The Institute’s Income/Expense Analysis® research program is now 64 years old. A brief survey of 200 apartment properties has developed into a major annual research effort encompassing over 10,250 properties. From this database, IREM annually produces over 1,000 pages of analysis published in five specialized volumes.

In 1976, the original apartment building study was supplemented with a survey of suburban office building operations. In 1978, the condominium and cooperative section was broken out of the apartment report and appeared for the first time as an independent publication. In 1982, the office building study was expanded to include downtown properties.

In 1986, the Institute published the first edition of this Income/Expense Analysis®: Federally Assisted Apartments which analyzes the operating experience of apartment buildings receiving subsidies under the following federal programs: 202, 221(d)3, 236 and Section 8. A fifth publication, Shopping Centers was added to the Income/Expense Analysis® series in 1991.

A consistent effort has been made to match the systematic increase in sample population and report quantity with qualitative improvements in the format, the method of statistical analysis, and the accuracy of the publications. In this edition of the Income/Expense Analysis®: Conventional Apartments, the reader will find a wealth of valuable information.

The Income/Expense Analysis® database of the Institute of Real Estate Management is a valuable resource with a wide range of applications. Real estate professionals, private investors, governmental agencies, and researchers across the country have turned to these surveys for sixty-four years to answer many of their questions.

What are the specific applications of this publication? How is this information used in the real estate community? It may play many roles in a property’s conception, development, and life. It is frequently applied to the preparation of feasibility studies on contemplated developments: Will the income stream anticipated in a particular location successfully support the project’s development and operating cost demands? What revenues can be expected from different locations and different types of development? Are market conditions for this type of project favorable?

The Income/Expense Analysis® database is constantly used in budgeting for buildings under development and those already in full operation: Have ongoing building maintenance requirements been fully anticipated? Which expense categories are increasing, and at what rate?

These surveys are also applied to the detailed analysis of individual markets: What revenues will a particular market support? Are project rentals keeping pace with comparable properties? Will higher rentals be offset by increased vacancies?

The data is also drawn upon to verify cash flow projections for appraisals using an income approach to value. The information is also included in management reviews, many aspects of real estate research, tax appeals, etc. And certainly, its most obvious use is in operating comparisons for individual properties.

Chart of Accounts

The chart of accounts is aligned with the HUD Chart of Accounts, the single most widely utilized system in the industry.

The collection of additional utility information allows for better analysis of utility costs. These expenses are broken down by the type of area serviced. For example, buildings that pay to heat the individual residential units are now distinguished from those projects that pay to heat only common areas. The volatility of utility expenses over the past few years has necessitated this refinement.

Method of Statistical Analysis

All of the income and expense figures reported in this publication are represented as “medians” and “ranges”. This method of statistical analysis was adopted for several reasons. An important factor is the consideration of the real purpose of these published statistics. They are intended to serve as a benchmark against which property managers, owners, developers, and investors can compare their own operating experience and are not intended to set a standard for the industry.

It is evident that no two properties are going to encounter identical maintenance problems or run up the same utility bills during the year in spite of any structural, geographical, or operational similarities. The median and chosen range reflects far more accurately the real diversity in operating experience than a simple average.

In this publication the median describes what might be called the “typical” expense for a given sample, and the range reflects the upper and lower limits within which the central portion of the sample falls. (For a complete explanation of these values, refer to the section entitled “Interpretation of a Page of Data.”)
Another reason for adopting the median is to insure that exceptionally high or low figures do not unduly affect the published results. This is particularly important for small samples, where one large property with extraordinary maintenance costs could significantly increase the calculated average maintenance expenses for its city.

All data collection forms are carefully and systematically audited by project staff and by computer to eliminate any properties that fall too far outside normal operating experience. Use of the median further protects the reported figures from any unidentified errors or extremes.

Our coding techniques insure that all information is held in strict confidence. Only the totals are published, never individual statistics or names.

