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September 11, 1998

TO INTERESTED PARTIES:

ASSESSORS' HANDBOOK SECTION 502: ADVANCED APPRAISAL

Enclosed is staff's second draft of Assessors' Handbook Section 502, *Advanced Appraisal*. This draft incorporates many of the comments submitted by assessors, taxpayers, and Board staff at our meetings on August 31 and September 1. It is also available in Adobe Acrobat format on the Board's Web site (www.boe.ca.gov).

Interested parties may submit additional comments or proposed revisions, in the form of alternative text, for staff review and possible inclusion into this manual. Comments and proposed changes must be received no later than September 25, 1998. To facilitate the review and revision process, we ask that the following guidelines be followed:

- Comments and draft revisions should be sent to the designated project leader for your respective group as they are completed (early submittal is appreciated).
- Project leaders should package all appropriate comments and draft revisions into one package and forward this package to Board staff *and the other designated project leader* no later than September 25.
- All comments and proposed revisions should reference the page and line numbers of the second draft.

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For electronic editing:

- Follow the instructions on the Board's Web site to copy and paste text from the Adobe Acrobat file to a separate document.
- Use the revisions mode to edit the text in the separate document.
- Again, all comments and proposed revisions must reference the page and line numbers of the second draft.

If you do not have access to the Board's Web site, you may obtain a copy of the manual on disk in Microsoft Word format upon request.

If you have any questions regarding the procedure for proposed revisions or the second draft in general, please contact Paul Lane at (916) 324-5828 or Michael Lebeau at (916) 445-0363. Staff appreciates the continuing cooperation of interested parties in the process of revising this manual.

Sincerely,

Rudy G. Bischof, Chief
Policy, Planning, and Standards Division
Property Taxes Department

Enclosure

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ASSESSORS' HANDBOOK SECTION 502

ADVANCED APPRAISAL

SEPTEMBER 1998

CALIFORNIA STATE BOARD OF EQUALIZATION

JOHAN KLEHS, HAYWARD

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PREFACE

1

2 This revision of Assessors' Handbook Section 502, *Advanced Appraisal*, is a complete rewrite of
3 the original manual (formerly titled *The Income Approach to Value*) written in 1988. This
4 rewritten manual includes the addition of material concerning subjects not previously covered, a
5 complete reorganization of topics, and the revision of the existing text. This rewrite was
6 undertaken by staff members of the Policy, Planning, and Standards Division (PPSD) of the State
7 Board of Equalization and is the product of PPSD authors writing at the direction of the Board.

8 The objective of this manual is to give property tax appraisers, and other interested parties, an
9 understanding of the advanced issues concerning property assessment and property appraisal for
10 tax purposes. If there is an inconsistency resulting from the absence of some technical data in this
11 manual and more advanced information in another more specific manual, the more specific manual
12 controls. In the interest of accuracy and thoroughness, appraisers and other interested parties are
13 advised to consult with qualified experts and other authoritative sources regarding the technical
14 aspects of valuing any complex property.

15 As part of the process of producing this manual, meetings were held with industry representatives
16 and assessors. Conflicts regarding the content of the manual were identified and most were
17 resolved. Those issues not resolved by meeting with industry and assessors were voted on by
18 Members of the Board of Equalization after hearing testimony from interested parties and Board
19 staff. The results of the voting are reflected as Board positions on issues in the manual.

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Richard C. Johnson
Deputy Director
Property Taxes Department
[Date]

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CHAPTER 1: DEFINING THE APPRAISAL PROBLEM

The "appraisal process" is a systematic, multi-step approach to the problem of valuation. Like most problem-solving methodologies, it begins with a definition of the problem to be solved. The purpose of "defining the appraisal problem" is to eliminate ambiguity regarding the appraisal and to establish the premises upon which the value estimate is to be based. The definition involves consideration of such fundamental appraisal concepts as the standard of value (i.e., the nature of the value sought), the appraisal unit, and the property rights to be appraised. This chapter reviews some of these fundamental concepts, which were discussed in detail in Assessors' Handbook Section 501 (AH 501), *Basic Appraisal*, Chapters 1-3.

The definition of the appraisal problem comprises five sub-steps, which are discussed in the following sections. These steps are:

1. Property identification
2. Identification of the property rights involved
3. Purpose and function of the appraisal
4. Valuation date
5. Definition of value

PROPERTY IDENTIFICATION

PHYSICAL IDENTIFICATION

At a basic level, identification of the property refers to a precise description of the property's physical location and boundaries. This can be specified in several ways: street address, legal description, or assessor's parcel number. In property tax appraisal, the assessor's parcel number is the most common means of describing the real property to be appraised.

Identification of the property also refers to a physical description of the *land*¹, *improvements*, and any other property within the appraisal unit (defined below).² Moreover, depending upon the composition of the appraisal unit, the property to be appraised may comprise a single parcel or multiple parcels, and may include several forms of property (e.g., real property, personal property, or fixtures).

¹ Words included in the Glossary of Terms are italicized when they first appear.

² This aspect is, however, often addressed in the next step of the appraisal process, preliminary analysis and data collection, in which specific data regarding the subject and comparable properties are obtained.

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1 APPRAISAL UNIT

2 On a more abstract level, the identification of the property requires a determination of the
3 *appraisal unit*.³ That is, the appraiser must answer the threshold question, "What is the unit of
4 property to be valued?"

5 Determining the proper appraisal unit is a problem to be solved on a case-by-case basis. In most
6 appraisals, the definition of the appraisal unit is straightforward. The value standard in property
7 tax appraisal is market value, and it is the market that determines the appraisal unit. In other
8 words, the appraisal unit is the unit that people typically buy and sell in the relevant market or
9 market segment.

10 This conceptualization of the appraisal unit is supported by section 51(d)⁴, which provides that
11 when estimating the fair market value of real property the assessor shall consider "that appraisal
12 unit that persons in the marketplace commonly buy and sell as a unit, or that is normally valued
13 separately." Further, rule 324(b)⁵, in the context of assessment appeals, provides that "[a]n
14 appraisal unit of property is a collection of assets that function together and that commonly sell as
15 a unit or that are specifically designated as such by law."

16 As an illustration of the concept of the appraisal unit, consider, single-family homes. These
17 properties sell in the market as a combination of land and improvements. The separate
18 components are not priced and sold separately, and it would be absurd to say that a buyer paid a
19 certain amount for the plumbing, a certain amount for the electrical system, a certain amount for
20 the roof, and so on. Instead, we know that, for single-family homes, the combination of land and
21 improvements is the typical unit of sale and therefore constitutes the appraisal unit.

22 Appraisal Unit and Multiple Parcel Properties

23 Determination of the proper appraisal unit for multiple-parcel properties is more complex. For
24 example, agricultural properties such as ranches and farms, and commercial properties such as
25 shopping centers, frequently comprise several parcels that could conceivably be sold either
26 individually or as one unit.

27 Several factors may indicate that multiple parcels should be considered a single appraisal unit.
28 These factors include: (1) the functional and economic integration of the parcels; (2) the
29 attainment of highest and best use when the parcels are analyzed as a single unit; (3) contiguity;
30 (4) common ownership; and, (5) current or prior combined sales of the parcels (i.e., actual
31 transactions in which the parcels transferred as a unit). The final decision as to the appraisal unit is

³ The appraisal unit is also variously referred to as "the unit to be appraised," "the unit to be valued," "the unit of appraisal," "the unit of value," or "the economic unit."

