stands and fast food places (table 3). Other components include meals and snacks sold by hotels and motels, retail stores (especially drugstores), vending machines, ice cream trucks and sandwich wagons, recreational places (motion picture theaters, bowling alleys, pool halls, sports arenas, camps, amusement parks, golf and country clubs), schools and colleges, manufacturing plants, military exchanges and clubs, and railroad dining cars. A final category consists of meals supplied by airlines, institutions, hospitals, boarding houses, fraternities and sororities, civic and social organizations, the military forces, and meals furnished to employees.

Separate statistics are also given for packaged alcoholic beverages (for off-premise consumption) and for alcoholic drinks (consumed on the premises where sold) because food and drink are frequently purchased and consumed together. Packaged alcholic beverages are sold mostly by liquor stores and foodstores (table 4). Other types of retail stores account for less than 10 percent of sales. Most alcoholic drinks are sold in restaurants and bars.

2/ The term "food" in this report excludes alcoholic beverages unless explicitly included.

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	60,388	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	42,863	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--Expenditures for food for off-premise use

Year	Food-stores 1/	Other stores 2/	Home delivered 3/	Military outlets 4/	Farmers, manufacturers, wholesalers	Total sales	Home production, donations	Grand total
				Million dollars				
1954	33,140	2,235	3,224	311	1,536	40,446	4,094	44,540
1955	34,266	2,314	3,313	338	1,538	41,769	4,020	45,789
1956	35,795	2,322	3,354	365	1,534	43,370	3,976	47,346
1957	38,610	2,329	3,324	394	1,552	46,209	3,995	50,204
1958	40,348	2,315	3,428	423	1,537	48,051	4,116	52,167
1959	40,812	2,332	3,378	505	1,534	48,561	3,876	52,437
1960	42,088	2,232	3,272	565	1,578	49,735	3,804	53,539
1961	42,710	2,179	3,252	631	1,577	50,349	3,762	54,111
1962	43,689	2,255	3,136	712	1,608	51,400	3,709	55,109
1963	44,104	2,247	3,021	796	1,622	51,790	3,631	55,421
1964	46,415	2,267	2,920	849	1,625	55,076	3,620	58,696
1965	49,076	2,294	3,011	972	1,629	56,982	3,653	60,635
1966	51,446	2,351	2,935	1,087	1,689	59,508	3,761	63,269
1967	52,109	2,125	2,944	1,193	1,618	59,989	3,637	63,626
1968	55,165	2,254	2,975	1,227	1,676	63,297	3,847	67,144
1969	59,431	2,323	3,016	1,299	1,736	67,805	4,186	71,991
1970	65,349	2,379	2,914	1,381	1,813	73,836	4,591	78,427
1971	68,974	2,573	2,700	1,506	1,828	77,581	4,809	82,390
1972	73,465	2,646	2,509	1,653	1,811	82,084	5,079	87,163
1973	83,135	2,787	2,376	1,867	2,054	92,219	6,009	98,228
1974	94,830	2,957	2,413	2,113	2,169	104,482	6,719	111,201
1975	104,063	3,142	2,275	2,244	2,264	113,988	7,155	121,143
1976	114,392	3,369	2,142	2,223	2,419	124,545	7,625	132,170
1977	122,526	3,687	1,960	2,237	2,535	132,945	8,179	141,124
1978 5/	135,057	4,043	1,800	2,358	2,713	145,971	8,648	154,619

1/ Excludes estimated sales to restaurants and institutions. 2/ Includes eating and drinking establishments and trailer parks. 3/ Includes mail order. 4/ Commissary stores and exchanges. 5/ Preliminary.

Table 3--Expenditures for meals and snacks

Year	Eating and drinking places 1/	Hotels and motels 1/	Retail stores, direct selling 2/	Recreational places 3/	Schools and colleges 4/	All other 5/	Total
				Million dollars			
1954	8,008	752	1,408	268	1,073	3,246	14,848
1955	8,490	809	1,480	306	1,219	3,068	15,372
1956	8,992	875	1,544	345	1,410	3,054	16,220
1957	9,409	932	1,602	332	1,554	3,156	16,985
1958	9,447	922	1,607	345	1,697	3,286	17,304
1959	10,102	982	1,684	373	1,888	3,240	18,269
1960	10,505	1,028	1,720	409	2,021	3,314	18,997
1961	10,907	1,061	1,743	440	2,199	3,435	19,785
1962	11,624	1,134	1,813	460	2,396	3,538	20,965
1963	12,247	1,200	1,854	471	2,547	3,590	21,909
1964	13,156	1,289	1,988	481	2,737	3,706	23,357
1965	14,444	1,409	2,162	505	2,988	3,929	25,437
1966	15,768	1,541	2,346	524	3,262	4,492	27,933
1967	16,595	1,623	2,436	541	3,558	4,865	29,618
1968	18,650	1,699	2,710	591	3,842	5,041	32,533
1969	20,110	1,708	2,976	633	4,206	5,413	35,046
1970	22,455	1,881	3,314	688	4,435	5,572	38,345
1971	23,842	2,061	3,615	724	4,962	5,526	40,730
1972	26,276	2,355	3,892	784	5,365	5,761	44,433
1973	29,690	2,573	4,286	880	5,620	6,428	49,477
1974	33,090	2,776	4,652	1,022	6,336	7,397	55,273
1975	38,065	3,070	4,901	1,103	7,058	8,052	62,249
1976	42,866	3,576	5,256	1,193	7,750	8,556	69,197
1977	48,538	3,880	5,587	1,216	8,205	9,381	76,807
1978 6/	52,979	4,595	5,991	1,177	8,664	10,326	83,732

1/ Includes tips. 2/ Includes vending machine operators but not vending machines operated by other organizations. 3/ Motion picture theaters, bowling alleys, pool parlors, sports arenas, camps, amusement parks, golf and country clubs. 4/ Includes school food subsidies. 5/ Military exchanges and clubs; railroad dining cars; airlines; food service in manufacturing plants, institutions, hospitals, boarding houses, fraternities and sororities, and civic and social organizations; and food supplied to military forces and civilian employees. 6/ Preliminary.