Description of Reports and Layout of the Book

This edition has been compiled with the intention of facilitating the location of desired statistics. The reports have been grouped as follows:

TREND REPORTS

These reports analyze the changes experienced over time in income, expenses, operating ratio, turnover, vacancies, and utility costs.

The first two trend reports include only buildings that have been reported consistently for the past four years. Because the sample does not change from year to year, these reports provide the most accurate portrayal of variations over time.

The remaining trend reports are based on all buildings reported each year. Both sampling techniques are used for the following reason. The samples appearing in the first two trend reports are consistent but relatively small. A small sample may be consistent but unrepresentative of the total population from which it is drawn.

The remaining reports are based upon much larger samples. In order to provide the reader with a more complete picture of trends in apartment building operations, both types of reports are offered.

METROPOLITAN AREA REPORTS

The second section of this publication offers detailed analyses of the operating experience of conventional apartments for selected metropolitan areas.

Within each metropolitan area, the data is reported by building type, including (where a sufficient sample was collected) Elevator, Low-Rise 12-24 Units, Low-Rise 25 or More Units, Garden Type and Furnished Buildings. The choice of metropolitan areas reported is determined by sample size.

REGIONAL REPORTS

This section contains similar breakouts for selected regions of the United States. The reader should refer to the map following this introduction to determine the geographical area represented by each region number. Certain regions have been grouped to insure a significant sample for each regional area reported. The reader should refer to the map on page 12 to determine the geographical area represented by each region number.

NATIONAL REPORTS

The fourth section includes comparable analyses of the national sample by building type.

AGE GROUP REPORTS

Where a sufficient sample was collected, the national data was further sorted into building age groups and cities to provide a more comprehensible picture of annual operating experience.

SPECIAL REPORTS

The final section contains a series of reports detailing the annual turnover rates for all metropolitan areas reporting, by building type and a graphic illustration of the distribution of median annual income and operating costs. Finally, there is an analysis of properties based on type of ownership.

Sample Composition

The sources of the financial data in this publication are the Institute’s CERTIFIED PROPERTY MANAGER® (CPM®), members and other real estate professionals who are involved with the fiscal management of apartment properties. Data collection forms are distributed at the beginning of each calendar year and are accepted from January through the reporting deadline of April 30. To be included in the sample, a submitted property must meet the following criteria:

- The building or group of buildings must contain a minimum of 12 residential units.
- The building’s office or store occupancy may not represent more than 20% of the total rentable area.
- The building must have been in operation for a full 12 months in the calendar year reported.

Contributors whose properties meet these criteria and whose buildings are included in the sample receive a complimentary copy of the Analysis or fifty percent discount when it is published, and an individual computer analysis of their building’s income and expenses.

Apartment Sample Split

IREM publishes two different apartment related reports. In addition to its Income/Expense Analysis®: Conventional Apartments report, it also publishes the Income/Expense Analysis®: Federally Assisted Apartments report. Over a
thousand properties formerly included in the general apartment database are now included in the federally assisted apartment sample. This should be kept in mind when using the data reported prior to when this change was made.

Cautions in Interpretations

The data in this report can prove to be of great service if correctly used and interpreted. It can achieve its purpose, however, only if it is applied accurately and carefully.

In the following paragraphs, the possible benefits of judicious interpretation are reviewed, along with the methods of putting these statistics to their proper and best use. It is important to establish clearly what these statistical summaries cannot do and what they do not pretend to do. They do not establish standards for the operation of real property. They do not determine the proper or “ideal” operating experiences for a particular property type. They are summaries of the operating experience of contributed properties and provide a valuable basis for analysis and comparison.

It must be kept in mind that these summaries are compiled from a voluntary sample. The buildings included in the sample were not statistically selected and do not necessarily reflect the total range of operating experience for a particular city or region.

Any analysis of this data must place it in its’ proper context, with a full understanding of its advantages and limitations. These considerations can be grouped into three categories:

- General factors influencing interpretation.
- Factors relating to a specific market.
- Factors to be considered in comparing a particular property to the published statistics.

