CHAPTER 1

COST AND SALES CONCEPTS

• LEARNING OBJECTIVES •

After reading this chapter, you should be able to:

1. Define the terms *cost* and *sales*.
2. Define and provide an example of the following types of costs: fixed, directly variable, semivariable, controllable, noncontrollable, unit, total, prime, historical, and planned.
3. Provide several examples illustrating monetary and nonmonetary sales concepts.
4. Describe the significance of cost-to-sales relationships and identify several cost-to-sales ratios important in food and beverage management.
5. Identify the formulas used to compute cost percent and sales price.
6. Describe factors that cause industrywide variations in cost percentages.
7. Explain the value of comparing current cost-to-sales ratios with those for previous periods.

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INTRODUCTION

A Taste of Tuscany

Until she decided to purchase a restaurant two years ago, Joan Bailey had been a successful advertising executive. Her annual income was substantial, and she augmented it by investing in some profitable real estate ventures with her brother. However, her position in advertising required that she travel several days a week, and over time the travel became wearisome to her. This made her decide to give up the advertising business in favor of operating her own business. On the advice of her brother, she decided to go into the restaurant business, even though she lacked previous experience in the field. After all her years of travel, she thought she knew more about restaurants from the customer's point of view than most restaurateurs. So she began to look around for an appropriate property. Fortunately, she soon found a place just 12 miles from her home, located on a main road on the outskirts of a city of 75,000 people. The building and equipment were only six years old and apparently in fine condition, and the retiring owner was anxious to sell at a very fair price. The owner's books revealed a successful operation, with a restaurant profit of approximately $165,000 per year. Joan Bailey decided to buy. The restaurant, A Taste of Tuscany, had 150 seats. It was open seven days a week, from 5 to 10 P.M., serving a varied menu but emphasizing northern Italian food. Joan believed she would be able to run it successfully with a small and dedicated staff.

In the first year, Joan's profits were less than those of the previous owner. After two years, profits were continuing to decline. The restaurant was simply not showing an adequate profit, even though Joan had increased the volume of business over that of the previous owner. The place was reasonably busy, her customers often complimented her on the food, and her staff appeared to be loyal and helpful in every way. The truth was that Joan Bailey was operating a popular, but not very profitable, food and beverage business. At the end of the second full year of operation, the statement of income prepared by her accountant revealed a restaurant profit of $48,455 (see Figure 1.1).

It quickly became apparent to Joan, her family, and her accountant that unless something could be done to make the restaurant more profitable, the operation would not be worth the effort required.

The Grandview Bistro

Just a few miles down the road from A Taste of Tuscany, the Grandview Bistro is owned and operated by Bill Young. After four years in the Air Force, Bill had

• FIGURE 1.1 •

A Taste of Tuscany Income Statement, Year Ended December 31, 20XX

Sales		
Food	$1,686,740	
Beverage	$297,660	
Total sales		$1,984,400
Cost of Sales		
Food	$708,431	
Beverage	$95,251	
Total cost of sales		$803,682
Gross Profit		$1,180,718
Controllable Expenses		
Salaries and wages	$535,788	
Employee benefits	$133,947	
Other controllable expenses	$242,660	
Total Controllable Expenses		$912,395
Income before Occupancy Costs, Interest, Depreciation, and Income Taxes		$268,323
Occupancy Costs	$132,608	
Interest	$27,060	
Depreciation	$60,200	
Total		$219,868
Restaurant Profit		$48,455

worked for an insurance company for a few years before enrolling in a nearby college to study hospitality management. His interest in the food and beverage sector of the hospitality industry began during his high school days, when he worked part time at the local unit of a national fast-food chain. Although his interest had grown steadily over the years, it took considerable courage for him to give up a fairly promising insurance career to go back to school. He earned a degree in hospitality management and then went to work as the assistant manager in a local restaurant. Over the next several years, he worked in three food and beverage operations in the area, including A Taste of Tuscany, before deciding that he was ready to own and operate his own restaurant.

With the help of his family and a local bank, Bill was able to purchase the Grandview Bistro, a fairly popular establishment with the same type

of menu as A Taste of Tuscany, as well as comparable prices and hours of operation. The only differences to the casual observer were size and location: The Grandview Bistro had only 75 seats and was in a somewhat less favorable location. The menu for the Grandview Bistro is illustrated in Figure 1.2.

• FIGURE 1.2 •

The Grandview Bistro Menu

SOUPS

Anasazi Bean and Roasted Corn with Chilies
Beautiful purple beans with corn, chilies,
celery, onions, and just enough spice
$4.95

MANHATTAN STYLE FISH CHOWDER
Traditional New York style tomato-based soup
with haddock, swordfish, shrimp, and scallops
$8.25

APPETIZERS

DUCK EMPANADAS
Tender roast duck encased in an empanada purse,
served with roasted poblano vegetable sauce
$7.65

GNOCCHI GRILLED VEGETABLE TARTLETS
Semolina and potato tartlet shells filled with grilled sliced eggplant, zucchini,
fennel, and fire-roasted tomato, garnished with shaved parmesan
$6.50

SMOKED SALMON CHEESECAKE
Smoked salmon and Gruyère cheese baked in a savory crust
served with Cucumber Dill Cream Sauce
$8.20

OYSTERS ROCKEFELLER
Six Chesapeake Bay oysters baked on the half shell
with spinach, onions, and hollandaise sauce
$9.35

EGGPLANT ROULADE
Thinly sliced fresh eggplant stuffed with ricotta, mozzarella, and
goat cheese and served with a tomato basil sauce
$5.50

SHIITAKE MUSHROOMS
Sautéed wild mushroom and goat cheese layered in phyllo dough
$5.50

SALADS

Mesclun Greens Topped with Hazelnuts
Warm herbed chevre cheese and Dijon vinaigrette
$4.95

CRACKED WHEAT SALAD
Tossed with a citrus and green onion vinaigrette
$4.75

CAESAR SALAD
Topped with roasted garlic cornbread croutons and a Southwest-inspired dressing
$5.45

ENTRÉES

All entrées served with vegetables du jour and your choice of pasta, baked potato, or wild rice and choice of house salad or traditional Caesar salad.

BLACK ANGUS NEW YORK STRIP STEAK
12-ounce prime steak charbroiled and topped with crimini mushrooms
$23.65

TOURNEDOS ROSSINI
Two 3-ounce fillets of beef pan-seared and topped with foie gras, truffles, and a Madeira sauce
$24.75

ROASTED MUSCOVY DUCK BREAST
Maple-infused *jus lie*, cashew and scallion rice, and spaghetti squash prima vera
$21.40

LAMB CHOPS SALTIMBOCCA
Succulent lamb chops sautéed with thin slices of prosciutto and served with a sage white burgundy butter sauce over angel hair pasta
$21.50

LOIN OF PORK À MAISON
Tender pork served with our sauce du jour
$20.50

SAUTÉED GINGER SHRIMP*
Gulf shrimp, bean sprouts, snow peas, enoki mushrooms, and scallions in an Asian glass noodle salad with a light ginger-sesame dressing
$18.00

VEGETARIAN PORTOBELLO BURRITO*
Grilled portobello mushrooms and monterey jack cheese baked in a flour tortilla with chipotle aioli and jicama and sweet potato cole slaw
$16.50

TEA-SMOKED SALMON*
Atlantic salmon lightly smoked and finished in the oven, accompanied by Italian white beans, fusilli, and saffron broth served with lemon baby spinach
$19.20

(*Continued*)

PAN-SEARED CHICKEN*
Breast of chicken, sliced Canadian bacon, and toasted pine nuts
with a Honey Adobo Chipotle Sauce
$16.50

