CHAPTER 12

Expense Forecast

¶ 12.01 INTRODUCTION

After the forecasted revenue for a proposed property has been determined, the next task for the appraiser is to project the expenses that the property would be likely to incur. Expenses for lodging facilities should be categorized according to the standardized system outlined in *Uniform System of Accounts for Hotels* (Hotel Association of New York City, Inc., *Uniform System of Accounts for Hotels* (8th ed.), HANYC, Inc., 1986). The accounts in this system include rooms, food and beverage, telephone, other, administrative and general, management fees, marketing, property operations and maintenance, energy, property taxes, insurance, and reserve for replacement.

Each expense account should be analyzed separately and projected independently of any other, because each account has unique fixed and variable characteristics. As part of this process, the appraiser divides each major account into its component categories. Each category should then be evaluated on the basis of whether it is fixed or varies with differing levels of occupancy, room rate, or food and beverage volume. The fixed and variable method of forecasting expenses, which can also be used to forecast revenues, is discussed in Chapter 11.

The fixed and variable approach to forecasting hotel revenues and expenses involves the following steps:

1. The financial statements of comparable hotels form the basis for forecasting revenue and expense items. If the subject property is an existing hotel, its historical operating performance is considered in formulating projections. For proposed hotels, the appraiser must rely on the operating results of comparable properties.
2. The comparable financial statements are adjusted to reflect the unique characteristics of the subject property, so as to create a one-year financial statement using the subject property's undiscounted first-year's average income and expense ratios representing the occupancy level actually experienced by either the subject or comparable hotels. This procedure yields a base-year profit-and-loss statement that can be used to determine the relationship between the fixed and variable components.
3. The base-year revenue and expense amounts are inflated or deflated to reflect current dollars for each projection year. The rate of inflation reflects the anticipated price change for the individual line item in the income and expense statement. This step is performed to adjust the comparable financial data that constitutes the base to the inflated dollars anticipated for that particular year.
4. The fixed and variable percentages of each income and expense item are estimated. Exhibit 12-1 illustrates typical fixed and variable percentages and the index used to measure change in the variable component.

The index of variability refers to a factor that controls the movement of the variable component. For example, the variable component of food revenue changes with occupancy; beverage revenue is tied directly to food revenue; and food and beverage expense is largely dependent on food and beverage revenue. The variable component of undistributed operating expenses and fixed expenses is correlated with revenue.

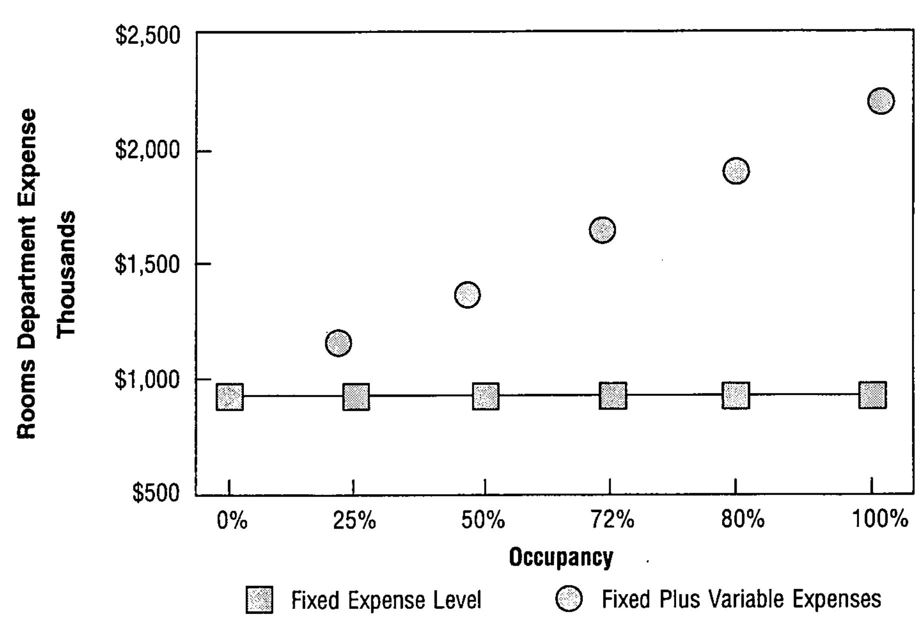
5. Each individual line item is projected separately. The fixed component is estimated by multiplying the appropriate fixed percentage by the inflated base-year revenue or expense for the corresponding projection year.
6. The variable components are assumed to be in accordance with the index of variability set forth in Step 4. The amount of change is quantified by dividing the appropriate projected index of variability by the index of variability for the base year.
7. The unadjusted variable component is calculated by multiplying the appropriate base revenue or expense category for the projection year by the variable percentage estimated in Step 4.
8. The unadjusted variable component is adjusted for variability by multiplying the results of Step 7 by the variable percentage change calculated in Step 6. The resulting product is known as the adjusted variable component.
9. The forecasted revenue or expense is the total of the fixed component calculated in Step 5 and the adjusted variable component calculated in Step 8.

The fixed and variable approach can be illustrated graphically. Exhibit 12-2 shows the subject's rooms department expense as of the stabilized year.

