

A SURVEY OF THE FOODSERVICE INDUSTRY

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Food is distributed both for at-home and for away-from-home consumption. Expenditures for food consumed at home rose from \$49.6 billion in 1957 to \$142.3 billion in 1977, or an increase of 187 percent.¹ During the same 20 years, away-from-home expenditures have gone from \$17.1 billion to \$76.8 billion, or an increase of 350 percent. To put it another way, the away-from-home portion of total food expenditures rose from 25 percent to 35 percent in the last 20 years. Yet, despite this apparent rapid growth rate and high level of absolute sales, surprisingly little information beyond gross sales and consumer expenditures is available on this very heterogeneous subsector of food distribution which we refer to as the food service industry.

We do know that the food service industry is a major market for food produced on the Nation's farms. It is a substantial market for food service equipment, supplies and services and is a major employer of labor. It is an industry consisting of food service in establishments such as restaurants, cafeterias, and fast food outlets, as well as food service in hotels, drug stores, vending machines, ice cream trucks, motion picture theaters, bowling alleys, sports stadiums, camps, amusement parks, country clubs, schools and colleges, military exchanges and clubs, railroad dining cars, airlines, manufacturing plants, hospitals, nursing homes, fraternities, sororities, correctional institutions and military services. Because this industry is not only large,

but very diverse, surveys of the entire away-from-home market are very costly, time consuming and virtually nonexistent.

Most data available on the industry are fragmented. For example, the Bureau of the Census obtains data for only one, although major component of this market--separate eating places. But by not including other types of outlets, it misses a substantial share of the market. Further, the data obtained by Census does not provide the detail required for varied analytical purposes. The only comprehensive study of the structure of the market, the amounts and type of food received, and the kinds of equipment used by the food service industry was conducted by the U.S. Department of Agriculture with the support of this industry in 1966-69.^{2,3}

The changes in the food service market since the 1966-69 study appear to be many and significant. Besides the absolute and the relative growth in the away-from-home food market, there also have been major shifts in the structure and organization of the industry, e.g., the rapid growth of fast foods; the relative increase in chain establishments; and the trend toward franchising. The growth of the market and changes in structure and organization likely have had varying impacts on the demand for many farm commodities. Some commodities are more likely to have a greater demand in the food service market or in certain parts of the market than they have in the retail market or vice versa.

Further, a growing food service market brings into focus issues relating to increased concentration and control of commodity purchasing decisions and questions concerning sources of supply. Although the food service industry has been and continues to be characterized by single unit firms, large, multiunit firms appear to be gaining more than proportionate shares of this market, to have the potential to exercise substantial purchasing and marketing power and to be a highly influential force in the market for specific commodities. Consider the potential economic implications of the procurement practices of certain very large food service firms for poultry, potatoes, bakery products and ground beef. As the number of multiunit firms grow, opportunities will increase for integrated production and marketing networks which will ultimately affect producers and the distribution system itself. In addition to situations created by potential shifts in commodity demand, food and nutritional policy issues also are evident. For example, the mix of food consumed away from home, particularly in fast food establishments, is likely to include bread, potatoes, soft drinks and shakes, which if constituting a major part of one's diet, are subject to nutritional questioning because of their high caloric value and/or lack of balanced nutrition.

Increased eating out also has implications for consumers' food expenditures because the structure of retail margins and costs are significantly higher in public eating places than food stores. And if eating out continues to grow, increases, rather than decreases would be expected in consumer food expenditures when they are shown as a percentage of disposable personal income. Thus, the food marketing bill will likely increase as a larger share of total food consumption takes place away-from-home

As the away-from-home market expands, food distribution will likely require more labor. However, the shifts within the market may not only cause changes in numbers but also in types of labor employed in food service. Also the growth and shifts in the food service market will have a significant impact on the amount of patterns of energy use.

Thus, it can be seen that current research in this area has many potential applications. Farmers could use the better intelligence as a basis for responding to the food service industry's needs, understanding the effect changes in this industry will have on their competitive position; and guiding their action in securing and maintaining an equitable position in the marketplace. Food processors and distributors could also make use of more current information to guide them in responding to the changing demands of this market. And, nutritionists would have a way to more accurately evaluate any nutritional impacts on the public. Moreover, policy makers would find information on the implications of the growth and changes in this market useful in such areas as farm policy, food costs, food quality and safety and level of competition. This kind of intelligence is highly dependent on access to primary data sources in the food service industry or specifically food service firms and establishments.

Since the 1966-69 study, public funds have not been available to cover the substantial cost involved in updating and providing current and comprehensive information on this market. However, because of the Agency's interest, requests by industry for research in this area and their expressed interest in direct participation and support, various alternatives for pursuing this work were explored with primary emphasis in the

design of a feasible sample. Although USDA still was unable to furnish funds for such massive data collection, the food service industry decided this year to proceed with the survey provided the Department made the sample it was working on available.