There are two important considerations that fall within the first category. First of all, the data is limited by time. In interpreting the contents of these surveys, the careful analyst will take into account the inevitable inflation that occurred subsequent to the operating year summarized.

It is also significant to note that there are variations in the sample base from year to year due to the voluntary nature of the contributions. Reported fluctuations in income and expenses must be interpreted with this in mind.

When evaluating the data on a particular market it must be remembered that market conditions can experience dramatic changes in a relatively short period of time. New projects coming on line, for example, can have a significant impact on a local inventory. Changes in the economic climate, such as dramatic swings in interest rates, or unemployment rates, can result in short term shifts in market conditions. Thus, the data must be interpreted in its current context.

In addition, particularly on the metropolitan level, it is important to consider the relative size of each sample, and the relative size of the properties in the sample. By taking this information into account, any comparisons made will be more fruitful.

Finally, when making a comparison between a particular property and the survey results, it must be remembered that there are many possible reasons why the two might differ. The property in question might not be of a comparable size. The type of tenants for that property, or for the sample collected, might have special needs and require special or exceptional expenditures. Different owners and managers have naturally differing maintenance and care policies. The physical and structural features of the building may not closely match sampled properties. Lease terms may vary significantly and must be taken into account in a careful interpretation. A proper analysis requires that such considerations be explored.

When applied intelligently, this data can prove to be of great value and consequence. That is why it is drawn upon by thousands of lenders, appraisers, property owners, investors, developers, government agencies, researchers, and real estate professionals. It is of particular benefit to the professional managers of real property assets. And that is why, in view of the important asset management decisions with which they are faced, that you will find copies of the Income/Expense Analysis® publications in the office of virtually every CPM®.

Comparing Your Property’s Experience With the Data in This Publication

PREPARATION

For any comparison to be possible, it is essential that your property’s income and expense figures share a format which is similar to the data as it appears on these pages. For effective comparison, you should convert your annual operating figures to match the income and expense categories as they are defined in the Appendix. A comparative data worksheet has been provided in that section for this purpose.

Your figures should then be translated into dollars per square foot based on the Rentable Floor Area of the buildings in the development; or you may make a similar conversion of your figures into percentages of the Gross Possible Income of your building during the comparable operating year. For example, each expense figure for your property should be divided by the number of Rentable Square Feet in your project. If your annual insurance cost was $8,392 and your project contains 120,000 Rentable Square Feet, your annual insurance cost in dollars per square foot would be $0.07 ($8,392 divided by 120,000 = .06993. 06993 rounded to the nearest whole cent = .07).
CHOOSING THE APPROPRIATE TABLE

You are now ready to take advantage of the data in the publication. You must now choose a sample or table which will provide you with an effective basis for comparison. There are intentionally many tables that may compare in one way or another with your property. It is recommended that you choose more than one.

All of the data are grouped by building type, so you must be certain to select samples of the same type. If the metropolitan area where your building is located appears in the book as a selected sample, you may wish to begin by comparing your property with others in that city.

You also may wish to compare your figures with data from your region, and with similar properties of the same size, age, rental range, or structural type. Several columns are provided on the comparative worksheet to permit you this flexibility.

ABSTRACTING COMPARABLE FIGURES FROM THE TABLES

When you have chosen a suitable table, you will want to use only those figures on the table which compare with your property’s operations. For example, there are four maintenance expense categories listed on each page of the publication. However, in any one year, your property may incur expenses in only two or three of those categories.

If that is the case, pull from each table you use only those figures which correspond to your property’s operations. For example, if your building did not require the painting or decorating of any interior area, do not copy that comparable onto your worksheet. Consequently, you should use only the subtotals and totals that appear in the book for quick preliminary comparison.

After you have abstracted the data that directly applies to your property, you should calculate your own.

The careful selection of data is particularly important in your analysis of utility expenditures. For each applicable utility you must select one of the two reported figures that most closely correspond to your project.