Exhibit 12-1 Range of Fixed and Variable Expenses

Revenue and Expense Category	Percent Fixed	Percent Variable	Index of Variability
Food	25–50	50–75	Occupancy
Beverage	0–30	70-100	Food Revenue
Telephone	10–40	60–90	Occupancy
Other Income	30–60	40–70	Occupancy
Departmental Expenses			
Rooms	50–70	30–50	Occupancy
Food and Beverage	35–0	40–65	Food and Beverage Revenue
Telephone	55–75	25–45	Telephone Revenue
Other Income	40–60	40–60	Other Income
Undistributed Operating Expenses			
Administrative and General	65–85	15–35	Total Revenue
Management Fee	0	100	Total Revenue
Marketing	65–85	15–35	Total Revenue
Franchise Fees	0	100	Rooms Revenue
Repairs and Maintenance	55–75	25–45	Total Revenue
Energy	80–95	5–20	Total Revenue
Fixed Expenses			
Property Taxes	100	0	Total Revenue
Insurance	100	0	Total Revenue
Reserve for Replacement	0	100	Total Revenue

Exhibit 12-2 Illustration of Fixed and Variable Relationship of Rooms Expense



¶ 12.02 ROOMS EXPENSE

Rooms expense consists of all the costs involved in the sale and upkeep of guestrooms and public space. The individual categories of rooms expense are moderately occupancy-sensitive and slightly rate-sensitive, which means that a portion of the overall expense is fixed and the remainder is occupancy-variable.

Salaries, wages, and employee benefits represent a substantial portion of rooms expense. Although part of the payroll cost is occupancy-variable, because management can schedule maids, bell personnel, and house cleaners to work on an as-needed basis when occupancy requires, much of the rooms payroll is actually fixed. Many positions, including front desk personnel, public area cleaners, and the housekeeper and other supervisory staff, must be maintained at all levels of occupancy. As a result, salaries, wages, and employee benefits are only moderately occupancy-sensitive.

Commissions represent remuneration to travel agents for booking rooms business. Because these charges are usually based on a percentage of rooms revenue, they are very sensitive to occupancy and average room rate. Reservations incur a similar expense that reflects the cost of a franchise reservation system, which is typically a certain percentage of rooms revenue. Other rooms expense categories such as laundry, linen, supplies, and uniforms are also somewhat affected by volume and are therefore slightly occupancy-sensitive.

Rooms expense is strongly influenced by changes in occupancy and average room rates, so the appropriate units of comparison that the appraiser should use to project rooms expense are a percentage of rooms revenue and an amount per occupied room. The projection derived from these quantities is then compared with a similar hotel's rooms expense.

The ratio of rooms expense to rooms revenue, the "rooms expense ratio," is an important statistic that often is a key indicator of the skill and effectiveness of management. Unless a hotel suffers from an extremely low level of occupancy or an unusually depressed average room rate, rooms expense should not exceed 25 percent of rooms revenue. If rooms expense is greater than this amount, problems may exist that warrant ownership investigation.

Rooms expense projections are usually made using the fixed and variable component approach, with 50 percent to 70 percent of the expense being fixed and 30 percent to 50 percent occupancy-variable. For example, it is estimated in Exhibit 12-3 that 60 percent of rooms expense is fixed and 40 percent varies with occupancy.

¶ 12.03 FOOD AND BEVERAGE EXPENSE

Food and beverage expense consists of the expenditures that must be made to operate the food, beverage, and banquet facilities of a hotel. Although food revenue and beverage revenue are normally projected individually and entered separately in an income and expense statement, the expenses for these two revenue sources are combined into a single entry.

The majority of food and beverage expense is made up of the cost of sales, salaries, and wages. These components are moderately to highly food-and-beverage–sensitive in that they vary directly with changes in food and beverage volume. The other associated costs (e.g., laundry and dry cleaning, operating supplies, and uniforms) tend to be either slightly food-and-beverage–sensitive or moderately fixed (i.e., they vary only slightly with changes in occupancy or room rates, or food and beverage volume). Given the nature of the components of food and beverage expense,

Exhibit 12-3 Forecast of Rooms Department Expense ($ thousands)

	1996	1997	1998	Stablized
Base Rooms Expense	$1,400	$1,456	$1,514	$1,575
Percent Fixed	60%	60%	60%	60%
Rooms Expense Fixed Component	$840	$873	$908	$945
Base Rooms Expense	$1,400	$1,456	$1,514	$1,575
Percent Variable	40%	40%	40%	40%
Unadjusted Variable Component	$560	$582	$606	$630
Unadjusted Variable Component	$560	$582	$606	$630
Variable Percentage Change	0.9854	1.0157	1.0612	1.0915
Adjusted Variable Component	$552	$591	$643	$687
Fixed Component	$840	$873	$908	$945
Adjusted Variable Component	$552	$591	$643	$687
Total Rooms Expense	$1,392	$1,465	$1,551	$1,632
Percent of Rooms Revenue	23.5%	23.1%	21.7%	20.5%
Amount Per Available Room	$5,352	$5,634	$5,966	$6,278
Amount Per Occupied Room	$22.57	$23.04	$23.35	$23.88

the appropriate unit of comparison is a percentage of food and beverage revenue. When this unit of comparison is used, the appraiser should select comparable hotels with similar ratios of beverage to food. The profit margin from the sale of beverages is considerably higher than that from the sale of food, so a hotel with a higher ratio of beverage to food should have a lower food and beverage expense ratio. The reverse is true as the ratio of beverage to food sales declines.

