CHANGING U.S. CONSUMER DEMANDS - IMPLICATIONS FOR THE POTATO INDUSTRY

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Introduction

Consumers in the United States have become increasingly aware of and concerned about the amounts of fat, cholesterol, sugar, sodium, and fiber in their food diet. Also of concern is the availability of certain vitamins and minerals in the foods they consume. This trend towards increased nutritional interest is supported by the actions of food producers, processors, and eating establishments who currently devote a substantial portion of their advertising budgets to stress the nutritional quality of their food products, with the goal of selling their products to consumers. In addition, in the past several years concerns with food safety issues have intensified.

Coupled with the increased nutritional and food safety concerns of consumers are other socioeconomic and demographic trends which directly or indirectly impact the quantity of food consumed and the quality and variety of the diet of the U.S. population. These changes have been accompanied by alterations in the eating patterns, including what is eaten (meat vs. vegetables), when it is eaten (meals vs. snacks), where it is eaten (at home vs. away from home), and in what form it is eaten (fresh vs. processed).

The purpose of this presentation is to provide a broad overview of consumption changes over recent years, focusing specifically on potatoes and products perceived to be substitutes for potatoes, and to identify some of the reasons for these demand changes.

The presentation is organized as follows. First, consumption changes over recent years are discussed. Second, reasons for these changes are identified and relevant studies documenting these reasons are discussed. These reasons include traditional economic factors (prices and income), household characteristics and demographics, health and nutrition related factors, and food safety concerns. The presentation will conclude by identifying some implications of the discussion for the potato industry.

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General Expenditure and Consumption Information

In 1989, food and beverage expenditures in the United States totaled $515 billion, up 6 percent from the $485.5 billion total in 1988, and up almost five-fold from the $86.7 billion total in 1965. Almost 80 percent of the 1989 total was accounted for by spending of families and individuals. These numbers, however, do not account for the general inflation that has occurred over the last several decades. In real terms (adjusted for inflation) overall food sales increased by 0.5 percent between 1988 and 1989.

While food spending has increased over the years, the increase has not matched the gain in disposable income. In 1967, families and individuals spent 14.2 percent of their disposable income on food and in 1989 they spent only 11.7 percent on food. The share of the U.S. food dollar going to purchase meals and snacks away from home was 44 percent in 1989, up considerably from 34 percent in 1969 and 24 percent in 1949. Because restaurant meals include more food services than food from home supplies, the shares of value and quantity are quite different.

Higher processing and marketing costs were the primary reason for increasing consumer expenditures over the past several decades. In 1989, the farm-value share of the retail cost of food sold in grocery stores was about 30 percent, down considerably from the 38-40 percent average during the 1960's and 1970's. The situation is even worse for food purchased for away-from-home consumption, with the farm value only accounting for 16 percent of the total in 1989 (Figure 1).

While per capita food consumption (total pounds of food consumed per person) changed very little from the 1960's through the 1980's, an increase of about 5 percent was registered over the last five years. Throughout the entire period, however, there have been significant changes occurring in the mix of the foods consumed. A trend consistent with increased concern with nutrition has been the steadily increasing importance of crop-derived foods as compared to foods from animals. Between 1967 and 1988, crop-derived foods increased 16 percent, while animal-based foods increased only 5 percent (on a per capita basis).

Consumption of foods in most crop categories has risen steadily in the last 20 years, especially vegetable fats and oils, flour and cereal products, fruits, fresh and frozen vegetables, frozen potatoes, and peanut and tree nuts. In contrast, concerning animal products, consumption was down for red meats, eggs, whole milk, and fats. These decreases were offset by increased consumption of poultry, fish and shellfish, lowfat fluid milk products, cream products, and cheese. Figures 2-4 illustrate some of these changes.

Total per capita consumption of vegetables (excluding potatoes) has been on the rise, reaching almost 200 pounds (farm-weight basis) in 1988 (Figure 5). This is a 14 percent increase from the level of consumption in 1970, and a 7 percent increase from the 1980 level.

Differentiating by the product form in which these products were consumed, per capita consumption of vegetables used for freezing has gradually increased since 1970 (up 35 percent to a total of 17.9 pounds) as the quanity used for canning declined (down 13 percent to a total of 83.1 pounds). Per capita consumption of fresh vegetables surged ahead of canned consumption in the mid-1980's, and in 1988 was 98.7 pounds (and up to 101.9 pounds in 1989).

