

# Food Industry Costs, Profits, and Productivity

Many factors influence how much the food industry charges for its services. Food industry input costs, profits, and productivity largely determine the price of food products when they reach the consumer.

## How Food Spending Was Distributed

Food spending for domestically produced food represents the retail market value of food purchased by or for civilian consumers. Both the quantities of food bought and the prices paid affect spending levels. The expenditures reported in this section include spending at grocery stores, restaurants, and institutions. These estimates are smaller than the amount consumers spent for all food because expenditures for imported food and fishery products are excluded. In this section, food expenditures are broken into two components (see box on page 15 for more information):

- The farm value is a measure of the payments farmers received for the raw commodities equivalent to food purchased by consumers at food stores and eating places.
- The marketing bill is the difference in dollars between the farm value and consumer expenditures for food produced on U.S. farms.

Changes in last year's bill can be evaluated by breaking down the bill into costs of principal inputs, such as labor and packaging.

Most of these estimates are based on secondary data, and are not direct measures of consumer expenditures or actual marketing costs. The limited accuracy of the data reported in this section makes them general indicators, and not precise measures, of levels and yearly changes.

## Food Expenditures

Consumers spent \$561 billion for food originating on U.S. farms in 1997 (fig. 3 and table 15). About 60 percent of consumers' food expenditures was spent at retail grocery stores on food for use at home. The

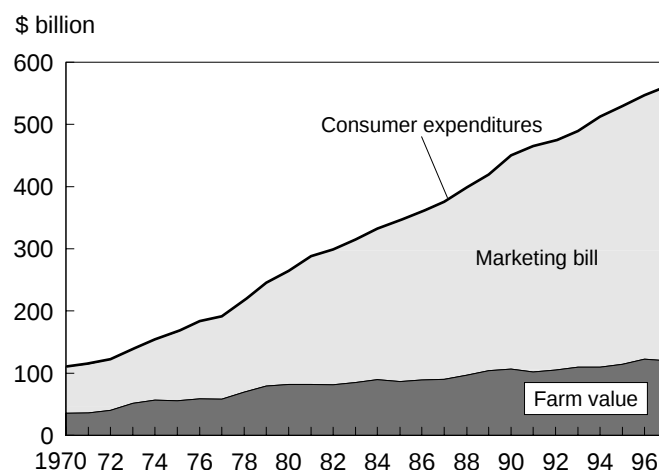
remaining 40 percent represented the retail value of food served in public eating places, hospitals, schools, and other institutions. Market shares have held steady in recent years.

Consumer expenditures for domestic farm foods in 1997 rose about 2.6 percent, a slower pace than in 1996. This slower pace reflects an environment in which the slow rate of inflation has made it difficult for grocery stores to raise prices. Moreover, fierce competition among restaurants has restrained price increases in the foodservice sector. However, spending for food purchased away from home grew more than food purchased at grocery stores, consistent with the general trend. Sales data reported by the U.S. Census Bureau suggest that consumer purchases were relatively flat at both grocery stores and restaurants. Sales at restaurants rose 3.2 percent in 1997 current dollars, but when adjusted for inflation, they were 0.4 percent higher than those in 1996. A similar story holds for grocery stores, where food spending increased 2.0 percent in current dollars, but just 0.3 percent in real dollars. Therefore, consumers purchased only marginally greater quantities of food in 1997 than in 1996.

Figure 3

### Distribution of food expenditures

*The marketing bill was 79 percent of 1997 food expenditures.*



Data for foods of U.S. farm origin purchased by or for consumers for consumption both at home and away from home.

## Farm Value

The farm value of food commodities originating on U.S. farms was about \$120 billion in 1997, a \$2-billion decrease from 1996. The farm value share of food commodities dropped 1 percent in 1997, and represented 21 percent of consumer expenditures. The lower farm value reflected lower farm prices of wheat, eggs, pork, and poultry. The largest share of the money farmers received for domestic food sales was for meat products. In 1997, the farm value of meat was about 28 percent of the total value of farm food. The next largest share, 19 percent, was for dairy products. Livestock and dairy farmers garnered about half of the total farm value, but they bought substantial amounts of grain from crop farmers. Fruits and vegetables were the third largest category, accounting for 18 percent of the 1997 farm value.

