



A Profile of Food Consumption Trends and Changing Market Institutions

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In recent years, the mix of foods consumers purchase has been changing rapidly. At the same time, total per capita food consumption has remained relatively stable. One distinct pattern in food consumption behavior over the past twenty years has been the shift away from animal products. Americans are eating less red meat and eggs and are consuming more crop products including cereals, sweeteners, fruits, and vegetables (Table 1). The entire food industry is impacted by changes in food consumption patterns. Food marketing practitioners recognize the importance of both socio-demographic and economic factors as they develop and market food products. Policy makers, as well, stay attuned to the structural elements of food demand to improve public policies aimed at consumer well-being. This fact sheet presents an overview of food consumption trends in the U.S. within the last two decades, with special emphasis on the fruit and vegetable industry. Economic factors, as well as population shifts and other lifestyle changes which influence consumer food demand, are also examined. In addition, promotional schemes and marketing responses to a fragmented consumer society are discussed, along with their implications for the food industry.

Trends in Food Consumption

With the exception of poultry and fish, per capita consumption of crop products has outpaced that of animal products the past twenty years (Figure 1A). In 1987, per capita consumption of poultry exceeded seventy pounds, which was almost a thirty pound gain from the previous two decades (Table 1). Moreover, five pounds were added to the 1966 totals for fresh, frozen, canned, and cured fish. Currently, beef consumption is approximately 73 pounds per person, five pounds less than 1966 levels and 20 pounds less than the record high of 94 pounds recorded in 1976 (Figure

1B and Table 1). Although pork consumption figures have increased in the long run, they too have declined from a high of 69 pounds in 1968 to the current level of approximately 59 pounds per person (Table 1). After World War II, Americans averaged a little more than one egg per day. Today's consumers average about four eggs per week, not including the number of eggs used in processed foods (Figure 1C and Table 1).

Recovering from a dramatic downturn around the middle of this century, consumption of flour and cereal products continues to be strong in the 1980s (Table 1). One cereal product that has made rapid consumption advances in recent years is pasta. Consumers averaged 17 pounds of pasta in 1987, which was an 11 pound increase over the 6 pound average consumed in 1967. Vegetable oil is another food item whose use has increased the past few decades. Salad bar popularity has spurred the use of vegetable oils in a variety of salad dressing preparations. Meanwhile, consumers, perhaps responding to health warnings of high cholesterol, have reduced their consumption of animal fat by nearly 22 percent since 1967.

For dairy products, consumer response is mixed. Not since the Great Depression has whole milk consumption made up a smaller portion of the diet than it does today. Mainly because of fewer calories and lower cholesterol levels, lowfat milk and yogurt are being substituted for whole milk products. Since 1967, per capita lowfat milk consumption has increased by more than 200 per cent, while whole milk consumption has decreased by 50 percent (Figure 1D). Cheese is another dairy product whose consumption has increased significantly. Ice cream and frozen dairy food consumption has remained relatively stable.

Current consumption figures for soft drinks more than double the average of eighteen gallons consumed in 1963, making soft drinks the number one nonalcoholic beverage choice in the U.S. today. Coffee, ranked number one in the 1960s, has fallen behind both soft drinks and alcoholic beverages (Table 1). The development of single serving boxed fruit juices in the early 60s and

Table 1. Per Capita Consumption of Animal and Crop Products, United States, Annual Averages for Selected Time Periods, 1965-1987.