As with rooms expense, the ratio of food and beverage expense to food and beverage revenue is a benchmark that can be used to evaluate the skill and effectiveness of a hotel's management. Many hotel operators run a highly efficient rooms department but lose thousands of dollars through poorly managed food and beverage service. Unless a hotel has an extremely low volume of food and beverage revenue or suffers from an unusually high cost of labor, food and beverage expense should not exceed 80 to 83 percent of food and beverage revenue. Food and beverage expense in excess of this amount may indicate poor management.

Food and beverage expense is normally projected through the fixed and variable component approach, with 35 percent to 55 percent of the expense being fixed and 45 percent to 65 percent variable. The appropriate index of variability for food and beverage expense is food and beverage revenue. This means that the variable portion of the food and beverage expense category will vary directly with changes in food and beverage revenue.

Exhibit 12-4 assumes that 55 percent of food and beverage revenue is fixed and that 45 percent varies with food and beverage revenue in its calculation of the subject property's food and beverage expense.

Exhibit 12-4 Forecast of Food and Beverage (F&B) Department Expense ($ thousands)

	1994	1995	1996	Stabilized
Base F&B Expense	$1,221	$1,270	$1,321	$1,374
Percent Fixed	55%	55%	55%	55%
F&B Expense Fixed Component	$672	$699	$726	$756
Base F&B Expense	$1,221	$1,270	$1,321	$1,374
Percent Variable	45%	45%	45%	45%
Unadjusted Variable Component	$550	$572	$594	$618
Unadjusted Variable Component	$550	$572	$594	$618
Variable Percentage Change	0.9890	1.0116	1.0464	1.0690
Adjusted Variable Component	$543	$578	$622	$661
Fixed Component	$672	$699	$726	$756
Adjusted Variable Component	$543	$578	$622	$661
Total F&B Expense	$1,215	$1,277	$1,348	$1,416
Percent of Food and Beverage Revenue	93.3%	92.2%	90.5%	89.5%
Amount Per Available Room	$4,674	$4,910	$5,186	$5,447
Amount Per Occupied Room	$19.70	$20.08	$20.29	$20.72

¶ 12.04 TELEPHONE EXPENSE

Telephone expense consists of all of the costs associated with the operation of a hotel telephone department. For smaller hotels with automated phone systems, the telephone department may be as simple as an additional responsibility for the front desk personnel; in large properties, the telephone department usually has one or more full-time telephone operators to provide the necessary service to the guests.

The bulk of telephone expense is the cost of local and long distance calls that are billed by the telephone companies that service the hotel. Because most of these calls originate from in-house guests, these expenses are moderately occupancy sensitive. Unless a particular department has unusually heavy telephone usage, the normal use of telephone services by hotel employees is charged to the telephone expense account. The remaining costs, such as salaries and wages, miscellaneous expenses, and printing, are all moderately fixed. In light of a recent modification of accounting categories in the *Uniform System of Accounts for Hotels* that reallocates equipment rental expense from the telephone expense account to that of rent, taxes, and insurance, the appraiser should take careful note of the accounting for telephone equipment rental or lease expense.

Given the nature of the components of total telephone expense and in view of the fact that the cost of telephone service is largely driven by the in-house usage that generates telephone revenue, the appropriate unit of comparison is a percentage of telephone revenue.

Telephone expense is normally projected through the fixed and variable component approach, with the expense being 55 percent to 75 percent fixed and 25 percent to 45 percent directly variable with telephone revenue. The fixed component is the operational usage of telephone services by hotel employees along with the normal fixed line charges from the telephone companies. The variable expense is the actual usage by hotel guests, which corresponds directly with telephone revenue.

In Exhibit 12-5, telephone expense is estimated to be approximately 60 percent fixed and 40 percent variable.

Exhibit 12-5 Forecast of Telephone Department Expense ($ thousands)

	1996	1997	1998	Stablized
Base Telephone Expense	$149	$155	$162	$168
Percent Fixed	60%	60%	60%	60%
Telephone Expense Fixed Component	$90	$93	$97	$101
Base Telephone Expense	$149	$155	$162	$168
Percent Variable	40%	40%	40%	40%
Unadjusted Variable Component	$60	$62	$65	$67
Unadjusted Variable Component	$60	$62	$65	$67
Variable Percentage Change	0.9881	1.0124	1.0532	1.0818
Adjusted Variable Component	$59	$63	$68	$73
Fixed Component	$90	$93	$97	$101
Adjusted Variable Component	$59	$63	$68	$73
Total Telephone Expense	$149	$156	$165	$173
Percent of Telephone Revenue	64.9%	64.0%	62.5%	61.5%
Amount Per Available Room	$572	$600	$635	$667
Amount Per Occupied Room	$2.42	$2.45	$2.48	$2.53

¶ 12.05 OTHER INCOME EXPENSE

Other income expense includes all of the costs that are associated with the corresponding other income revenue, such as rentals, forfeited advance deposits, and vending machine revenues. The extent of these expenses depends on the nature of the revenue. For example, if a hotel leases a gift shop in its lobby, the cost to the hotel would be minimal, consisting of such items as rental fees and commissions. If, on the other hand, the hotel operated the gift shop, both the revenue and expenses would be higher; revenue would include the proceeds from products sold, and expenses would include the cost to purchase products to sell, payroll, and so forth.