PARMESAN-CRUSTED VEAL STEAK*
Provimi-veal à la Francaise accompanied by braised bok choy and roasted potatoes
$20.85

STEAK DIANE WITH A FIVE-PEPPER CREAM SAUCE
Prime New York Sirloin prepared to your specifications with a
rich flavorful sauce, duchesse potatoes, and asparagus
$24.75

CHICKEN ALBUFERA
Chicken breast sautéed with shallots and artichoke hearts in a
brandy cream sauce finished with red pepper butter
$16.45

TROUT GRENOBLOISE
Sautéed brook trout served with lemon and capers
$19.00

SHRIMP À LA MARSEILLE
Large shrimp served in a light tomato sauce, seasoned with our fine herbs and pernod
$19.95

FRUITS DE MER
Lobster, shrimp, and scallops tossed in a light basil cream with
fresh romano, served over thin pasta
$21.40

CATCH OF THE DAY
Fresh fillet of fish sautéed and served with lemon
$16.50

DESSERTS

Ginger-Lime Cheesecakelettes
Served with crystallized ginger
$3.85

CHOCOLATE TORTE WITH CHERRY ICE*
Chocolate, walnuts, and vanilla baked in a soufflé cup served
with a cherry, ricotta, and maple syrup ice
$4.40

FRESH FRUIT TART
Prepared with the finest and freshest fruit of the season
$2.75

*Heart-healthy items

Under the previous owner, the restaurant had shown a profit of $65,000 per year. But Bill felt sure he could increase the profit by applying the principles he had learned in the college's hospitality management program. The employees he inherited with the restaurant were both loyal and cooperative, and he found them receptive to the changes that he made gradually over the first year of operation. None of the changes were dramatically apparent to the customers; in fact, at the end of the first year, most had not noticed any changes at all. In general, they were as pleased with the establishment as they had been when Bill first took it over, and they continued to return. In addition, newcomers tried the restaurant, liked it, and became regular customers. At the end of the first full year of operation, Bill's accountant presented him with a statement of income showing a restaurant profit of $128,702 (see Figure 1.3).

• FIGURE 1.3 •

The Grandview Bistro Income Statement, *Y*ear Ended December 31, 20XX

Sales		
Food	$891,687	
Beverage	$157,356	
Total Sales		$1,049,043
Cost of Sales		
Food	$312,090	
Beverage	$39,339	
Total Cost of Sales		$351,429
Gross Profit		$697,614
Controllable Expenses		
Salaries and wages	$209,809	
Employee benefits	$47,207	
Other controllable expenses	$162,602	
Total Controllable Expenses		$419,618
Income before Occupancy Costs, Interest, Depreciation, and Income Taxes		$277,996
Occupancy Costs	$89,169	
Interest	$13,875	
Depreciation	$46,250	
Total occupancy costs, interest, and depreciation		$149,294
Restaurant Profit		$128,702

The statement confirmed Bill's expectations. It proved to him that his management of the operation was effective in the ways he had anticipated. At the end of his first year, he looked to the future with confidence.

A comparison of the statements of income for these two restaurants reveals some very important facts. As one might expect, A Taste of Tuscany, with twice as many seats as the Grandview Bistro, as well as a comparable menu and comparable prices, shows approximately twice the dollar volume of sales. However, despite the apparently favorable sales comparison, the restaurant profit for A Taste of Tuscany is considerably less than the Grandview Bistro. Because the difference between sales and restaurant profit on each statement of income is represented by costs of various kinds, we can infer that part of the difficulty with A Taste of Tuscany is somehow related to cost. The costs of operation seem to be in more favorable proportion to sales at the Grandview Bistro. Initially, we must look to the nature of these costs and their relations to sales to find the differences between the two establishments. It is possible that the costs of operation are not well regulated, or controlled, by A Taste of Tuscany. It is also possible that sales are not well controlled, and that if Joan Bailey is going to increase her profit to a desirable level, she must begin by exercising greater control over the several kinds of operating costs, as well as over sales.

The statement of income from the Grandview Bistro suggests that Bill Young has kept both costs and sales under control, and, as we shall see, this is critically important to the success of his business. Comparative investigation of the two restaurants would reveal that Bill Young had instituted various control procedures in the Grandview Bistro that are noticeably absent in Joan Bailey's business. These control procedures are important features of a computer program that plays a significant part in the operation of the Grandview Bistro. These procedures have enabled Bill to manage his business more effectively. It will be important, therefore, to look closely at the nature and effect of these control procedures in succeeding chapters. However, before proceeding, it will be useful to establish clear definitions of the terms *cost, sales*, and *control*. Cost and sales will be defined and discussed in this chapter; control will be covered in Chapter 2.

COST CONCEPTS

Definition of Cost

Accountants define a **cost** as a reduction in the value of an asset for the purpose of securing benefit or gain. That definition, although technically

correct, is not very useful in a basic discussion of controls, so we will modify it somewhat.

As we use the term in our discussion of cost control in the food and beverage business, *cost* is defined as the expense to a foodservice establishment for goods or services when the goods are consumed or the services are rendered. Foods and beverages are considered "consumed" when they have been used, wastefully or otherwise, and are no longer available for the purposes for which they were acquired. Thus, the cost of a piece of meat is incurred when the piece is no longer available for the purpose for which it was purchased, because it has been cooked, served, or thrown away because it has spoiled, or even because it has been stolen. The cost of labor is incurred when people are on duty, whether or not they are working and whether they are paid at the end of a shift or at some later date.

The cost of any item may be expressed in a variety of units: weight, volume, or total value. The cost of meat, for example, can be expressed as a value per piece, per pound, or per individual portion. The cost of liquor can be expressed as a value per bottle, per drink, or per ounce. Labor costs can be expressed as value per hour (an hourly wage, for example) or value per week (a weekly salary).

Costs can be viewed in several different ways, and it will be useful to identify some of them before proceeding.

Fixed and Variable Costs

The terms *fixed* and *variable* are used to distinguish between those costs that have no direct relationship to business volume and those that do.

Fixed Costs

Fixed costs are normally unaffected by changes in sales volume. They are said to have little direct relationship to the business volume because they do not change significantly when the number of sales increases or decreases. Insurance premiums, real estate taxes, and depreciation on equipment are examples of fixed costs. Real estate taxes, after all, are set by governmental authorities and are based on a government's need for a determined amount of total revenue. The real estate taxes for an individual establishment are based on the appraised value of the assessed property as real estate. Real estate taxes do not change when the sales volume in an establishment changes.

All fixed costs change over time, sometimes increasing and sometimes decreasing. However, changes in fixed costs are not normally related to short-term changes in business volume. They are sometimes tied indirectly

to long-term volume changes. For example, an increase in the cost of insurance premiums may be attributable to an insurance company's perception of increased risk associated with higher volume. Even though the increase in insurance cost is somehow related to an increase in volume, the cost of insurance is still considered a fixed cost. Advertising expense is another example: Larger establishments tend to spend more on advertising because their larger sales volume makes larger amounts of money available for the purpose, but advertising expense is still considered a fixed cost.

The term *fixed* should never be taken to mean static or unchanging, but merely to indicate that any changes that may occur in such costs are related only indirectly or distantly to changes in volume. Sometimes, in fact, changes in fixed costs are wholly unrelated to changes in volume, as with real estate taxes. Other examples of costs that are generally considered fixed include repairs and maintenance, rent or occupancy costs, most utility costs, and the costs of professional services, such as accounting.