Food Item	Time Period					Percent change ^a
	1965-69	1970-74	1975-79	1980-84	1985-87	
	-----pounds-----					
Red meats:	143.5	150.6	148.0	143.4	139.9	-2.5
Beef	78.5	83.9	87.8	77.3	76.9	-2.0
Veal	3.4	2.0	2.8	1.6	1.7	-50.0
Pork	58.2	62.1	55.9	63.0	59.9	2.9
Lamb & Mutton	3.4	2.6	1.5	1.4	1.4	-58.8
Poultry	44.1	49.0	53.7	63.4	73.2	66.0
Fishery Products	10.9	12.1	12.8	13.0	14.8	35.8
Eggs	40.0	37.9	34.6	33.5	31.8	-20.5
All Dairy Products ^b	585.5	554.3	542.5	558.7	593.8	1.4
Fats and Oils:	53.6	55.9	57.4	61.4	66.8	24.6
Vegetable	37.1	42.0	46.3	48.8	53.9	45.3
Animal	16.5	13.9	11.1	12.6	12.9	-21.8
Fruits:						
Fresh	77.8	75.7	80.5	85.9	92.7	19.3
Canned	N/A	13.0	11.6	9.7	8.5	-34.6
Frozen	N/A	3.4	3.1	3.0	3.7	8.8
Fruit Juices (citrus)	27.5	37.5	44.9	44.3	47.0	68.5
Vegetables:						
Fresh (selected)	63.7	65.4	68.7	74.4	79.1	24.2
Canned	N/A	92.6	90.7	87.6	87.4	-5.6
Freezing	N/A	13.6	14.4	15.0	16.6	22.1
Flour and Cereal Products	141.8	137.6	146.5	150.7	165.9	17.0
Sugar and Sweeteners ^c	120.1	129.2	131.2	135.7	149.5	24.5
Non-alcoholic Beverages:						
Coffee ^d	36.2	33.1	29.0	26.7	26.6	-26.5
Soft Drinks ^d	18.5	22.0	25.1	27.0	29.7	60.5

^a 1985-87 relative to 1965-69.

^b milk-equivalent, fat-content basis.

^c Dry weight.

^d Gallons

N/A: Consistent Data is not available.

Source: Calculated from USDA and Capps.

Figure 1. Per Capita Food Consumption Trends, 1966-

Figure 1A. Per Capita Food Consumption of Lowfat and Whole Milk.

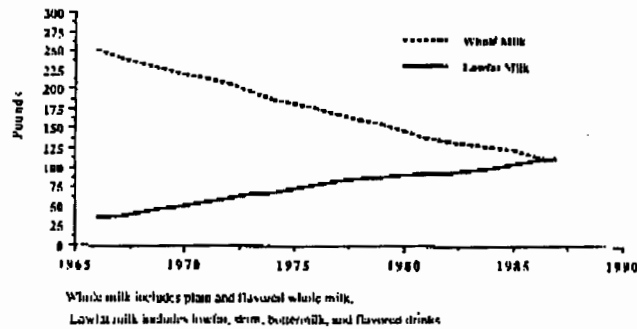
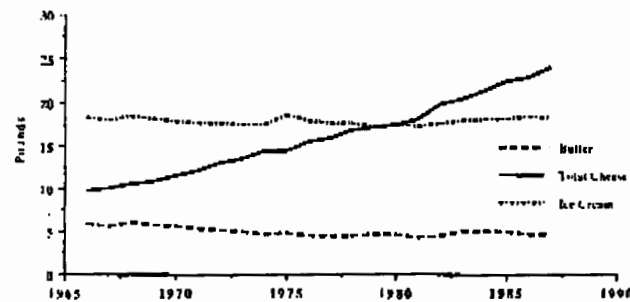


Figure 1B. Per Capita Food Consumption of Butter, Cheese and Ice Cream.



Source: USDA, 1988.

the addition of fruit juice blends to the marketplace has helped foster a tremendous increase in non-citrus fruit juice consumption. Sweetener use continues to climb in the U.S.; high fructose corn syrup, which is used primarily in processed foods and soft drinks, is the most popular sweetener. On the other hand, refined sugar consumption has decreased. A per capita amount of 60 pounds was recorded in 1986, an all-time low.

In U.S. supermarkets, fresh fruits and vegetables have been the fastest growing items. Technological advancements in production have resulted in ample supplies of higher quality produce and year round availability. Fresh vegetables with the highest per capita consumption rates are lettuce, tomatoes, and onions, the traditional salad basics. Others which have doubled and tripled their consumption rates since 1966 are cauliflower and broccoli, respectively. However, not all fruit and vegetable categories have been as successful as that of fresh produce. Consumption of many canned fruit and vegetable items has declined in the last two decades (Table 1). Freezing as a food preservation technique was developed in the 1930s, but not until after World War II did frozen vegetable consumption become popular. Frozen vegetables registering the biggest consumption increases in recent years are sweet corn, cauliflower, and broccoli.