On the basis of an analysis of the components that constitute other income expense, the appropriate unit of comparison is a percentage of other income revenue.

Other income expense is normally projected by the fixed and variable component approach, with 40 percent to 60 percent of the expense being fixed and 40 percent to 60 percent varying directly with other income revenue.

Exhibit 12-6 presents the calculation of the subject property's Other Income expense. Income expense is estimated to be 70 percent fixed, with 30 percent varying directly with other income.

Exhibit 12-6 Forecast of Other Income Expense ($ thousands)

	1996	1997	1998	Stabilized
Base Other Income Expense	$81	$85	$88	$82
Percent Fixed	70%	70%	70%	70%
Other Income Expense Fixed Component	$57	$59	$62	$64
Base Other Income Expense	$81	$85	$88	$92
Percent Variable	30%	30%	30%	30%
Unadjusted Variable Component	$24	$25	$26	$27
Unadjusted Variable Component	$24	$25	$26	$27
Variable Percentage Change	0.9943	1.0066	1.0166	1.0295
Adjusted Variable Component	$24	$26	$27	$28
Fixed Component	$57	$59	$62	$64
Adjusted Variable Component	$24	$26	$27	$28
Total Other Income Expense	$81	$85	$88	$92
Percent of Other Income Revenue	47.8%	47.4%	47.0%	46.6%
Amount per Available Room	$312	$326	$340	$355
Amount per Occupied Room	$1.31	$1.34	$1.32	$1.35

¶ 12.06 ADMINISTRATIVE AND GENERAL EXPENSE

The administrative and general expense of a hotel is made up of all of the managerial and operational expenses that cannot be attributed to a particular department. For example, the general manager might work part of one day solving a problem in the rooms department and devote the remainder of the day to booking an important food and beverage function. It is too difficult to continually keep track of the manager's activities and allocate his or her salary to individual departments, so the category of administrative and general is used to account for it.

Most administrative and general expenses are relatively fixed. The exceptions are commissions on credit card charges, which are highly dependent on occupancy; cash overages and shortages and provisions for doubtful accounts, all of which are affected moderately by the quantity of transactions or total revenue; and salaries and wages, benefits, and security, which are influenced slightly by volume.

In recent years, several new categories have been added to administrative and general expenses. One example is human resources, which includes the cost of recruiting, relocating, and training. Another example is security, which encompasses the cost of contract security for the property and other related expenses.

The category called "insurance/general." comprises the premiums for policies that cover liability, fidelity, life insurance, theft coverage, and business interruption insurance. Fire and extended coverage insurance on the building and its contents is a separate insurance expense category.

Liability coverage encompasses third-party actions involving bodily injury and personal property and is typically based on rooms receipts, meeting and banquet revenue, and food and beverage revenue. Some of the factors that affect liability insurance expense are the size of meeting, banquet, or restaurant facilities; the amount of alcohol served as a percentage of total food and beverage sales; and the existence of a lounge dance floor. Factors that can increase liability insurance expense include building design (such as a high-rise structure), swimming pools, lack of life safety support systems (fire and smoke alarms), and any transportation services provided to guests.

Given the nature of the components of administrative and general expense, the appropriate unit of comparison to test for reasonableness is an amount per available room. The result of this test can be verified by using a percentage of total revenue.

Projections of administrative and general expense are normally made using the fixed and variable component approach, with 65 percent to 85 percent of the expense being fixed and 15 percent to 35 percent varying directly with total revenue.

In the example in Exhibit 12-7, it is assumed that approximately 70% of administrative and general expenses is fixed and 30 percent vary in relation to total revenue.

Exhibit 12-7 Forecast of Administrative and General Expense ($ thousands)

	1996	1997	1998	Stablized
Base Administrative and General Expense	$675	$702	$730	$759
Percent Fixed	70%	70%	70%	70%
Administrative and General Expense Fixed Component	$472	$491	$511	$531
Base Administrative and General Expense	$675	$702	$730	$759
Percent Variable	30%	30%	30%	30%
Unadjusted Variable Component	$202	$210	$219	$228
Unadjusted Variable Component	$202	$210	$219	$228
Variable Percentage Change	0.9863	1.0147	1.0575	1.0863
Adjusted Variable Component	$200	$214	$231	$247
Fixed Component	$472	$491	$511	$531
Adjusted Variable Component	$200	$214	$231	$247
Total Administrative and General Expense	$672	$705	$742	$779
Percentage of Total Revenue	8.8%	8.6%	8.2%	7.8%
Amount per Available Room	$2,585	$2,712	$2,854	$2,996
Amount per Occupied Room	$10.89	$11.08	$11.17	$11.39

¶ 12.07 MANAGEMENT FEE EXPENSE

The management fee expense category accounts for the basic fee paid to the management company that will operate the subject property. Management fees differ depending on whether the management company is a first- or second-tier operator. The appraiser should use the actual fee structure negotiated for the management company, if it has been selected, or a fee based on market analysis in the event the operator is not known. The estimate for the incentive portion of the management fee is generally found at the point in the income and expense statement that forms the basis for the incentive fee calculation. For example, if the incentive management fee is based on a percentage of income before fixed charges, then the incentive fee is located just after this point in the statement.