⁴ According to California Style Manual, the correct citation for subdivisions is "section 51, subdivision (d)." For ease of reference in this handbook, subdivisions may also be referred to as "section 51(d)." All statutory references are to the Revenue and Taxation Code unless otherwise indicated.

⁵ The official citation to a Property Tax Rule is "Title 18, California Code of Regulations, Section 324, subdivision (b)" or "18 CCR 324(b)." To reflect the convenience of common usage and practice, and to avoid confusion with Revenue and Taxation Code section citations, Property Tax Rules are simply referred to as "rule."

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1 a matter of judgment, and no single factor can be considered controlling. The appraiser's
2 determination of the proper appraisal unit should reflect the unit most likely to be sold in view of
3 these five factors, if the property were exposed to the open market.

4 **Appraisal Unit and Bulk Sales**

5 A related problem concerns completed development projects in which the proper appraisal unit
6 could conceivably be either an individual parcel or a group of parcels. For example, although most
7 residential subdivisions, condominium projects, and timeshares are developed with the intent of
8 marketing each lot or unit separately, group sales of multiple lots or units may occur under certain
9 circumstances. Indeed, in some cases, frequently related to conditions of financial distress, the
10 entire project may transfer as a unit.

11 Determining the proper appraisal unit in these cases is always a matter of judgment. However, the
12 best general criterion is the actual sale or transfer of the subject property. An actual transaction is
13 a very strong indication of the unit recognized by the market and, hence, the proper appraisal unit
14 for property tax purposes. A sales listing is also an indication of an appraisal unit recognized by
15 the market.

16 In the absence of an actual transaction or other market evidence, the appraisal unit should be the
17 unit most likely to be sold if the property were exposed to the open market. In this regard, the
18 appraiser should attempt to discern the probable economic intent or motivation of typical buyers
19 and sellers of the subject property, acting rationally and in their own self interests.

20 That the appraisal unit should be determined on a case-by-case basis is true, even for parcels
21 within the same project. For example, if a developer sells a group of parcels in a subdivision to
22 another developer or builder (typically with a quantity discount), the group of parcels transferred
23 is the proper appraisal unit. Assuming the transaction occurred under requisite conditions of
24 market value, the purchase price for the sale should be allocated among the parcels involved. As
25 rule 2 states, in part:

26 If a single transaction results in a change in ownership of more than one parcel of
27 real property, the purchase price shall be allocated among those parcels and other
28 assets, if any, transferred based on the relative fair market value of each.

29 If, in a subsequent transfer, an individual lot is sold (probably at a higher price than the average
30 price under the group sale), the proper appraisal unit is the individual lot, and the parcel should be
31 valued accordingly.

32 In the case of a change in ownership of a distressed project or an unfinished project, it is highly
33 probable that the proper appraisal unit is the entire project; the typical buyer would view the unit
34 being marketed (hence, the appraisal unit) as the entire subdivision or project.

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1 **Appraisal Unit and Undivided Interests**

2 Undivided fractional interests in real property are not separate appraisal units for property tax
3 purposes. In the case of most real property, the typical unit of sale is a one-hundred percent
4 interest, not an undivided fractional interest.

5 There is statutory authority permitting the separate valuation of undivided interests for the limited
6 purpose of collection on part of an assessment. For such purpose, section 2802(b) provides that,
7 for collection purposes, an undivided interest is a separate parcel from the whole assessment.
8 Further, section 2821 provides that any person filing an affidavit of interest may apply to the tax
9 collector to have fractional interests in a parcel separately valued on the current roll for the
10 purpose of paying taxes. In either case, section 2823 requires the assessor to determine a separate
11 valuation on the parcel such that the sum of the valuations of the parcels shall equal their total
12 value before separation. Thus, even in these limited cases in which an undivided interest may be
13 valued separately, the sum of the value of the parts must equal the value of the whole as a single
14 appraisal unit.

15 It is sometimes erroneously argued that undivided fractional interests should be valued at less than
16 their proportionate share of the value of the entire interest. The argument for discounting the
17 value of an undivided interest is typically based on the reduced marketability of the undivided
18 interest, the lack of control over the use of the entire property (in the case of a minority interest),
19 or both. Despite these arguments, given that the proper appraisal unit for property tax purposes
20 consists of a one-hundred percent interest, it is inconsistent to discount the value of an undivided
21 interest below its proportionate share of the total value. Indeed, even those who argue for a
22 discount from the proportionate share of the whole usually recognize that it is necessary to first
23 estimate the market value of the whole property as a unit. Thus, although an undivided interest
24 may be a proper appraisal unit for other valuation purposes (e.g., estate and gift taxes), this is not
25 the case for property tax purposes.

26 Although not related to the appraisal unit concept, an additional argument against fractional
27 interest discounts is based on the legal requirement that all property be taxed at its full value.⁶ To
28 illustrate, assume a property whose full value is \$100,000. Further assume that undivided one-
29 quarter interests in this property are transferred to four separate people. If these undivided
30 interests are discounted to a value below their proportionate share of the value of the whole, the
31 result would be a total assessment something less than \$100,000, which is the full value of the
32 whole property. Thus, the proper method for determining the value of fractional interests is to
33 first appraise the proper appraisal unit (i.e., the whole property) and then to allocate value to the
34 undivided interest(s) proportionately.

35 **Principle of Unit Valuation**

36 The "principle of unit valuation" is used by the State Board of Equalization when appraising
37 properties, such as utilities and railroads, pursuant to article XIII, section 19, of the California

⁶ Specifically, section 201 provides that all property in this state not otherwise exempt is subject to taxation, and section 401 requires the assessor to assess all property subject to taxation at its full value.

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1 Constitution. As statutory authority, section 723 expressly provides that "[t]he board may use the
2 principle of unit valuation in valuing properties of an *assessee* that are operated as a unit..."

3 Under the principle of unit valuation, the board is authorized to recognize the entire operating unit
4 as the proper appraisal unit for certain property, thereby recognizing the high degree of functional
5 and economic integration of such property. When the board appraises a telephone company, for
6 example, the appraisal unit comprises all of the operating property of the telephone company.

7 **Fixtures are a Separate Appraisal Unit for Declines in Value**

8 Specifically, rule 461(d) explicitly states that for the purpose of determining declines in value,
9 "fixtures and other machinery and equipment classified as improvements constitute a separate
10 appraisal unit." In addition, Letter to Assessors 79/39 advises that a decline in value in one
11 appraisal unit cannot be offset by an increase in value in another appraisal unit. Thus, for example,
12 to arrive at the total *assessed value* of a property containing land, fixtures, and improvements
13 other than fixtures, the assessed value should be the lower of the factored *base year value* or fair
14 market value of land and improvements, plus the lower of the factored base year value or fair
15 market value of the fixtures. A decline in value of fixtures cannot be offset by an increase in value
16 of land and improvements.

