CHAPTER 4 - VALUATION

READ THIS CAREFULLY: It is important for the student to remember that the license exam will *not* test you about "mechanical" aspects of appraisal (i.e., "what does an appraiser *do*.") However, you *will* be tested extensively on the *concepts* of valuation. Such as - the theories which go into determining the value of a piece of real property.   Most questions will not even use the words "appraisal" or "appraiser". Even if they do, what they are most likely asking is: "What type of valuation method is most appropriate, given these circumstances?"; or "What factor or principle of value is affecting this piece of property?" You will also get a number of math-related questions which ask, for example, the amount or percentage of appreciation in value, given a set of facts. The information in this chapter is specifically designed to address all the issues you will see on the exam.

An **appraisal** is an *estimate or opinion of value*. Formal appraisal reports are relied on by mortgage lenders, investors, public utilities, governmental agencies, businesses, and individuals. Mortgage lenders, for instance, need to know a property's market value so that the loan-to-value ratio (percentage of value to be loaned) will accurately reflect the property's value as collateral.

The tumultuous real estate market of the 1980s reinforced the need for competent appraisals. The collapse of many savings and loan associations as a result of the surge into unwise investments following enactment of the Depository Institutions Deregulation and Monetary Control Act of 1980 was at least partly the result of faulty property appraisals. With the passage of the Financial Institutions Reform, Recovery and Enforcement Act (**FIRREA**) in 1989, Congress took action to introduce appraisal regulation. Since July 1, 1991, appraisals performed as part of a federally related transaction have been required to comply with state standards and be performed by a state-licensed or state-certified appraiser. State appraisal standards and appraiser licensing requirements must meet at least the minimum levels set by the Appraisal Standards Board and Appraiser Qualifications Board of the Appraisal Foundation, a national body composed of representatives of the major appraisal and related organizations. Colorado's appraisal regulations fulfill, and in many cases, exceed these requirements.

The federal law affects the majority of appraisers and appraisals performed nationwide. While a relatively low percentage of residential home loans have some government backing, most are packaged for sale in the federally regulated secondary mortgage market. Thus, lenders who wish to make use of that market must use only appraisers licensed or certified by the state in which the appraised property is located, and the appraisals must meet the federal criteria.

Not all estimates of real estate value are made by professional appraisers, however. Often a real estate agent must help a seller arrive at an asking price or a buyer determine an offering price for property without the aid of a formal appraisal

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report. Thus everyone engaged in the real estate business, even those who do not choose to be licensed in appraisal, must have at least a fundamental knowledge of real estate valuation.

VALUE
- Value may be defined as the relationship between an object desired and a potential purchaser.
- It is the power of a good or service to command other goods or services in exchange.
- In terms of real estate appraisal value may be described as the present worth of future benefits arising from the ownership of real property.

To have value in the real estate market property must have these characteristics:

Demand. The need or desire for possession or ownership, together with financial means to satisfy that need.

Utility. Practical usefulness; the ability to satisfy the need for what real estate provides, (i.e., may be used for shelter, a place to live, grow crops, etc.)

Scarcity. A finite supply.

Transferability. The relative ease with which ownership rights are transferred from one person to another. Regardless of a property's demand, utility, or scarcity, if title is flawed or there are economic or environmental problems, the property may not be "transferable."

MARKET VALUE. Generally the *goal of an appraiser* is to estimate market value, which is:

- The most probable estimate, in terms of money, which a property will bring if exposed for sale in the open market allowing a reasonable time to find a purchaser who buys with a knowledge of all the uses to which it is adapted and for which it is capable of being used.
- It is referred to as the price at which a willing seller would sell and a willing buyer would buy, both knowing all the facts and neither being abnormally motivated.
- It is the price typically to be expected if a reasonable time is allowed to find a purchaser, with both seller and buyer being fully informed.

Included in this definition are the following key points:

- Market value is the most probable price a property will bring -- (not the average price or the highest price.)
- Payment must be made in cash or its equivalent.
- Buyer and seller must be unrelated and acting without undue pressure.

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- A reasonable length of time must be allowed for the property to be exposed in the open market.
- Both buyer and seller must be well informed of the property's use and potential, including its assets and defects.