Potato consumption deviates from the general shift towards fresh vegetable consumption (Figure 6). While total potato consumption trended upward slowly during the 1970's and 1980's (from 121.8 to 126.2 pounds per person, on a farm-weight basis), consumption of fresh potatoes decreased and processed potatoes increased. In 1970, 51 percent of potatoes were consumed in the fresh form, but by 1989, only 39 percent were consumed fresh. The growth in the processed form has been mainly due to the increased popularily of frozen products mainly in the fast food market with frozen consumption increasing almost 65 percent between 1970 and 1989 (from 28.1 to 46.1 pounds per person). Per capita consumption of chips/shoestrings was fairly stable over the time period (at 17.8 pounds in 1989) and consumption of other products (canned and dehydrated) decreased slightly (at 12.5 pounds in 1989).

Since the early 1970's, the variety of vegetables offered by retail stores has grown considerably. A 1986 study conducted by the Produce Marketing Association and the Food Marketing Institute found that the number of produce items carried by the average retail grocery store increased from about 65 in 1970 to over 200 in 1986. And this number has increased even more in recent years. Food service operators have also followed the trend of increased product diversity, and have added a number of specialty produce items to their menus. Hence, in future years changes in vegetable consumption are expected to continue with added competition due to increased product availability.

A recent National Restaurant Association/CREST (Consumer Reports on Eating Share Trends) survey conducted about the food service industry suggests that in 1989 potatoes were consumed at approximately one-third of all eater occasions (one meal eaten by one person) (Figure 7). Potatoes were the most-often-ordered side dish, followed by salads and soups. Potato orders differed in importance by restaurant type. Potatoes of all types and baked/stuffed potatoes were more likely to be ordered in upscale restaurants than other types of restaurants. French fries were most often ordered in quick service restaurants such as hamburger, fish/seafood, and barbecue restaurants. And mashed potatoes and other potatoes were most often ordered in midscale family restaurants.

The results of a 1988 CREST survey indicate that potatoes were consumed more often at dinner (48 percent of all potato orders) than at lunch (43 percent of all potato orders), with snacks and breakfast accounting for only a small percentage. There were differences by meal period in the type of potato ordered -- fries were ordered most often at lunch while potato skins, mashed potatoes, and baked/stuffed potatoes were ordered most often at dinner.

An interesting finding in the 1989 CREST survey was that 43 percent of the french fries ordered in restaurants were consumed outside of the restaurant -- 23 percent were eaten at home, 10 percent were eaten in the car, and the other 10 percent were eaten at work and other places.

A 1989 National Potato Board Survey found that although potatoes are still the most frequently ordered side dish, pasta and rice consumption has increased. This study also indicates that consumer attitudes towards potatoes have not changed, but attitudes toward rice and pasta have improved. The National Potato Board predicts that the recent democratization of Eastern Europe could stimulate interest in menu items in which potatoes are a main item such as goulash, borscht, and potato pancakes.

Reasons for Changing Food Consumption Patterns

Many factors external to the food industry are postulated as being responsible for changing food consumption patterns, and in particular for changing vegetable and potato demands. These influences include:

Traditional Economic Factors

Economists have traditionally considered prices and income as the most important determinants of demand. Research does indicate that own-prices negatively impact fresh, canned, and frozen vegetable demand, indicating that consumption decreases of a vegetable form if its price increases. Also, canned vegetables substitute for the frozen form (as price changes). In contrast, fresh potato prices are not so important in determining fresh potato consumption over time. The price of processed potatoes has an important negative impact on consumption of processed potatoes and a positive impact on consumption of fresh potatoes. Hence, while prices may not be so important in determining total vegetable consumption, they do affect the composition of consumption.

Despite a recent economic slowdown, per capita income has increased fairly steadily over recent years. Households at different income levels spend significantly different amounts on food each week (on a per person basis). the poorest 20 percent spent $15.03 per person per week on food, while the comparable figure for the richest 20 percent was $24.90. A study by the U.S. Department of Agriculture found that for an average household a 10 percent increase in income would increase expenditures on vegetables by 1.08 percent and decrease expenditures on potatoes by 0.04 percent. Looking at specific potato product forms, a 10 percent increase in income would decrease fresh, canned, and dehydrated potato consumption by 0.62, 1.24, and 0.51 percent, respectively, and increase frozen and chip, stick, and salad potato consumption by 1.35 and 1.70 percent, respectively. This researcher also found that income had a negative impact on fresh potato intake at home, and a positive impact on potato chip consumption at home and fried potato consumption away from home. These results support the speculation that income affects vegetable and potato consumption, but that the effect differs among products.