Basic hotel management fees are almost always based on a percentage of total revenue, which means that they are 100 percent variable. The proper unit of comparison is a percentage of total revenue.

In Exhibit 12-8, the management company is operating the subject property for a basic management fee of 3 percent, which is considered reasonable for this type of company.

Exhibit 12-8 Forecast of Management Fee ($ thousands)

	1996	1997	1998	Stabilized
Projected Total Revenue	$7,620	$8,153	$9,101	$10,016
Management Fee Percentage	3.0%	3.0%	3.0%	3.0%
Management Fee Expense	$229	$245	$273	$300

¶ 12.08 MARKETING EXPENSE

Marketing expense includes all of the expenses associated with advertising, sales, and promotion of a lodging facility. These marketing activities are designed to attract new customers and retain existing ones through efforts aimed at creating an image for the hotel, developing customer awareness, and stimulating patronage to the property and its various facilities. Unlike most expense categories, marketing is almost totally controlled by management. Hotel operators typically develop annual marketing plans that detail future expenditures. If such budgets are followed, total marketing expenses can be projected accurately.

The hotel operator must consider many factors when compiling a marketing budget. One of the most significant is that the results of marketing expenditures are not always immediately realized. Depending on the type of advertising and promotion, increased patronage may not be seen for months or even years. Over time, however, this lag period tends to be offset, because the benefits of a successful marketing campaign generally continue after the program has ended.

Hotels have unique operating characteristics that must be considered either when developing a marketing plan or when reviewing the effectiveness of an established marketing effort. For an appraiser to forecast hotel revenues, the marketing programs of the past several years (along with anticipated future plans) should be evaluated to determine their potential effect on the income and expenses of the hotel. Some of the unique characteristics that should be addressed are as follows:

- New hotels, especially those catering to the meeting and convention segment, should have a marketing plan that commences before the hotel opens. Organizers of business meetings and conferences typically plan their meeting accommodations three to six months in advance, while large national associations choose their convention sites as far as five years in advance. If a meeting-oriented hotel is not in the marketplace in time to obtain advance business, it will be passed over in favor of the established competition and suffer low occupancy levels during the initial years of its operation.

- Because the effect of marketing tends to be cumulative, the initial marketing efforts for a new hotel may require greater expenditures than those for an established facility in order to achieve the desired results.
- Marketing expenditures are similar to a hotel maintenance program. If an existing property has neglected its marketing efforts for several years, the appraiser may have to allow for a higher than normal marketing budget either to maintain or to increase current revenues. However, if an aggressive marketing program has been in effect, a reduction in marketing expenses may be justified, because revenues will not be adversely affected.
- The marketing budget should be designed for the specific property as well as for the nature of local lodging supply and demand. Characteristics such as location, visibility, chain affiliation, and class and types of market segments serviced can affect the type and amount of marketing expenditures required.

Marketing expense is divided into seven categories: salaries and wages, benefits, sales, advertising and merchandising, reservations, other marketing activities, and fees and commissions. Together they form the entire marketing effort of the property, incorporating both the internal staff and outside agencies. All categories are budgeted, fixed expenses, except for reservations and fees and commissions, which are occupancy and rate sensitive because they are generally based on a percentage of rooms revenue.

Costs related to the marketing of guestrooms, such as reservations and travel agency fees and commissions, have traditionally been charged to rooms expense. However, there is a growing recognition that these costs are elements of the overall marketing activity, and hotels that recognize these functions as marketing responsibilities should charge these expenses to marketing.

The appropriate unit of comparison for marketing expenses is an amount per available room. Sometimes it is helpful to remove the franchise fee cost and make a separate calculation for it because it is generally 100 percent variable, depending on the rooms revenue.

Marketing expense is normally projected through the fixed and variable component approach, with 65 percent to 85 percent of the expense being fixed and 15 percent to 35 percent varying directly with total revenue. The fixed and variable component approach must sometimes be adjusted to account for unique marketing considerations, such as the costs incurred by fees and commissions paid to travel agencies.

Exhibit 12-9 presents a marketing forecast based on a fixed and variable component model in which 70 percent of this expense is considered fixed and 30 percent varies with total revenue. This relationship takes into account the location of the subject property, the local market for transient accommodations, the competitive environment, and the hotel's anticipated market segmentation.

¶ 12.09 PROPERTY OPERATIONS AND MAINTENANCE EXPENSE

Property operations and maintenance (PO&M), which is also known as repair and maintenance, is another expense that is largely controlled by management (see Exhibit 12-10). Except for repairs necessary to keep the facility open and precautions against damage, most maintenance items can be deferred for various lengths of time. However, maintenance is an accumulating expense. If a needed repair is merely postponed, it is neither eliminated nor does it go away of its own accord. Rather it becomes what is known as deferred maintenance that must ultimately be attended to at some later date. When an appraiser projects income and expense for an existing lodging facility, the property operations and maintenance expenses over the past several years should be investigated to determine whether adequate expenditures were made to keep the facility in good condition. This should be done in conjunction with a physical inspection of the property to determine whether the funds that were expended were sufficient for the repairs required.