A growing concern in the produce industry today is the presence of chemical residues on fresh fruits and

vegetables which may impact consumption trends. Consumer activist groups, calling for the minimization of pesticide usage, have put pressure on government agencies like the Food and Drug Administration and the Environmental Protection Agency to upgrade their testing and monitoring methods. As a result of the growing concern for food safety, private testing of fresh produce is on the rise. Consumer response to this issue, in terms of altered consumption behaviors for fresh produce, varies. Results from a 1988 consumer survey showed that, while the majority of respondents were concerned about the possible presence of chemical residues on fresh produce, their buying habits for fruits and vegetables were relatively unchanged.

Forces Shaping Domestic Food Demand

The domestic demand for food is shaped by a myriad of forces. Essentially a timeless concept, food demand is the quantity of food consumers are *willing and able* to purchase at specific time periods in the marketplace. A combination of demographic and economic factors, acting interdependently or independently, can alter consumer demand. These factors include demographic shifts, changes in consumer tastes and preferences, fluctuations in incomes and relative prices, and the development of new marketing techniques and technology. A major challenge in researching consumer food demand has been to determine whether the observed changes in consumption patterns are influenced more by the changes in supply conditions and relative prices or by the changes in consumer preferences and demographics.

Population Shifts and Other Changing Demographics

Declining growth rates and population aging are two potentially persuasive changes affecting future food demand. In previous decades, population growth was a major factor influencing the volume of food demanded. Rapid population increases, which assured food industry expansion in the past, no longer exist. From 1950 to 1980, the U.S. population increased by 50 percent. The population growth rate for the next thirty years is expected to be less than half of this rate. Moreover, the median age, which was 31.8 years in 1986, has been inching upwards the past 40 years (Table 2). By the year 2010, it has been estimated that persons 65 years and older will make up 16 percent of the total U.S. population and by 2030, the median age will be 40.8 years.

Over time, population shifts are partially responsible for changes in food consumption patterns. Future decreases in the teenage population and increases in the elderly population will likely lead to a continued decline in whole milk consumption. The expanding population of middle-aged and elderly persons are being charged

in part for the large increases in fruit and vegetable consumption as well as substantial declines in meat consumption. Specialists disagree with respect to the future eating habits of the elderly. Some say that future projections should be based on the current status of the elderly, who rarely eat out. Others predict that the eating habits of the 21st Century elderly will be similar to those of middle-aged persons today. Accustomed to fast food, salad bars, and carry outs, tomorrow's elderly will spend more of their income on food prepared away from home.

Other demographic variables affecting the consumer food demand are changes in household composition, female labor force participation, and the ethnic population. The traditional family unit consisting of a working father, a non-working mother and two children represents only 13 percent of all modern day households. The average household size in 1987 was 2.66 persons, down from 3.3 persons in 1960 (Table 2). Individuals living alone made up almost one quarter of the total number of households in 1987. Unable to realize economies of scale, smaller households spend more on snack foods and foods prepared outside the home than larger households. Fruit and vegetable expenditures for single households averaged 32 percent higher than all households in 1981. The number of females in the labor force has been increasing since World War II and has more than one implication for food demand. For example, in dual earner households, couples often spend more for high quality and a greater variety of food items. Moreover, working wives buy additional household and leisure time by choosing to eat out.

It has been estimated that the rising ethnic population will be almost 17 percent of the total population by the year 2000. A growing ethnic population has spurred the demand for various cultural foods, including recently popular Southeast Asian, Thai and southwestern cuisine. In the early 70s, the average produce department marketed about 65 different produce items, whereas today the figure is closer to 175, with as many as 250 items in some upscale supermarkets. It used to be that

consumers selected grocery stores based on the meat department's reputation. Becoming more prevalent today is grocery store selection based on the quality of the fresh produce department.

Economic Factors and Food Expenditures

Economic factors such as incomes and relative prices can have an effect on food expenditures. However, the impact of these factors is not expected to be large for many food items due to the fact that Americans spend a smaller portion of their income on food compared to consumers in less developed countries. Nevertheless, the proportion of income spent on food in U.S. households varies, depending on the income level. During the past two decades, real disposable personal income rose by sixty percent (Table 3).

The impact of income growth on food expenditures depends on the income elasticity of demand, which measures the effect of changes in income on quantity demanded. Although income elasticity for food products in general is small, variations do exist among certain food items. Food groups most responsive to increases in income are foods eaten away from the home, beef, fish, cheese, butter, and alcoholic beverages. Also, some processed fruits and vegetables exhibit substantial responses to income increases.