17 **Property Contained in the Appraisal Unit**

18 The appraisal unit may contain several forms of property. When appraising a single-family
19 residence, the appraisal unit contains land and improvements. When appraising an apartment
20 building, the appraisal unit typically contains land, improvements, and personal property.

21 **Appraisal Unit and Assessed Value Allocation**

22 Often, the appraisal unit does not correspond with the way that assessed values are allocated for
23 purposes of enrollment. For example, section 607 provides that land and improvements shall be
24 separately assessed. However, as discussed above, when valuing land and improvements these
25 two real property components are typically parts of a single appraisal unit, and the appraiser
26 estimates market value on this basis. To comply with the law, this market value is allocated into
27 two components on the *assessment roll*.

28 As another example, section 606 provides, with some exceptions, that if a tract of land is situated
29 in two or more revenue districts, the part in each district shall be separately assessed. Again, this
30 legal requirement for separate assessment does not correspond with the concept of a market-
31 derived appraisal unit. The solution is an artificial allocation of value following the boundaries of
32 revenue districts to create the separate assessments.

33 **IDENTIFICATION OF THE PROPERTY RIGHTS INVOLVED**

34 Property may be defined as the aggregate of rights that are guaranteed and protected by
35 government. The fundamental rights associated with the private ownership of property are the
36 rights to possession, control, enjoyment, and disposition. Property rights can be divided and

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1 shared, leading to the concept of a "bundle of rights." The full bundle of rights is called the *fee*
2 *simple estate* (sometimes called the "fee simple absolute" or simply the "fee").

3 Ownership may be defined as the collection of rights to use and enjoy property. According to
4 section 103, "[p]roperty includes all matters and things, real, personal, and mixed, capable of
5 private ownership." Ownership of the fee simple estate is the most complete form of real property
6 ownership under law and is subject only to the limitations imposed by government: police power,
7 right to taxation, right to eminent domain, and right of escheat.

8 All appraisals involve the valuation of a set of defined property rights. With few exceptions, an
9 appraisal for California property tax purposes involves the valuation of the entire fee simple estate
10 unencumbered by any private interests (e.g., leases, liens, easements, etc.).⁷ As a general rule,
11 private parties cannot reduce the taxable value of their property by imposing private
12 encumbrances upon it; only enforceable government restrictions under section 402.1 are
13 recognized as limiting the full fee simple interest. Thus, rule 2(a) provides, in part:

14 When applied to real property, the words "full value," "full cash value," "cash
15 value," "actual value," and "fair market value" mean the prices at which the
16 unencumbered or unrestricted fee simple interest in the real property (subject to
17 any legally enforceable governmental restrictions) would transfer for cash or its
18 equivalent....

19 For example, a property encumbered with a lease containing rental terms that are below or above
20 the current economic, or market, rent should be valued as if not so encumbered. As stated in rule
21 4(b)(2), the appraiser must

22 convert the sale price of a property encumbered with a lease to which the property
23 remained subject to its unencumbered-fee price equivalent by deducting from the
24 sale price of the seller's equity the amount by which it is estimated that the lease
25 enhanced that price or adding to the price of the seller's equity the amount by
26 which it is estimated that the lease depressed that price.

27 An easement is the right of use over the property of another for a specific purpose. Most
28 easements are not separately recognized for property tax purposes. An exception occurs when the
29 language contained in the grant of the easement effectively transfers an interest "substantially
30 equivalent to the value of the fee," thus giving rise to a change in ownership under section 60. In
31 this case, the easement should be appraised and assessed to the grantee, and the property subject
32 to the easement should be reappraised in a manner that recognizes the effect of the easement.

33 Private conditions, covenants, and restrictions (CC&R's) are private restrictions or encumbrances
34 that are typically recited in deeds or noted in deeds by reference. Often imposed in residential

⁷ Encumbrance: "Any right to, or interest in, land that may subsist [i.e., exist] in another to diminution of its value, but consistent with the passing of the fee. A claim, lien, charge, or liability attached to and binding real property; e.g., a mortgage; judgement lien; mechanic's lien; lease; security interest; easement or right of way; accrued and unpaid taxes." (Black's Law Dictionary, 5th edition, s.v. "encumbrance.")

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1 subdivisions, CC&R's have an effect similar to zoning (an enforceable government restriction
2 under section 402.1) in that they place restrictions on use (e.g., minimum house size requirements
3 and specification of architectural style). In many cases, they are more restrictive than zoning.
4 Although CC&R's are not enforceable government restrictions under section 402.1, if they are
5 effectively enforced by the owners' association the market will tend to recognize the impact of
6 these restrictions.

7 In some cases, the appraisal to be made is a partial, or fractional interest in the full fee simple, and
8 the property rights appraised are, therefore, less than the full bundle of rights.⁸ Taxable possessory
9 interests; oil, gas, or mineral rights; air rights; transferable development rights; and—under certain
10 conditions—water rights all represent cases where the property rights appraised are less than the
11 full fee simple interest. Further, as discussed above, the rights associated with an easement may be
12 valued and assessed separately under certain circumstances. This does not mean that a portion of
13 the full taxable fee simple interest escapes taxation; the remaining rights are assessed to another
14 owner.

15 PURPOSE OF THE APPRAISAL

16 Real estate appraisals are prepared for many purposes; the purpose of each appraisal may affect
17 both the methods used and the appropriate standard of value. An estimate of value for one
18 purpose may not be appropriate for another purpose.

19 Broadly stated, the purpose of an appraisal for property tax purposes is to render an estimate of
20 value, consistent with property tax law, that will be used to place an assessment on the subject
21 property for the purpose of levying an *ad valorem* tax. "Consistent with property tax law" means
22 consistent with the legal framework embodied in the California Constitution, statutes, and
23 property tax rules. Documents prepared by the State Board of Equalization (e.g., the *Assessors'*
24 *Handbook*, Letters to Assessors, special topic surveys, and annotated correspondence) provide
25 guidance about property tax valuation and assessment but do not have the authority of law.

26 Estimates of real property value are made under a number of circumstances. These include
27 reappraisals upon changes in ownership; completion of new construction; disaster, misfortune or
28 calamity; and, declines in value. In addition, under specific constitutional and statutory provisions,
29 the property tax appraiser prepares estimates of value under "restricted value" standards.⁹ These
30 valuations involve methodologies—prescribed by law—that result in a value usually less than full
31 cash value. The properties for which such valuations are made include open space properties,
32 historical properties, non-profit golf courses, certain single-family residences, lands within a
33 Timberland Production Zone, and taxable government-owned property.

⁸ The full taxable fee simple interest in the property is still assessed.

⁹ Under rule 460(b)(3) restricted value is defined in a general manner as a value standard other than fair market, or full cash, value.

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VALUATION DATE

1

2 The valuation date of an appraisal is critically important; changes in market conditions may cause
3 the market value of property to vary significantly from one date to another. Estimates of market
4 value are valid only for the valuation date specified.

5 Valuation dates for property tax purposes reflect either a specific event date or the lien date.¹⁰
6 Event dates include the date of a change in ownership; completed new construction; or, a disaster,
7 misfortune or calamity. The valuation date for a change in ownership is the date on which the
8 change in ownership occurs; the valuation date for completed new construction is the date on
9 which the new construction is completed; the valuation date resulting from a calamity is the date
10 on which the calamity occurred. In each of these cases, the value standard is market value on the
11 event date.