Variable Costs

Variable costs are clearly related to business volume. As business volume increases, variable costs will increase; as volume decreases, variable costs should decrease as well. The obvious examples of variable costs are food, beverages, and labor. However, there are significant differences between the behavior of food and beverage costs and the behavior of labor costs.

Food and beverage costs are considered directly variable costs. **Directly variable costs** are directly linked to volume of business, so that every increase or decrease in volume brings a corresponding increase or decrease in cost. Every time a restaurant sells an order of steak, it incurs a cost for the meat. Similarly, each sale of a bottle of beer at the bar results in a cost for the beer. Total directly variable costs, then, increase or decrease—or at least *should* increase or decrease—in direct proportion to sales volume.

Payroll costs (including salaries and wages and employee benefits, and often referred to as labor costs) present an interesting contrast. Foodservice employees may be divided into two categories—those whose numbers will remain constant despite normal fluctuations in business volume, and those whose numbers and consequent total costs should logically (and often will) vary with normal changes in business volume. The first category includes such personnel as the manager, bookkeeper, chef, and cashier. In terms of the preceding definition, they are fixed-cost personnel. Their numbers and costs may change, but not because of short-term changes in business volume. The second category includes the servers, or the waitstaff. As business volume changes, their numbers and total costs can be expected to increase

or decrease accordingly. Both fixed-cost and variable-cost employees are included in one category on the statement of income: *salaries and wages*. Because payroll cost has both the fixed element and the variable element, it is known as a **semivariable cost,** meaning that a portion of it should change with short-term changes in business volume and another portion should not.

It must be noted that each establishment must determine which employees should be fixed-cost personnel and which should be variable cost. In some specialized cases, it is possible for payroll to consist entirely of either fixed-cost or variable-cost personnel. For example, there are some restaurants in which the entire staff works for hourly wages. In these cases, numbers of hours worked and consequent costs are almost wholly related to business volume. Conversely, in some smaller restaurants, employees may all be on regular salaries, in which case labor cost is considered fixed.

Controllable and Noncontrollable Costs

Costs may also be labeled *controllable* and *noncontrollable*. **Controllable** costs can be changed in the short term. Variable costs are normally controllable. The cost of food or beverages, for example, can be changed in several ways—by changing portion sizes, by changing ingredients in a recipe, or by changing the quality of the products purchased.

The cost of labor can be increased or decreased in the short term by hiring additional employees or by laying some off, by increasing or decreasing the hours of work, or, in some instances, by increasing or decreasing wages.

In addition, certain fixed costs are controllable, including advertising and promotion, utilities, repairs and maintenance, and administrative and general expenses, a category that includes office supplies, postage, and telephone expenses, among others. It is possible for owners or managers to make decisions that will change any of these in the short term.

In contrast, **noncontrollable costs** cannot normally be changed in the short term. These are usually fixed costs, and a list of the more common ones would include rent, interest on a mortgage, real estate taxes, license fees, and depreciation. Managers do not normally have the ability to change any of these costs in the near term.

Unit and Total Costs

It is also important to distinguish between **unit costs** and **total costs.** The units may be food or beverage portions, as in the cost of one steak or one

martini, or units of work, as in the hourly rate for an employee. It is also useful to consider costs in terms of totals, as in the total cost of all food served in one period, such as a week or a month, or the total cost of labor for one period. The costs on a statement of income are all total costs, rather than unit costs.

These concepts are best illustrated by example. In the Grandview Bistro, where steaks are cut from strip loins, a strip loin was purchased for $98.25. If one entire strip were consumed in one day, the total cost would be $98.25. However, the cost per unit (the steak) depends on the number of steaks cut from the strip. If there are 15, the unit cost is an average of $6.55. No two of the 15 steaks are likely to have identical costs, because it is not normally possible for a butcher to cut all steaks to exactly the same weight. In the food and beverage business, we commonly deal with average unit costs, rather than actual unit costs. It is important to know unit costs for purposes of establishing menu prices and determining unit profitability. Total costs, including those that appear in statements of income, are normally used for broader purposes, including determining the relationship between total costs and total sales—as discussed later in this chapter—and determining overall profitability of operations.

It is important to note that, as business volume changes, total and unit costs are affected in different ways. Assume that a restaurant has a fixed cost for rent of $2,000 per month. If 2,000 customers were served during a period of one month, the fixed cost of rent per customer would be $1.00. If, in the succeeding month, the number of customers increased to 4,000, the total fixed cost for rent would not change, but the fixed cost per unit (customer) would be reduced from $1.00 to $0.50.

A similar analysis may be done with variable costs. The variable cost for the steak described earlier is $6.55 per unit. If 240 customers in a given month order steak, the total variable cost would be $1,572, at $6.55 average unit cost per steak. If, in the following month, 300 customers order steak, the variable cost per unit (the steak) should remain at $6.55, whereas the total variable cost for 300 steaks increases to $1,965.

The preceding paragraphs illustrate cost behavior only as business volume increases, but it is important to recognize that costs behave similarly as business volume decreases. The relationships hold true. Figure 1.4 illustrates the behavior of fixed and variable costs per unit and in total. It is important to understand these relationships when dealing with cost/volume/profit analysis and the calculation of break-even points, which are discussed in Chapter 3.

• FIGURE 1.4 •

Cost Behavior as Business Volume Changes

	Unit Costs	*Total Cost*
Fixed cost	Changes	Does not change
Variable cost	Does not change	Changes

It must be noted that this relationship does not always hold true. As volume increases, some variable costs have a tendency to decrease. This is particularly true with variable labor costs, because workers become more productive with greater time utilization. Food can be purchased cheaper in larger quantities and can thus reduce variable costs.

Prime Cost

Prime cost is a term our industry uses to refer to the costs of materials and labor: food, beverages, and payroll. Unfortunately, although everyone agrees that total food costs and total beverage costs should be included in prime cost, there is no general agreement on the payroll cost component. Some would include all payroll costs, whereas others would include only the cost of kitchen staff. In this text, prime cost is defined as the sum of food costs, beverage costs, and labor costs (salaries and wages, plus employee benefits). Referring to Figure 1.3, these costs for the Grandview Bistro are $351,429 (food and beverage costs), $209,809 (labor costs), and $47,207 (employee benefits). These, taken together ($608,445), represent the largest portion of total costs for virtually all foodservice operations. In addition, management can typically alter these costs more easily than most fixed costs. Consequently, prime cost is of the greatest interest to most owners and managers. The level and control of prime cost plays a large part in determining whether an establishment will meet its financial goals. In this text, we therefore concentrate on those controllable costs that are most important in determining profit: food cost, beverage cost, and labor cost.

Historical and Planned Costs

Two additional cost concepts are important for those seeking to comprehend cost control: **historical cost** and **planned cost.** The definition of cost at the beginning of this chapter carries with it an implication that all costs are historical—that is, that they can be found in business records, books of

account, financial statements, invoices, employees' time cards, and other similar records. Historical costs are used for various important purposes, such as establishing unit costs, determining menu prices, and comparing present with past labor costs. However, the value of historical costs is not limited to these few purposes. Historical records of costs are of particular value for planning—for determining in the present what is likely to happen in the future. Planning is among the most important functions of management, and, in order to plan effectively, managers use historical costs to develop planned costs—projections of what costs will be or should be for a future period. Thus, historical costs are necessary for effective planning. This kind of planning is often called *budgeting*, a topic to be discussed in Chapter 2.

SALES CONCEPTS

A brief introduction to costs in food and beverage operations having been given, it will be useful to establish a working definition of the term *sales* and to examine some of the principal sales concepts required for an understanding of control in foodservice.