Household Characteristics and Demographics

The effects of household characteristics and demographic trends on food expenditure and consumption patterns are becoming increasingly important as these factors themselves have changed rather dramatically in recent years. For one, household size has decreased from 3.14 people in 1970 to 2.63 people in 1990. Larger households spend less per week per person on food than do smaller households, as they can purchase in bulk and often purchase a different mix of food than smaller households. Larger households are more likely to buy bagged potatoes and may be sensitive to advertised prices.

There has also been a shift in the composition of the U.S. household away from the traditional family household of mother-father-kids to other household structures including those of single parents, married couples with no children, and "blended households" or step families. American Demographics estimates that by the year 2000 nontraditional households will account for slightly under half of all households. These nontraditional households may be more likely to eat away-from-home or demand greater convenience (processing) in the foods that they purchase for at-home use. The aging of the population is expected to increase household vegetable expenditures, with expenditures on fresh products increasing more than on processed products.

Where a household resides-geographic location and urbanization of area--typically influences the household's food consumption patterns. This author found that regionality affected the type of potato product eaten away from home. For example, households in the north region consumed more fries away from home but fewer frozen potatoes (mainly fries) at home relative to Northeasterners.

Changes in the racial and ethnic mix of the population have also influenced U.S. food use patterns over the last several decades. American Demographics estimates that by the year 2000 one out of every four people in the U.S. will be a racial or ethnic minority, compared to one out of ten in 1960. Non-Black households tend to spend more on vegetables and potatoes for use at home. In the away-from-home market, preference differences by race appear to be even stronger with black households less likely to consume potatoes than similar non-Black households. The increasing concentration of Asians, with traditionally strong preferences for rice, in some metropolitan areas of the country may dampen the demand for potato products.

The steady growth in the number of married, female wage earners and dual-earner households has increased the demand for the service component of food expenditures, increasing the demand for both fast food away from home and convenience in foods prepared at home. This author found that households with higher values of time purchased fewer fresh potatoes for at-home consumption and more of total potatoes away from home.

Health and Nutrition-Related Factors and Food Safety Issues

Some of the more significant trends in food consumption have stemmed from the improved information about the links between diet and health. The new U.S. Dietary Guidelines, issued by the Departments of Health and Human Services and Agriculture in late 1990, are a step in the right direction in providing consumers with information specific enough to be useful in making consumption decisions. In particular, for the first time specific limits are set on the amount of fat that Americans should eat (30 percent or less of total calories from fat, with less than 10 percent from saturated fat high in cholesterol) and the amount of alcohol they should consume. Recommendations were also made on the number of servings that should be eaten daily from major food groups:

1. 3-5 servings of vegetables
2. 2-4 servings of fruits
3. 6-11 servings of pastas, cereals, and breads
4. 2-3 servings of milk
5. 2-3 servings of meat, poultry, fish, and eggs

Survey results support the hypothesis that consumers are concerned about their health and the role of food consumption in attaining and maintaining good health. The empirical evidence on whether consumers are actually taking the next step and changing their consumption patterns is mixed. Perhaps the new guidelines will assist consumers in more effectively translating their personal goals (with respect to health-related concerns) into dietary behavior.

An issue under growing scrutiny of the media and of increasing importance to consumers is that of food safety, particularly fresh produce safety. This issue is likely very confusing to consumers as they are being told, on one hand, to eat more fresh fruits and vegetables, and on the other hand, that there are safety concerns with eating fresh produce. Consumers are in dire need of facts.

Each year the produce industry (The Packer) conducts a random survey of U.S. households. The most recent survey conducted in late 1989, Fresh Trends '90 -- A Profile of Fresh Produce Consumers, devoted extra attention to produce safety issues. Some of the relevant findings are shown in Figure 8 and detailed in the following paragraphs.