The farm value is a much smaller part of expenditures for food eaten away from home than for food bought at stores, because the cost of preparing and serving food is a major part of the cost of food eaten away from home.

## Marketing Bill

The marketing bill, the difference between what consumers spent for food and the farm value of the food, amounted to \$441 billion in 1976, \$16.6 billion more than in 1996. Of last year's increase in the marketing bill, consumers paid about \$14.4 billion in higher expenditures, and producers received \$2.2 billion less for food commodities.

The marketing bill rose 3.9 percent in 1997, considerably more than 1996's 2.1-percent rise. This increase was the result of a 1.8-percent drop in the farm value, coupled with a modest 2.6-percent increase in consumer food expenditures. These developments contrasted with the situation in 1995 and 1996, when the marketing bill rose at a slower (percentage) pace than the farm value. Higher labor costs accounted for nearly 70 percent of the 1997 increase in the marketing bill, while most other marketing inputs rose at a slower pace than the marketing bill.

Marketing costs contributed less than usual to food expenditure increases in 1996. In 1997, these costs resumed their normal long-term pattern as the most persistent source of rising food expenditures. Consumer expenditures for farm foods have increased \$186 billion since 1987, about \$156 billion of which was marketing charges. Farm value has increased only \$30 billion since 1987.

## What the Marketing Bill Bought

The food processing and marketing industry is an important part of the American economy. The \$441 billion the industry received from consumers in 1997 paid the wages and salaries of 13.7 million employees (10.6 percent of total civilian nonagricultural employment) and paid for all the other costs of doing business.

The marketing bill pays for all of the major functions performed by the food industry—processing, wholesaling, transporting, and retailing. Last year's marketing bill increase can be analyzed by looking at the specific cost items that the food industry incurred to perform these functions.