Exhibit 12-9 Forecast of Marketing Expense ($ thousands)

	1996	1997	1998	Stabilized
Base Marketing Expense	$540	$561	$584	$607
Percent Fixed	70%	70%	70%	70%
Marketing Expense Fixed Component	$378	$393	$409	$425
Base Marketing Expense	$540	$561	$584	$607
Percent Variable	30%	30%	30%	30%
Unadjusted Variable Component	$162	$168	$175	$182
Unadjusted Variable Component	$162	$168	$175	$182
Variable Percentage Change	0.9863	1.0147	1.0575	1.0863
Adjusted Variable Component	$160	$171	$185	$198
Fixed Component	$378	$393	$409	$425
Adjusted Variable Component	$160	$171	$185	$198
Total Marketing Expense	$538	$564	$594	$623
Percentage of Total Revenue	7.1%	6.9%	6.5%	6.2%
Amount per Available Room	$2,067	$2,168	$2,284	$2,396
Amount per Occupied Room	$8.71	$8.87	$8.94	$9.12

The following factors influence the required level of maintenance for lodging facilities:

- *Age of the hotel.* New hotels are typically protected for several years by new equipment and manufacturer's warranties, so PO&M costs during the initial years of operation are reduced. As hotels become older, maintenance costs tend to escalate rapidly.
- *Use of a preventive maintenance system.* Some hotel operators conduct preventive maintenance programs that consist of periodic checks and maintenance of all the important components of a lodging facility. The purpose of preventive maintenance is to anticipate possible maintenance problems early enough so that only minor repairs, rather than major overhauls, are necessary.
- *Quality of initial facilities.* The quality and type of the initial construction can have a direct effect on future maintenance requirements. The use of high-quality building materials and construction methods will generally reduce the need for maintenance expenditures over the long term. During the physical inspection, the appraiser should investigate the condition and quality of the original construction.

Property operations and maintenance is considered an operating expense and, as such, under IRS regulations, it can contain only items that can be expensed rather than capitalized. For example, if a table leg breaks, the repair of the leg would be considered an expense and chargeable to property operations and maintenance. If the table was instead replaced, it would become a capital expenditure that would not appear under the property operations and maintenance category. Appraisers account for capital replacements of items such as furniture, fixtures, and equipment reserve for replacement expense.

The items in property operations and maintenance are either fixed or very slightly influenced by changes in occupancy and food and beverage usage. The fact that PO&M is mostly fixed means that the appropriate unit of comparison for this expense category is an amount per available room that is verified by a percentage of total revenue.

Property operations and maintenance is normally projected by the fixed and variable component approach with 55 percent to 75 percent of the expense being fixed and 40 percent to 60 percent varying directly with total revenue. In Exhibit 12-10, it is assumed that 70 percent of the category is fixed to project operations and maintenance expense.

Exhibit 12-10 Forecast of Property Operations and Maintenance Expense ($ thousands)

	1996	1997	1998	Stabilized
Base Property Oper. & Maint. Expense	$338	$351	$365	$380
Percent Fixed	70%	70%	70%	70%
Property Oper. & Maint. Expense Fixed Component	$236	$246	$256	$266
Base Property Oper. & Maint. Expense	$338	$351	$365	$380
Percent Variable	30%	30%	30%	30%
Unadjusted Variable Component	$101	$105	$110	$114
Unadjusted Variable Component	$101	$105	$110	$114
Variable Percentage Change	0.9863	1.1047	1.0575	1.0863
Adjusted Variable Component	$100	$107	$116	$124
Fixed Component	$236	$246	$256	$266
Adjusted Variable Component	100	107	116	124
Total Property Oper. & Maint. Expense	$336	$353	$372	$390
Percentage of Total Revenue	4.4%	4.3%	4.1%	3.9%
Amount per Available Room	$1,294	$1,357	$1,430	$1,499
Amount per Occupied Room	$5.45	$5.55	$5.60	$5.71

¶ 12.10 ENERGY EXPENSE

Energy consumption within a lodging facility typically takes several forms: water and space heating, air conditioning, lighting, cooking fuel, and other miscellaneous power requirements. The most common sources of energy are electricity, natural gas, fuel oil, and steam. In addition to these energy uses, energy expense also includes the cost of water service. The total cost of energy varies with the source and quantity of fuel used. Electricity tends to be the most expensive source, followed by oil and gas.

The cost of electrical energy is a function of the amount of energy consumed and the size of the peak demand. The unit of electrical consumption is the kilowatt-hour, which is measured by a watt-hour meter. To calculate the monthly electric bill, the utility company reads the electric meter and determines the number of kilowatt-hours of electricity consumed since the last reading. This amount is multiplied by the appropriate scheduled rate to determine the usage charge. The demand charge reflects the peak number of kilowatts required by the property during a specific, short-term time period. The demand is also read monthly from the utility meter, with the additional charge added to the electric bill on the basis of a demand rate schedule.