Signs point to more anxiety and hesitancy but survey results do not suggest that consumers are turning their back on fresh produce. Almost half of the respondents indicated that they were more concerned than they were 12 months earlier with issues of residues on food, food tampering, and chemical additives on foods. These results are not surprising in light of the recent media attention given to the Alar scare, the Chilean grape incident, and food safety issues in general. Specifically with respect to residues on food, 60 percent were concerned but had not altered their produce purchasing.

Interestingly, consumers in lower income brackets appeared more concerned than those in higher brackets--35 percent of households with incomes less than $10,000 altered their purchases and 23 percent of households with incomes greater than $30,000 altered their purchases.

Eleven percent of the 1990 Fresh Trends respondents made a point of seeking and buying organics, up from 8 percent in the previous year. A recent study of consumers in California identified price and lack of availability as two major obstacles to buying organically grown produce. Many of these California consumers further felt that organics were no better than nonorganics. As an illustration of premiums received for organic products, on September 22, 1990, organic potatoes in the Los Angeles terminal market were priced at a premium of 36 to 112 percent, depending upon the variety and size count. In the 1990 Fresh Trends Survey, 54 percent of the sample felt "the potential health benefits of eating fresh fruits and vegetables outweigh the potential risks from pesticide residues." Hence, it is not surprising that 31 percent said they were eating more vegetables than in the previous year.

Reasons that were given for increased consumption (and the percent of the sample indicating the reason) are:

--good value (55%)
--increased salad consumption (54%)
--concern with calories (53%)
--adding more vegetables to salads (51%
--eating less canned/frozen (50%)
--eating more vegetables for snacks (41%)
--better quality fresh vegetables available (40%)
--more kinds available (40%)
--preparing new items in microwave (36%)
--found new vegetables (25%)
--greater availability of packaged vegetables (13%)
--purchasing more organically grown vegetables (10%)

To summarize the Fresh Trends '90 findings, when consumers shop for produce they are looking for fresh, good tasting, attractive, nutritious, and value-priced fruits and vegetables. There is not a lot of interest in brand names, prepackaged items, those grown organically, or items from particular growing regions or countries. There is a desire for information concerning type or variety and nutritional content. Add safe to the list as an important characteristic and according to the Fresh Trends Survey, "this provides a good picture of what the produce consumer of today looks like and looks for."

Conclusions and Implications

Major changes have occurred in food consumption patterns in the United States during the past several decades. Consumption of vegetables and potatoes has increased over this time period. For vegetables as a group there has been a tendency towards consumption of fresh and frozen products, and away from consumption of canned products.

Potato consumption deviates from the general trend towards increased popularity of the fresh product, with gains in total potato consumption as a result of large increases in consumption of frozen products. The variety of vegetable items (fresh and processed) available in food stores and in food service outlets has increased and will likely continue to increase. Hence, the potato industry will likely face an increasingly competitive environment in their pursuit for the consumer's food dollar.

Empirical research supports the hypothesis that vegetable and potato consumption patterns have been influenced by changes in society that are external to the produce industry. For example, rising per capita income, declining household size and changing household composition, increasing concentration of racial and ethnic minorities, and the growing number of married female wage earners and dual-earner households have had a depressing effect on fresh potato consumption at home, but have stimulated consumption of processed potato products. An implication for the potato industry is that demographic changes are important factors in developing long-term marketing strategies. And over a shorter period of time, differences in consumption by demographic groups in the population indicates the need to target segments of the population with different types of products-existing products as well as new products (including new varieties of potatoes).

Knowledge about consumer attitudes toward health and nutrition and food safety issues provides the potato industry with information about the expected change in the demand for potatoes and potato products, but the current available information does not provide detailed guidance on the magnitude of the change. There is a need to further research the link between attitudes, health, and dietary concerns to farm-level demand for potatoes. Such information would be useful in developing and implementing effective production and marketing strategies. It is critical that the industry be attuned to media and consumer concerns about pesticide residues on the products that they purchase and their demand for "organic" produce, and make appropriate adjustments.