The term *sales* is used in several ways among professionals in the foodservice industry. For the term to be meaningful, one must be specific about the context in which it is used. The following paragraphs therefore define the term and explore some of the many ways it is used in the industry.

Sales Defined

In general, the term **sales** is defined as revenue resulting from the exchange of products and services for value. In our industry, food and beverage sales are exchanges of the products and services of a restaurant, bar, or related enterprise for value. We normally express sales in monetary terms, although there are other possibilities. Actually, there are two basic groups of terms normally used in food and beverage operations to express sales concepts: monetary and nonmonetary.

Monetary Terms

Total Sales

Total sales is a term that refers to the total volume of sales expressed in dollar terms. This may be for any given time period, such as a week, a month,

or a year. For example, total dollar sales for the Grandview Bistro was expressed as $1,049,043 for the year ending December 31, 20XX.

Total Sales by Category. Examples of **total dollar sales by category** are total food sales or total beverage sales, referring to the total dollar volume of sales for all items in one category. By extension, we may see such terms as *total steak sales* or *total seafood sales,* referring to the total dollar volume of sales for all items in those particular categories.

Total Sales per Server. Total sales per server is the total dollar volume of sales for which a given server has been responsible in a given time period, such as a meal period, a day, or a week. Management sometimes uses these figures to make judgments about the comparative performance of two or more employees. It may be helpful, for example, to identify those servers responsible for the greatest and least dollar sales in a given period.

Total Sales per Seat. Total sales per seat is the total dollar sales for a given time period divided by the number of seats in the restaurant. The normal time period used is one year. This figure is most frequently used by chain operations as a means for comparing sales results of one unit with those of another. In addition, the National Restaurant Association determines this average nationally so that individual operators may compare their results with those of other similar restaurants.

Sales Price. Sales price refers to the amount charged to each customer purchasing one unit of a particular item. The unit may be a single item (e.g., an appetizer or an entrée) or an entire meal, depending on the manner in which a restaurant prices its products. Figure 1.2 shows the sales prices for each of the dinner menu items at the Grandview Bistro. The sum of all sales prices charged for all items sold in a given time period will be total dollar sales for that time period. Figure 1.5 shows the sales on one particular Saturday. Total dollar sales for soups, appetizers, entrées, and desserts is shown as $3,902.30.

Average Sale. An **average sale** in business is determined by adding individual sales to determine a total and then dividing that total by the number of individual sales. There are two such averages commonly calculated in food and beverage operations: average check and average sale per server.

• **FIGURE 1.5** •

The Grandview Bistro Daily Sales and Covers, Saturday, February 6, 20XX

Menu Item	*Number Sold*	*Sales Price, $*	*Total Sales, $*
Bean Soup	16	$4.95	$79.20
Fish Chowder	24	8.25	198.00
Duck Empanadas	13	7.65	99.45
Vegetable Tartlets	9	6.50	58.50
Salmon Cheesecake	16	8.20	131.20
Oysters Rockefeller	17	9.35	158.95
Eggplant Roulade	9	5.50	49.50
Shiitake Mushrooms	14	5.50	77.00
Strip Steak	13	23.65	307.45
Tournedos Rossini	10	24.75	247.50
Roasted Duck Breast	5	21.40	107.00
Lamb Chops	8	21.50	172.00
Loin of Pork	6	20.50	123.00
Ginger Shrimp	9	18.00	162.00
Vegetarian Burrito	6	16.50	99.00
Tea-Smoked Salmon	13	19.20	249.60
Pan-Seared Chicken	9	16.50	148.50
Parmesan Veal Steak	7	20.85	145.95
Steak Diane	8	24.75	198.00
Chicken Albufera	11	16.45	180.95
Trout Grenobloise	9	19.00	171.00
Shrimp à la Marseille	6	19.95	119.70
Fruites de Mer	9	21.40	192.60
Catch of the Day	11	16.50	181.50
Cheesecakelettes	15	3.85	57.75
Chocolate Torte	25	4.40	110.00
Fresh Fruit Tart	28	2.75	77.00
Total Covers	140		
Total Sales			$3,902.30

Average Check. Average check is the result of dividing total dollar sales by the number of sales or customers. In the foodservice industry, this is also known as covers. The term *cover* is defined in greater detail later in the chapter.

This average is determined as follows:

Average check = Total dollar sales ÷ Total number of covers

Figure 1.5 shows total sales of $3,902.30 and 140 covers. Thus,

Average sale = $3,902.30 ÷ 140
= $27.87

Note that appetizers and desserts are not included when determining the number of covers. The assumption is that each customer ordered an entrée and that appetizers and desserts were additional orders placed by customers. This figure is for food only and does not include beverages. Many restaurants keep food and beverage figures separate when calculating average sale per customer.

The average dollar sale is used by foodservice operators to compare the sales performance of one employee with that of another, to identify sales trends, and to compare the effectiveness of various menus, menu listings, or sales promotions.

This figure is of considerable interest to managers, who are likely to be watching business trends. If the average sale decreases over time, management will probably investigate the reasons for the changes in customer spending habits. Possibilities include a deterioration in service standards, customer dissatisfaction with food quality, inadequate sales promotion, and changes in portion sizes.

Average Sale per Server. Average sale per server is total dollar sales for an individual server divided by the number of customers served by that individual. This, too, is a figure used for comparative purposes, and it is usually considered a better indicator of the sales ability of a particular individual because, unlike total sales per server, it eliminates differences caused by variations in the numbers of persons served. If the Grandview Bistro had four servers on duty, and Jim, one of the servers, had 30 customers and total dollar sale of $565 on the Saturday night of February 13, average sale per server for Jim would be calculated as follows:

Average sale for Jim = Total sales for Jim ÷ Number of customers for Jim
= $565 ÷ 30
= $18.83

The average sale per server for Jim would be compared with other servers'. If Jim's average sale per customer was considerably lower than other servers, management might look into the reason why, and possibly decide to retrain Jim in the selling aspects of serving.

All of these monetary sales concepts are common in the industry and are likely to be encountered quickly by those seeking careers in food and beverage management. Yet several nonmonetary sales concepts and terms should also be understood.

Nonmonetary Terms

Total Number Sold

Total number sold refers to the total number of steaks, shrimp cocktails, or any other menu items sold in a given time period. This figure is useful in several ways. For example, foodservice managers use total number sold to identify unpopular menu items in order to eliminate such items from the menu. In addition, historical records of total numbers of specific items sold are useful for forecasting sales. Such forecasts are helpful in making decisions about purchasing and production. Total number of a specific item sold is a figure used to make judgments about quantities in inventory and about sales records, as discussed in later chapters. For example, Figure 1.5 shows that only five orders of roasted duck breast, six orders of loin of pork, and six orders of vegetarian burrito were sold on the day these calculations were made. The purchasing steward would track these items carefully so as not to order too much. Additionally, the manager might consider eliminating these three items from the menu if the number sold does not improve.

Covers

Cover is a term used in the industry to describe one diner, regardless of the quantity of food he or she consumes. An individual consuming a continental breakfast in a hotel coffee shop is counted as one cover. So is another individual in the same coffee shop who orders a full breakfast consisting of juice, eggs, bacon, toast, and coffee. These two diners are counted as two covers.

Total Covers. **Total covers** refers to the total number of customers served in a given period—an hour, a meal period, a day, a week, or some other period. Foodservice managers are usually particularly interested in these figures, which are compared with figures for similar periods in the past so that

judgments can be made about business trends. As shown in Figure 1.5, there were 140 covers for that Saturday night.