OTHER FORMS OF VALUE

There are several other types of value that are important to understand and distinguish from Market Value. None of these types of value should be used to determine the market value of real property.

Market Price. Market value is an estimate based on an analysis of comparable sales and other pertinent market data. Market Price, on the other hand, is what a property has actually sold for--its *sales price.* Theoretically the market price would be the same as market value. Market price can be taken as accurate evidence of current market value, however, only after considering all of the factors listed above. A sale from father to daughter, for instance, might well have been designed to favor one of the parties.

Objective and Subjective Value. Objective value is the *actual market value*, whereas subjective value (also known as **utility value**) is the *personal use value of the benefits of ownership*. The appraiser estimates the objective value that the ultimate buyer will be willing to pay for the benefits offered.

Book Value. Book value is the *original property cost plus the cost of any improvements, minus any depreciation taken*. Book value, the value carried on the owner's books, bears no relationship to market value and is not used in appraising.

Exchange Value. The value that can be purchased with the sale proceeds (the *relationship of the value to other goods*) is the property's exchange value.

Assessed Value. This is the *value placed by the county property tax assessor*. Assessed value, often influenced by the price paid, always differs from market value. The student must remember that Assessed value (especially in Colorado) has *nothing to do with appraised value*; for our purposes, we may consider it a fictional number assigned by the county assessor in order to determine the amount of property taxes.

Loan Value. Loan value is less than market value, as it is customarily a percentage of market value, leaving a margin for lender security.

FOUR SPECIAL INFLUENCES THAT AFFECT VALUE

1. **Physical**

Topography. Steep grades mean higher development costs. Subdividers like gentle rolling land that breaks the monotony but does not result in excessive costs.

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Shape. Rectangular lots generally are more valuable (more easily developed) than irregularly shaped parcels.

Size. The width and depth of a lot determine possible uses.

Exposure. How a property is situated as to light, air, view and so on affects value. For example, the south and west sides of streets generally are more valuable for business because they offer shoppers more shade on hot afternoons.

Soil. The ability of soil to support a structure affects construction costs. Compaction tests ("soil reports") by a civil engineer would measure this ability. Fertility of soil generally has only slight effect on value other than for agricultural land.

Corner Influence. A corner location has greater value for commercial purposes because of greater exposure for signs and easier access.

Location. Location is the site of a property in relationship to other uses and physical features. Appraisers often state that the three most important factors in determining value are location, location and location.

2. **Economic**. The economy affects value in that it directly affects demand. As to a particular property, the local economy tends to be more important than the national economy. (The economy of a particular community might run counter to the national economy.) A primary measurement of the national economy is the **gross domestic product** (GDP) which is the sum of all goods and services produced by our nation during a certain period. Changes in the GDP are indicators or changes that have occurred in the national economy.   Changes in unemployment levels indicate trends in the local economy. Real estate values tend to rise during periods of inflation, when the purchasing power of the dollar decreases. A principle measurement of inflation is the **consumer price index** (CPI).

3.   **Political**. Government regulations such as zoning, taxes, growth limitations, building codes, health codes, public housing, rent control, also affect value.

4. **Social**. Social factors that influence value include population movements, size of households, attitude toward recreation and such.

Neighborhood. A neighborhood is an area characterized by social conformity. It might have defined boundaries, such as a particular street, a river or a particular subdivision. Other neighborhoods might merge together with imprecise boundaries. Similarity of interests provides neighborhood cohesiveness; similarities might include income, ethnic background, education, children or recreational

interests. **Zoning** (government restrictions on land use) is a device used to maintain that social conformity and the highest possible values for that area.

If residents of an area have pride in their neighborhood, the neighborhood (and therefore value) is likely to remain stable; a neighborhood that loses common interests tends to decline. A decline in the percentage of home ownership and an increase in rental units often indicate a declining neighborhood, as does the increase of new residents lacking common neighborhood interests and/or values.

BASIC PRINCIPLES OF VALUE

Q&A **Highest and Best Use**. The *most profitable single use* to which the property may be adapted, or the use that is likely to be in demand in the reasonably near future is its highest and best use. This is not necessarily the use to which the property is currently being put, nor is it the use that the owner eventually chooses.