12 Many valuations are performed as of the lien date, which is January 1 of each year. Most value
13 estimates prepared under a restricted value standard,¹¹ value estimates prepared in the case of
14 declines in value, and value estimates of unfinished new construction are all prepared as of the lien
15 date.

16

DEFINITION OF VALUE

MARKET VALUE STANDARD

17
18 The standard of value for most property tax appraisals is market value. In a general economic
19 sense, market value, or value in exchange, is the power of a commodity to command other
20 commodities in exchange. It is the relative desirability of a commodity as evidenced by the actions
21 of buyers and sellers in an open market at a particular time. In an industrial economy market value
22 is generally measured in terms of money. It is the price (or amount of money) that a property will
23 bring when it is sold in a market. It is value as determined in a market by the forces of supply and
24 demand.

25 The general economic concept of market value is the basis for the precise legal standard of market
26 value for property tax purposes. Both section 110 and rule 2 address the concept of market value
27 in the context of the taxable value of the property. Subdivision (a) of section 110 expresses the
28 concept of market value:

29 Except as is otherwise provided in Section 110.1, "full cash value" or "fair market
30 value" means the amount of cash or its equivalent that property would bring if
31 exposed for sale in the open market under conditions in which neither buyer nor
32 seller could take advantage of the exigencies of the other and both with knowledge
33 of all the uses and purposes to which the property is adapted and for which it is

¹⁰ The lien date is the date property taxes become a lien against all real property on the secured roll.

¹¹ A conceivable exception to this is a change in ownership of a single-family residence under section 401.4, in which case the valuation date is the date of the change in ownership.

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1 capable of being used and of the enforceable restrictions upon those uses and
2 purposes.

3 In addition, section 110(b) establishes a rebuttable presumption that full cash value or *fair market*
4 *value*, as defined in subdivision (a), shall be the actual purchase price if the terms were negotiated
5 under specified conditions reflecting an "open market transaction." Under subdivision (c), this
6 rebuttable presumption shall not apply where an assessee has failed to provide certain information
7 about the conditions of the transaction (e.g., negotiation of terms, the parties' allocation of
8 purchase price).

9 Rule 2 interprets the statutory definition of market value as follows:

10 In addition to the meaning ascribed to them in the Revenue and Taxation Code, the
11 words "full value," "full cash value," "cash value," "actual value," and "fair market
12 value" mean the price at which a property, if exposed for sale in the open market
13 with a reasonable time for the seller to find a purchaser, would transfer for cash or
14 its equivalent under prevailing market conditions between parties who have
15 knowledge of the uses to which the property may be put, both seeking to maximize
16 their gains and neither being in a position to take advantage of the exigencies of
17 the other.

18 Abstracting from the above, important elements of market value are:

- 19 • The amount the property would bring in cash or its equivalent
- 20 • Exposure on an open market for a sufficient amount of time
- 21 • Neither the buyer nor the seller able to take advantage of the exigencies of the other
- 22 • Both parties seeking to maximize their gains
- 23 • Both buyer and the seller having full knowledge of the property and acting prudently

24 MARKET VALUE AND HIGHEST AND BEST USE

25 The market value concept also includes the assumption that sale prices reflect the utilization of the
26 property at its highest and best use. *Highest and best use*, briefly stated, is the legally permissible,
27 physically possible, financially feasible or probable, and maximally productive use that produces
28 the highest residual land value. It is the use that produces the greatest long term net return to the
29 owner. As suggested in rule 2, market value means the price that property would sell for in a
30 transaction "between parties who have knowledge of the uses to which the property may be put,
31 both seeking to maximize their gains."

32 In an open market, prices are determined based on a property's highest and best use. Consider a
33 simple example. A choice commercial corner lot is for sale. The property may be used to grow
34 and sell vegetables or, more profitably, as a site for a commercial building (e.g., fast food
35 restaurant or gasoline retailer). In an open, competitive market, the site's value will be determined

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1 on the basis of the more profitable, or highest and best, use. Knowledgeable buyers will make
2 their bids on this basis, and knowledgeable sellers will accept only bids made on this basis.

3 **RESTRICTED VALUE CONCEPT**

4 As previously mentioned, there are certain exceptions to the fair market value standard. These
5 exceptions fall under the "restricted value" concept. Rule 460(b)(3) defines "restricted value" to
6 mean "a value standard other than full cash value prescribed by the Constitution or by statute
7 authorized by the Constitution."

8 For properties subject to a restricted value standard, the law sets aside the general concept of fair
9 market value based on highest and best use in favor of specific value limitations. In some cases,
10 the statutory appraisal formula is compensation for the owner's agreement to limit the future use
11 of the property; that is, the property value is premised on the restricted use rather than the most
12 profitable or productive use.¹²

13 **MARKET VALUE, USE VALUE, AND LIMITED MARKET OR SPECIAL PURPOSE** 14 **PROPERTIES**

15 It is important to distinguish between the concept of market value and another value concept
16 known as "use value" or "value in use."¹³ The concept of use value is concerned with the value of
17 property based on its utilization by a particular owner or group of owners. As defined in a current
18 appraisal text:

19 *Use value is the value a specific property has for a specific use.* In estimating use
20 value, the appraiser focuses on the value the real estate contributes to the
21 enterprise of which it is a part, without regard to the property's highest and best
22 use or the monetary amount that might be realized upon its sale.¹⁴ [Emphasis
23 retained]

24 It is clear that the standard of value for property tax purposes is market value and not value in
25 use. However, questions concerning market value in relation to use value sometimes arise when
26 appraising limited market or special use properties. A widely used appraisal text provides the
27 following definition of a limited market property:

28 A limited-market property is a property that has relatively few potential buyers at a
29 particular time. It may be a limited-market property because of unique design
30 features or changing market conditions. Large manufacturing plants, railroad
31 sidings, and research and development properties are examples of limited-market
32 properties that typically appeal to relatively few potential purchasers.¹⁵

¹² Several types of restricted value properties are discussed in Chapter 2 of AH 501, *Basic Appraisal*.

¹³ This concept is also sometimes referred to "value to an owner."

¹⁴ Appraisal Institute, *The Appraisal of Real Estate*, 24.

¹⁵ Appraisal Institute, *The Appraisal of Real Estate*, 25.

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1 Special use property is defined statutorily in section 401.6(b)(3).¹⁶ The definition is very similar to
2 that of limited market property:

3 "Special use property" means a limited market property with a unique physical
4 design, special construction materials, or a layout that restricts its utility to the use
5 for which it was built.

6 By definition, there is a very small market for limited use or special use properties; conceivably,
7 the market could be limited to the current owner. Limited market and special purpose properties
8 should be appraised at market value based on their current use or the most likely alternative use.
9 The appraiser may not use a method of valuation designed solely to capture the specific utility of a
10 property to a particular owner, but the appraiser should assume that there is a market composed
11 of potential buyers and sellers who would use the property in a manner similar to the way the
12 current owner uses it, unless it is clearly apparent that the market would adapt the property to
13 another use.