Utility charges for other sources of energy, such as gas and oil, are generally based entirely on usage, with no additional expense for demand. The unit of gas consumption is the therm, which is measured by a gas meter. Oil is delivered to the property and stored in tanks. Bills are rendered upon delivery and the unit charge is the gallon.

A large portion of energy consumption is relatively fixed and varies little with changes in occupancy. Restaurants, kitchens, public areas, and corridors must be continually lighted and heated or air conditioned, whether the hotel is full or nearly empty. The energy costs of an additional occupied room (i.e., a few hours of light, television, heat, or air conditioning) are minimal.

To forecast the energy cost for a hotel or motel, estimates must be made for total energy consumption, sources of energy, and utility rates.

The amount of energy consumed in the process of heating, air conditioning, and operating a lodging facility is measured in terms of British thermal units (BTUs). By estimating the number of BTUs a hotel or motel will use over a twelve-month period and multiplying this amount by a cost factor based on local utility charges, an energy cost forecast can be developed.

In order to estimate the amount of energy consumed by a facility, it is necessary to know the conversion factor that relates the unit of consumption (kilowatt-hours, therms, and gallons) to the specific number of BTUs produced. The following table shows the conversion factors for electricity, gas, and oil.

A portion of the energy consumed by hotels and motels is always in the form of electricity. This source is generally supplemented by either gas or oil when these alternatives are available and cost effective. Electrical energy accounts for approximately 40 percent to 60 percent of the total BTU energy consumption for a typical lodging facility, with the supplemental fuels representing the remainder.

Once the total units of consumption have been calculated, the appraiser contacts the local utility company and fuel oil dealer to determine rates and costs. In most instances, utility companies are extremely helpful in providing the necessary data, information, and costs to estimate the energy costs for a lodging facility.

Once the base year energy expense has been estimated, a projection is made using the fixed and variable component approach, with 80 percent to 95 percent of the expense being fixed and 5 percent to 20 percent varying directly with total revenue. In Exhibit 12-11, it is assumed that 90 percent of this category is fixed and 10 percent varies directly with total revenue.

¶ 12.11 PROPERTY TAX EXPENSE

Property tax expense includes the taxes paid to local municipalities for governmental services such as highways, schools, parks, sanitation, and other services and facilities. The purpose of property taxes is the allocation of the municipal tax burden on the basis of value. The weight of the tax burden the owner will assume increases proportionally with the value of the property. The legal term for property tax is "ad valorem" tax, or tax "in proportion to value."

Depending on the policy of the municipality, property taxes can be based on the value of the real property alone (real estate tax) or the value of the personal property in its entirety (personal property tax).

Exhibit 12-11 Forecast of Energy Expense ($ thousands)

	1996	1997	1998	Stabilized
Base Energy Expense	$318	$331	$344	$358
Percent Fixed	90%	90%	90%	90%
Energy Expense Fixed Component	$286	$298	$310	$322
Base Energy Expense	$318	$331	$344	$358
Percent Variable	10%	10%	10%	10%
Unadjusted Variable Component	$32	$33	$34	$36
Unadjusted Variable Component	$32	$33	$34	$36
Variable Percentage Change	0.9862	1.0147	1.0575	1.0863
Adjusted Variable Component	$31	$34	$36	$39
Fixed Component	$286	$298	$310	$322
Adjusted Variable Component	$31	$34	$36	$39
Total Energy Expense	$318	$331	$346	$361
Percentage of Total Revenue	4.2%	4.1%	3.8%	3.6%
Amount per Available Room	$1,222	$1,275	$1,322	$1,389
Amount per Occupied Room	$5.15	$5.21	$5.21	$5.28

To establish the proper allocation of the tax burden, municipalities employ assessors to assess, or valuate, all the taxable real estate within their jurisdictions. Theoretically, the assessment bears a definite relationship to market value, so that properties of equal market values will have similar assessments, and properties of higher and lower values will have proportionately larger and smaller assessments.

Because the objective of assessed value is to maintain a specific value relationship among all properties in a taxing jurisdiction, comparable hotel assessments should be evaluated to determine whether the subject property's assessed value is equitable.

Some municipalities assess properties at 100 percent of market, while others use a certain percentage of market value. In any case, the allocation of the tax burden to each property will not change if the relationshp between the assessed value and market value is altered. If additional properties are developed within a tax jurisdiction, the tax base increases while the tax rate decreases, assuming that the municipal budget remains constant. Although the assessed value of the properties does not change, the individual tax burden decreases because the additional properties generate tax revenue. If the municipal budget increases, however, the tax rate will increase proportionately.

Projecting property tax expense for an existing hotel is relatively simple. The assessed value is normally on public record and can be found in the appropriate municipal office. Multiplying the assessed value by the anticipated rate yields the estimated property tax burden. The appraiser must determine, however, whether the assessed value might escalate at some future time, as the result either of improving trends in local real estate market values or of a new valuation of the subject property triggered by a recent sales transaction.