The Department agreed to make the sample available to industry for them to conduct a survey and to provide technical consultation to the industry as requested. The industry, spearheaded by IFMA (International Food Service Manufacturers Association), proceeded to raise the funds and award a contract to a private research firm to conduct the survey. The survey is now in progress. It will provide information on: dimensions and growth of the market for food consumed away from home; changes and trends in structure and organization of establishments comprising this market; and the economic implications and impacts of these changes on producers, processors, suppliers and consumers. More specifically, details will be obtained on: use of individual foods and/or commodities in terms of quantity and product form (fresh, frozen, dried, canned) and use of prepared foods and new food forms; costs and dollar sales; kind of business, size of operation, primary type of food service, kinds of equipment used and selected data on the economic and physical characteristics of these food service outlets. A basic consideration in planning new research in this area was that to the maximum extent possible it be comparable to prior research or specifically the 1966-69 survey.

Although the data will not be available for over a year from now, a more detailed explanation of the sample design, the survey procedures and questionnaire may be useful to those who are interested in the data for various purposes.

Because of the complexity of the industry and the high cost of conducting a survey or surveys that would provide

reasonable coverage, considerable attention was given to developing and appraising research methodologies and procedures that would be effective at lowest cost. The 1966-69 study used an area probability scheme for sampling the industry. This required enumerators to find all food service facilities within selected census half-tracts of large cities and within census enumeration districts in other areas. The sample was self-weighting and representative of the contiguous United States. A major drawback of the procedure was the expense of enumerating the areas.

One alternative considered was the development of a list from secondary sources of all facilities that provide food service. In pilot tests for two relatively small geographic areas such lists were collated from lists of food service clients of several major food and beverage supply firms, lists of subscribers to several food service oriented publications, lists of the local members of the National Restaurant Association, and addresses from telephone yellow pages. This was followed by complete enumeration to check the completeness of the collated lists. These tests showed that approximately 50 percent of the establishments that provide food service were not on the combined lists and that such lists were not adequate.

However, the tests and further explorations did uncover another list possibility: the health or regulating departments of governments that issue licenses or permits or carry out sanitation inspections for establishments to operate food service facilities. Although it was found that the location of responsibility for licensing and inspection of food service outlets varies from State, county and local levels by areas, it was determined that it would be feasible to develop complete lists of food service facilities within most counties of the U.S. from records maintained by

these government entities. With this knowledge, a sampling procedure was developed that would eliminate the time and cost of walking the streets of a census tract looking for likely food service facilities.

The final design used for generating a sample for a national survey of the industry was a two stage procedure. The first stage was selection of counties to represent the contiguous United States with the second stage being selection of names and addresses of establishments within the representative counties. With the U.S. counties stratified into four major census regions and within these, six urbanization zones, 200 counties were selected with probability proportional to the 1970 census of population. The urbanization zones which were used for the stratification of the sample are unique enough that they deserve further discussion. The six urbanization zones are defined as:

1. Core Counties of Large Metropolitan Areas--Counties that contain the primary central city of SMSA's having a population of at least 1 million (examples: Cook County, Illinois, the five counties of New York City, St. Louis City and County).

2. Fringe Counties of Large Metropolitan Areas--Counties that do not contain the central city of SMSA's having a population of at least 1 million (examples: Montgomery County, Maryland, and Fairfax County, Virginia of the Washington, D.C. Metro area or Bucks County, Pennsylvania, of the Philadelphia metro area).

3. Counties of Medium Metropolitan Areas--Counties of SMSA's having a population of 250,000 to 999,999 (examples: Phoenix, Oklahoma City, Madison, Birmingham, and Salt Lake City).

4. Counties of Small Metropolitan Areas--Counties of SMSA's having a

population of less than 250,000 (examples: Portland, Maine, Eugene, Oregon, and Hamilton-Middletown, Ohio).