Average Covers. An **average number of covers** is determined by dividing the total number of covers for a given time period by some other number. That number may be the number of hours in a meal period, the number of days the establishment is open per week, or the number of servers on duty during the time period, among many other possibilities. The following calculations are some of the more common ones used:

Covers per hour = Total covers ÷ Number of hours of operation
Covers per day = Total covers ÷ Number of days of operation
Covers per server = Total covers ÷ Number of servers

The averages so derived can be of considerable help to a manager attempting to make judgments about such common questions as the efficiency of service in the dining room, the effectiveness of a promotional campaign, or the effectiveness of a particular server.

Seat Turnover

Seat turnover, most often called simply *turnover* or *turns*, refers to the number of seats occupied during a given period (or the number of customers served during that period) divided by the number of seats available. For example, Figure 1.5 shows 140 customers served during that one Saturday meal. The restaurant has 75 seats, so seat turnover would be calculated as follows:

Seat turnover = Number of customers served ÷ Number of seats
= 140 ÷ 75
= 1.87 turns

In other words, each seat in the Grandview Bistro was occupied an average of 1.87 times during that Saturday dinner meal.

Seat turnover may be calculated for any period, but is most often calculated for a given meal period.

Sales Mix

Sales mix is a term used to describe the relative quantity sold of any menu item as compared with other items in the same category. The relative

• **FIGURE 1.6** •

The Grandview Bistro Sales Mix, Saturday February 6, 20XX

Menu Item	*Number Sold*	*Sales Mix, %*
Strip Steak	13	9.29
Tournedos Rossini	10	7.14
Roasted Duck Breast	5	3.57
Lamb Chops	8	5.71
Loin of Pork	6	4.29
Ginger Shrimp	9	6.43
Vegetarian Burrito	6	4.29
Tea-Smoked Salmon	13	9.29
Pan-Seared Chicken	9	6.43
Parmesan Veal Steak	7	5.00
Steak Diane	8	5.71
Chicken Albufera	11	7.86
Trout Grenobloise	9	6.43
Shrimp à la Marseille	6	4.29
Fruites de Mer	9	6.43
Catch of the Day	11	7.86
Total Covers	140	100.00

quantities are normally percentages of total unit sales and always total 100 percent. Figure 1.6 shows the number of entrées sold for each of the entrée items, and the sales mix at the Grandview Bistro for Saturday, February 6. Note that the percentages vary from 3.57 percent to 9.29 percent. These percentages will be significant when we discuss Menu Engineering in Chapter 11.

※ THE COST-TO-SALES RATIO: COST PERCENT

Raw dollar figures for directly variable and semivariable costs are seldom, if ever, of any particular significance for control purposes. Because these costs vary to some extent with business volume, they become significant only when expressed in relation to that volume with which they vary. Foodservice managers calculate costs in dollars and compare those costs with sales in dollars. This enables them to discuss the relationship between costs and sales, sometimes described as the **cost per dollar of sale,** the ratio of costs

to sales, or simply as the cost-to-sales ratio. The industry uses the following basic formula for calculating cost-to-sales ratio.

$$\text{Cost} \div \text{Sales} = \text{Cost per dollar of sale}$$

The formula normally results in a decimal answer, and any decimal can be converted to a percentage if one multiplies it by 100 and adds a percent sign (%). This is the same as simply moving the decimal point two places to the right and adding a percent sign. This is the formula used to calculate **cost percents;** it is commonly written as

$$\text{Cost} \div \text{Sales} \times 100 = \text{Cost\%}$$

This formula can then be extended to show the following relationships:

$$\begin{aligned} \text{Food cost} \div \text{Food sales} \times 100 &= \text{Food cost\%} \\ \text{Beverage cost} \div \text{Beverage sales} \times 100 &= \text{Beverage cost\%} \\ \text{Labor cost} \div \text{Total sales} \times 100 &= \text{Labor cost\%} \end{aligned}$$

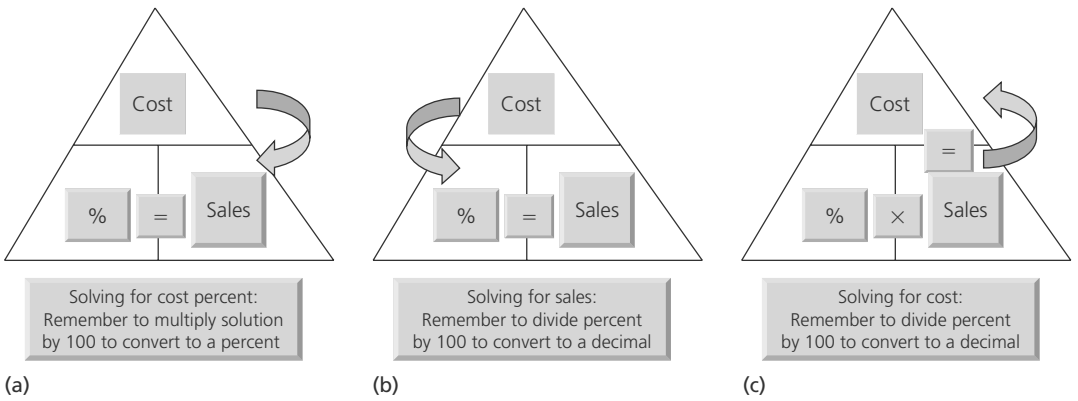
GB

Consider Figures 1.1 and 1.3, the statements of income for the two establishments described earlier—A Taste of Tuscany and the Grandview Bistro. In the case of the Grandview Bistro, we saw that food costing $312,090 ultimately resulted in sales of $891,687. To determine the percentage of sales represented by cost, we divide cost by sales, as in the preceding formula, and multiply the resulting decimal answer by 100 in order to convert it to a percentage. The costing triangle illustrated in Figure 1.7a is very useful when solving cost percent formulas. It should be noted that the costing triangle can be used to solve for cost percent as well as for cost and sales. The idea is that any number over another number indicates division, therefore in Figure 1.7a, cost divided by sales multiplied by 100 is equal to cost percent. Similarly, when solving for sales, the cost would be over the cost percent figure, as shown in Figure 1.7b, thus cost divided by cost percent (after converting to a decimal) is equal to sales. Finally, when using the costing triangle to solve for cost, the cost percent and sales numbers are side by side, as shown in Figure 1.7c. In this case, we multiply to find the unknown cost, remembering always to convert percents to decimals before using in a formula:

$$\$312{,}090 \div \$891{,}687 = .35 \text{ and } .35 \times 100 = 35.0\%$$

• FIGURE 1.7 •

Costing Triangle



Thus, we learn that the food cost percent, or the food cost-to-sales ratio, in the Grandview Bistro over the past year has been 35 percent. This tells us that 35 percent of the income from food sales over the year has gone to cover the cost of the food. Because the cost of food represents $0.35 out of each $1.00 in sales, we can also say that food cost per dollar sale is $0.35. Following the same formula, we may now take the figures for food costs and food sales from the statement of income for A Taste of Tuscany and calculate both the food cost percent and the cost per dollar of sale for purposes of comparison:

$$\$708{,}431 \div \$1{,}686{,}740 = .42 \text{ and } .42 \times 100 = 42.0\%$$

So, in the case of A Taste of Tuscany, the food cost per dollar of sale is $0.42, and the food cost percent is 42 percent.

Cost percents are useful to managers in at least two ways: (1) they provide a means of comparing costs relative to sales for two or more periods of time; and (2) they provide a means of comparing two or more operations. When comparing cost percents for two or more operations, it is important to note that the comparisons are valid only if the operations are similar. Thus, one can compare two fast-food restaurants offering similar products, but one cannot compare a French restaurant with a local diner and expect the comparison to be meaningful.