14 If the appraiser determines that the current use of a limited-market property is the highest and best
15 use and that this use is likely to continue, it is appropriate to consider the current use value (i.e.,
16 the value of the property based upon its current use) as the property's market value. If, on the
17 other hand, the appraiser determines that the current use is not the highest and best use and that
18 this use is not likely to continue, the property must be appraised based upon the alternative use
19 that is the highest and best use.¹⁷

¹⁶ Section 401.6 concerns entrepreneurial profit and special use properties.

¹⁷ Further discussion of this issue can be found in AH 501, *Basic Appraisal*, under "Valuation of Limited Market Properties."

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CHAPTER 2: ADVANCED ISSUES IN THE COST APPROACH

INTRODUCTION

In general, the cost approach may be used when the current cost of replacing a property provides evidence of the property's value. When employing this approach to determine the value of improved properties, the known value of the land or site is added to the current cost of replacing the improvements, less an allowance for any depreciation incurred by the improvements.

The rationale for the use of the cost approach is based on the economic principle of substitution. As discussed in AH 501, this principle holds that a rational person will pay no more for a property than the cost of acquiring a satisfactory substitute, assuming no costly delay. The condition of no costly delay must be satisfied, or the cost of the delay must be added to the cost of a substitute property. If it would not be worthwhile to replace the property (i.e., if the delay in acquiring a substitute is too costly) then the cost of replacement cannot be said to represent the property's market value.

The cost approach is most reliable when the property being appraised is relatively new and has experienced little depreciation. Improvement cost tends to equal value when the improvement is new and reflects the highest and best use of the improved property. In general, the reliability of the approach decreases as the depreciation of the property (i.e., the improvements) increases. This inverse relationship between the reliability of the approach and the extent of depreciation present arises from the difficulty inherent in estimating depreciation.

In the context of real property, the steps employed in the cost approach can be summarized as follows:

1. Estimate the value of the land, or site, as if vacant and available for development to its highest and best use as of the valuation date.
2. Estimate the total cost new of the improvements as of the valuation date.
3. Estimate the total amount of depreciation incurred by the improvements.
4. Subtract the total estimated depreciation from cost new to arrive at the depreciated cost of the improvements.
5. Add the land, or site, value to the depreciated cost of the improvements to arrive at a value indicator for the total property.

APPLICABILITY AND LIMITATIONS OF THE COST APPROACH

Rule 6 makes several statements about the general applicability of the cost approach. Specifically, subdivision (a) of rule 6 provides that the cost approach is:

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- 1 1. To be used in conjunction with other value approaches;
- 2 2. The preferred approach when neither reliable sales data nor reliable income data are available,
3 or when the income from the property is not so regulated as to make current replacement
4 costs irrelevant to value; and
- 5 3. Particularly appropriate for construction work in progress and for property that has
6 experienced relatively little depreciation.¹⁸

7 Note that the last of these statements speaks not only to the applicability of the cost approach, but
8 also to an important limitation. Specifically, where the subject property suffers from depreciation,
9 the reliability of a value indicator determined by the cost approach may be severely limited. As
10 discussed later under "Concepts of Depreciation," this limitation comes about because
11 depreciation is, typically, difficult to accurately measure.

12 VALID COMPONENTS OF COST

13 AH 501 discusses the concept that costs, for appraisal purposes, may be thought of as "full
14 economic costs."¹⁹ In general, full economic costs are the payments that must be made to secure
15 the supply of all of the agents necessary for production. Full economic costs consist of all
16 expenditures necessary to place the completed property in the hands of the buyer or ultimate
17 consumer. Full economic costs necessary to construct real property and ready it for its intended
18 use include (1) direct costs, (2) indirect costs, and (3) entrepreneurial profit.

19 DIRECT COSTS

20 Direct costs, also called hard costs, are generally thought of as those expenditures required for the
21 labor and materials necessary to develop and construct an improvement. Direct costs would also
22 include other items, such as fees for building permits, contractor's profit and overhead, and
23 charges for equipment rentals, that relate directly to the physical aspects of a construction project.

24 INDIRECT COSTS

25 Indirect costs, or soft costs, are generally thought of as those expenditures for items other than
26 labor and materials typically incurred in bringing the property to a finished state. Indirect costs,
27 which are not normally part of a construction contract, may, depending on the circumstances,
28 include such items as:

- Developer's administrative expenses
- Environmental impact studies
- Property taxes during construction
- Leasing and sales commissions
- Architectural and engineering fees
- Insurance
- Interest on borrowed or owner-supplied funds

¹⁸ Rule 6(a).

¹⁹ AH 501, 74.

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1 **ENTREPRENEURIAL PROFIT**

2 Under subdivisions (b) and (d) of rule 6 when estimating the current cost to replace a property by
3 reference to the current prices of a property's labor and material components, it may be
4 appropriate to add amounts for entrepreneurial services and other costs that would typically be
5 incurred in bringing the property to a finished state. In this context, *entrepreneurial profit* refers
6 to a market-derived estimate of what the entrepreneur expects to receive for his/her contribution,
7 i.e., the value of the "entrepreneurial services." Thus, entrepreneurial profit does not attempt to
8 measure actual money outlays for entrepreneurial services; instead, it is an estimate of the cost to
9 the entrepreneur of foregoing the opportunity to profit from providing his services to some other
10 development project. In general, entrepreneurial profit reflects the developer's expected reward
11 for his or her expertise and risk-taking (i.e., his or her entrepreneurial services).

12 There are specific instructions regarding entrepreneurial profit under section 401.6(b)(1), which
13 governs the application of the cost approach in the valuation of special use property.²⁰ Here
14 entrepreneurial profit means either (1) the amount that a developer would expect to recover with
15 respect to a property in excess of the amount of the development costs or (2) the difference
16 between the fair market value of a property and the total costs incurred with respect to that
17 property. Section 401.6 also provides that the assessor, in valuing special use property, shall not
18 add a component for entrepreneurial profit unless evidence is derived from the market that
19 entrepreneurial profit exists and that it has not been fully offset by physical deterioration or
20 economic obsolescence.²¹

21 **CONCEPTS OF COST**

22 **Reproduction Cost and Replacement Cost**

23 Rule 6 authorizes an assessor to use a cost approach that is based on either *reproduction cost* or
24 *replacement cost*. Reproduction cost, strictly construed, is an estimate of the cost of replacing the
25 subject property with an exact replica, using costs as of the valuation date. This concept of cost is
26 not particularly useful to an appraiser, however, since reproduction cost is relevant to an estimate
27 of a property's market value only if the property would actually be replaced by one that is
28 identical in terms of design, materials, and workmanship. An existing building or other type of
29 improvement may incorporate elements that diverge from current market standards, and that
30 would therefore not be replaced by the typical buyer. However, reproduction cost frequently
31 provides a basis for measuring depreciation from various causes.

32 Replacement cost, in comparison, is the estimated cost to construct a property that is equivalent
33 to the subject in terms of utility as of the valuation date. It is this concept of cost that is validated
34 by the principle of substitution, since, as discussed above, a rational person will pay no more for
35 a property than the cost of acquiring a satisfactory—but not usually identical—substitute
36 property.