Table 4 --Sales of alcoholic beverages

Year	Packaged alcoholic beverages				Alcoholic drinks			
	Liquor stores	Food-stores	All other	Total	Eating and drinking places 1/	Hotels and motels 1/	All other	Total
	Million dollars							
1954	2,942	1,724	588	5,254	4,454	274	182	4,910
1955	3,060	1,813	610	5,483	4,552	290	188	5,030
1956	3,408	1,920	637	5,965	4,753	309	200	5,262
1957	3,642	2,071	663	6,376	4,861	325	212	5,398
1958	3,841	2,146	671	6,658	4,910	330	222	5,462
1959	4,056	2,298	692	7,046	5,014	356	249	5,619
1960	4,137	2,371	699	7,207	5,039	378	276	5,693
1961	4,120	2,354	701	7,175	4,975	395	295	5,665
1962	4,494	2,463	717	7,674	5,172	427	323	5,922
1963	4,665	2,594	725	7,984	5,306	458	342	6,106
1964	4,958	2,753	761	8,472	5,465	493	362	6,320
1965	5,247	2,907	809	8,963	5,681	541	393	6,615
1966	5,676	3,116	864	9,656	5,981	593	434	7,008
1967	6,005	3,211	904	10,120	6,222	623	492	7,337
1968	6,553	3,432	953	10,938	6,620	665	516	7,801
1969	6,983	3,702	981	11,666	6,831	686	541	8,058
1970	7,589	4,154	1,056	12,799	7,577	752	563	8,892
1971	8,386	4,421	1,100	13,907	7,897	837	574	9,308
1972	8,854	5,014	1,169	15,037	8,647	940	612	10,199
1973	9,269	5,473	1,259	16,001	9,566	1,018	613	11,197
1974	9,975	6,058	1,350	17,383	10,253	1,099	588	11,940
1975	10,698	6,525	1,452	18,675	11,341	1,217	636	13,194
1976	11,178	7,633	1,566	20,377	12,275	1,417	676	14,368
1977	11,724	8,108	1,693	21,525	13,450	1,537	723	15,710
1978 2/	12,447	8,942	1,836	23,225	14,442	1,821	743	17,006

1/ Including tips.
2/ Preliminary.

Methods of Estimation at Point of Sale

In the TE series, each category of food and alcoholic beverage is valued at the last point where the product is sold separately. That means that different components are valued at different points in the flow of food from farm to consumer. Food in hospitals is valued when sold to the hospital, while restaurant food is valued as sold to the customer and includes taxes and tips. In a later section of this report, all food is valued at the same price levels; that method yields figures more nearly comparable, in concept, with those prepared by many private research organizations.

The method used to estimate most food expenditures for this series starts with current estimates of sales or receipts. In 1970, this type of estimate accounted for 88 percent of food for off-premise use, 68 percent of meals and snacks, and over 95 percent of all alcoholic beverages (table 5). The proportion of sales of each type of store accounted for by (1) food for off-premise use, (2) meals and snacks, (3) packaged alcoholic beverages, and (4) alcoholic drinks is used as reported by the U.S. Department of Commerce in its 5-year Censuses of Business in most cases. The figures were interpolated for the years between censuses. The figures for the years after the last census were estimated from the direction of movement in earlier years. Other sources of data were used occasionally (for grocery stores, for example) where better data were available.

Grocery store sales are subdivided into food, alcoholic beverages, and nonfood components on the basis of annual data published in the September issues of Supermarketing magazine. The base data used for other types of stores were taken from the Census of Business which is available only for the years 1963, 1967, and 1972. The census attributes greater importance to food in sales of grocery stores than does Supermarketing. The latter was used because it publishes the data annually and provides a more reasonable distribution of sales by product category (table 6). While Census reports indicate a decline in the relative importance of nonfood sales, Supermarketing shows the opposite trend, reflecting the expansion of nonfoood departments in modern supermarkets. One industry source notes that less than half of the items carried by the typical supermarket are food (table 7).

Table 5--Methods of estimation for total food expenditures, 1970

Method 1/	Food for off-premise use	Meals and snacks	Packaged alcoholic beverages	Alcoholic drinks
		Percent		
Current sales or receipts	88.0	68.4	98.5	95.1
Estimated sales	4.9	6.7	1.5	4.1
Reported	.3	.9	--	--
Rough estimates	1.4	1.2	--	0.8
Base year/mover	4.5	5.9	--	--
PCE components	2/ 0.9	3/ 5.4	--	--
Elementary and secondary schools	--	11.5	--	--
Total	100.0	100.0	100.0	100.0

-- zero.
1/ See text for description of each method.
2/ Farm home-produced food.
3/ Food furnished to employees and to the military.

For some minor types of businesses, current sales are not reported by the Bureau of the Census in the Retail Trade Report and sales were interpolated between census years. Such estimates accounted for from 2 to 7 percent of the expenditures in the various categories (table 5, line 2).

Small amounts of data are based directly on reports of food expenditures--sales in railroad dining cars (13) and airline payments for food service (7) (table 5, line 3).

Rough estimates of various types were used where no other method appeared to be available. These accounted for 5 percent of food for off-premise use, 3 percent of alcoholic drinks, and 2 percent of meals and snacks (table 5, line 4).

For some categories, most notably hospitals and institutions, no data on food purchases were available either on a current or on a periodic basis. In these cases,

Table 6 --Distribution of grocery store sales

Year	Food		Alcoholic beverages		Nonfood	
	Census	SMM	Census	SMM	Census	SMM
	Percent					
1963	84.5	76.5	1.5	4.9	14.0	18.6
1967	85.0	73.4	1.7	4.9	13.3	21.7
1968	84.9	72.9	2.1	5.4	13.0	21.7

SMM = Supermarketing magazine, September issues.