Useful information about the two restaurants is compared in Figure 1.8.

• FIGURE 1.8 •

Comparison of Costs and Sales, The Grandview Bistro and A Taste of Tuscany

	The Grandview Bistro	*A Taste of Tuscany*
Food Sales	$891,687	$1,686,740
Cost of Food Sold	$312,090	$708,431
Cost per dollar of sale	$0.35	$0.42
Food cost %	35%	42%

It is only at this point that the figures can begin to take on some real meaning and that one can begin to compare them intelligently. It is significant that a principal difference between the two restaurants lies in the fact that the food cost per dollar of sale is $.07 higher in one. Expressed another way, one can say that the cost-to-sales ratio for food is 7 percent higher at A Taste of Tuscany. It is not until raw dollar figures have been converted to this form that there is any useful way of comparing them.

Because food cost is variable, it increases and decreases with sales volume. It would not be possible to make useful comparisons between operating periods for one restaurant or between similar restaurants (as in a chain, for example) unless one were to work with cost percents, or with costs per dollar of sale. Because cost-control figures in the hospitality industry are most commonly expressed in terms of cost percents, we will deal with those figures in this text. In addition, because real dollar figures in real restaurant operations seldom result in round numbers, our percents will be expressed in tenths of 1 percent—35.9 percent or 36.2 percent, for example. This, too, is common in the hospitality industry and permits a greater degree of accuracy. After all, in the case of the Grandview Bistro, one-tenth of 1 percent of sales is $891.69, which is a considerable number of real dollars.

Using the preceding formula, it is now possible to develop a chart (Figure 1.9) comparing cost percents in the two restaurants.

It is both interesting and significant that the cost percents for prime cost as well as the components of prime cost—food, beverages, and labor—are all higher at A Taste of Tuscany than they are at the Grandview Bistro. The remaining costs are lower in A Taste of Tuscany when expressed as a percent of sales. In foodservice, these remaining costs are often referred to as overhead costs. In this text, the term ***overhead cost*** is used to mean all costs other than prime cost. Overhead normally consists of all the fixed costs associated with operating the business. One of the reasons that the overhead

• FIGURE 1.9 •

Comparison of Cost Percentages, The Grandview Bistro and A Taste of Tuscany

	Grandview Bistro	*A Taste of Tuscany*
Food cost as a % of food sales	35.00%	42.00%
Beverage cost as a % of beverage sales	25.00%	32.00%
Combined food and beverage cost as a % of total sales	33.50%	40.50%
Payroll as a % of total sales	24.50%	33.75%
Overhead as a % of total sales	29.73%	23.31%
Prime cost as a % of total sales	58.00%	74.25%
Profit before taxes as a % of total sales	12.27%	2.44%

costs of A Taste of Tuscany are lower than those of the Grandview Bistro, when expressed as a percentage of sales, is the higher sales volume of A Taste of Tuscany. It is normal for high-volume restaurants to have a lower overhead cost percentage than restaurants with lower volume of sales. Nevertheless, the Grandview Bistro still makes a higher profit than A Taste of Tuscany and has a much higher profit percentage.

As explained in Figure 1.7, sometimes the formula

$$\text{Cost} \div \text{Sales} \times 100 = \text{Cost\%}$$

is rearranged algebraically to facilitate other calculations. For instance, suppose a banquet manager has been directed by her boss to ensure that all banquet functions operate at a given food cost percent, and she wants to quote a sales price for a particular menu item, the cost of which is known. The calculation of sales price is simplified if the formula is rearranged in the following form:

$$\text{Cost} \div \text{Cost\% (expressed as a decimal)} = \text{Sales (or sales price)}$$

Remember: When working with percents, one must convert to a decimal before using it in a formula.

If the given cost percentage were 30.0 percent and the food cost for the item were $3.60, the appropriate sales price would be $12.00, as illustrated here:

30.0% ÷ 100 = 0.3
$3.60 ÷ 0.3 = $12.00

Suppose this banquet manager is dealing with a group willing to spend $15.00 per person for a banquet, and the same given 30.0 percent cost percent is to apply. Calculation of the maximum permissible cost per person is facilitated by rearranging the formula once again:

Sales × Cost% (expressed as a decimal) = Cost

So the cost per person can be calculated as $4.50:

30.0% ÷ 100 = 0.3
$15.00 × 0.3 = $4.50

In summary, the cost percent formula can be written and used in any one of three possible forms:

Cost ÷ Sales = Cost%
Cost ÷ Cost% (expressed as a decimal) = Sales
Sales × Cost% (expressed as a decimal) = Cost

The foregoing discussion has assumed that food and beverage costs are relatively stable over time and that one can readily predict future costs accurately. Unfortunately, that is not normally the case. However, it is often necessary to quote prices for functions to be held some months in the future. To do so with some reasonable degree of accuracy, one should consider both seasonal fluctuations in costs and inflation rates. For example, the price of most shellfish is highest in New England during the winter months when the catch is smallest, and this fact should be taken into account when quoting prices in July for a function to be held in January. Moreover, in times of inflation, various food costs increase at various rates. These can frequently be anticipated by management from published information and should be taken into account when quoting future sales prices. An example is the case of an establishment quoting a banquet price for a date six months in the future when the current rate of inflation is 5 percent on an annual basis. If the current food cost for one item is calculated to be $4.00, the manager may be reasonably sure that the cost will be somewhat higher in six months.

Although it is not possible to predict a future cost with perfect accuracy, it is possible to approximate it. A simple way is to assume that one-half of the annual rate will apply to the first six months of the upcoming year, and thus use 2.5 percent (one-half of 5 percent) as the approximate future cost—$4.10, in this case. Assuming a preestablished food cost percent of 30 percent, sales price will be increased from $13.33 to $13.67, as illustrated here.

30.0% ÷ 100 = 0.3
$4.00 ÷ 0.3 = $13.33 versus $4.10 ÷ 0.3 = $13.67

Mathematicians will immediately recognize that this calculation is not wholly accurate. However, it does offer a simple system for taking inflation into account and is clearly better than ignoring inflation completely.

Industrywide Variations in Cost Percents

Cost percents vary considerably from one foodservice operation to another. There are many possible reasons for these variations, several of which are discussed in the following paragraphs. Some of the factors contributing to these variations are type of service, location, price structure, and type of menu.

In very broad terms, there are two basic types of foodservice operations:

1. Those that operate at a low margin of profit per item served and depend on relatively high business volume
2. Those that operate at a relatively high margin of profit per item and therefore do not require such high business volume

It is apparent that if two operations—one of each type—were to have any menu items in common, the menu price would tend to be lower in the operation of the first type.

The following examples of the cost structures of establishments in these two categories are intended to serve only as illustrations of relative costs. The examples should not be taken to imply either that these are standards for the industry or that any particular restaurant should have or should strive to achieve the illustrated cost structure. The cost structure for each individual restaurant must be determined for that restaurant alone, the obvious point being that, as percentages of sales, costs must always total less than 100.0 percent if the operation is to be profitable.

Restaurants that depend principally on convenience foods—the so-called fast-food or quick-service operations—are generally included in the

• FIGURE 1.10 •

Cost Analysis for Typical Low-Margin Restaurant

Cost of food and beverages	40%
Labor cost	20
Other controllable and noncontrollable costs	30
Profit before income taxes	10
Total	100%

first (low margin) category. Because of relatively lower menu prices, the food cost percents in these restaurants tend to be higher. However, they hire unskilled personnel, pay lower wages, and keep the number of employees at a minimum. This makes it possible for them to offset high food cost percent with low labor cost and low labor cost percent. A typical cost analysis for such a restaurant is shown in Figure 1.10.