²⁰ Paragraph (3) of subdivision (b) provides that "[s]pecial use property' means a limited market property with a unique physical design, special construction materials, or a layout that restricts its utility to the use for which it was built."

²¹ See also the discussion regarding entrepreneurial profit in Chapter 6.

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1 However, although distinct in concept, for a given property the estimates of replacement cost and
2 reproduction cost may be the same. For example, in the case of a newly built property constructed
3 and designed in accordance with current market standards, the estimates of reproduction cost and
4 replacement cost would tend to be the same.

5 **Historical, or Original, Cost**

6 Historical, or original, cost is the cost of a property when it was originally constructed and/or
7 placed into service. As discussed below, historical cost, combined with a cost trending factor, can
8 be used to estimate reproduction cost.²²

9 A cost estimate may differ significantly depending on whether reproduction or replacement cost is
10 used, and the cost concept selected should be clearly understood. Depreciation, which is
11 discussed below, must be measured in a manner that is consistent with the cost concept used.
12 Reproduction cost provides a basis from which to measure depreciation from all causes, while
13 with replacement cost the need to measure some forms of functional obsolescence is eliminated
14 because they are not included in the estimate of replacement cost new.

15 **METHODS OF ESTIMATING COST**

16 **GENERAL REQUIREMENTS UNDER RULE 6**

17 Reproduction cost, under subdivision (b) of rule 6, may be estimated by either (1) adjusting the
18 property's original cost for price level changes and for abnormalities, if any, or (2) applying
19 current prices to the property's labor and material components and adding, as appropriate,
20 amounts for entrepreneurial services, interest on borrowed or owner-supplied funds, and other
21 costs typically incurred in bringing the property to a finished state.

22 Subdivision (c) of rule 6 provides that, where reproduction cost is estimated by the first of these
23 methods (i.e., by adjusting the property's original cost for price level changes), costs incurred in a
24 given year shall be multiplied by an appropriate price index factor. Further, where annual costs are
25 not ascertainable, costs over several years may be lumped together and then adjusted by an
26 index factor that represents the assessor's best judgment of the weighted average price change for
27 those years. If the property was not new when it was acquired by its present owner and the
28 original cost is unknown, the property's acquisition cost may be substituted for original cost
29 under this subdivision. Acquisition cost should reflect the cost of the taxable property, which may
30 or may not be equal to the "booked cost" found in accounting records. Booked cost may
31 include the cost of non-taxable property.

²² Some sources distinguish between historical cost and original cost. Historical cost is defined as in the text, but original cost is used to designate the actual cost to the present owner, who may have acquired the property from a previous owner at an amount more or less than historical cost. Rule 6 does not make this distinction (using original cost as synonymous with historical cost) but does use "acquisition cost" in this sense, stating, in subdivision (c), "If the property was not new when acquired by its present owner and its *original cost* is unknown, its *acquisition cost* may be substituted for original cost...." [Emphasis added.]

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1 As to replacement cost, subdivision (d) of rule 6 provides that this measure of a property's value
2 may be estimated by applying current prices to the labor and material components, not of the
3 subject property, but of a substitute property capable of yielding the same services and amenities.
4 To this estimate would be added amounts, as appropriate, for entrepreneurial services, interest on
5 borrowed or owner-supplied funds, and other costs typically incurred in bringing the substitute
6 property to a finished state as discussed under subdivision (b)(2).

7 **SOURCES OF COST DATA**

8 Collection and classification of cost information is a continuing process for appraisers; costs are
9 constantly changing. Section 401.5 states:

10 The board shall issue to assessors data relating to costs of property, or with
11 respect to commercial and industrial property, shall, after a public hearing, review
12 and approve commercially available data, and shall issue to assessors other
13 information as in the judgment of the board will promote uniformity in appraisal
14 practices and in assessed values throughout the state. An assessor shall adapt data
15 received pursuant to this section to local conditions and may consider that data
16 together with other factors as required by law in the assessment of property for tax
17 purposes.

18 Cost tables published by the Board are found in Assessors' Handbook Section 531 (AH 531),
19 *Residential Building Costs*; and Assessors' Handbook Section 534 (AH 534), *Rural Building*
20 *Costs*. These sections of the Assessors' Handbook are usually updated annually. The costs
21 provided in these handbook sections are intended for use with the Assessors' Standard
22 Classification System. This system provides estimates of square foot building costs according to
23 physical variations in building design, construction type, quality, floor area, and shape.

24 Board-approved cost guides for commercial and industrial properties should be used for
25 determining current costs of commercial and industrial properties.²³ Adjustments may be
26 necessary, however, in order to achieve a fair market value assessment. Variances from the
27 values indicated by the cost guide should be based on reliable evidence of current replacement
28 costs.

29 Cost guides provide costs of benchmark properties. Adjustments may be required for differences
30 between the benchmark properties and the subject property. For example, adjustments may be
31 made for differences in interior features, the shape of the building's perimeter, cost changes
32 between the date of the benchmark costs and the effective date of value, and local cost
33 differentials. Proper appraisal requires an analysis of the estimates for all direct and indirect costs
34 applicable to the subject property. Unit costs obtained from a cost guide may exclude some
35 indirect costs.

²³ Letter to Assessors No. 97/71, *Commercial and Industrial Value Guides*.

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1 METHODS OF ESTIMATING COST NEW

2 Rule 6 provides that any of several measurements of cost (or a combination thereof) may be used
3 in applying current prices to the labor and materials components of the subject property (to arrive
4 at an estimate of reproduction cost) or of a substitute property (to arrive at an estimate of
5 replacement cost). These measurements include (1) square-foot, cubic-foot, or other unit costs;
6 (2) a summation of the in-place costs of all components; and, (3) a quantity survey of all material,
7 labor, and other cost elements. As discussed below, the methods for estimating costs using these
8 measurements are known as the Comparative-Unit Method, the Unit-in-Place Method, and the
9 Quantity Survey Method. Also discussed below is the Trended Historical (or Original) Cost
10 Method, which provides an estimate of reproduction cost, in accordance with rule 6, by adjusting
11 the property's original cost (or, if necessary, acquisition cost) for price level changes and any
12 abnormalities.

13 Comparative–Unit Method

14 This method produces an estimate based on the dollar cost per unit of area. The appraiser
15 identifies costs of similar structures, adjusting those costs for differences in market conditions,
16 location, and/or physical characteristics in comparison to the subject property. Contractor's
17 overhead and profit may be either included in the cost estimate per unit of area or computed
18 separately. Indirect costs are usually computed separately, as is entrepreneurial profit.

19 The following example shows how comparative-unit costs can be used to value an 1,800 square
20 foot D7 single-family residence using the AH 531.90 Compact Cost guide:

EXAMPLE 2–1: Single-Family Residence—Comparative Unit Method	
Base cost per sq. ft.	\$ 68.54
Add for central air conditioning	2.12
Subtotal	\$ 70.66
Current cost multiplier	x 1.00
Subtotal	\$70.66
Local cost multiplier (Sacramento)	x 1.00
Total cost per sq. ft.	\$ 70.66
Residence cost new (1,800 sq. ft. x \$70.66)	\$ 127,188
Double garage	12,806
Total cost new	<u>\$ 139,994</u>

21 **NOTE:** The above cost estimate includes direct construction costs and some indirect costs. It does not
22 include entrepreneurial profit or the costs of buying or assembling land. Estimated costs of these items are
23 added separately.