Table 7--Number and percent of items sold by a typical supermarket, 1965-75

Type of product	Number of items			Percent of items		
	1965	1970	1975	1965	1970	1975
	Number			Percent		
Perishables (meat, produce, dairy, bakery)	860	827	1,002	12.0	9.7	8.6
Frozen foods	357	475	767	5.0	5.6	6.6
Dry groceries	2,927	3,448	3,180	40.8	40.4	27.4
Soft drinks, candy, gum, nuts	433	548	726	6.0	6.4	6.3
All food	4,577	5,298	5,675	63.8	62.1	48.9
Beer and wine	25	30	557	0.4	0.4	4.8
Nonfoods	2,569	3,208	5,368	35.8	37.5	46.3
Total	7,171	8,536	11,600	100.0	100.0	100.0

Note: Each brand and package size is a separate item. Basic data from Chain Store Age, July issues. Partly estimated by ESCS.

base year data was supplied by a one-time survey--mostly for 1969 from Van Dress (31). The estimates for other years were derived by using other series (table 5, line 5). For example, hospital and institutional use was estimated for other years using the base-year expenditures and an index incorporating number of residents and the wholesale price index for food. Direct sales by farmers to consumers are based on a 1977 survey (24).

Farm home-produced food and food furnished to civilian employees and the military are taken directly from PCE (table 5, line 6) reported by the U.S. Department of Commerce (28).

The estimates for elementary and secondary schools are based on data for the National School Lunch Program, the School Breakfast Program, and the Special Milk Program (table 5, line 7). These were adjusted to totals for all school food service, including schools not participating in the Federal programs and a la carte service in participating schools. Estimates of total school food service were obtained from periodic national surveys (1, 2, 3, 9, 10, 14, 15, 16, 20,). Additional data were obtained from the Census of Governments (27).

COMPARISONS OF VARIOUS MEASURES OF FOOD EXPENDITURES

The conceptual differences between the three time series (TE, PCE, and marketing bill) and other periodic measures of food expenditures (input-output analysis and household surveys) may be made clearer by reviewing the major commodity flows in the U.S. food sector (fig. 1; see also 12). The largest portion of the Nation's food supply comes from U.S. farms. Imports account for about one-eighth of the total supply. Coffee and fish are the most important imports, with bananas, tea, cocoa, and oil products following. Three-fourths of the food supply is used domestically as food and most of the remainder is exported. Foods from U.S. farms are supplemented by home production (including game fish and animals) and the products of U.S. fisheries.

Food consumption can be looked at in many ways. One is suggested by the lower part of figure 1. Food produced and used at home does not enter the marketing system at all, but it accounts for a small part of all food consumed. Household purchases represent 85 percent of all food, including both foods purchased for off-premise consumption and meals and snacks. Meals furnished to employees, inmates, and residents and those paid for by business travel and entertainment accounts cover the remainder.

In terms of the categories in figure 1, the total expenditures series covers the entire flow. Personal consumption expenditures for food include only:

	Percent
Food furnished--meals	5.3
Household purchases:	
Food	67.5
Meals	17.1
Home production--farm	1.9
Total	91.8

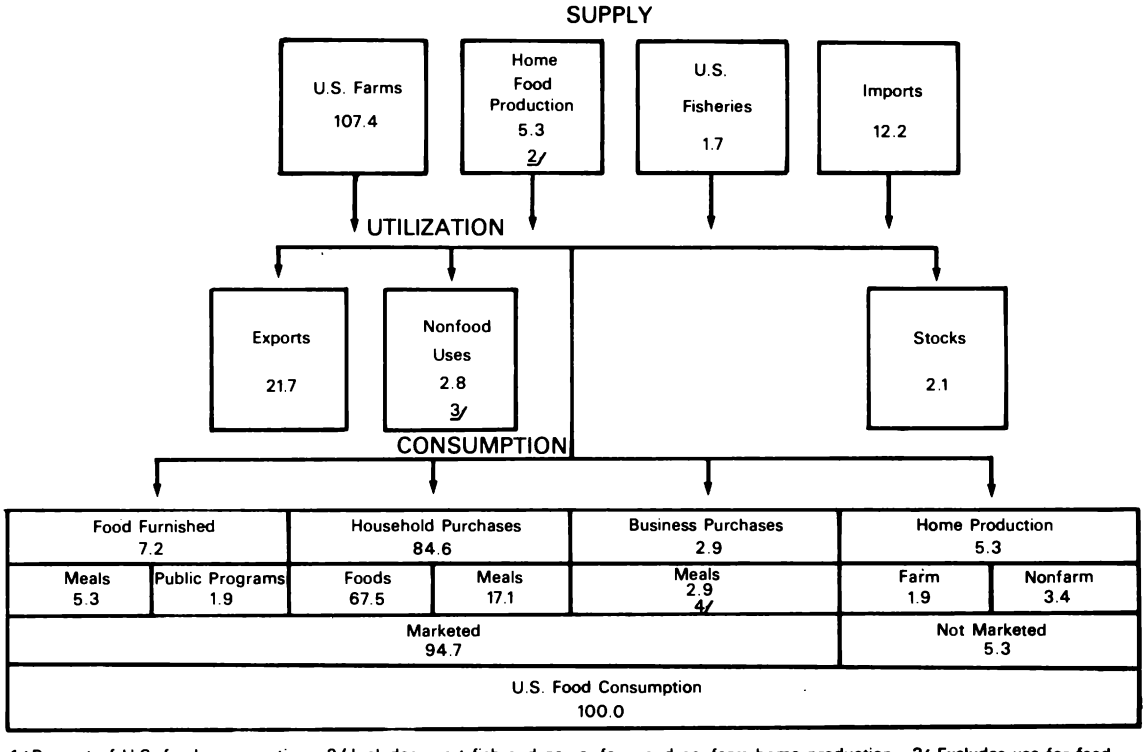
The marketing bill series includes only the products of U.S. farms that go to civilian consumers--in 1976, 90.5 percent of U.S. food consumption.