Highest and best use is noted in every appraisal but may also be the object of a more extensive analysis. For example, a highest-and-best-use study may show that a parking lot in a busy downtown area is not the highest and best use of that land.

Substitution. The principle of substitution states that the maximum value of a property tends to be set by the cost of purchasing an equally desirable and valuable replacement property. Substitution is the fundamental basis of the Sales Comparison (or Market Data) Approach.

Supply and Demand. The principle of supply and demand states that the value of a property will increase if the supply decreases and the demand either increases or remains constant, (and vice versa.) For example, the last lot to be sold in a residential area where the demand for homes is high would probably be worth more than the first lot sold in that area.

Balance. In any community, to satisfy the needs of its inhabitants, there should be a balance in the number and location of the various types of real estate usages. There should be enough churches, schools, shopping centers, service stations, movie theaters, for example, to accommodate all of the people desiring to use these facilities, and they should be located where the users find them convenient. More generally speaking, there should be the proper number of Residential to Commercial to Business uses in the community. When there is too much or too little of any real estate usage in a community, a condition of imbalance exists and property values go down. (Example: If there are plenty of houses in the community (Residential) but not enough jobs (Industrial), then people will not want to live there, and property values decline.)

Conformity.   This means that maximum value is realized if the use of land conforms to existing neighborhood standards. In residential areas of single-family houses, for example, all buildings in a neighborhood should be similar in design,

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construction, size and age. Subdivision restrictions rely on the principle of conformity to ensure maximum future value. This is a narrower version of balance. (Example: Property values will decline in a residential neighborhood if a liquor store or warehouse is placed within it.)

Regression and Progression.   Regression is the principle that, between dissimilar properties, the worth of the better property is affected adversely by the presence of the lesser-quality property. Thus, in a neighborhood of modest homes a structure that is larger, better maintained and/or more luxurious would tend to be valued in the same range as the others. Conversely, the principle of progression states that the worth of a lesser property tends to increase if it is located among better properties. (Remember the old adage that it is better to have the worst house in a better neighborhood than it is to have the nicest house in a poor neighborhood.)

Keep in mind that the purpose of an appraisal is to determine the value of a single property (taking into account the effects of neighboring properties). So absent language to the contrary, when asked something like "What is being described, regression or progression?", your answer should be based on which principle of value is affecting the *subject property*, and not its neighbors.

Anticipation.   This principle holds that value can increase or decrease in anticipation of some future benefit or detriment affecting the property. For example, the value of a house may be affected if there are rumors that an adjacent parcel may he converted to commercial use in the near future.

Plottage and **Assemblage**. The *principle* of plottage holds that the merging or consolidation of adjacent lots held by separate landowners into one larger lot may produce a higher total land value than the sum of the two sites valued separately. For example, two adjacent lots may be valued at $35,000 each, but their total value if consolidated into one larger lot under a single use might be $90,000. The *process* of merging the two lots under one owner is known as assemblage.

Q&A **Increasing and Diminishing Returns**. Improvements to land and structures will eventually reach a point at which they will no longer have an effect on property value. As long as money spent on improvements produces an increase in income or value, the law of increasing returns is applicable. But beyond that point when additional improvements will not produce a proportionate increase in income or value, the law of diminishing (or decreasing) returns applies.

Contribution.   According to the principle of contribution the value of any component of a property is what its addition contributes to the value of the whole, or what its absence detracts from that value. For example, the cost of installing an air conditioning system and remodeling an older office building may be greater than is justified by the increase in market value (a function of expected net rental increases) that may result from the improvement to the property.

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Competition. When extraordinary profits are derived from an investment, competition will be created that will increase the supply, thus lowering profits, (unless the purchasing power in the area increases substantially.)

Economics of Scale. A larger development or multiple units generally can be built at a lower price per square foot or per unit.

Integration and Disintegration. Property goes through phases of development (**integration**), stability (**equilibrium**) and decline (**disintegration**). This principle also is referred to as the principle of three-stage life cycle (development, maturity and old age).