USING THE PUBLISHED RANGES

Having chosen appropriate tables, and selected from those tables the median income and expense data that applies to your property, you begin to compare specific figures. You quickly discover that your property does not exactly match many of the published median expenses reported. For example you may note that your real estate tax figure is several cents above the median for your city.

There are many reasons, discussed previously, which might explain why your property’s expenses differ from a citywide median. However, for any particular line item, you can now benefit from the published ranges which appear for those samples with more than 10 buildings. You should return to the table and examine the Low and High columns which appear to the right of the median column.

In the following section, the layout and interpretation of each page of data will be described in greater detail.

GREEN BUILDING SURVEY

In 2010, a Green Building survey was introduced. The Green Building Survey is located in Part 8. The survey results break down green certifications to the types of green systems used in the properties surveyed. The survey also includes buildings which reported energy and water conservation modifications. All figures are based on the number of buildings that participated in the Green Survey. Not all buildings reported a certification, program or rating.

A green building is a building that has earned one of the qualifying certifications, see question #2 on the Going Green Building Survey in the Appendix. A non-green building is a building that has not earned a qualifying certification but has implemented at least one green system, see question #4 on the Going Green Building Survey in the Appendix.

Table 1A identifies the percentages of properties that are IREM® Certified Sustainable Properties and LEED® certified and the LEED® level they achieved. Table 1B identifies the percentages of properties that are certified in Green Globes™, BREAM® USA, and Local/Regional/State programs. Table 2A tracks both capital and non-capital operating efficiency improvements over the last five year. Table 2B summarizes EnergyStar® buildings and their ratings.

Table 3A lists the percentages of buildings (both green and non-green buildings) that have implemented energy efficient systems. Table 3B lists percentages of buildings utilizing renewable energy, Table 3C represents percentages of water management systems being used and Table 3D represents percentages of other green features and programs.

The second report on Green Buildings compares the utilities of all buildings, non-green buildings and green buildings. Do to sample sizes some of the reports may not be available.
The Chart of Accounts
The various line-items are listed in a column on the left side of each data page. A number of abbreviations were adopted because of space limitations. A few of these are clarified below. For complete definitions of the terms used and the various income and expense categories, the reader should refer to the Appendix.

ABBREVIATIONS
For each of the following abbreviations, the term or expression abbreviated follows in italics.

GROSS POSSIBLE RENTS: Gross Possible Rent Income
TOTAL COLLECTIONS: Total Actual Collections
OTHER ADMINISTRATIVE: Other Administrative Costs
SUBTOTAL ADMINIST: Subtotal Administrative Costs
CA ONLY: Common Areas Only
CA & APTS: Common Areas and Apartment Units
OTHER OPERATING: Other Operating Expenses
PAINT/DECORATING: Painting and Decorating Interior Only
OTHER TAX/FEE/PERMIT: Other Taxes, Fees, and Permits
RECREATIONAL/AMENITIES: Recreational/Amenities Costs

TREATMENT OF PAYROLL COSTS
It is important to clarify how and where payroll expenses appear on these pages. According to the instructions on the data collection form, contributors were requested to include any related payroll expenses in the following expense categories: Other Administrative Costs, Security, Grounds Maintenance, Painting and Decorating-Interior Only, and Recreational Amenities.

All remaining expenses including the amount paid to janitors, maids, elevator operators, telephone switchboard operators, and interior maintenance personnel, were to be reported in the last expense category Other Payroll.

The Payroll Recap line is not included in the calculation of Total All Expenses. It is a recapitulation of all the various payroll expenses reported in any of the categories identified above.

TREATMENT OF UTILITY COSTS
In this publication, two lines appear for each utility. The first line, CA Only, represents the median cost of that utility in the common areas of that building, and not for its use, if any, in the residential units. The second line, CA & Apts., provides the median cost of the utility in the common areas and in the individual apartments. This second line includes any buildings where the utility is used only in the apartments but still paid for by their management.

It is also important to note that the Electricity and Gas expense categories do not include any heating expense, according to the instructions.