Projecting property tax expense for a proposed lodging facility is generally more difficult. Local assessors are often reluctant to provide initial estimates of assessed values until the hotel is complete and operational. They are apt to use a cost approach and say that the assessed value will be based on total project cost. Because the assessor has no incentive to provide an accurate projection of assessed value, there is always a tendency to overstate these initial estimates; consequently, when the final value is placed on the property, a reduced amount is looked upon favorably. The appraiser should, nonetheless, contact the assessor and attempt to obtain an indication of what the assessed value will be, although this estimate should be tempered by the results of research into comparable assessments.

The objective of assessed value is to maintain a specific value relationship among all of the properties in a tax jurisdiction, so that the best way to make an estimate of the assessed value of a proposed hotel is to base it on the actual values of similar hotels. The acumen of the appraiser comes into play in this process when the indicated assessed values must be adjusted to reflect any differences between them and the subject property.

[1] Real Property Assessment

Because tax jurisdictions provide separate assessed values for real property (i.e., land and improvements), it is advisable to compare the assessed values of only the improvements, not the combined land and improvement values. The combination of the two equals the total property value and forms the basis for calculating the real estate tax burden of an individual property. The assessed value of the land is developed from actual land sales within the jurisdiction. On the basis of these known land sales, the assessor can determine the relative desirability of the parcels; as value declines, so does desirability. Each parcel is assessed on the basis of its desirability relative to the surrounding parcels, which means that assessors are often reluctant to change one land assessment because doing so could alter the assessment grid for all the other parcels in the jurisdiction. As a result, when developing an assessed value estimate of a proposed hotel, the actual assessed value of the land should be considered unchangeable (because any locational advantages or disadvantages have theoretically been accounted for), and only the improvement value should be compared and adjusted. Improvement value does not include such factors as decor, management, franchise, or business value.

[2] Personal Property Assessment

If a tax jurisdiction imposes a personal property assessment, the appraiser must estimate the value of the furniture and equipment in addition to land and improvements. Because personal property assessment procedures differ widely, guidance from the local assessor is often helpful. In many instances, the assessed value of furniture and equipment is based on actual cost less a mandated depreciation schedule. The key factor for an appraiser working with this type of assessment is a clear definition of what is considered personal property and what is considered real property.

¶ 12.12 INSURANCE EXPENSE

Insurance expense consists of the cost of insuring the hotel and its contents against damage or destruction from fire, weather, sprinkler leakage, boiler explosion, and so forth. It does not include liability coverage, which is charged to administrative and general expense. Insurance expenses are generally 100 percent fixed and do not vary with a hotel's volume.

Insurance rates are based on many factors, including building design and construction, fire detection and extinguishing equipment, fire district, distance from firehouse, and the history of fires in the area. Sometimes it is possible to obtain an estimate of insurance cost from a local insurance agent who is familiar with the project and area insurance rates. If this is not possible, the appraiser should use the insurance costs incurred by similar lodging facilities expressed on a per available room basis.

¶ 12.13 RESERVE FOR REPLACEMENT EXPENSE

Furniture, fixtures, and equipment are essential to the operation of a lodging facility, and their quality often determines the overall quality of a facility. All non–real estate items that are normally capitalized rather than expensed are included in this category.

The furniture, fixtures, and equipment in a hotel are exposed to heavy use and must be replaced at regular intervals. The useful life of these items is determined by the quality and durability of their construction and the amount of guest traffic and use to which they are subjected.

Periodic replacement of furniture, fixtures, and equipment is essential to maintain the quality, image, and income of a lodging facility. Capitalized expenditures are not included in the operating statement but nevertheless affect an owner's cash flow; consequently, an appraisal should reflect these expenses in the form of an appropriate reserve for replacement. As a general rule, a reserve of 3 percent to 5 percent of total revenue is usually sufficient to provide for timely replacement of furniture, fixtures, and equipment. The reserve for replacement is based on a percentage of total revenue, so it is 100 percent variable. The unit of comparison is a percentage of total revenue.

¶ 12.14 OVERALL STATEMENT OF INCOME AND EXPENSE

From the room-night analysis that produces an estimate of occupancy to the reserve for replacement calculation, the overall forecast must be combined into an overall statement of income and expense covering the appropriate forecasted years. This should be organized in accordance with the *Uniform System of Accounts for Hotels* and contain ratios of total and departmental revenues and amounts per available room.

The appraiser should examine the reasonableness of all the numbers and ratios in the overall statement. Among the numerical relationships that should be verified are the following:

- As occupancy increases, most operating ratios tend to decrease, with the exception of property operations and maintenance expense, which generally increases for a new property.
- As occupancy increases, the increase in the average rate per occupied room generally outpaces inflation.

Hotels with a high food and beverage volume (i.e., ratio of food and beverage revenue to rooms revenue) will tend to have lower profit ratios (i.e., net income to total revenue). However, if the food and beverage departments are operated at a profit, these properties will bring in more revenue. The optimum profit percentage for a lodging facility depends upon the food and beverage volume produced by the hotel (i.e., ratio of food and beverage to rooms). A well-run hotel will make a departmental profit of $.80 for each dollar of rooms revenue and only $.30 for each dollar of food and beverage revenue, so the volume of each department will dramatically impact the overall bottom line percentage. For example, a rooms-only lodging facility may have a net income ratio of 40 percent compared to a 20 percent bottom line for a property with a high food and beverage volume. However, the property with the high food and beverage volume will often generate a greater dollar profit on a per room basis.