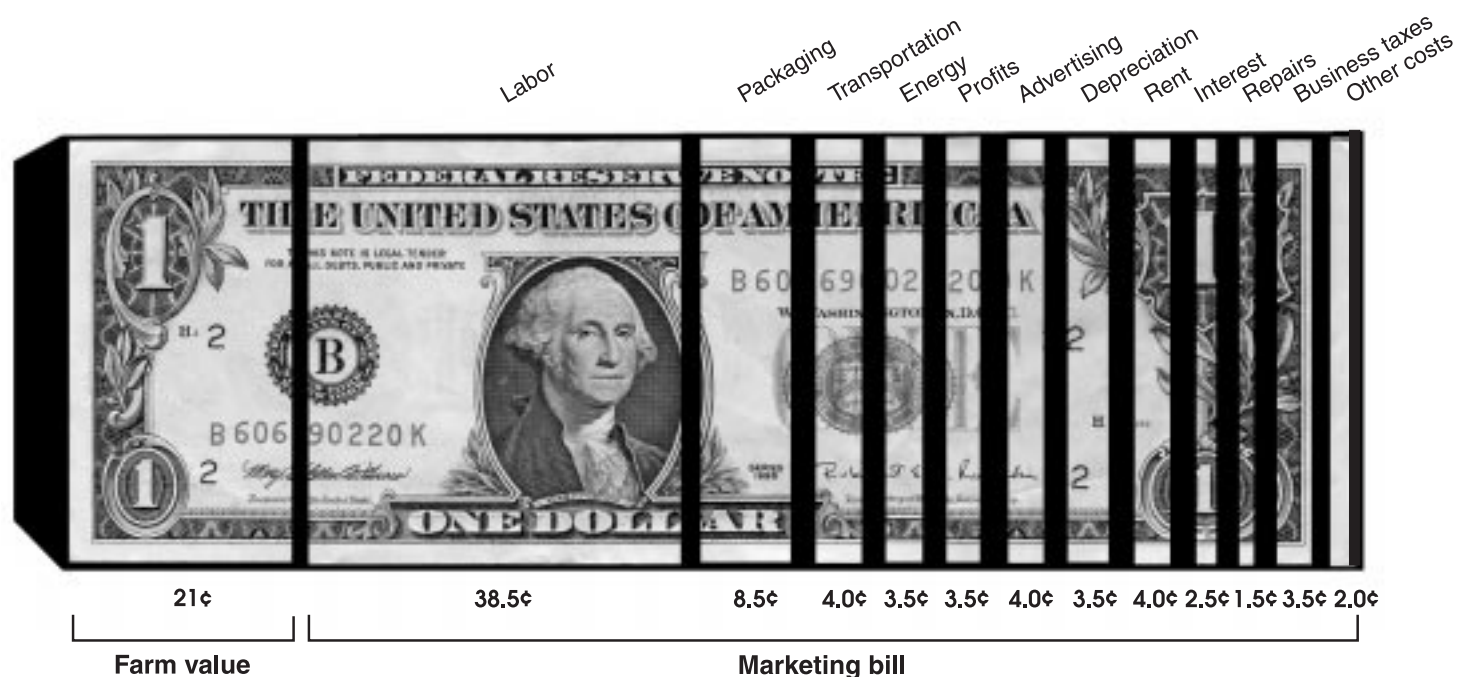
### Labor Costs

Labor costs overshadow all other cost components of the marketing bill. Rising labor costs have accounted for about 55 percent of the total increase in the marketing bill during the last decade. Higher labor costs are primarily responsible for the 4.0-percent increase in the marketing bill from 1996 to 1997. Direct labor costs amounted to about \$216.2 billion in 1997, or 38.5 percent of food expenditures (fig. 4 and table 16). Labor costs consist of wages and salaries, employee benefit costs such as group health insurance, estimated earnings of proprietors and family workers, and tips for food service. Direct labor costs do not include the costs of labor engaged in for-hire transporting of food or in manufacturing and distributing supplies that food industry firms use.

Labor costs in the food industry rose about 5.7 percent in 1997, faster than the 5.2-percent average annual rise of the last decade. This faster pace primarily reflected average hourly earnings, which increased at a faster rate for food manufacturing,

Figure 4

# What a dollar spent for food paid for in 1997



Economic Research Service, USDA

wholesaling, and restaurant employees in 1997, relative to 1996. These increases were mitigated by slower rises in the cost of benefits and a slower increase in hiring rates. The following discussion identifies developments in each of these components.

Hourly earnings of food manufacturing employees rose 2.6 percent in 1997, slightly faster than the 1996 increase (table 17). Average hourly earnings of food-store employees rose 2.3 percent, compared with 3.1 percent in 1996. Wage increases in these two sectors continue to reflect union contract provisions negotiated during the last few years. Meanwhile, average hourly earnings of wholesale trade employees rose 3.3 percent, slightly higher than the 1996 increase. The average hourly earnings of eating and drinking place employees advanced 4.5 percent in 1997, following a 3.6-percent increase in 1996. This was the fastest pace of any food industry sector, and reflected the Federally legislated increase in the minimum wage to \$5.15. Moreover, restaurants experienced a tight labor market that reflected the very low unemployment rate that was prevalent in the general econ-

omy. The foodservice sector has both the largest workforce and the highest proportion of minimum wage employees of the aggregate food industry.

Food retailing employment rose about 1.8 percent in 1997, a slightly smaller rate of increase than the 1.9-percent rise recorded in 1996. This smaller rate of increase reflects flat retail sales, which have reverberated throughout the food marketing sector. In 1997, 13.7 million people were employed in the food sector beyond the farm. About 25 percent worked for foodstores, 12 percent for food manufacturers, and 7 percent for wholesalers. Eating and drinking places represented the single largest share, 56 percent. These shares are comparable to trends recorded in recent years. Many food retailing employees are part-time workers. Part-time employees lower labor costs in several ways. They are often paid less and receive fewer benefits than full-time employees. Part-timers also cut labor costs by reducing overtime work by full-time employees. Greater use of part-time workers has likely held down the rise in hourly earnings in food retailing. Employment rose 1.6 percent in eating

## The Market Basket and Marketing Bill Measure Food Marketing Costs in Different Ways

USDA uses its **market basket** concept to track food price changes in grocery stores and to determine the underlying causes of changes in grocery store prices. The market basket contains the average annual quantities of foods purchased per household in a base period (currently 1982-84). Since the basket relies on a fixed set of quantities, changes in the value of the market basket are strictly the result of changes in price. The market basket consists of three components—the retail price, the farm value, and the farm-to-retail price spread.