Personal Consumption Expenditures

The personal consumption expenditures (PCE) series is a component of the National Income and Product Accounts (28, p. 16). To compute these figures, the base year

Figure 1

FOOD SECTOR FLOWS, 1976[1/]



1/ Percent of U.S. food consumption. 2/ Includes sport fish and game, farm and nonfarm home production. 3/ Excludes use for feed and seed. 4/ Business expenses for travel accounts and entertainment.

value is derived as part of the input-output (I-O) analysis. The I-O transactions table (25, 26) starts with the value of production, primarily at the manufacturing level, and distributes food sales among the following uses:

1. Food sold to other manufacturing industries,
2. Food produced and consumed on farms,
3. Food purchased for off-premises consumption,
4. Meals and snacks purchased with personal funds,
5. Meals purchased with business funds,
6. Food supplied to employees,
7. Food purchased for entertainment and gifts, and
8. Food used by others (airlines, hospitals, institutions, etc.).

The value added by transportation and the wholesale and retail trades is estimated separately and added to the value of food at the manufacturer level.

The PCE series includes only foods purchased by individuals and households using their own funds (items 2, 3, and 4 above) and food supplied to employees (item 6 above). It does not include food paid for by business funds, mostly for travel and entertainment, or food used in hospitals and other institutions (either where there is no charge or where the charge is not stated separately, as in the case of hospital food service). The complete input-output analysis is possible only every 5 years when economic census information becomes available.

Using the most recent base year (currently 1967), quarterly estimates are constructed using selected movers such as sales of retail food stores for food for off-premise use. The percentage change in the "mover" series from the base year is multiplied by the base-year value of the series being estimated. Retail sales as reported by the Bureau of the Census are adjusted by the Bureau of Economic Analysis for biases in the census figures (28, p. 17). The current estimates are constrained by the requirement that the two sides of the National Income and Product Accounts balance. The effects of these constraints and others which are part of estimating a consistent set of income and product accounts for the entire economy can be seen in table 8.

The PCE for food for off-premise use rose 119 percent while its mover, retail foodstore sales, rose 129 percent. A part of the difference arises from the adjustments made in balancing the National Income and Product Accounts. Another part of the difference may arise because of differences in the timing of revisions by the Bureau of the Census and BEA.

Significant differences exist between the PCE and TE series (table 9). Food for off-premise use is essentially the same concept in both series if nonfarm home food production and donations are excluded from TE and the estimated expenditures for pet food are excluded from PCE. With those adjustments, total expenditures were 97 percent of PCE in 1954, 82 percent in 1968-69, and 85 percent in 1977. Thus, not only the magnitudes but also the relative changes differ between the series.

For meals and snacks, there are significant conceptual differences, since total expenditures include business as well as personal expenditures and expenditures for food served in hospitals and institutions. The TE figures ranged from a third to a half larger than PCE.

For packaged alcoholic beverages, although there are no significant conceptual differences, the TE series has been substantially larger than PCE since the late fifties, with the margin widening over time. This is due in part to the larger sales of beer and wine by grocery stores in the TE series, for reasons discussed earlier (table 6).

The major conceptual difference between the two series for alcoholic drinks is that personal expenditures plus business travel and entertainment expenditures should approximately equal total expenditures. If both series are correct, these figures imply that business expenditures for alcoholic drinks declined somewhat between 1958 and the midsixties and then increased quite significantly.

Table 8--Personal consumption expenditures for food and retail store sales, 1967 and 1977

Item	1967	1977	Percentage increase 1967 to 1977
	Billion dollars		Percent
Personal consumption expenditures (including sales taxes):			
Food purchased for off-premise use	73.2	160.1	119
Food away from home	19.1	51.8	172
Retail sales (excluding sales taxes):			
Foodstores	69.4	158.5	129
Eating places	18.6	54.8	195

Table 9 --Comparisons of total expenditures and personal consumption expenditures for food and alcoholic beverages

Year	Food for off-premise use 1/			Meals and snacks 2/			Packaged alcoholic beverages		Alcoholic drinks	
	Total (TE)	Personal (PCE) 3/	Total as percent of personal	Total (TE)	Personal (PCE)	Total as percent of personal	Total (TE)	Personal (PCE)	Total (TE)	Personal (PCE)
	----Million dollars----		Percent	----Million dollars----		Percent	----------Million dollars----------			
1954	42,124	43,364	97.1	14,848	11,500	129.1	5,254	5,529	4,910	3,341
1955	43,341	46,746	92.7	15,372	11,678	131.6	5,483	5,653	5,030	3,462
1956	44,870	48,672	92.2	16,220	12,094	134.1	5,965	5,838	5,262	3,632
1957	47,629	51,477	92.5	16,985	12,596	134.8	6,376	5,872	5,398	3,793
1958	49,501	53,446	92.6	17,304	12,735	135.9	6,658	5,921	5,462	3,831
1959	49,827	54,799	90.9	18,269	13,455	135.8	7,046	6,317	5,619	4,075
1960	50,933	55,729	91.4	18,997	14,234	133.5	7,207	6,452	5,693	4,189
1961	51,464	56,789	90.6	19,785	14,842	133.3	7,175	6,525	5,665	4,350
1962	52,434	57,268	91.6	20,965	16,090	130.3	7,674	6,959	5,922	4,594
1963	52,773	58,140	90.8	21,909	16,968	129.1	7,984	7,242	6,106	4,828
1964	55,998	61,441	91.1	23,357	17,969	130.0	8,472	7,574	6,320	4,984
1965	57,900	66,010	87.7	25,437	18,980	134.0	8,963	7,895	6,615	5,210
1966	60,466	71,508	84.6	27,933	20,210	138.2	9,656	8,428	7,008	5,553
1967	60,699	72,863	83.3	29,618	20,997	141.1	10,120	8,791	7,337	5,861
1968	63,990	78,167	81.9	32,533	23,190	140.3	10,938	9,555	7,801	6,128
1969	68,511	83,215	82.3	35,046	24,825	141.2	11,666	10,208	8,058	6,301
1970	74,561	90,199	82.7	38,345	29,144	131.6	12,799	11,676	8,892	7,425
1971	78,289	92,275	84.8	40,730	28,860	141.1	13,907	11,966	9,308	7,039
1972	82,889	98,449	84.2	44,433	30,065	147.8	15,037	12,354	10,199	7,436
1973	93,284	110,058	84.8	49,477	31,473	157.2	16,001	12,871	11,197	8,521
1974	105,720	125,328	84.4	55,273	38,442	143.8	17,383	14,369	11,940	8,591
1975	115,199	137,392	83.8	62,249	43,781	142.2	18,675	15,538	13,194	9,402
1976	125,808	145,441	86.5	69,197	49,593	139.5	20,377	16,376	14,368	10,294
1977	134,092	157,086	85.4	76,807	55,609	138.1	21,525	17,166	15,710	11,022

1/ Includes food consumed on farms where produced; excludes nonfarm home food production and donations.
2/ Includes food furnished to civilian employees and military.
3/ Excludes pet food.