24 Unit–in–Place Method

25 The unit-in-place method is a condensed version of the quantity survey method described later in
26 this chapter. Both are time-consuming methods which may not be practical in mass appraisal.
27 Nevertheless, the unit-in-place and quantity survey methods may occasionally be suited for
28 property subject to an assessment appeal, or for appraisals of complex properties. Appraisers
29 should be able to apply either technique when appropriate.

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1 In the unit-in-place method, total costs of installing a common unit of construction are applied to
2 the number of units in a project. Units of measure vary according to standardized costs for each
3 component as installed. For example, floor covering may be counted on a square yard basis;
4 baseboards or interior partitions on a linear foot basis; doors or plumbing on a door or plumbing
5 fixture basis; air conditioning on a per ton basis; insulation, drywall, or paint on a square foot
6 basis; and excavation on a cubic yard basis. Common sources of unit-in-place cost data are
7 standard cost tables such as those published in a Board-approved cost guide.

8 Commonly, there are several costs for each unit of construction, with differences explained by
9 variations in the quality or the complexity of an installation. All unit costs are added together to
10 provide a total estimate of direct costs for the subject property's improvements. Contractor's
11 overhead and profit may be included in the direct cost estimate or computed separately. Other
12 indirect costs and entrepreneurial profit are usually computed separately and added to arrive at an
13 estimate of the full cost of the subject property.

14 The following example shows how the unit-in-place method can be used to estimate cost new for
15 a 20 foot by 20 foot, detached garage with the AH 531.60 cost guide. The garage has a standard
16 concrete foundation and floor. The wall framing is 2" x 4" – 16" on center and the wall height is 8
17 feet. The roof structure is 2" x 8" – 16" on center ceiling joists and 2" x 6" – 16" on center rafters.
18 The roof covering is asphalt composition shingle. The exterior wall finish is ¾" bevel siding. The
19 interior of the garage is unfinished. The garage has a 16' x 7' aluminum door. There are six - 110
20 volt electrical outlet and the wiring is Romex.

EXAMPLE 2-2: Garage Building—Unit-in-Place Method				
Foundation	80 Linear Feet	x	\$ 10.50	= \$ 840
Floor	400 Square Feet	x	\$ 3.16	= \$ 1,264
Wall Framing	3,088 Square Feet	x	\$ 1.80	= \$ 5,558
Ceiling Joists	400 Square Feet	x	\$ 1.80	= \$ 720
Rafters	400 Square Feet	x	\$ 2.12	= \$ 848
Roof Sheathing & Decking	400 Square Feet	x	\$ 1.40	= \$ 560
Roof Cover	400 Square Feet	x	\$ 1.49	= \$ 596
Wall Cover	3,088 Square Feet	x	\$ 2.30	= \$ 7,102
Garage Door				= <u>\$ 1,900</u>
Base Cost				= \$19,688
Local Cost Multiplier (Sacramento)		x	<u>1.00</u>	
Value Indicated by the Unit-in-Place Method				= <u>\$19,688</u>

21 **NOTE:** Any applicable indirect costs and entrepreneurial profit would be added to this cost estimate.

22 **Quantity Survey Method**

23 Similarly, the quantity survey method is time-consuming and may not be practical in mass
24 appraisal, but because of its supporting data, may be well-suited to assessment appeals or
25 appraisals of complex properties. This method comprehensively details the quantity, quality, and
26 cost of all materials and labor required to construct a reproduction of the subject building. Total

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1 material and labor costs are combined to indicate total direct costs of the subject building. All
2 applicable indirect costs and entrepreneurial profit are then added to derive a total cost estimate.

3 The following example summarizes a general contractor's cost breakdown for an apartment
4 building. It is important to note that the table provides only a summary of the results of the
5 quantity survey, and does not show the computations for the materials that would be used in
6 construction.

EXAMPLE 2-3: Apartment Building—Quantity Survey Method	
<u>Direct costs</u>	
Foundation	\$ 23,000
Frame	191,000
Floor structure	223,000
Floor cover	96,000
Exterior walls	647,000
Interior walls	433,000
Electrical system	59,000
Electrical fixtures	28,000
HVAC	242,000
Roof structure	205,000
Roof cover	51,000
Ceilings	79,000
Painting	18,000
Plumbing system	65,000
Plumbing fixtures	21,000
Onsite improvements and landscaping	1,205,000
Offsite improvements (sidewalks, curbs, gutters, and storm drainage)	75,000
Permits and fees	290,000
Construction overhead	215,400
Payment and performance bond	<u>35,000</u>
	\$4,201,400
<u>Indirect costs</u>	
Architectural/engineering services	\$ 304,000
Survey	8,000
Soils report	5,000
Toxic assessment	<u>5,000</u>
	\$4,523,400
<u>Additional indirect costs</u>	
Construction loan fee (\$4,308,000 x 2%)	86,160
Construction loan interest (\$4,308,000 @ 8% interest for 1 year)	188,954
Appraisals	16,000
Legal	25,000
Development consultants	148,000
Title and escrow	19,000
Other bank charges	40,000
Total additional indirect costs	<u>523,114</u>
Total improvement cost	\$5,046,514

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Marketing and carrying costs during rent-up	178,000
Entrepreneurial profit (15% of direct and indirect costs and site value)	<u>783,827</u>
Total improvements cost new	\$5,830,341
Site value	<u>179,000</u>
Total Value Indication by the Cost Approach	\$6,009,341
Rounded to:	\$6,000,000

1 **Trended Historical (or Original) Cost Method²⁴**

2 *Historical cost*, or original cost, means the cost of a property when it was originally constructed
3 and/or placed into service. As discussed above, this measure of cost may be used in estimating the
4 value of property by the reproduction cost approach, under which a property's original
5 construction cost is adjusted for price level changes using a cost index:²⁵

$$\text{Historical cost} \times \text{Cost index} = \text{Reproduction cost}$$

6 If construction occurred during more than one year, expenditures for each year that construction
7 took place are factored separately to compute the reproduction cost as of the valuation date.
8 Historical construction cost data may be found in the official, undepreciated cost accounting
9 records, or book costs, of the initial property owner. However, this data is often difficult to
10 obtain. Further, accounting records may contain errors, or may represent estimates rather than the
11 actual full economic costs. In some cases, book costs must be adjusted to reflect the full economic
12 costs of a property as of initial construction.²⁶

13 In addition, whenever the cost of a single property is used to estimate market value, there is a risk
14 that the cost indicator does not reflect typical costs in the market. The historical cost of a property
15 may be significantly higher or lower than its market value at the time of construction. As the time
16 span between initial construction and the date of value increases, the trended historical cost
17 method yields less reliable indicators of value.

18 Limitations notwithstanding, the trended historical (or original) cost method may be useful to the
19 appraiser, particularly in dealing with unusual types of construction for which current data are not
20 sufficiently available in the marketplace.