The **retail price** component of the market basket is a subset of the Consumer Price Index for Food at Home, adjusted to exclude imported foods, nonalcoholic beverages, and seafood. Food purchased for away-from-home consumption is excluded from this estimate. The retail price index for the market basket has two parts:

The **farm value** represents the prices received by farmers for the quantities of raw farm commodities that must be purchased from farmers in order to sell a unit of food product at retail.

The **farm-to-retail price spread** is the difference between retail price and farm value, and represents

the costs of processing, wholesaling, and retailing foods. The price spread concept should be distinguished from the concept of margins as defined and used in the food trade. The farm-to-retail price spread represents the difference between average prices at two levels of the food marketing system *at a given point in time*. A margin is the difference between sales of a good or goods and the cost of goods sold. Margins allow for pricing inputs *at a different point in time* than the one in which the product is sold.

The **marketing bill** differs from the farm-to-retail price spread in several important ways. The bill is the difference between consumer expenditures for foods produced on U.S. farms and an associated farm value. However, product quantities are allowed to vary from year to year, in contrast to the fixed quantities used to develop market basket estimates. Therefore, changes in the marketing bill may result from changes in price, product mix, product quantity, and the quantity of marketing services. Thus, the bill measures changes in marketing costs, whereas the market basket measures changes in prices. Moreover, the bill includes both the at-home and away-from-home markets.

places and declined marginally in the food manufacturing industry. Altogether, 13.7 million workers were employed in processing and distributing food in 1997, up 1.3 percent from 1996. More than half, or 7.6 million people, were employed in away-from-home eating places. Foodstores employed 3.5 million people, food processors employed 1.7 million people, and food wholesalers employed about 895,000 people.

Wage supplements comprise about 20 percent of total labor costs. However, the cost of medical care had a smaller effect on labor costs, relative to recent years. The 2.8-percent increase in the Consumer Price Index for medical services in 1997 was considerably

smaller than the 6.1-percent annual average increase over the last 10 years. Similarly, the Bureau of Labor Statistics Employment Cost Index (ECI) for private industry benefits rose just 2.1 percent in 1997, less than half the 4.6-percent average annual rise of the last decade. These figures are in marked contrast to the situation over much of the last decade, when health benefits were the number one issue in collective bargaining discussions.

The Employment Cost Index (ECI), a quarterly series published by the Bureau of Labor Statistics, can also be used to track labor cost changes. The ECI has several advantages over average hourly earnings. Changes in wages and salaries are based on wage

rates, rather than on average earnings, thereby eliminating the effects of shifts in the occupational employment mix. Changes in the proportion of full-time and part-time workers in food retailing probably have caused average earnings both to increase at a slower rate than the ECI series and to understate the change in the price of labor. The ECI includes employers' cost of employee benefits and lump-sum payments to workers.

The ECI for foodstores (the only food industry sector for which these data are available) rose 2.4 percent in 1997, compared with 3.1 percent for all private industry (table 18). This rise in worker compensation costs was considerably smaller than the 1996 gain of 3.6 percent. The 1997 compensation increase included a wage and salary gain of 3.1 percent, also smaller than 1996 (3.5 percent). Compensation costs rose less than wages and salaries in 1997 because benefit cost increases were smaller than gains in wage rates for the first time in the history of the ECI series, begun in 1989. Although not reported separately, benefit costs probably decreased about 0.4 percent in 1997. Lower benefits reflect union contracts negotiated for foodstores that have required workers to pay a greater portion of their medical care costs. Thus, benefit costs dropped slightly for foodstores, although they rose modestly for private industry.

### **Labor Productivity**

Productivity measures are calculated for the purpose of relating real physical output to real input. The Bureau of Labor Statistics (BLS) measures overall business productivity in terms of output per hour of all employees. Labor productivity rose a moderate 0.7 percent during 1996 in the Nation's total business sector (excluding farming), reflecting a slightly larger increase in output than in hours worked. By contrast, labor productivity in foodstores (SIC 54) declined 1.2 percent in 1996 (the most recent year for which data are available), consistent with the general downward trend of the last 15 years. Increased use of labor inputs, as reflected in a 1.9-percent rise in foodstore hiring, and a small increase in output, as measured by real sales, likely combined to produce another productivity decline in 1997. Output per unit of labor among supermarkets exhibited a consistent downward trend between 1985 and 1996. However, it

should be noted that the CPI for food at-home items has been found to overstate inflation by 1 to 1.9 percent per year (see "Consumer Price Index Overstates Food-Price Inflation," by James MacDonald, *Food Review*, September-December 1995). Therefore, real supermarket output, calculated by using the CPI to deflate retail sales, would be understated, as would the resulting productivity figure for supermarkets. In short, productivity may be higher than the BLS figures suggest.