Input-Output Analysis

The input-output (I-O) analyses (25, 26) furnish the base-year figures for the PCE series. Since the I-O analyses include all food and alcoholic beverages except nonfarm home production, game, and USDA donations, comparison of the food expenditure figures from the I-O analysis for the 2 most recent years with the TE series provides further insight into the sources of difference between PCE and TE. For food, the main differences between TE and I-O are in off-premise consumption (table 10). Purchased meals were quite similar by both measures in each year. But TE estimates of food for off-premise consumption are below those of the I-O analysis by $10 billion to $12 billion.

Table 10--Comparisons of expenditures for food and alcoholic beverages, 1963 and 1967

Item	1963		1967	
	Total expenditures series	Input-output analyses (purchasers' prices)1/	Total expenditures series	Input-output analyses (purchasers' prices)1/
	Million dollars			
Foods purchased for off-premise consumption	2/51,663	3/58,302	2/59,382	3/71,942
Food produced and consumed on farms	879	954	710	718
Purchased meals:	18,646	18,260	25,274	25,089
Personal	--	14,968	--	19,930
Business	--	3,292	--	5,159
Food furnished to employees	1,350	1,350	1,944	1,944
Food used by others	1,943	--	2,407	3,310
All food	74,773	78,866	89,832	103,003
Packaged alcoholic beverages	7,984	6,914	10,119	9,042
Alcoholic drinks:				
Personal	--	4,714	6,938	4,537
Business	5,842	1,994	--	3,724
Other	--	--	--	83
All alcoholic beverages	13,826	13,622	17,057	17,386
Food and beverages	88,307	92,488	106,774	120,389

-- Not available.
1/ Purchasers' value partly estimated by ESCS from producers' value.
2/ Excludes nonfarm home production, game fish, and USDA donations to families.
3/ Excludes pet food.

The alcoholic beverage figures are fairly close in total, but sales of packaged alcoholic beverages are about $1 billion larger in the TE series than in the I-O and sales of alcoholic drinks smaller by about the same amount.

One major source of these differences arises out of the decision that the census figures on the division of retail foodstore sales between food, alcoholic beverages, and nonfood simply were not believable. Figures from the Census of Business show food's share of grocery store sales varying from 34.5 to 34.9 percent between 1963 and 1972 (table 6). Sales of alcoholic beverages increased from 1.5 to 2.1 percent of store sales. This leaves nonfood sales declining from 14 to 13 percent of total store sales during a period when supermarkets were growing bigger primarily by adding nonfood lines. By contrast, Supermarketing reports that, as a percentage of total grocery store sales, food sales declined, alcoholic beverages sales increased, and sales of nonfood items rose.

A significant part of these differences arises out of the terminology used by the Bureau of the Census. The grocery department in nearly every supermarket includes packaged nonperishable foods, beer and perhaps wine, pet foods, paper products, soaps and detergents, and other items which have been traditionally carried in supermarkets. The nonfood department, on the other hand, has newer items--added within the past 15 to 20 years--including health and beauty aids, records, magazines, household supplies, linens, and many other items varying from store to store. When the store operator is asked to report the sales of "groceries," most beer and wine is included along with a substantial share of the nonfood items such as household supplies. The Bureau of the Census has recognized this problem and has acknowledged less than total success in dealing with it.

Supermarketing breaks down grocery store sales into several hundred categories of products, avoiding the classification problem in data collection which the Bureau of the Census encounters. It also has the decided advantage of being annual and, thus, available for each year from 1954 through 1977, while the census data are available only for 1963, 1967, and 1972. On the other hand, the census figures are based on a much larger sample.

If we had used the census proportions rather than those from Supermarketing, estimated 1972 grocery store sales of food would have been $11 billion larger than those reflected in the TE series. Sales of packaged alcoholic beverages by grocery stores would have been $3 billion less.

Civilian Expenditures for U.S. Farm Foods

The food expenditure series which USDA has published annually for many years excludes expenditures for all non-U.S. foods but is more comprehensive in coverage of final consumers than is the PCE series.

> Civilian expenditures for farm foods represent the market value of foods originating on U.S. farms and purchased by or for civilian consumers in the country. Included are expenditures for food in retail stores and also for food served in restaurants and other away-from-home eating establishments and bought directly from farmers, processors, and wholesalers. Also included is the value of food served by schools, hospitals, and other institutions, and of food furnished by employers to civilian employees. Sales taxes and tips are also included. Excluded are expenditures for imported foods, for fish and other foods not originating on U.S. farms, and for alcoholic beverages; the value of food furnished by the Government to members of the Armed Services and of food consumed on farms where it is produced is also excluded. (22, p. 18)

The methods used in estimating this series are described more fully in (22, pp. 19-24). The TE series, excluding nonfarm home food production, is compared with civilian expenditures for U.S. farm-produced food in table 11.