Lastly, consumer food purchase decisions are the end results of a complicated set of economic, sociological, psychological, anthropological, and physiological factors. As these factors have an interactive impact on consumers' decisions, the potato industry needs to consider all factors simultaneously in developing their production and marketing plans. For example, households with two wage earners or headed by single wage earners are a growing segment of the population. These households face tight time constraints and hence demand convenience in the foods that they purchase for use at home and for consumption away from home. Many of these households are also interested in health and nutrition, and consequently are attempting to control the fat in their diet. The potato industry would likely benefit by developing convenient, but fat-controlled potato products and targeting them towards this group of consumers. The recent efforts of the industry in developing microwave french fries is a step in the right direction. Work should continue to improve the palatability and reduce the fat content of this and similar products.

Figure 1. Away-from-home Share of Food Quantity and Spending

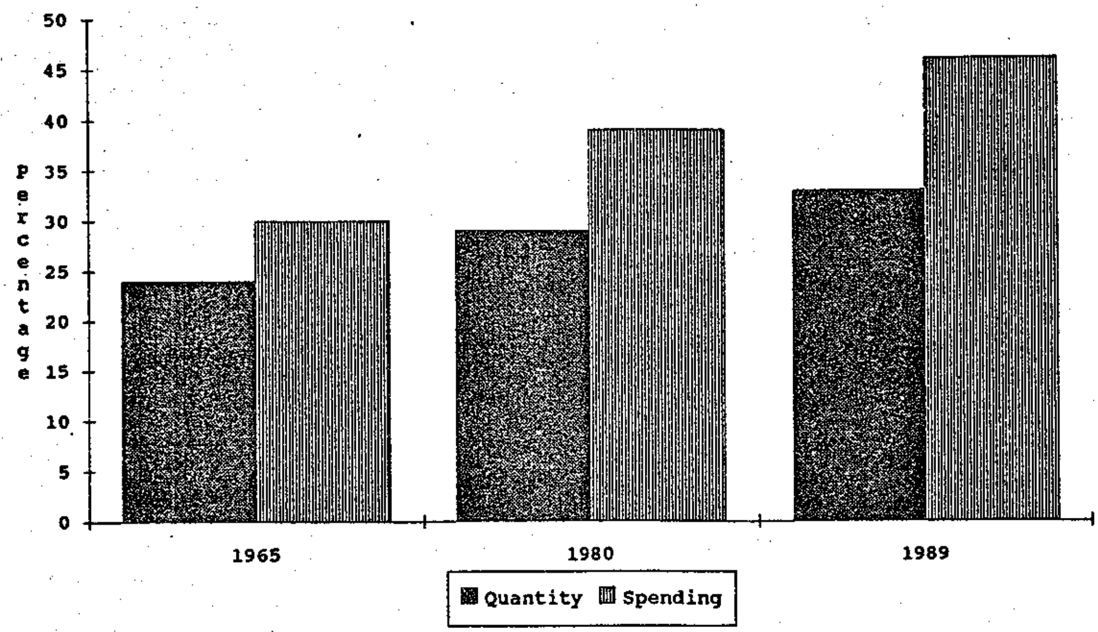


Figure 2. Percentage Breakdown of Meat Consumption

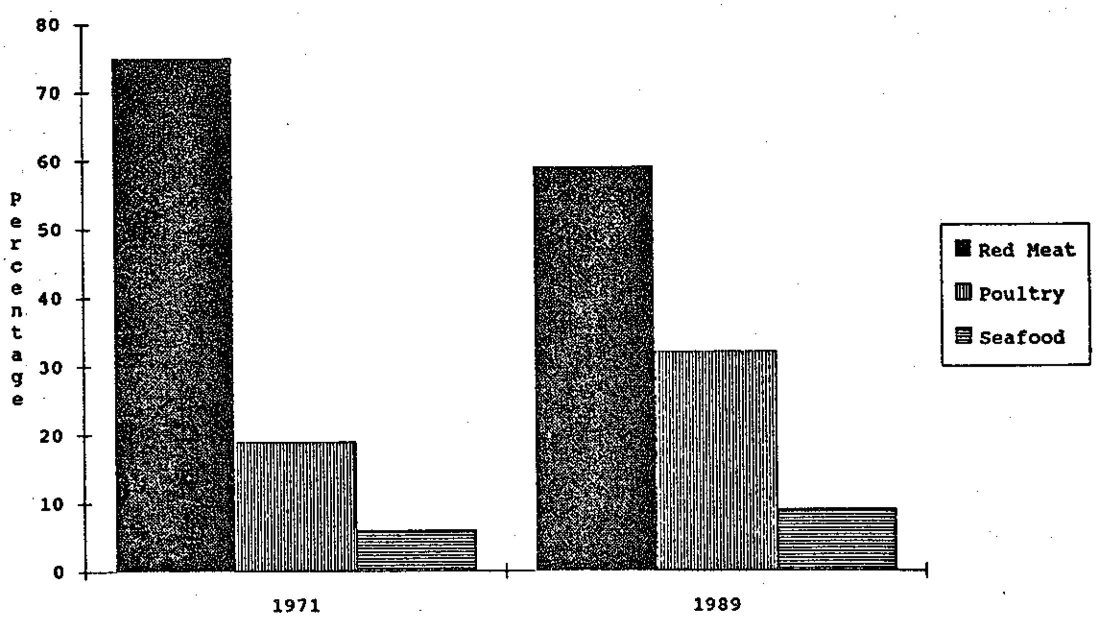


Figure 3. Percentage Breakdown of Milk Consumption

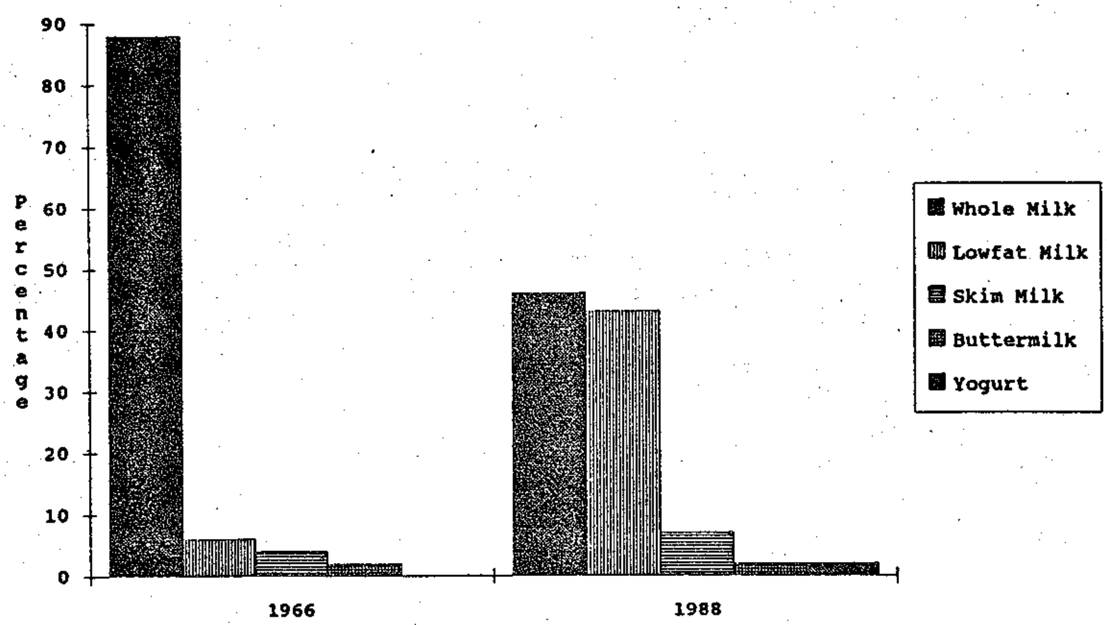


Figure 4. Consumption of Rice and Pasta (Doubled between 1966 and 1988)