Change. The principle of change states that no physical or economic condition remains constant. Real estate is subject to natural phenomena, such as tornadoes, fires and the routine wear and tear of the elements. The real estate business is also subject to the demands of its market, as is any business. It is an appraiser's job to be knowledgeable about the past and, therefore, perhaps predictable of the effects of natural phenomena and the behavior of the marketplace. On the **Uniform Residential Appraisal Report** (the standardized form that all appraisers must use) the last thing that an appraiser determines (after detailing the current value of the property) is what factors are likely to affect the value of the property in the future.

THE THREE APPROACHES TO VALUE

To arrive at an accurate estimate of value appraisers traditionally use three basic valuation techniques, the Sales Comparison approach, the Cost approach and the Income Capitalization approach. Each method serves as a check against the others and narrows the range within which the final estimate of value will fall. Each method is generally considered most reliable for specific types of property.

Q&A **Sales Comparison Approach** (also known as the **Market Data Approach**). An estimate of value is obtained by comparing the subject property (the property under appraisal) with recently sold comparable properties (properties similar to the subject). (A simplified version of this approach is the **competitive market analysis**, or **CMA**, often used by brokers and salespeople helping a seller set a price of residential real estate in an active market.)

Because no two parcels of real estate are exactly alike, the sales prices of the comparables must be adjusted for any features dissimilar to the subject property. The principle factors for which adjustments must be made fall into four basic categories:

1. Sales or financing concessions. This consideration becomes important if a sale is not financed by a standard mortgage procedure.

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2. Date of sale. An adjustment must be made if economic changes occur between the date of sale of the comparable property and the date of the appraisal.

3. Location. An adjustment may be necessary to compensate for location differences. For example, similar properties might differ in price from neighborhood to neighborhood or even between locations within the same neighborhood.

4. Physical features and amenities. Physical features that may require adjustments include age of building, size of lot, landscaping, construction, number of rooms, square feet of living space, interior and exterior condition, presence or absence of a garage, fireplace or air conditioning and so forth.

After a careful analysis of the difference between comparable properties and the subject property, the appraiser assigns a dollar value to each of the differences noted. On the basis of their knowledge and experience appraisers estimate dollar adjustments that reflect actual values assigned in the marketplace.

The value of a feature present in the subject property but not in the comparable property is added to the sales price of the comparable. This presumes that, all other features equal, a property having a feature (such as a fireplace or wet bar) not present in the comparable property will tend to have a higher market value solely because of this feature. (The feature need not be a physical amenity; it may be a location or aesthetic feature.)

Likewise the value of a feature present in the comparable but not the subject property is subtracted from the sales price of the comparable. The adjusted sales prices of the comparables represent the probable value range of the subject property. From this range a single market value estimate can be selected.

The sales comparison approach is essential in almost every appraisal of real estate. It is considered the most reliable of the three approaches in appraising residential property, where the amenities (intangible benefits) may be difficult to measure otherwise.

Q&A   **The Cost Approach**. The cost approach is most helpful in the appraisal of special-purpose buildings such as schools, churches and public buildings. Such properties are difficult to appraise using other methods because there are seldom many local sales to use as comparables, and the properties do not ordinarily generate income.

The cost approach to value is based on the principle of *substitution*. Sometimes called appraisal by summation, it consists of these steps:

1.   Estimate the value of the land as if it were vacant and available to be put to its highest and best use.

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2.   Estimate then add the current cost of constructing the building(s) and site improvements.

3.   Estimate then deduct the amount of **accrued depreciation** resulting from physical deterioration, functional obsolescence and/or external obsolescence. Deduct accrued depreciation from the estimated construction cost of new building(s) and site improvements.

Land value (step 1) is estimated by using the sales comparison approach; that the location and site improvements (presence of utilities, sewer lines and so on) of the subject property are compared to those of similar sites nearby, and adjustments are made for significant differences.

There are two ways to look at the construction cost of a building for appraisal purposes (step 2) - reproduction cost and replacement cost:

      Reproduction Cost is the *construction cost at current prices of a duplicate of the subject property improvements*, including both the benefits and the drawbacks of the property (such as hardwood flooring in a poorly designed floor plan).

      Replacement Cost is the *construction cost at current prices of improvements with utility or function similar to the subject property*. This approach would permit the installation of less expensive hardwood kitchen cabinets instead of more expensive but outdated enameled steel cabinets. When appraising older structures using the Cost Approach, the Replacement Cost technique is used more frequently than Reproduction Cost, because Replacement Cost eliminates obsolete features and takes advantage of current construction materials and techniques.