Table 11--Comparison of total expenditures for food and civilian expenditures for U.S. farm-produced food

Year	Total expenditures for food (TE) 1/	Civilian expenditures for U.S. farm-produced food	
	Mil. dol.	Mil. dol.	Percent of TE
1954	55,499	51,140	92.1
1955	56,585	53,127	93.9
1956	59,170	55,548	93.9
1957	62,787	58,293	92.8
1958	64,977	60,993	93.9
1959	66,509	63,619	95.7
1960	68,469	66,881	97.7
1961	69,927	68,672	98.2
1962	72,185	71,317	98.8
1963	73,550	74,044	100.7
1964	78,319	77,503	99.0
1965	82,247	81,114	98.6
1966	87,062	86,923	99.8
1967	88,924	90,568	101.2
1968	95,247	95,486	100.3
1969	102,378	101,239	99.9
1970	111,855	108,668	97.2
1971	118,128	114,670	97.1
1972	126,366	118,814	94.0
1973	141,445	136,442	96.5
1974	159,408	151,260	94.9
1975	175,793	164,185	93.4
1976	193,286	178,783	92.5
1977	209,248	186,360	89.1

1/ Excludes all home food production, game fish and animals, and meals furnished to the military.

Consumer Surveys

About once a decade, USDA conducts a national Household Food Consumption Survey (HFCS) and the Bureau of Labor Statistics carries out a Consumer Expenditure Survey (CES). Each of these surveys provides measures of food expenditures by the population living in households. The survey methods are not the same, although both are based on national probability samples. Research comparing various survey methods indicates the differences arising from methods, but gives no indication of the true values (17, 21). By comparing survey results with the appropriate components of the total expenditures series, additional light is shed on the question of which survey methods yield aggregate measures of food expenditures closer to those derived from sales figures.

The HFCS yielded estimates about one-fourth higher than the TE series for food at home in 1955 and in 1965-66 (table 12). The CES (interview) results were relatively close to the time series estimates in 1960-61 and in 1972-73. All the figures for meals and snacks from the surveys are lower than those from TE because only TE includes business expenditures. Again, the HFCS is higher than the CES for meals and snacks.

Table 12 --Comparisons of surveys and time series

Period and survey	At home		Away from home	
	Expenditures	Percent of TE	Expenditures	Percent of TE
	Mil. dol.	Pct.	Mil. dol.	Pct.
1955				
HFCS	1/52,523	125.2	--	--
TE	41,971		--	
1960-61				
CES	50,335	100.6	10,034	61.2
TE	50,043		2/16,388	
1965-66				
HFCS	73,106	127.3	17,862	79.7
TE	57,434		2/22,401	
1972-73				
CES interview	93,129	106.5	26,288	64.8
CES diary	81,689	93.4	28,315	69.8
TE	87,488		2/40,550	

-- Not available.
HFCS = Household Food Consumption Survey.
CES = Consumer Expenditure Survey.
1/ Survey covered food at home in spring only. Annual rate calculated using 1965-66 HFCS seasonal.
2/ Includes business expenses.

None of the other surveys in table 12 provide information in the same detail as the CES interview. The HFCSs and the diary portion of the CES provide data for 1 week. In order to obtain annual estimates, some assumption must be made as to the number of weeks that food for off-premise use is purchased at the rates of the survey week, which would exclude weeks spent on vacation or pleasure trips when food is bought at restaurants. Since CES diaries were seldom obtained from households on vacation, comparison of the interview and diary segments of the CES provides some help.

In the interview segment of the CES, 62.5 percent of the households reported some kind of expenditure on vacation or pleasure trips and 53.9 percent reported expenditures for food on such trips. A reasonable assumption would seem to be that, on the average, households had 1 week per year when they were on vacation and were not buying food for use at home. This assumption and an adjustment for the different time periods covered yields the comparison shown in table 13.

Table 13--Food expenditures reported in two segments of the Consumer Expenditures Survey, 1972-73

Category	Interview survey	Diary survey 1/	Diary as percent of interview
	Million dollars		Percent
Food at home	93,129	81,689	87.7
Food away from home	26,288	28,315	107.7
Meals as pay	1,340	--	--
Food on vacation	4,082	--	--

-- = Not reported.

1/ July 1972 to June 1974 weekly expenditures X 51, adjusted to 1972-73 level using PCE.

Measures at Various Price Levels

In the total expenditures series, each component is measured at the point of final identifiable sale, which varies by component--grocery store prices differ from restaurant prices and both differ from the prices paid by airlines for food served to their passengers. Individual components of total expenditures are priced at four general levels: Farm, wholesale, retail store, and restaurant.

It is often useful to have expenditures adjusted to a common price level. We have provided two such adjustments in this report--one where all food is valued at retail store prices and a second where all food away from home is valued as though it were sold at restaurant prices (table 14).

Base-year estimates (for 1967) of the magnitude of the differences between these four levels of prices (i.e., of the markups or margins between them) were derived from the USDA marketing bill statistics (32) and the I-O analysis (26). Annual estimates were derived by applying price indexes from USDA and the Bureau of Labor Statistics for each of the four levels identified above.

APPLICATIONS

Some idea of the potential uses of the new series are included in this section. Since the coverage of total expenditures for food is the same as that for USDA food consumption measures--or can be adjusted to that level--many analyses are possible which start from the identity:

$$\text{Price} \times \text{Quantity} = \text{Value}$$

The first application makes extensive use of the available data.

Sources of Change in Expenditures

Analysis of the sources of changes in food expenditures between 1954--the first year of the total expenditures series--and 1976 using consumption, price, and expenditures data illustrates the potential power of these measures. Food expenditures went up from $366 per person in 1954 to $443 in 1965 and to $939 in 1976 (table 15). Food-at-home expenditures more than doubled; food-away-from-home expenditures more than tripled. The biggest increase was in meals and snacks in public eating places--up four times.