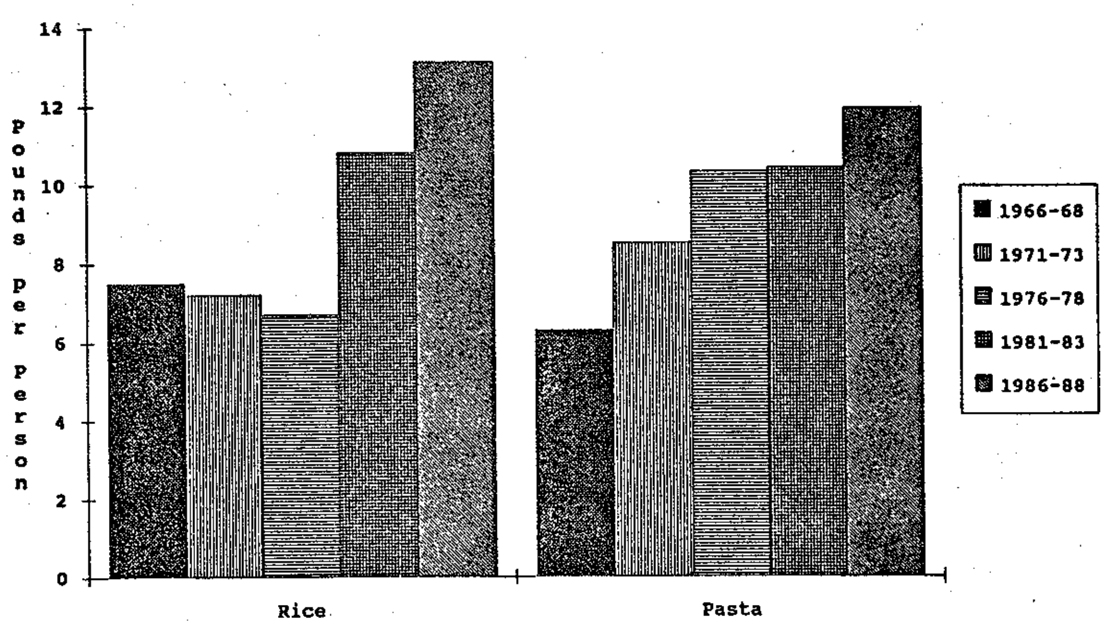


Figure 5. Per Capita Consumption of Vegetables (Excluding Potatoes)