Labor productivity in food manufacturing industries has risen moderately over the years. The average annual increase in output per unit of labor in nine food manufacturing industry groups ranged from -0.7 to 3.5 percent over 1980-96 (table 19). In most instances, higher productivity resulted from increased output and a small decline in hours worked. The reverse situation held for those industries that experienced lower productivity. Labor productivity among food manufacturers increased most in beverages, dairy products, and preserved fruits and vegetables. Meanwhile, labor productivity declined in the meat products and bakery sectors during this period. Productivity has grown erratically for most industries, partly because of fluctuating output and business conditions. Productivity dropped in 1996 after a 1995 rise for most food manufacturing sectors.

Productivity among eating and drinking places dropped 0.5 percent in 1996, in contrast to generally higher productivity levels since the mid-1980's. Productivity declined because hours worked rose about 2.7 percent, while output was down 0.6 percent.

### **Packaging Costs**

Packaging is the second largest component of the marketing bill, accounting for 8.5 percent of the food dollar. Costs of these materials increased 2.1 percent in 1997, well below the 5 percent average annual increase of the last decade. The prices of most major packaging materials declined in 1997. The aggregate price of packaging materials dropped 2.4 percent in 1997, following 1996's sharp 3.8-percent decline. Aggregate packaging cost increases were mainly due to greater use of shipping boxes, food containers, and plastic materials.

Paperboard boxes and containers are the largest packaging cost. The food industry spent approximately \$19.5 billion, or about 40 percent of total packaging expenses, on paper and paperboard products in 1997. Fiber (cardboard) boxes, the primary container used to ship nearly all processed foods, represented about 33 percent of total packaging expenses. Sanitary food containers, including those for such products as fluid milk, margarine and butter, ice cream, and frozen food, also totaled almost 33 percent of paperboard packaging expenses. The third largest paperboard item was folding boxes used for such dry foods as cereal and perishable bakery products. Prices of paperboard shipping boxes and other paper products fell 6.0 percent in 1997 for a second consecutive annual decrease, while the price of paper bags and sacks rose 0.9 percent. Excess production capacity continued to plague the paperboard industry in 1997, a trend that carried over from 1996.

Metal containers are the second largest packaging expense, making up about 20 percent of total food packaging costs. Prices of metal cans fell 1.2 percent in the face of excess beverage can capacity due to increased demand for competing plastic containers. The demand for competing plastic containers continued to weaken the market for metal cans, reducing their prices for the fourth consecutive year. Cans have become less important for food packaging because of the increased popularity of glass and plastic bottles, the year-round availability of fresh fruits and vegetables, and the increased use of microwavable dishes for frozen foods. The price of glass containers, which are largely used to enhance product image, was nearly 3 percent lower in 1997.

Costs of plastic containers and wrapping materials account for nearly 20 percent of food packaging costs. Plastic is an important source of trays for meat and produce; bottles for milk and fruit juices; jars and tubs for cottage cheese and other dairy products; and flexible wrapping materials, such as polyethylene film for protective covering of baked goods, meat, and produce. The price of plastic held steady in 1997. Lower prices for plastic packaging offset higher demand for these products, which are oil derivatives. Demand for packaging products prevented sales volume from falling as fast as packaging prices.

## ***Transportation Rates and Costs***

Intercity truck and rail transportation for farm foods amounted to \$23.6 billion in 1997, or about 4 percent of retail food expenditures, consistent with the trend of recent years. Transportation costs rose at a slightly faster pace than in 1996, mainly due to higher trucking rates, which rose 2.9 percent in 1997, higher than in 1996.