Table 14--Food expenditures measured at two different price levels

Year	Components of food expenditures measured at--			
	Retail store price levels			Restaurant price levels
	Off-premise consumption	Meals and snacks (excluding tips)	All food	Meals and snacks (excluding tips)
	Million dollars			
1954	47,422	13,586	61,008	16,651
1955	48,714	13,569	62,283	17,135
1956	50,207	14,307	64,514	18,359
1957	52,927	14,631	67,558	18,851
1958	55,006	15,065	70,071	19,170
1959	54,995	15,217	70,212	20,383
1960	55,951	15,548	71,499	21,187
1961	56,514	16,052	72,566	22,160
1962	57,351	16,696	74,047	23,503
1963	57,733	17,309	75,042	24,584
1964	60,921	18,277	79,198	26,151
1965	62,538	19,776	82,414	28,236
1966	65,238	21,900	87,138	31,146
1967	65,401	22,385	87,786	33,577
1968	68,884	24,022	92,906	36,731
1969	73,710	25,554	99,264	39,535
1970	80,352	27,353	107,705	43,267
1971	84,331	28,145	112,476	45,918
1972	89,136	30,697	119,833	49,643
1973	101,209	36,111	137,320	54,167
1974	113,587	40,998	154,585	60,972
1975	123,589	45,848	169,437	68,185
1976	135,085	49,475	184,560	76,944
1977	144,291	54,294	198,585	85,768
1978	157,822	59,911	217,733	93,371

Table 15 --Food expenditures per capita, 1954, 1965, and 1976

Item	1954	1965	1976
	Dollars		
Food at home:			
Purchased	252	293	584
Home-produced and donations	22	19	32
Total	274	311	616
Food away-from-home:			
Public eating places	59	93	246
Limited clientele	15	20	32
Meals furnished	18	19	45
Total	92	132	323
All food	366	443	939

Prices a bit more than doubled in grocery stores and rose substantially more in restaurants (table 16). Quantities in pounds went down a bit, although the per capita food consumption index rose 10 percent, reflecting the shift to higher-valued foods, especially beef. Over the same 22-year period, disposable income per capita rose 250 percent--much more than the increases in food expenditures.

A combination of consumption, prices, and expenditures data allows us to sort out the components of change. Out of a $573 increase in per capita food expenditures from 1954 to 1976, the biggest share--$416--was due to price change (table 17). The shift of outlets--primarily from home to away-from-home--increased per capita food expenditures by $62, while changes in quantities accounted for $34, and shifts between foods for $61 per person.

Table 16--Factors affecting food expenditures, 1954, 1965, 1976

Item	Units	1954	1965	1976
Consumer price indexes for food:				
Grocery store prices	Pct.	100	111	209
Restaurant prices	do.	100	130	265
Farm value	do.	100	103	185
Wholesale prices	do.	100	107	199
Per capita food consumption:				
Index	do.	100	101	110
Pounds	lb.	100	97	99
Disposable income per capita:				
Current dollars	Dol.	1,574	2,430	5,511
Index	Pct.	100	154	350

Table 17--Sources of change in food expenditures per capita from 1954 to 1965 and 1976

Source of change	Change from 1954 to: 1965	1976
	Dollars	
Total changes	+77	+573
Change due to:		
Shift in outlets	+19	+62
Changes in prices	+52	+416
Changes in quantities	+2	+34
Shifts among food groups	-1	+55
Shifts among foods within food groups	+5	+6

Market Shares

Since total expenditures are computed on the basis of sales by various types of firms, the data are easily transformed into market shares. With grocery store sales divided between supermarkets, convenience stores, and other grocery stores using Census and Progressive Grocer data, the picture in table 18 emerges.

Supermarkets accounted for 56 percent of the sales of food for home use, a doubling of their share in 20 years. 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 19). The share of schools and colleges peaked in 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.

Table 18--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 foodstores	11.1	9.9	8.4	8.6	8.8
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

Final Demand for Food

Additional insights into the changes in food expenditures can be gained by classifying sales according to purchaser. Major categories are food marketed and home-produced food. Food entering marketing channels includes that purchased for consumption off-premise (food purchased) and that consumed as meals and snacks (on-premise). A portion of the latter group is purchased and the remainder is furnished without charge to the consumer. Additional food is provided through Federal food programs.

The final demand for all food in 1977 was estimated at $218 billion, of which $133 billion represented foods purchased for off-premise consumption and $69 billion represented meals and snacks purchased. Meals furnished to hospital patients, residents of institutions, civilian employees, and military personnel accounted for an additional $7 billion. In total, meals and snacks constituted $73 billion in 1977 (table 20).

Two much smaller markets are foods supplied through public food programs ($4 billion) and the home production of foods, including game and fish ($8 billion). Most of the public food category consists of Federal and other subsidies for child nutrition programs, with much smaller amounts representing food distributed to institutions and the elderly and USDA food distribution to families. Foods purchased with food stamps are included with cash sales of stores accepting stamps. Home production on farms amounted to one-sixth of all home-produced foods, with nonfarm gardens, fish, and game accounting for the remainder.

Changes in the relative importance of the major food market components are shown in table 21. Food purchased declined from 68 percent in 1955 to 61 percent in 1978, while meals and snacks rose from one-fourth to one-third of all food dollars. Food programs grew slowly over the period, while home production of food declined from 6 to 4 percent of the total.

The market for meals and snacks for consumption away from home ("meals") can be divided into meals purchased and meals furnished. Meals purchased in public places amounted to $60 billion in 1977. Eating places such as restaurants, lunchrooms, cafeterias, and refreshment places dominate this group, with other sales by department stores, grocery stores, retail bakeries, other foodstores, drugstores, and the like. Other public places include hotels and motels, other retail places and direct sales, and sales through recreational places such as camps, country clubs, and amusement parks (table 20).

Table 19--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.

Some establishments provide meals for a limited clientele, rather than for the general public. These include schools and colleges, manufacturing plants, civic, social, and fraternal organizations, and military exchanges and clubs. In 1977, such sales totaled $7 billion. All meals purchased in that year amounted to $66 billion.

The third meals category, meals furnished, includes those provided to civilian employees, military personnel, persons in group quarters like hospitals, and airline travelers. When this component was added to meals purchased, all meals were estimated at $73 billion in 1977.