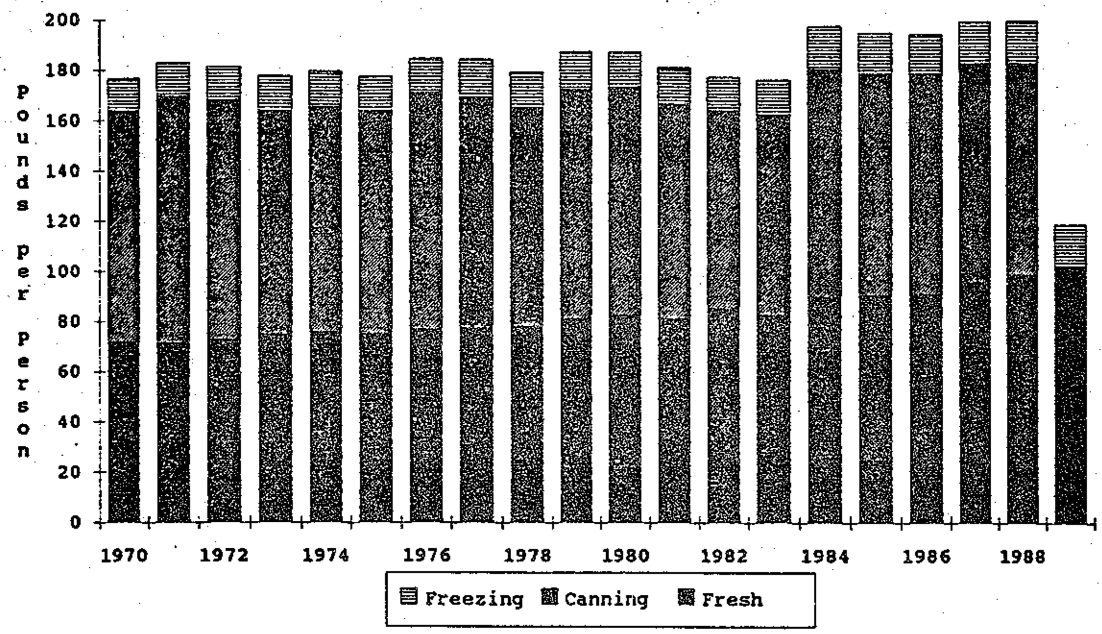


Figure 6. Per Capita Consumption of Potatoes

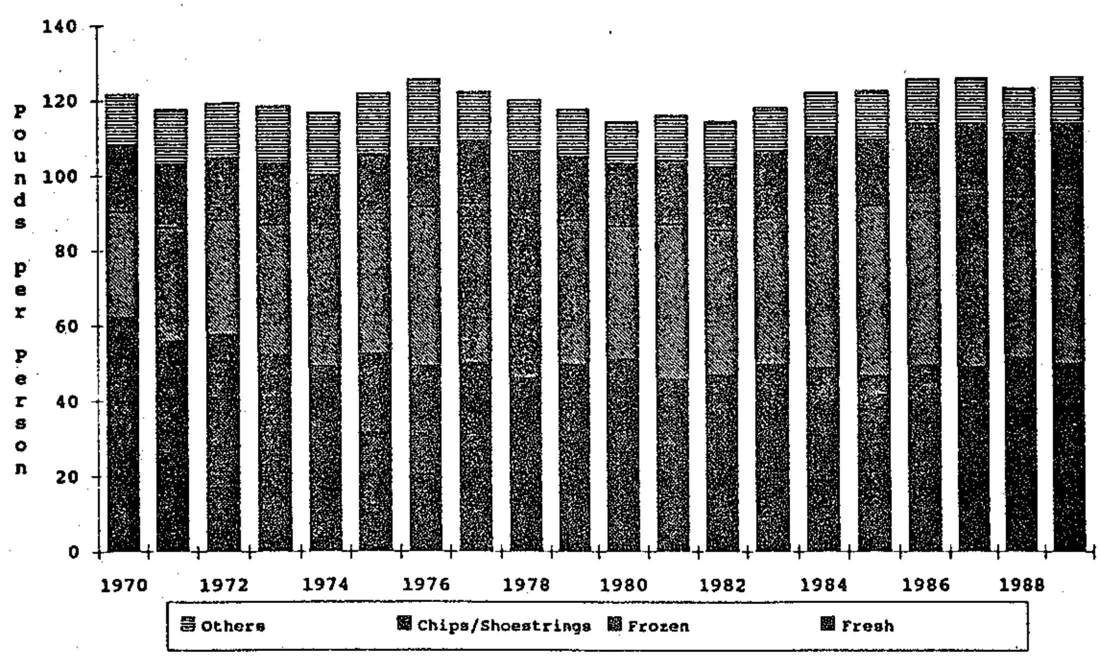
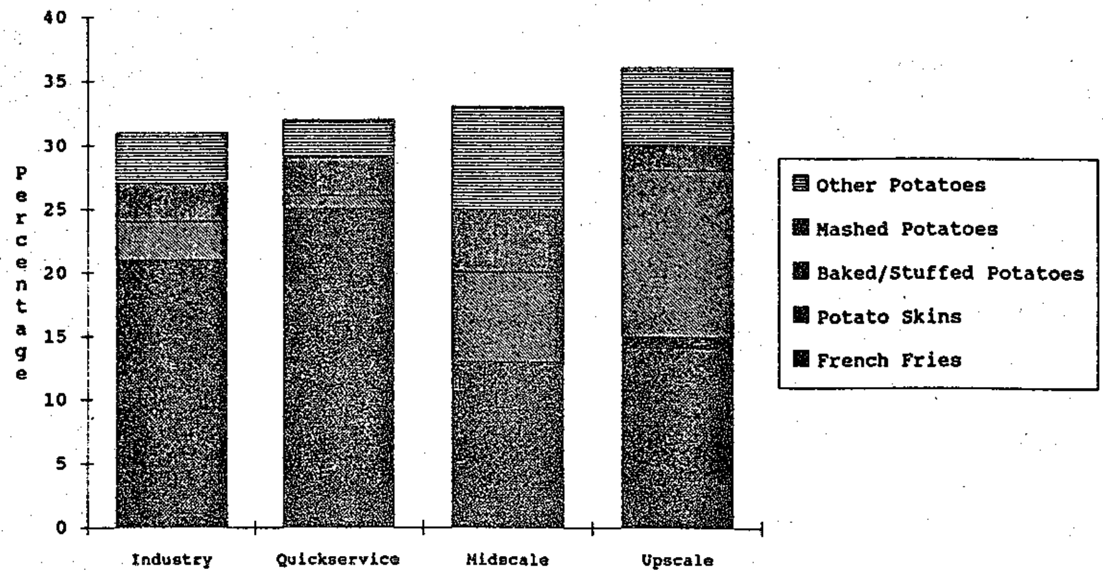


Figure 7. Percent of Eater Occasions on Which Item Was Ordered by Restaurant Type



Source: National Restaurant Association, 1989 CREST Survey.

Figure 8. Food Safety Issues Concerns (This Year Compared to a Year Earlier)