The new BLS index of agricultural trucking rates showed an increase of 2.9 percent. Some meat and fresh fruits and vegetables are shipped by rail in truck trailers on flat cars (TOFC), but information on charges for these products is not available. TOFC shipments of fresh fruits and vegetables held steady in 1997, but still accounted for about 2.4 percent of all produce shipped. The quantity of produce shipped by railcars was slightly higher in 1997, but the market share accounted for by this transportation mode, 3.7 percent, was somewhat smaller than in 1997.

Approximately 94 percent of fresh produce was transported by truck in 1997. Operating costs of trucks hauling produce, as reported by USDA's Agricultural Marketing Service, increased 0.7 percent in 1997 (table 20). Labor costs incurred by truckers increased 1.2 percent and accounted for nearly 40 percent of total transportation labor costs. Fuel costs, which accounted for 21 percent of trucking costs, declined 1.8 percent, due to lower crude oil prices resulting from mild weather and petroleum production that exceeded demand. Truckers also incurred higher interest expenses, which jumped 7.5 percent. A variety of miscellaneous costs incurred by truckers (depreciation, licenses, insurance, overhead, and maintenance) rose an average of 1.4 percent in 1997. Meanwhile, railroad rates were only 0.5 percent higher. Most foods shipped by railroad are canned and bottled products.

## ***Energy Costs***

Last year's energy bill for food marketing costs came to about \$203 billion, making up about 3.5 percent of retail food expenditures. Energy costs rose 2.0 percent last year, roughly half the rate of increase for the marketing bill. The energy bill included only the costs of electricity, natural gas, and other fuels used in food processing, wholesaling, retailing, and food-

service establishments. Transportation fuel costs, except for those incurred for food wholesaling, were excluded.

Energy costs rose despite a 0.4-percent drop in the price of electricity. Higher energy costs were largely the result of a 6.8-percent rise in the price of natural gas and increased volume of marketing services. In contrast to transportation, lower fuel costs did not greatly affect direct energy costs because electricity supplies most of the food industry's energy requirements. Natural gas and electricity prices exert the greatest effect on the energy costs of processing and retailing food, with oil prices having little effect.

Public eating places and other foodservice facilities incur nearly 40 percent of the fuel and electricity costs of food marketing. Their energy expenses have risen because of large growth in the away-from-home food market. Also, away-from-home food service has the highest energy costs per dollar of sales, about 3.1 percent. About 85 percent of this cost comes from the use of electric power. Energy costs of food retailers are the second largest at about 33 percent of the energy bill, and consist mainly of electricity. The food processing sector is responsible for another 26 percent of the total energy bill, while foodservice accounts for 22 percent. Wholesaling comprises the remaining 19 percent of food sector energy costs. Electric power is responsible for 56 percent of food manufacturing energy costs, with natural gas making up the remaining 44 percent.

### **Other Costs Added Up**

The major costs discussed above total about 69 percent of the 1997 food marketing bill. The rest of the bill included a variety of miscellaneous costs, about 24 percent of the total, and profits, about 4 percent (table 16). Miscellaneous costs totaled \$104 billion. The largest of these costs (advertising, business taxes, net interest, depreciation, rent, and repairs) are estimated using data from trade publications, the Internal Revenue Service, and the U.S. Bureau of the Census.

**Advertising.** Advertising expenses rose 1.9 percent in 1997, and account for about 4 percent of food expenditures. The largest increases occurred in food

service (3.5 percent) and food retailing (2.0 percent). Meanwhile, advertising expenditures by food wholesalers rose 1.7 percent, and processors increased their advertising expenditures by 1.1 percent. Food manufacturing accounts for 51 percent of total food industry advertising expenditures, with food service contributing another 27 percent, and food retailing 15 percent. A mix of print and broadcast media promote food industry products.

**Business Taxes and Interest.** Business taxes are the second largest of the miscellaneous costs, comprising 3.5 percent of consumer food expenditures. Business taxes include property, State, unemployment insurance, and Social Security taxes, but exclude Federal income taxes. Business taxes rose 2.5 percent in 1997.

Net interest, while accounting for only 2.5 percent of total consumer expenditures, had the second fastest rate of increase, jumping 60 percent over the last decade. Most of the increase occurred in the food-store sector and reflected higher debt acquired due to merger and acquisition activity, particularly leveraged buyouts. The 7.4-percent increase in 1997 interest expense occurred as a result of increased debt stemming from long- and short-term loans booked during years of rising interest rates (such as 1995), which are included in the estimates.