Relative prices may also play a role in explaining changes in consumption patterns. As a food item becomes less expensive, it may attract some consumers (Table 3). However, for many food items, the effect of economic factors on food consumption levels may be offset by the impact of noneconomic factors such as demographics and changes in consumer tastes and preferences. In summary, an analysis of the influence price and income has on the quantity of food consumed can be made by isolating sociological, psychological, cultural, and regional factors in the short run. However, in the long run demographic factors and changing consumer preferences play an important role.

Lifestyles, Tastes and Preferences

Compared to earlier prototypes, contemporary consumers are a study in contrasts. While today's consumers may be better educated, they appear to be lacking in traditional culinary skills. Accessibility to commercial food establishments and the development of convenience foods, which transfers food processing techniques away from the household managers, has lessened the necessity for home food preparation expertise. To some extent, the concern for health has adversely affected the consumption rates of several agricultural commodities in the past couple of decades. Commodities benefitting from medical reports promoting diets that are high in fiber and low in fat are fresh and frozen fruits and vegetables, vegetable oils, and whole grain cereal products. The microwave oven has revolutionized modern day cooking. The epitome of

Table 2. Demographic Trends Influencing Consumer Food Purchases, Annual Averages for Selected Time Periods, 1960-1986.

	1960	1970	1975	1980	1986
Population growth (percent change from previous years)	1.6%	1.2%	1.0%	1.2%	1.0%
Median Age (years)	29.4	27.9	28.7	30.0	31.8
Average household size (No. of persons)	3.30	3.14	2.94	2.76	2.66

Table 3. Indices of Real Prices of Selected Food Items and Real Personal Disposable Income, Annual Averages for Selected Time Periods, 1966-1987.

Food Item	Time Period					Percent change
	1966-69	1970-74	1975-79	1980-84	1985-87	
------(1982-84=100)-----						
Indices of Real Prices^a:						
All Food	102.1	106.4	109.6	101.8	99.13	-2.9
Food at home	105.3	106.6	112.3	102.3	97.7	-7.2
Food away from home	93.6	98.4	103.1	100.2	102.1	9.1
Meat, poultry, & fish:						
Meat	112.4	116.0	118.1	103.5	95.8	-14.8
Poultry	112.9	118.9	117.8	103.6	93.8	-16.9
Fish	149.8	143.2	132.4	104.1	100.7	-32.8
Eggs	78.2	90.6	87.7	102.1	107.1	37.0
Dairy Products	172.6	141.0	141.0	102.5	84.6	-51.0
Fats and Oils	118.1	115.8	115.6	103.5	94.4	-20.1
Fruits and Vegetables:	106.6	109.8	120.1	103.3	97.9	-8.2
Fresh	101.1	102.7	105.6	101.1	101.8	.7
Processed	102.3	101.7	108.7	100.3	97.1	-5.1
Flour and Cereal Products	99.5	99.3	106.8	100.6	100.9	1.4
Sugar and Sweeteners	79.0	82.9	105.9	103.4	98.5	24.7
Non-alcoholic Beverages	68.5	69.2	104.2	102.9	97.4	42.2
Real Personal Disposable Income ^a	69.8	81.7	92.7	98.0	111.7	60.0

^a Nominal terms were converted into real terms by dividing the nominal index by consumer price index of all items.

Source: Calculated from USDA.

“super convenience” today is being able to purchase a preprocessed meal that can be heated in the microwave, then served out of the same container in which it was purchased.

A growing trend among Americans is the number of meals they consume away from home. Consumers who are inclined to eat out most frequently are between the ages of 25 and 44. As recent as 1987, consumers were spending 37 percent of their food budget on meals away from the home, a 14 percent increase from 1966. The away-from-home food market is composed of commercial food service establishments and noncommercial institutional outlets. As the elderly population continues to grow in the 21st Century, nursing care facilities and retirement homes are likely to expand. Development of an institutional sector of the food service industry to serve this demographic phenomenon will warrant special attention. Commercial and institutional outlets are not the only purveyors capitalizing on the consumer away-from-home food dollar. Convenience stores have introduced fast foods and limited menu service, while grocery stores are being remodeled to include deli counters, salad bars, and ready-to-serve entrees.