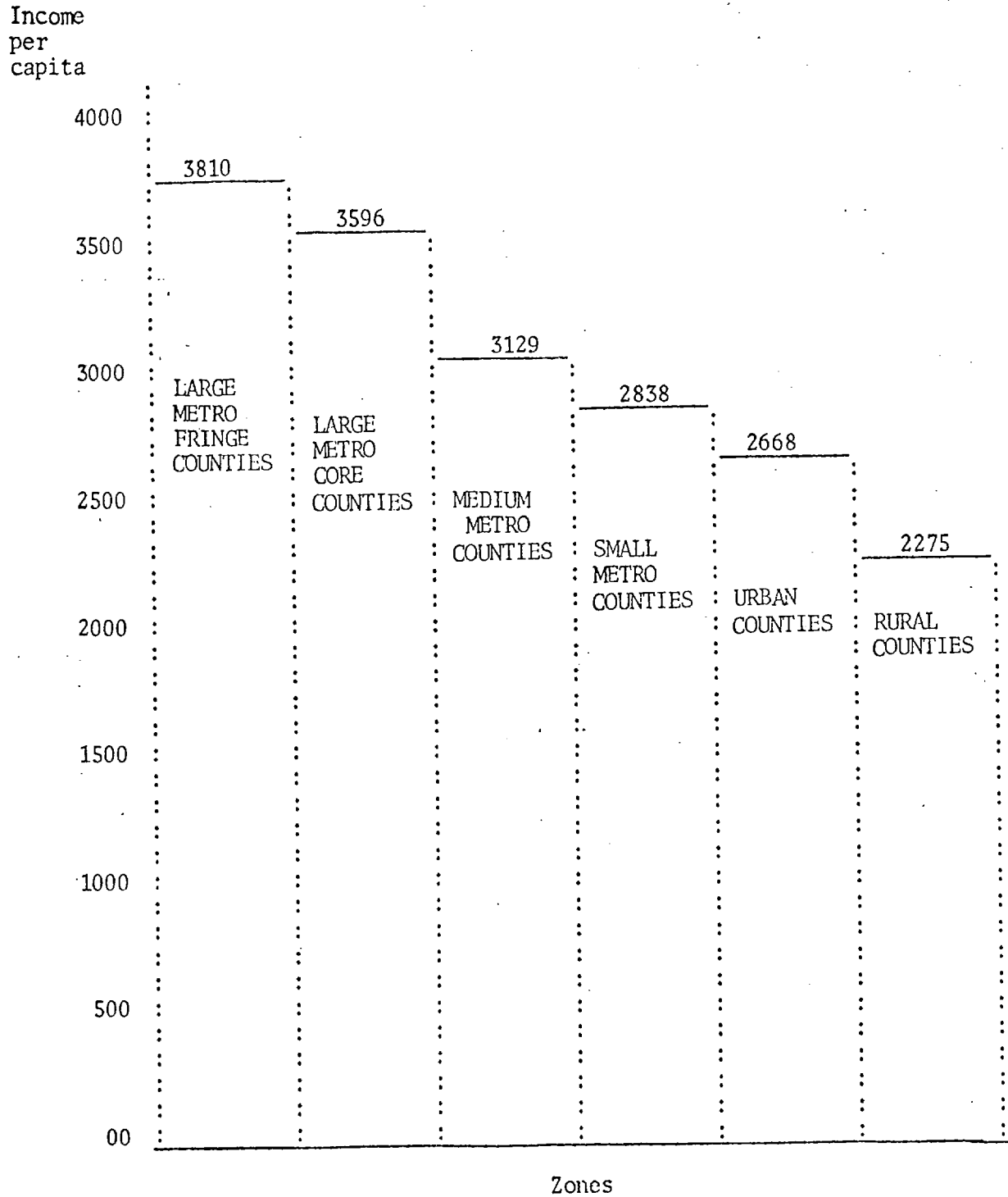
5. Counties of Nonmetropolitan Urbanized Areas--Non-SMSA counties having aggregate urban populations of at least 20,000 (Examples: Sandusky County, Ohio, Augusta County, Virginia and La Salle County, Illinois).

6. Counties of Nonmetropolitan Rural and Less Urbanized Areas--Non-SMSA counties having urban populations of less than 20,000.

Many social and economic variables that may be related to the amount and pattern of the expenditures for food away-from-home are represented in and unique to these urbanization zones.⁴ For example, the average amount of per capita income is much higher in the counties of the large metropolitan areas than in the counties of small metropolitan areas (see Exhibit 1) and since higher per capita income usually corresponds with higher per capital expenditures for meals and snacks eaten away-from-home it might be expected that this might be reflected in sales variation among different zones.

Having made the two hundred county selections the second stage was to select samples of all establishments that provide food service from lists of names and addresses that were compiled from State, county and local government departments and from master listings of hospitals, nursing homes, and higher educational institutions obtained from HEW. For each county unit selected, primary, secondary and tertiary samples were drawn, each containing a hospital, a college or university, and 14 other establishments representing various kinds of businesses that provided food service. Hospitals were randomly selected with probability proportional to the number of in-patients in a county and institutions of higher learning, with probability

Exhibit 1. Income per capita by zones



proportional to student enrollment. The 14 other establishments were selected with equal probabilities within the county unit. The fourteen "other" establishments included separate eating and drinking places as well as inplant feeding, hotels, drug stores, department stores, amusement places, nursing homes, airports, etc., but did not include elementary and secondary schools, military feeding, correctional institutions, grocery stores and several miscellaneous kinds of business that are generally of minor importance to food service. The secondary and tertiary samples were drawn independently to accommodate potential refusals, out-of-business operations, and closures, yet enable the completion of approximately 3,200 interviews. Thus, a total of 16 establishments, plus "back-ups" were chosen, when available, for each of 200 selections.