Restaurants in the second (high margin) category tend to depend less on convenience foods, catering to customers who prefer fresh foods (often prepared gourmet-style) and more personal service. This type of food preparation and service usually requires a greater number of personnel who are more highly skilled and often better paid. This tends to keep the cost of labor higher in these restaurants than in establishments of the first type cited. However, the food cost percent in such establishments tends to be lower, partly because of higher menu prices and partly because foods purchased in raw form are less expensive than preportioned convenience items. An analysis of costs for a typical restaurant of this type would resemble that in Figure 1.11.

It is important to note that operations in the first category require greater numbers of customers to achieve a given dollar volume of sales. In the second example, partly because of higher menu prices, fewer customers

• FIGURE 1.11 •

Cost Analysis for Typical High-Margin Restaurant

Cost of food and beverages	25%
Labor cost	35
Other controllable and noncontrollable costs	30
Profit before income taxes	10
Total	100%

are required to reach a given dollar volume. In general, it is possible to achieve a profit with fewer customers if menu prices are high.

In the two examples cited, profit as a percentage of sales is shown to be 10.0 percent. It must be remembered that these figures are not to be taken as industry standards or even as necessarily desirable standards. Some experts believe that 5.0 percent profit is desirable; others think that a lower percentage of profit will help ensure customer satisfaction and will induce customers to return regularly. If true, this would be likely to lengthen the business life of a restaurant.

The appropriate percentage of profit for a given restaurant must be based on other factors, such as desired return on investment, the real and perceived risks of being in the foodservice business as compared with other forms of investment, the return one might expect to earn in some other business, and a whole range of considerations involving the competition in a specific market. In the last analysis, evaluations and judgments about costs, sales, and profits must be made on an individual, case-by-case basis. Each restaurant tends to be unique.

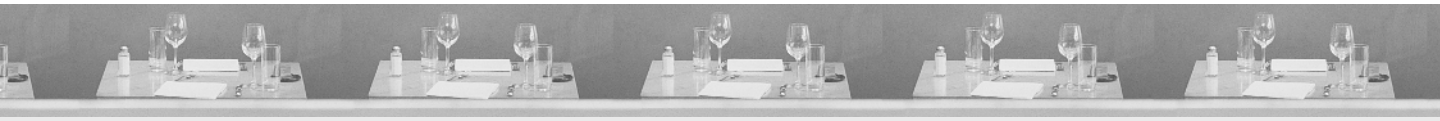
Monitoring Costs and Sales

It is obvious that total sales must exceed total costs if a foodservice enterprise is to be profitable. If costs exceed sales for an extended period of time, the enterprise may eventually face bankruptcy. At the very least, the owner will have to put additional funds into the business to keep it going. It is the job of the manager—and the cost controller, if there is one—to be constantly aware of the costs of operating the business and to keep these costs below the level of sales. Fortunately, many smaller operations and most larger operations have the benefit of computers and industry-specific computer programs that automatically calculate the data described in this chapter (see Chapter 2 for an example of such a program). Daily reports printed out by the computer allow management to monitor various cost and sales information, as well as the important ratios (percents). These ratios are compared with the same ratios from previous periods, and judgments are made about whether the ratios are satisfactory. If not, remedial steps must be taken to bring these ratios into line with those of previous periods.

It is important that the cost and sales data used to calculate these ratios be from like periods. Customarily, comparisons are made for specific days of the week—Monday of last week compared with Monday of this week, for example. Sometimes comparisons are made of like weeks in two different

months—the first week in June compared with the first week in July, for example. Sometimes trends can be identified by those who track these ratios from week to week. However, there are still many establishments in which cost and sales data are seldom examined and ratios are rarely calculated. If this is the case, it should be obvious that management is taking a high degree of risk.

Establishments that gather cost and sales information only monthly, quarterly, or annually may not be able to take effective remedial action, because the information is not sufficiently timely to shed light on current problems.



CHAPTER ESSENTIALS

In this chapter, we defined *cost* as the term is used in the foodservice industry and showed that all industry-related costs can be viewed from several perspectives, including fixed versus variable (with some variable costs being directly variable and others being semivariable), controllable versus noncontrollable, total versus unit, and historical versus planned. We defined the term *prime cost* and showed how the components of the prime cost relate to one another as well as to total sales. We defined *sales* and illustrated special terms commonly used in the industry to discuss and compare various ways of identifying and expressing sales. Monetary expressions of sales include total sales; total sales by category, by server, and by seat; sales prices; and average sale per customer and per server. We defined the term *cover*, and identified such nonmonetary expressions of sales as total number sold, total covers, average covers, seat turnover, and sales mix. We defined the cost-to-sales ratio and provided the formulas used in the industry for various common calculations. We also showed how cost-to-sales ratios may vary from one establishment to another throughout the industry. Finally, we discussed the importance of monitoring cost and sales data and of calculating significant ratios regularly. An understanding of these concepts will provide the necessary foundation for those seeking to understand and apply the control process in food service.

KEY TERMS IN THIS CHAPTER

Average number of covers
Average sale
Average check
Average sale per server
Controllable costs
Cost
Cost per dollar of sale
Cost percent
Cover
Directly variable costs
Fixed costs
Historical cost
Labor costs
Noncontrollable costs
Overhead
Planned cost
Prime cost
Sales
Sales mix
Sales price
Seat turnover
Semivariable cost
Total costs
Total covers
Total dollar sales by category
Total number sold
Total sales
Total sales per seat
Total sales per server
Unit costs
Variable costs

QUESTIONS AND PROBLEMS

1. Given the following information, calculate cost percentages. Round your answers to the nearest tenth of a percent.
   a. Cost, $200.00; Sales, $500.00
   b. Cost, $150.00; Sales, $500.00
   c. Cost, $178.50; Sales, $700.00
   d. Cost, $216.80; Sales, $800.00
   e. Cost, $127.80; Sales, $450.00
   f. Cost, $610.00; Sales, $2,000.00

2. Calculate cost, given the following figures for cost percent and sales:
   a. Cost percent, 28.0%; Sales, $500.00
   b. Cost percent, 34.5%; Sales, $2,400.00
   c. Cost percent, 24.8%; Sales, $225.00
   d. Cost percent, 31.6%; Sales, $1,065.00
   e. Cost percent, 29.7%; Sales, $790.00
   f. Cost percent, 21.2%; Sales, $4,100.00

3. Calculate sales, given the following figures for cost percent and cost:
   a. Cost percent, 30.0%; Cost, $90.00
   b. Cost percent, 25.0%; Cost, $500.00

c. Cost percent, 33.3%; Cost, $1,000.00
d. Cost percent, 27.3%; Cost, $1,300.40
e. Cost percent, 24.5%; Cost, $88.20
f. Cost percent, 34.8%; Cost, $1,113.60

4. List three examples of foodservice costs that are fixed. Are they controllable? Explain your answers.

5. List three examples of foodservice costs that are variable. Are they controllable? Explain your answers.

6. Write a short paragraph illustrating why a comparison of raw dollar costs in two restaurants would not be meaningful, but a comparison of the cost percents for food, beverages, labor, and overhead might be.