The Individual Report Sample
At the top of each report, the following characteristics are used to compute the results:

- The number of buildings (Bldgs. or Buildings)
- The total number of apartments (Apts. or Apartments)
- The total rentable square feet reported (Sq. Ft. or Rentable Square Feet)

The Line-Item Sample
Not every building reported a positive dollar figure for each income and expense category. The figures in the Building column (abbreviated BLDGS) identify the number of properties in the sample reporting floor area and a dollar figure for that line-item. This is especially important in areas where the reader should pay particular attention to the number of properties used to calculate each line. If the line-item sample is very small (less than five buildings), care should be taken in interpreting the results.

The Calculations
On the standard data page, the median income and expense figures reported are expressed in the following ways:

- As a percentage of Gross Possible Income (% of GPI)
- In Dollars per square foot of rentable area per year ($/Sq. Ft.)
- In Dollars per unit per year ($/Unit), on selected reports

THE MEDIAN
The median of a set of measurements is defined as the middle measurement, identified after the measurements have been arranged in order of magnitude. As an example, if there are 13 buildings reporting the following values for Real Estate Taxes in dollars per square foot-

<table>
<thead>
<tr>
<th>0.72</th>
<th>0.76</th>
<th>0.88</th>
<th>0.89</th>
<th>0.94</th>
<th>0.97</th>
<th>0.99 MED</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.05</td>
<td>1.07</td>
<td>1.10</td>
<td>1.13</td>
<td>1.24</td>
<td>1.26</td>
<td></td>
</tr>
</tbody>
</table>

-the Middle value of 0.99 is the median.
If there is an even number of values reported, the higher of the two values has been chosen as the median. For purposes of comparison, the calculated average for this distribution is 1.00, very near the chosen median.

**SUBTOTAL CALCULATIONS**

Due to the nature of calculating the median and the variability of line-item samples as discussed in the previous section, line-item medians will not add up to the medians obtained for subtotals or totals.

In the following example, the median subtotal is not the sum of the three-bolded figures which appear above it. Rather, the median subtotal is calculated independently.

<table>
<thead>
<tr>
<th>Bldg</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grounds Maint</td>
<td>.02</td>
<td>.03</td>
<td>.04</td>
<td>.05</td>
<td></td>
<td>.05</td>
<td>.06</td>
</tr>
<tr>
<td>Maint &amp; Repair</td>
<td>.06</td>
<td>.07</td>
<td>.07</td>
<td>.08</td>
<td>.09</td>
<td>.09</td>
<td>.12</td>
</tr>
<tr>
<td>Painting/ Décor</td>
<td>.02</td>
<td>-</td>
<td>.03</td>
<td>.03</td>
<td>.08</td>
<td>.08</td>
<td>.09</td>
</tr>
<tr>
<td>SUBTOTAL</td>
<td>.10</td>
<td>.10</td>
<td>.14</td>
<td>.16</td>
<td>.17</td>
<td>.22</td>
<td>.27</td>
</tr>
</tbody>
</table>

**USING METRIC EQUIVALENTS**

To convert to metric units, the following conversion factors may be used:

- 1 square foot = 0.0929034 square meters
- 1 square meter = 10.764 square feet

Adding this text should aid the user who must comply with the units of measurement recently mandated by the General Services Administration (GSA).

**THE RANGE**

In addition to the median, for samples of 11 or more buildings the “interquartile range” is reported in terms of a Low and a High value. After the set of measurements has been arranged in order of magnitude, the Low and High values are chosen so that the bottom 25 percent of the sample falls below the Low and the top 25 percent of the sample lies above the High. Using the same example, for the following values-

0.72 0.76 0.88 0.89 **LOW** 0.94 0.97 0.99 1.05 1.07 **1.10 HIGH** 1.13 1.24 1.26

-the Low value is 0.89 and the High value is 1.10.

In interpreting the data as it appears in this publication for a particular line-item, such as Insurance, the value that best describes the sample is the median (Med) with the central 50 percent of the values falling between the Low and the High.