An appraiser using the cost approach computes the reproduction or replacement cost of a building using one of the following methods:

1.   **Quantity Survey method**. An estimate is made of the quantities of raw materials needed to replace the subject structure (lumber, plaster, brick and so on), as well as of the current price of such materials and their installation costs. These factors are added to indirect costs (building permit, survey, payroll taxes, builder's profit) to arrive at the total replacement cost of the structure. Because it is so detailed and time-consuming, this method is usually used only in appraising historical and dedicated-use properties.

2. **Unit-in-Place method**. The replacement cost of a structure is estimated based on the construction cost per unit of measure of individual building components, including material, labor, overhead and builder's profit. Most components are measured in square feet, although items like plumbing fixtures are estimated by unit cost.

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3. **Square Foot method**. The cost per square foot of a recently built comparable structure is multiplied by the number of square feet in the subject building; this is the most common method of cost estimation. For some properties the cost per cubic foot of a recently built comparable structure is multiplied by the number of cubic feet in the subject structure.

4. **Index method**. A factor representing the percentage increase to the present time of construction costs is applied to the original cost of the subject property. Because it fails to take into account individual property variables, this method is useful only as a check of the estimate reached by one of the other methods.

Q&A **Depreciation**. In a real estate appraisal, depreciation (step 3) refers to any condition that adversely affects the value of an improvement to real property. (It has *nothing* to do with depreciation of investment property for income tax purposes.) Land does not depreciate, except in such rare cases as misused farmland, downzoned urban parcels or improperly developed land. For appraisal purposes (as opposed to depreciation for tax purposes) depreciation is divided into three classes according to its cause:

1. **Physical Deterioration--curable**: repairs that are economically feasible and would result in an increase in appraised value equal to or exceeding their cost. Routine maintenance, such as painting, falls into this category.

Physical Deterioration--incurable: repairs that are not economically feasible, such as installing expensive siding to repair the cosmetic appearance of the exterior of a building whose interior structure is otherwise unsound. (NOTE: "incurable" does not mean the same thing as "impossible". It simply means that it is not *cost effective* to make that particular repair. "Curable", therefore means that the repair will yield an increase in appraised value at least equal to what the repair cost.)

2. **Functional Obsolescence--curable**: physical or design features that are no longer desirable by property buyers but could be replaced or redesigned at low cost. Outmoded fixtures, such as plumbing, are usually easily replaced. Room function might be redefined at no cost if the basic room layout allows for it. A bedroom adjacent to a kitchen, for instance, may be converted to a family room.

Functional Obsolescence--incurable: Currently undesirable physical or design features that could not be remedied easily or cost-effectively. Many older multistory industrial buildings are considered less suitable than one-story buildings. An office building that cannot be air-conditioned suffers from functional obsolescence.

3. **External** (**Environmental** or **Economic**) **Obsolescence--incurable only**: caused by factors not on the subject property so that this type of

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obsolescence cannot usually be considered curable. Proximity to a nuisance, such as a polluting factory, would be an unchangeable factor that could not be expected to be cured by the owner of the subject property.

In determining a property's depreciation most appraisers use the breakdown method, in which depreciation is broken down into all three classes, with separate estimates for curable and incurable factors in each class. Depreciation is difficult to measure, and the older the building, the more difficult depreciation is to estimate.

Straight-line depreciation is the easiest but least precise way to determine depreciation. It is also called the **economic age-life method** of depreciation. Depreciation is assumed to occur at an even rate over a structure's economic life, the period during which it is expected to remain useful for it's intended purpose. The property's cost is divided by the number of years of its expected economic life to derive the amount of annual depreciation.

For example, a $120,000 property may have a land value of $30,000 and an improvement value of $90,000. If the improvements are expected to last 60 years, the annual straight-line depreciation would be $1,500 ($90,000 / 60 years). Such depreciation can be calculated as an annual dollar amount or as a percentage of the property's replacement cost.

Much of the functional obsolescence and all of the external obsolescence, however, can be evaluated only by considering the actions of the buyers in the marketplace.