This large sample will provide reliable information for U.S. totals⁵ as well as for regions and zones. The size and nature of the sample is similar to that used in the 1966-69 study so that inferences may be drawn between the two study periods.

To avoid distortion due to seasonal factors on food usage, industry has scheduled the survey interviews over a 12-month period. This will be accomplished by surveying approximately one-twelfth of the 200 county units during the middle two weeks of each month. For each of the 16 establishments in each county unit the survey will consist of a screening type personal interview, with a leave behind purchase diary, and a final personal interview at which time the diary is picked up. The preliminary screening interview will obtain information on the kind of business, type of food service offered, the menu specialty, the general products purchased and the willingness to continue in the survey. The purchase diary is designed for the respondent to record the quantity, size

and type of container and storability nature of every item purchased during a one-week period. The final personal interview will review the diary and obtain information on vending machine sales, amounts and types of equipment, tableware and supplies used, types of energy used, costs of energy, food and labor, and the annual gross sales.

In addition to the request for a completed sample design and technical advice in developing survey instruments and plans, the industry asked the Department to publish and provide analyses of the survey data. The USDA has agreed in principle to this request although specifics are yet to be developed and agreed upon.

At this point, it is not known exactly what information will be made available to the USDA for analysis and publication. Some data will likely be reserved, at least for a limited time period, for proprietary use by sponsors who participated in financing the study. However, we expect to have access to information similar to that which was published for the 1966-69 study, although perhaps not in quite as great a detail. This information will include the type and quantity of food used by kind and size of business within the six urbanization zones and four geographic regions. It will also include information on the general structure and performance of the industry, such as numbers of each kind of business, numbers of employees, food costs, energy costs, etc.

By using the 1966-69 study as a base, the data should be of value in analyzing shifts in demand for individual commodities and shifts in total food usage, in studying the structure of the food service industry and in assessing the impacts of the structural changes on supply channels, labor, nutrition, economic performance, and in other uses that you will probably identify. Data collection is

scheduled to be completed in late 1979. If this schedule is met, a USDA report containing the principal data and findings should be available by mid-summer of 1980.

Footnotes

- ¹Manchester, Alden C., "Total Food Expenditures--A New Series," National Food Review, April 1978, p. 17.
- ²Van Dress, Michael G. and William H. Freund. The Food Service Industry: Its Structure and Characteristics, 1966, Statistical Bulletin No. 416, ERS, USDA, February 1968.
- ³Van Dress, Michael G. The Foodservice Industry: Type, Quantity and Value of Foods Used, Statistical Bulletin No. 476, ERS, USDA, November 1971.
- ⁴Hines, Fred K., David L. Brown and John M. Zimmer, Social and Economic Characteristics of the Population in Metro and Nonmetro Counties, 1970, AER No. 272, ERS, USDA, March 1975.
- ⁵See Appendix for projection and variance formulas for U.S. totals.

Appendix

The following formulas would be used to estimate a U.S. Total from responses to a specific item on questionnaires:

$$\text{U.S. Totals: } T = \sum_{i=1}^{24} T_i$$

Variance of U.S. Total:

$$\text{Var} (T) = \sum_{i=1}^{24} \text{Var}(T_i)$$

with $T_i = \sum_{j=1}^{n_i} \frac{T_{ij}}{n_i}$

$$T_{ij} = A_{ij} \cdot B_{ij} \cdot \sum_{k=1}^{m_j} X_{ijk}$$

$$\text{Var} (T_i) = \sum_{j=1}^{n_i} \frac{(T_{ij} - T_i)^2}{n_i(n_i-1)}$$

where:

- i = or "cell" urbanization zone within a region.
- j = county unit selected within a cell
- k = establishment in a county
- n_i = number of county units selected in cell i

$$A_{ij} = \frac{\text{population in cell } i}{\text{population in county } j}$$

$$B_{ij} = \frac{\text{Total no. of estab. in county } j}{\text{No. of estab. sampled in county } j \text{ (includes ineligible establishments)}}$$

m_j = no. of estab. with completed questionnaire information in county j

X_{ijk} = response to particular question on questionnaire

Note: no. of estab. in B_{ij} and m_j would be replaced by the number of inpatient days for projections of hospitals; and by number of students enrolled for projections of colleges and universities.