Table 20 --Components of final demand for food, United States

Market component	1967		1977	
	Mil. dol.	Pct.	Mil. dol.	Pct.
Foods purchased	59,989	64.3	132,945	61.0
Meals purchased:				
In public places	21,195	22.7	59,221	27.2
In places with limited clientele 1/	4,072	4.4	7,042	3.2
All meals purchased	25,267	27.1	66,263	30.4
Meals furnished	3,442	3.7	6,954	3.2
Public food programs 2/	1,024	1.1	3,625	1.7
Home production:				
Farm households	710	.8	1,263	.6
Nonfarm households	2,239	2.4	5,099	2.3
Game and fish	573	.6	1,808	.8
All home production	3,522	3.8	8,170	3.7
All food	93,244	100.0	217,971	100.0

1/ Schools and colleges, membership organizations, employee cafeterias.
2/ Includes child nutrition subsidies.

Table 21--Relative importance of foods purchased, meals and snacks, food programs. and home food production

Year	Foods purchased	Meals and snacks	Food programs	Home production	All food
			Percent		
1955	68.3	24.6	0.7	6.4	100.0
1960	68.6	25.4	.9	5.1	100.0
1965	66.3	28.6	1.1	4.0	100.0
1970	63.2	31.8	1.3	3.7	100.0
1975	62.1	32.4	1.6	3.9	100.0
1978	61.3	33.5	1.6	3.6	100.0

Relation to Food Price Indexes

The U.S. Department of Agriculture regularly publishes price indexes and price spreads for the market basket of U.S. farm-produced foods. This is a measure of price changes of U.S. farm-produced items included in household purchases of foods in figure 1. The Consumer Price Index (CPI) published by the Department of Labor measures price changes for food at home and for meals and snacks purchased. The expenditure values that correspond to these two indexes are all items in household purchases of foods and meals in figure 1. Recognition of the differences in the expenditure categories which these series represent will help to explain why the series do not, and should not, be expected to move in precisely the same manner from one period to another. As is true of nearly all indexes, the quantity weights assigned to individual items are held constant over time and, therefore, do not reflect changes in sales volume from year to year.

POSSIBLE EXTENSIONS

It should be possible to develop consistent series for a variety of uses with the methods by which the national estimates were calculated. One such extension would be to prepare regional estimates of food expenditures. These estimates would be extremely useful in efforts to develop regional demand relationships for food. This series could also be extended to provide regional and national estimates for major food groups that would be consistent with national aggregates.

Another extension of this food expenditure series would be by population subgroups. Food stamp families may have different expenditure patterns than other families. Analyses of the impact of changes in the food stamp and other food assistance programs would be enhanced by the availability of such estimates.

Analysis of the forthcoming Continuing Consumer Expenditure Survey could be meshed with the food expenditure categories in the TE series, as could analysis of the Nationwide Food Consumption Survey. Changes in the demographic characteristics of the population may have different impacts on the various types of food expenditures.

Forecasts of future food expenditures might be improved by treating different categories of food expenditure explicitly rather than as a single aggregate. Changes in the prices of food purchased for home consumption may follow patterns different from those of meals and snacks purchased for away-from-home consumption. Also, changes in the incomes of individuals and households may have different impacts on the food expenditure categories. Expenditures by groups consistent with the wage-earner and all-urban Consumer Price Indexes would be useful.

THE LONG VIEW--FOOD EXPENDITURES FOR 50 YEARS

The quarter century of data on total food expenditures presented in this report should be adequate for most analyses. For the analyst who needs a longer view, the TE series has been extended for another 25 years, back to 1929. To do that, however, it was not possible to estimate food expenditures before the fifties by the methods used in this study, since the Bureau of the Census did not start reporting monthly and annual retail sales until then. However, the same methods can be applied in years when a Census of Business was taken and this has been done in table 22.

Total expenditures for food from all sources were $21 billion in 1929, dropped during the Depression, and then rose to nearly $60 billion in 1954. Expenditures for alcoholic beverages increased from zero in 1929 (expenditures for illegal alcohol not being measured) to $10 billion 25 years later. For annual estimates, different procedures are required. This study uses the estimates made by Burk (6, p. 41) and fits them to the levels in table 20. By these procedures, total expenditures for food dropped to $13.6 billion in the depths of the Depression (table 23).

Table 22--Total expenditures for food and alcoholic beverages, 1929, 1939, 1948, and 1954

Item	1929	1939	1948	1954
		Million dollars		
Food for off-premise use:				
Foodstores	9,538	8,569	27,239	33,140
Other stores 1/	2,264	914	1,317	2,235
Home delivery, mail order	2,243	1,802	3,595	3,535
Manufacturers, wholesalers, farmers, fishermen	802	589	963	1,536
Total sales	14,847	11,874	33,114	40,446
Home-produced, donations	3,084	2,267	5,005	4,094
Total off-premise food	17,931	14,141	38,119	44,540
Meals and snacks:				
Eating and drinking places, hotels and motels	1,901	2,103	7,184	8,760
Schools and colleges 2/	113	140	771	1,073
All other sales	771	653	1,955	2,547
Meals supplied	540	522	1,811	2,575
Total meals and snacks	3,325	3,418	11,721	14,955
Packaged alcoholic beverages:				
Liquor stores	0	507	2,487	2,942
Foodstores	0	122	1,224	1,724
All other	0	458	410	462
Total packaged beverages	0	1,087	4,121	5,128
Alcoholic drinks:				
Eating and drinking places	0	1,083	4,172	4,454
All other	0	119	346	456
Total alcoholic drinks	0	1,202	4,518	4,910
All food	21,256	17,559	49,840	59,495
All alcoholic beverages	0	2,289	8,639	10,038
Grand total	21,256	19,848	58,479	69,533

1/ Includes eating and drinking places.
2/ Includes child nutrition subsidies.

Table 23--Total expenditures for food, 1929-54

Year	Total expenditures	Year	Total expenditures
	Billion dollars		Billion dollars
1929	21.3	1945	31.8
1930	20.5	1946	39.3
1931	16.9	1947	46.9
1932	13.6	1948	49.8
1933	13.6	1949	48.4
1934	15.3	1950	50.0
1935	16.2	1951	56.0
1936	18.0	1952	58.2
1937	18.2	1953	58.8
1938	17.3	1954	59.5
1939	17.6		
1940	18.3		
1941	21.4		
1942	25.4		
1943	28.8		
1944	29.5		

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