Q&A Accrued Depreciation.   For appraisal purposes, only improvements are depreciated, *never land*. To arrive at the depreciation of a structure, the economic life of the structure must be determined. **Economic life** is the period during which the improvements contribute to the net income. Age-life tables provide the economic life, often 40 to 50 years, for various types of structures and construction. To determine the amount of accrued depreciation, the effective age of the structure must be found. **Effective life** is the structure's age for appraisal purposes. Effective age can differ from chronological age.

The appraiser analyzes the condition of the property, considering physical deterioration, functional obsolescence and external factors, to determine the accrued depreciation. This is known as the observed condition method. For example, if the economic life is determined to be 40 years, each year's depreciation amounts to 2+ percent of the replacement cost:

100% / 40   = 2 ½ %   2 ½ % x 10 = 25%

If the property had an effective age of ten years, it would have depreciated 25 percent.

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Sample Problem: A 15,000 -square-foot warehouse would cost $40 per square foot to build today. Its economic life is 50 years, and its effective age is 8 years. The land is valued at $170,000 (arrived at by the market comparison method). The property is valued as follows:

15,000 x $40   = $600,000 cost to replace
50-year life   =   2% depreciation per year
8 years x 2%   =   16% depreciation
.16 x $600,000 = $96,000 accrued depreciation

$600,000   Cost to build today
 -96,000   Accrued depreciation
$504,000   Present value of structure
+170,000   Land value
$674,000   Total present value of land and improvements

The Income Capitalization Approach
The *Income Capitalization Approach*, (also known as the **property residual method**, or even the **Income Approach**) to value is based on the present value of the rights to future income. It assumes that the income derived from a property will control the value of that property. The income capitalization approach is used for valuation of income-producing properties -- apartment buildings, office buildings, shopping centers and the like. In using the income capitalization approach to estimate value an appraiser must take the following steps:

1.   Estimate annual potential gross income, including both rental income and income from other sources, such as concessions and vending machines.

2. Based on market experience, deduct an appropriate allowance for vacancy and collection losses to arrive at effective gross income.

3.   Based on appropriate operating standards, deduct the annual operating expenses of the real estate from the effective gross income to arrive at the annual net operating income. Management costs are always included as operating expenses, even if the current owner also manages the property. Mortgage payments, however (including principal and interest), are **debt service** and not considered operating expenses.

4. Estimate the price a typical investor would pay for the income produced by this particular type and class of property. This is done by estimating the rate of return (or **yield**) that an investor will demand for the investment of capital in this type of building. This rate of return is called the **capitalization rate** (or "cap rate") and is determined by comparing the relationship of net operating income to the sales prices of similar properties that have sold in the current market.

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For example, a comparable property that is producing an annual net income of $15,000 is sold for $187,500. The capitalization rate is $15,000 / $187,500 = 8%. If other comparable properties sold at prices that yield substantially the same rate, the appraiser should apply an eight percent rate to the subject property.

5. Finally the capitalization rate is applied to the property's annual net income, resulting in the appraiser's estimate of the property value.

The capitalization rate is the *rate of return an investor wants on a particular property*. For a high-risk investment, an investor might want a 20 percent return, whereas an 8 percent return for a secure investment might be acceptable. When interest rates are high, investors use a higher capitalization rate to reflect a higher desired return on investment.

Besides indicating a return on an investment, the capitalization rate can be increased to provide for the return of the investment (depreciation). For example, if an investor wanted an 8 percent return on an investment and the property was expected to have a 50-year useful life (economic life), the investor could add 2 percent to the rate, raising the rate to 10 percent. This added 2 percent provides for the recapture of the investment over 50 years.

With the appropriate capitalization rate and the projected annual net operating income, the appraiser can obtain an indication of value by the income capitalization approach in the following manner:

Net Operating Income / Capitalization Rate = Value
       Example: $18,000 income / 9% cap rate = $200,000 value

This formula and its variations are important in dealing with income property.

$$\frac{Income}{Rate} = Value \qquad \frac{Income}{Value} = Rate \qquad Value \times Rate = Income$$

In Practice . . .   The most difficult step in the income capitalization approach to value is determining the appropriate capitalization rate for the property. This rate must be selected to recapture the original investment over the building's economic life, give the owner an acceptable rate of return on investment and provide for the repayment of borrowed capital. Note that an income property that carries with it a great deal of risk as an investment generally requires a higher rate of return than a property considered a good investment.