7. The present cost to Lil's Restaurant for one à la carte steak is $3.20. This is 40 percent of the menu sales price.
   a. What is the present sales price?
   b. At an annual inflation rate of 5 percent, what is this steak likely to cost one year from today?
   c. Using the cost calculated in (b) above, what should the menu sales price be for this item in one year if the cost percent at that time is to be 38 percent?
   d. If you were a banquet manager planning a function six months from now and planning to use this item, what unit cost would you plan for?
   e. The banquet manager in (d) above has already calculated that the other items included in this banquet menu will have increased in cost in six months from $2.00 to $2.11. What should the sales price per person be for this banquet if the desired cost percentage is 40 percent?

8. At the Loner Inn, total fixed costs for October were $28,422.80. In that month, 14,228 covers were served.
   a. What was the fixed cost per cover for October?
   b. Assume that fixed costs will increase by 2 percent in November. Determine fixed cost per cover if the number of covers decreases by 10 percent in November.

9. Joe's Downtown Restaurant purchases domestic red wine at $9.20 per bottle. Each bottle contains 3 liters, the equivalent of 101 ounces. The wine is served in 5-ounce glasses, and management allows for 1 ounce of spillage per 3-liter bottle.
   a. What is the average unit cost per drink?
   b. What is the total cost of 60 glasses of wine?

c. The banquet manager is planning a function for 120 persons for next Friday evening. Each guest will be given one glass of wine. How many bottles should be ordered for the party?
d. What will be the unit cost of the wine? The total cost?

10. Sales records for a luncheon in the Newmarket Restaurant for a recent week were:
Item A, 196
Item B, 72
Item C, 142
Item D, 24
Item E, 112
Item F, 224
Item G, 162
Given this information, calculate the sales mix.

11. Calculate the average check from the following data:
a. Sales, $1,000.00; Number of customers, 125
b. Sales, $1,300.00; Number of customers, 158
c. Sales, $8,720.53; Number of customers, 976

12. The following table indicates the number of covers served and the gross sales per server for one three-hour period in Sally's Restaurant. Determine: (a) the average number of covers served per hour per server, and (b) the average sale per server for the three-hour period.

Server	Covers Served	Gross Sales Per Server
A	71	$237.40
B	66	$263.95
C	58	$188.25

13. Use the information about Sally's Restaurant identified in Question 12 to complete the following:
a. Calculate the average check.
b. Calculate the turnover for the three-hour period if there are 65 seats in the restaurant.

14. Given the information about Sally's Restaurant identified in Questions 12 and 13, assume the restaurant had 85,629 customers per year and gross sales were $352,783.40.
a. Calculate the average check.
b. Calculate sales per seat for the year.

15. The financial records of the Colonial Restaurant reveal the following figures for the year ending December 31, 20XX:
Depreciation, $25,000
Food sales, $375,000
Cost of beverages sold, $30,000
Other controllable expenses, $60,000
Salaries and wages, $130,000
Beverage sales, $125,000
Employee benefits, $20,000
Cost of food sold, $127,500
Occupancy costs, $55,000
   a. Following the form illustrated in Figure 1.1, prepare a statement of income for the business.
   b. Determine the following percentages:
      Food cost percent
      Labor cost percent (payroll, plus payroll taxes and employee benefits)
      Beverage cost percent
      Combined food and beverage cost percent
      Percentage of profit before income taxes
   c. Assuming the restaurant has 75 seats, determine food sales per seat for the year.

16. Define the key terms in this chapter.

EXCEL EXERCISES

The disk accompanying this text provides computer exercises for students using Microsoft Excel. Bring up the exercises for each chapter on your Excel spreadsheet and complete the problems. Students using another spreadsheet program can complete these exercises but must construct their own templates, using the illustrations in the text as examples.

Barnaby's Hideaway is a 140-seat restaurant located on the outskirts of a city of 250,000 population. Its menu is shown as Figure 1.12.

Exercise 1.1

Complete the income statement for Barnaby's Hideaway by inserting the following figures in the appropriate places. Print your completed income statement. This will give you printed information for completing Exercises 1.2, 1.3, and 1.4.

Sales
    Food, $1,120,964
    Beverage, $465,200
Cost of Sales
    Food, $392,337
    Beverage, $102,344
Salaries and Wages, $396,541
Employee Benefits, $99,135
Other Controllable Expenses, $275,330
Occupancy Costs, $75,230
Interest, $25,600
Depreciation, $79,099

Exercise 1.2

On your Excel spreadsheet, calculate food cost percent and labor cost percent for Barnaby's Hideaway.

Exercise 1.3

On your Excel spreadsheet, calculate overhead as a percentage of total sales for Barnaby's Hideaway.

Exercise 1.4

On your Excel spreadsheet, calculate prime cost as a percentage of total costs for Barnaby's Hideaway. When completed, add the cost percentages for prime cost, overhead costs, and profit to arrive at 100 percent.

Exercise 1.5

Sales for one Friday night are shown on your disk. On your Excel spreadsheet:

- **a.** Calculate the average check (assume one customer for each entrée sold).
- **b.** Calculate the sales mix.
- **c.** Eight servers are on duty that night. Calculate the average sales per server.
- **d.** Calculate the seat turnover for the meal period.

Exercise 1.6

Follow the instructions on the disc to complete this exercise.

• FIGURE 1.12 •

Menu for Barnaby's Hideaway

SOUPS

Black Bean Soup
$4.30
New England Style Clam Chowder
$5.50

APPETIZERS

SHRIMP COCKTAIL
Five jumbo shrimp served with a zesty cocktail sauce
$6.95

OYSTERS ROCKEFELLER
Six oysters on the half shell baked with spinach, onion, bread crumbs, bacon, and spices
$6.95

PROSCIUTTO AND FIG BRUSCHETTA
Bruschetta covered with Italian prosciutto and figs
$5.45

JEWELS OF THE SEA IN PUFF PASTRY
Six different shellfish served with a delicious sauce in puff pastry
$6.95

SALADS

Wild Mushroom and Quinoa Salad
With fresh thyme, goat cheese, and shallot vinaigrette
Carmelized Apple Salad
With walnuts and spicey orance vinaigrette
Caesar Salad
Topped with roasted garlic cornbread croutons and our own dressing

ENTRÉES

All entrées served with pasta, baked potato, or wild rice;
vegetables du jour; and choice of salad

NEW YORK STRIP STEAK
12-ounce prime steak charbroiled and topped with crimini mushrooms
$21.50

PRIME RIB OF BEEF
10-ounce prime beef with corn-poblano pudding
$19.50

BABY BACK PORK RIBS
Barbecued ribs with our own barbecue sauce
$15.45

(*Continued*)

ROAST LEG OF LAMB
Roast lamb with honey, balsamic vinegar, and fresh mint paste
$17.45

LOIN OF PORK À MAISON
Tender pork served with our sauce du jour
$17.45

MEATLESS MANICOTTI*
Pasta stuffed with a delicious low-fat cheese filling
$10.45

CHICKEN BREASTS AU SOY*
Breasts marinated in soy sauce and honey
$12.45

TEA-SMOKED SALMON*
Italian white beans, fusilli, and saffron broth served with salmon on a bed of lemon baby spinach
$17.45

BAKED STUFFED SHRIMP
Five large shrimp stuffed with a crab dressing
$19.50

CHICKEN ALBUFERA
Chicken breast sautéed with shallots, brandy cream sauce, and artichoke hearts
$14.45

FRUITES DE MER
Lobster, shrimp, and scallops tossed in a light basil cream with fresh romano, served over thin pasta
$19.45

CATCH OF THE DAY
Fresh fillet of fish sautéed and served with lemon
$14.50

DESSERTS

Deep-Dish Apple Pie
$3.50
Banana Beignets with Orange-Caramel Sauce
$4.00
Caramelized Apple-Blackberry Cobbler
$3.50

*Heart-healthy items