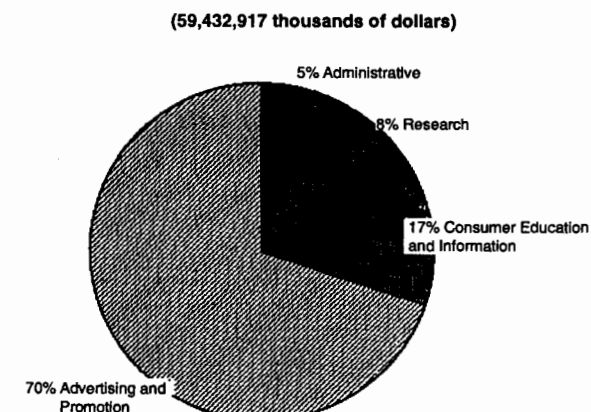
Marketing Innovations and Food Industry Implications

The marketing and promotional schemes of food marketers and agricultural commodity groups are crucial in increasing the demand for food products. These activities include, but are not limited to, promotion, advertising, new product development, and packaging innovations. Marketers adopt their strategies in accordance with specified consumer wants and needs. They also create product image and influence consumer purchases. Often, consumer demands for food are difficult to categorize. Consumers tend to purchase products and services that cover a broad spectrum of price and value combinations. Servicing the educated, nutritionally aware, yet surprisingly fickle consumer is a complex role which marketers strive to master.

“Heard It Through the Grapevine,” a promotional gimmick sponsored by the California Raisin Advisory Board, has promoted the lowly raisin to national stardom. For the first eighteen months following its release, raisin sales remained flat, but more recently, sales have been increasing at a fairly rapid rate. Similar marketing campaigns have boosted sales of other food products. Twenty-five years ago, yogurt was a low-profile food item. Yogurt was promoted as a healthy, low-calorie dairy product in the 80s, and yogurt consumption has increased more than tenfold. Moreover, the beef and pork industries have also allocated funds to national advertising campaigns (Figure 2).

New product developments in conjunction with technological advancements have revolutionized the

Figure 2. National Livestock and Meat Board Fiscal Year 1988 Budget for Beef and Veal Promotion.



Source: Oklahoma Beef Commission, 1988.

marketing of many food items. Relatively recent innovations appearing on supermarket shelves are single serving aseptically packaged fruit juices, fruit roll-ups and fruit juice blends. Creative marketing technology has also contributed to the popularity and consumption rise of many processed turkey products. Marketing infrastructure, which includes transportation facilities and the composition of retail and wholesale markets, is correlating its production changes to the consumer demand for high quality produce. Equipment that transports produce from the field to the supermarket, field wrapping machines, improved cooling techniques, and temperature controlled distribution centers have been developed to insure the delivery of quality produce to retail outlets.

Summary and Conclusions

In recent decades, gradual changes have been occurring in the socioeconomic environment and the demographic structure of the U.S. population. These changes, in combination with technological advancements in agriculture and marketing, have significantly influenced food consumption patterns. The food industry accounts for a significant portion of the U.S. Gross National Product. One out of every ten workers, for an average of 12 million full time employees, is associated with the food marketing system. Jobs in food production, retailing, processing, and distribution generated 129 billion dollars worth of income in 1987. To insure industry growth, food professionals need to continually monitor the lifestyles and activities of the buying public. Moreover, in the future, consumer sensitivity to agricultural chemicals is a likely source of concern for marketing professionals.

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Extension carries out programs in the broad categories of agriculture, natural resources and environment; family and consumer sciences; 4-H and other youth; and community resource development. Extension staff members live and work among the people they serve to help stimulate and educate Americans to plan ahead and cope with their problems.

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- Extension programs are nonpolitical, objective, and research-based information.
- It provides practical, problem-oriented education for people of all ages. It is designated to take the knowledge of the university to those persons who do not or cannot participate in the formal classroom instruction of the university.
- It utilizes research from university, government, and other sources to help people make their own decisions.
- More than a million volunteers help multiply the impact of the Extension professional staff.
- It dispenses no funds to the public.
- It is not a regulatory agency, but it does inform people of regulations and of their options in meeting them.
- Local programs are developed and carried out in full recognition of national problems and goals.
- The Extension staff educates people through personal contacts, meetings, demonstrations, and the mass media.
- Extension has the built-in flexibility to adjust its programs and subject matter to meet new needs. Activities shift from year to year as citizen groups and Extension workers close to the problems advise changes.

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