Sample Problem: An appraiser anticipates that an eight-unit apartment building will have monthly rentals of $400 per unit, a 10 percent vacancy and collection loss factor, plus total expenses of $600 per month. Find its value using a capitalization rate of 12 percent:

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8 x $400 = $3,200 monthly scheduled gross income
$3,200 x 12 = $38,400 annual scheduled gross income

$38,400   Annual scheduled gross income
- $3,840   10% vacancy and collection loss
$34,560   Effective gross income (gross - vacancy & collection factors)
-$7,200   Expenses ($600 x 12)
$27,360   **NOI**

To determine the value after the net operating income and the capitalization rate have been determined, divide the net operating income by the capitalization rate:

$$\text{Value} = \frac{\text{NOI}}{\text{Cap Rate}} = \frac{\$27,360}{.12} = \$228,000$$

The value, using the income approach, is $228,000.

If the capitalization rate were 10 percent:
$$\frac{\$27,360}{.10} = \$273,600$$

If the rate used were 14 percent:
$$\frac{\$27,360}{.14} = = \$195,428.57$$

Value moves inversely to capitalization rate; that is, value goes up if the rate goes down, and value goes down if the rate goes up. Similarly, if expenses go up, value goes down because net decreases; if expenses go down, value goes up because net increases.

Gross income multipliers.   (*Note: This will be **heavily** tested on the state license exam!)*   Certain properties, such as single-family homes and two-flat buildings, are not purchased primarily for their ability to generate income. As a substitute for a more elaborate income capitalization analysis, the **gross rent multiplier (GRM)** and **gross income multiplier (GIM)** are often used in the appraisal process. Each relates the sales price of a property to its expected income.

Because single-family residences usually produce only a rental income, the gross rent multiplier is used. This relates the sales price to monthly rental income. However, commercial and industrial properties generate income from many sources (rent, concessions, escalator clause income, etc.), and they are valued using their annual income from all sources. (Note that these terms are often used interchangeably, however inaccurately.)

The formulas are as follows:

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<u>Sales Price</u>   = GIM (annual)   or   <u>Sales Price</u>   = GRM (monthly)
Gross Income   Gross Rent

For example, if a home recently sold for $82,000 and its monthly rental income was $650, the GRM for the property would he computed thus:

$\dfrac{\$82,000}{\$650}$ = 126.2 GRM

To establish an accurate GRM an appraiser should have recent sales and rental data from at least four properties similar to the subject property. The most appropriate GRM can then be applied to the estimated fair market rental of the subject property to arrive at its market value. The formula would then be: Rental Income x GRM = Estimated Market Value.

This method is appropriate when sufficient sales occur from which to accumulate statistically reliable data. This data will result in a probability distribution (range) of GIM's. Often, however, appraisers use only 4 to 6 GIM's and select what they believe to be a proper GIM for application to the subject property. The comparables of sales price and rental must be of the same date and physical characteristics; adjustments are necessary if prices have changed since the sale but the current rent is being used. However, care must be taken not to adjust the gross income nor the "raw" market prices paid for comparable properties, for age, condition or location. To do so will over-adjust for factors that both the renters and the investors have already considered in the price paid for rental and in the purchase amount given for the property in its existing condition. Proper use of GIM requires attention to differing characteristics in the gross income streams produced by each property; e.g. unfurnished property cannot be compared to furnished property.

The GIM does not give weight to differing expense ratios, remaining economic lives and land/building ratios. Another weakness of this method is that it is based on past facts, does not reflect current financing, and hence cannot be expected to indicate future investor expectations and yield requirements.

Primary reliance may be placed upon the gross income multiplier to appraise very similar properties, such as small apartment properties in an active market. Otherwise, the GIM is considered a preliminary or rough indication of value.

Comp. No.	Sales Price	Mo. Rent	GRM
1	$93,600	$650 144	
2	78,500	450	174
3	95,500	675	141
4	82,000	565	145
Subject	?	625	?