**Depreciation, Rent, and Repairs.** Depreciation, rent, and repairs together totaled \$49.5 billion in 1997, accounting for 9 percent of the consumer food dollar. The foodservice sector incurred about 42 percent of these costs, while foodstores made up 27 percent. Manufacturing and wholesaling firms together accounted for the remaining 31 percent. Foodservice establishments incurred high property rental expenses, and thus had the highest total of any food sector. Indeed, net rent expenses grew 93 percent over the last decade, the fastest growth rate of the miscellaneous costs. Rent grew at especially fast rates for processing (120 percent) and foodservice firms (112 percent).

Sufficient data are not available for estimating many individual smaller costs, such as insurance, for-hire local truck transportation, professional services, and food service in schools and institutions. Together,

these costs account for about 0.5 percent of the food dollar.

**Corporate Profits.** Food industry firms earned approximately \$18 billion in pre-tax profits from marketing U.S. farm foods in 1997, a 4.2-percent decrease from 1996. About 3.5 cents of every food dollar went to pre-tax corporate profits in 1997. Retail foodstore profits rose 6.5 percent in 1997, despite marginal sales increases, by attracting customers to cheaper generic brands and nonfood services such as in-store pharmacies, greeting cards, health and beauty care, and video rentals. These items are especially appealing to customers seeking one-stop shopping convenience. *Supermarket Business* reports that these products account for as much as 20 percent of total store profits, while comprising only 10 percent of store volume. The stronger economy, technological improvements, and increased sales of store-label products also stimulated higher 1997 retail profits. Retailers continued to make greater use of technology (particularly checkout scanning, satellite communications, and more sophisticated merchandising and labor scheduling systems) to increase efficiency and control labor costs, their largest operating expense. Thus, the factors responsible for higher 1996 retail profits also played important roles in 1997. However, profits were held down by a variety of conditions in the other food sectors. For example, food processors' profits declined 14 percent from 1996 levels, largely due to accounting losses stemming from restructuring activities at several large processing firms. Moreover, processors were unable to raise prices due to the slow inflationary environment. With food manufacturers able to hold down costs with gains in labor productivity, profits rose for many in 1997. However, manufacturers' profits continue to be tempered by increased consumer purchases of less costly store-label foods, which cut into sales and profits of manufacturers' brand-name foods.

Meanwhile, competition among restaurants, particularly fast-food outlets, has restrained profit levels among eating and drinking places. Moreover, the slow inflationary pace in the general economy has made it difficult for restaurants to raise prices. In

addition, the rise in the minimum wage contributed to higher labor costs in this sector, where a large share of employees are paid minimum wage. Foodservice continues to capture an expanding share of total food expenditures. However, the demand for convenience is also being seen at grocery stores, where prepared foods are also generating profits and accounting for higher percentages of supermarket sales. The distinction between the at-home and away-from-home markets has become increasingly blurred as these two segments compete for the consumer's food dollar.

The profit estimate was developed by a two-step procedure. First, profit ratios per dollar of sales were derived from IRS corporate income tax returns for each food sector. This estimate was then multiplied by the annual sales of food retailers, wholesalers, manufacturers, and public eating places.

Two financial ratios provide further insight into the 1997 food industry profit picture: profit margin and return on stockholder equity. The profit margin is net income as a percentage of sales, and measures the portion of the sales dollar left after paying all expenses, including the cost of food products. The profit margin helps explain the importance of profits compared with costs that, together, make up the consumer food dollar. Return on stockholder equity, which reflects the earning power of the owner's investment, shows food industry profitability compared with that of other industries.

The after-tax profit margin of food and tobacco manufacturers averaged 5.6 percent of sales in 1997, the same as 1996, based on data from the U.S. Bureau of the Census. Returns on stockholders' equity increased to 19.8 percent in 1997 (table 21). Returns on equity for the food and tobacco industry were thus higher than the 17.0-percent average for all manufacturers of nondurable products. Profit margins of retail food chains were much narrower than those of food manufacturers, and averaged 1.6 percent of sales in 1997, the same as a year earlier. Returns on equity were also slightly lower for retail food chains (17.4 percent) than manufacturers in 1997, down by 2.0 percentage points.