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Note: Based on an analysis of these comparisons, a GRM of 145 seems reasonable for homes in this area. In the opinion of an appraiser, then, the estimated value of the subject property would be $625 x 145, or $90,625.

Q&A The **Property Residual, Inwood Annuity Method** of income capitalization employs a market derived discount rate. This method will solve practically all real estate problems calling for a value estimate of an income producing property. Capitalization consists of estimating (forecasting) the future monthly income over the period of ownership and adding the anticipated future lump sum sales price of the property, both of which are discounted at the risk rate to present value at a yield (interest rate) which would attract purchase capital.

Inwood Annuity Table.   A discount table which is derived from the compound interest table.   The discount rate is the reciprocal of the compound interest rate. These discount factors are used to convert future income streams in today's present value.

Ellwood Mortgage-Equity-Analysis.   This is a method which enables the analysis of a property by taking into account differing effects of various mortgage financing, loan amortization and future property appreciation or depreciation at the time of sale.

Reconciliation. If more than one of the three approaches to value are applied to the same property, they will normally produce different indications of value. Reconciliation is the art of analyzing and effectively weighing the findings from the different approaches used.
       Although each approach may serve as an independent guide to value, whenever possible all three approaches should be used as a check on the final estimate of value. The process of reconciliation is more complicated than simply taking the average of the derived value estimates. An average implies that the data and logic applied in each of the approaches are equally valid and reliable and should therefore be given equal weight. In fact, however, certain approaches are more valid and reliable with some kinds of properties than with others.
       For example, in appraising a home the income capitalization approach is rarely used, and the cost approach is of limited value unless the home is relatively new; therefore, the sales comparison approach is usually given greatest weight in valuing single-family residences. In the appraisal of income or investment property the income capitalization approach would normally be given the greatest weight. In the appraisal of churches, libraries, museums, schools and other special-use properties where there is little or no income or sales revenue, the cost approach would usually be assigned the greatest weight.   From this analysis, or reconciliation, a single estimate of market value is produced.
Simple Linear Regression Analysis. In addition to the three standard methods of appraising residential property, the **Simple Linear Regression Analysis** (**S.L.R.A**.) is another variation of the market adjustment method and is a useful valuation technique that indicates the probable range of prices. It determines an

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equation that measures the relationship of sales price to living area. S.L.R.A. is based on the proposition that there is a direct relationship between the sales price and the square footage of a single family dwelling.

There is a tendency for the sales price to increase as the number of square feet increases; that is, buyers are generally willing to pay a higher price for a larger house than a smaller house.

An adequate sample would be from 9 to 15 sales. The more comparables the better, for the larger sampling allows omission of verification. This may, for example, call for examination of all dwelling sales completed within the last three years, in a given neighborhood, conventional housing less than five years old, and with a floor area of 1,000 to 1,500 square feet. With a sample of sufficient size it is possible to eliminate the unlikely extremes in order to contain the range within practical and meaningful limits. If the appraiser is not completely accurate in his market judgment as to the various weights applied to the valuation elements, but is consistent in the application of them, the final value conclusion will not be significantly distorted.

The equation can be applied to the subject property to derive a specific value with given ranges of accuracy. A range more accurately portrays probable market behavior. The equation is multiplied against the square foot improved living area to derive a specific sales price and can also be applied to similar unsold properties in the same neighborhood to estimate their market value.

The predicted sale price should fall within $1,000 of the forecast sale price 68% of the time, and the predicted sale price will fall within two standard errors 95% of the time. After deriving the range, the comparable sales would be graphed to visually check the relationship between sales price and square footage. If the sales show a trend, the method is usable.

S.L.R.A. does not eliminate the need for appraisal judgment. The information on the property's probable value range is an aid to the judgment of the client. Simple linear regression analysis is a worthwhile, practical appraisal approach.

The difference between Simple Linear Regression Analysis and **Multiple Regression Analysis**, is that Simple (meaning one) uses one variable whose weight is unknown, but Multiple Regression Analysis (M.R.A.) uses many unknown variables. Multiple Regression Analysis is not in common use because it requires access to a programmed computer. M.R.A. is being used in some cases by some county assessors for property tax assessment purposes and by some financial institutions.

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Real Estate Law & Practice (48 hrs)