²⁴ The trended historical cost method of estimating value under the reproduction cost approach is different from the historical cost approach to value under subdivision (d) of rule 3, which applies to properties of regulated companies where historical cost, historical cost less depreciation (or, in some cases, trended original cost) is used as a rate base. The historical cost approach is discussed as a special topic in Chapter 6.

²⁵ The SBE publishes building cost indices in AH Section 533.10, *Building Cost Indices*, and AH 581, *Equipment Index and Percent Good Factors*.

²⁶ As discussed earlier, rule 6 provides that acquisition cost may be substituted if historical (original) cost is unavailable.

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DEPRECIATION

1

2 DEPRECIATION DEFINED

3 The most difficult aspect of the cost approach is estimating *depreciation*. In general, depreciation
4 may be thought of as the difference between the present value of the worn or outmoded subject
5 property and the present value of a hypothetical, newly built, modern property of equivalent
6 utility. For purposes of the cost approach, it is the difference between estimated replacement or
7 reproduction cost new as of a given date, and market value as of the same date. Thus, in an
8 appraisal sense, the term "depreciation" refers not to a decline in the original value of the subject
9 property, but rather to a measurement of the extent to which the subject property is, at a
10 particular point in time, worth less than a hypothetical new property.

11 The accounting approach to depreciation is quite different from the appraisal approach. The
12 appraiser does not use the accountant's depreciation estimate in valuation, since it is not market
13 derived. In the accounting approach, the rate of depreciation is established when an asset is new,
14 based on a pre-selected life span and standard periodic depreciation charge in order to write off
15 the original cost. By the end of the asset's life, the value of the asset has been depreciated to a
16 typically nominal or zero salvage value. The book value shown on the accounting records is the
17 asset's acquisition cost reduced by the accrued depreciation charges against it for income tax
18 purposes. By contrast, depreciation for appraisal purposes estimates actual loss in value incurred
19 by the property in the marketplace. An appraiser estimates the market value of a building by
20 adjusting its cost new for estimated depreciation. Market value is unlikely to equal the book value
21 indicated by accounting records.

22 Differences between the accountant's and the appraiser's depreciation estimates are represented in
23 equation form below:

$$\begin{array}{l} \textit{Replacement Cost New} \quad - \quad \textit{Depreciation} \quad = \quad \textit{Market Value Estimate} \quad (\textit{Appraiser}) \\ \textit{Reproduction Cost New} \quad - \quad \textit{Depreciation} \quad = \quad \textit{Market Value Estimate} \quad (\textit{Appraiser}) \\ \textit{Trended Historical Cost} \quad - \quad \textit{Depreciation} \quad = \quad \textit{Market Value Estimate} \quad (\textit{Appraiser}) \\ \textit{Capitalized Cost} \quad - \quad \textit{Depreciation} \quad = \quad \textit{Book Value} \quad (\textit{Accountant}) \end{array}$$

24

25 TYPES OF DEPRECIATION

26 Appraisers analyze three generally recognized types, or causes, of depreciation: physical
27 deterioration; functional obsolescence; and external, or economic, obsolescence. A property may
28 suffer from more than one form of depreciation at one time.

29 Physical Deterioration

30 *Physical deterioration* is a loss in value due to use or the forces of nature. Physical deterioration
31 occurs to virtually all improvements as they age, lowering their utility and consequently reducing
32 their value. Examples of physical deterioration are peeling paint, metal fatigue, flood damage, and
33 termite infestation. Proper maintenance can slow a building's rate of physical deterioration.

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1 Physical deterioration may be classified as curable or incurable. Curable physical deterioration
2 (also called deferred maintenance) occurs when the value added by a repair equals or exceeds the
3 cost to cure the defect. Incurable physical deterioration occurs when the value added by the repair
4 is less than the cost to cure the defect as of the valuation date—that is, it is not economically
5 feasible to repair the item.

6 When estimating physical deterioration, the physical components of an improvement are divided
7 into two types: short-lived components and long-lived components. Short-lived components of an
8 improvement (e.g., roof covering, elevators, or mechanical systems) are components that typically
9 have useful lives shorter than the remaining economic life of the entire improvement (the concepts
10 of useful life and remaining economic life are discussed below). Long-lived components (e.g.,
11 concrete foundations and underground plumbing) are components that typically have useful lives
12 at least as long as the entire improvement's remaining economic life.

13 **Functional Obsolescence**

14 A property's functional utility reflects its overall usefulness or desirability—its ability to satisfy the
15 wants and needs of the marketplace. *Functional obsolescence* is the loss in utility and value due
16 to a reduction in the desirability of the property. This form of obsolescence may be attributable to
17 changes in tastes and preferences within the marketplace, changes in building techniques or
18 technology in general, or poor original design that is deficient or excessive when compared to
19 current market standards.

20 As with physical deterioration, functional obsolescence is classified as curable or incurable,
21 depending on whether or not the cost to cure the functional defect is less than or equal to the
22 anticipated increase in property value resulting from correction of the defect. Functional
23 obsolescence may be caused by a deficiency or a superadequacy. With a deficiency, the
24 improvement is below standard as determined by the market; with a superadequacy, the
25 improvement exceeds market standards. External Obsolescence

26 *External obsolescence* (sometimes called economic obsolescence) is a loss in value caused by
27 negative influences outside of the subject property that are generally beyond the control of the
28 subject property owner or tenant. Unlike physical deterioration and functional obsolescence,
29 which are intrinsic to the property, external obsolescence is caused by extrinsic forces. Negative
30 influences could be economic (e.g., erosion of a community's economic base or a building supply
31 that is in excess of demand), locational (e.g., placement of a medical center adjacent to a railroad
32 crossing), or legal (e.g., a zoning variance that allows for industrial uses in a residential
33 neighborhood, or a wetlands protection law that limits construction). The presence and extent of
34 external obsolescence can be identified by examining the overall market conditions of a property.
35 External obsolescence can affect both a site and its improvements. External obsolescence is
36 generally deemed to be incurable as of the valuation date, but may not be permanent.

37 **AGE AND LIFE CONCEPTS**

38 Any measurement of depreciation must take account of the difference between the present value
39 of the subject property and the present value of a hypothetical, new, substitute property. To do

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1 this, an appraiser makes use of specific appraisal concepts that allow comparisons between the
2 expected entire "life" of a new property and the expected remaining "life" of a subject property.
3 These concepts, which include economic life and useful life, remaining economic life and
4 remaining useful life, and actual age and effective age, all serve to represent depreciation as a
5 function of time.

6 **Economic Life and Useful Life**

7 With respect to improvements to real property, *economic life* refers to the period of time over
8 which an improvement or a component thereof contributes to the property's value from the time it
9 is new. To estimate economic life expectancy, the appraiser must identify and analyze all
10 significant attributes of the subject property's market, including typical quality and condition of
11 construction; functional utility of improvements; changes in technology and building design;
12 factors external to the subject property such as supply and demand conditions and the stage of a
13 neighborhood's life cycle.

14 *Useful life* is the period of time over which an improvement or a component thereof actually
15 performs the function it was designed to perform. It is possible for useful life to extend far beyond
16 economic life, as, for example, in the case of a well-maintained building demolished for
17 development of the site to its highest and best use.

18 **Remaining Economic Life and Remaining Useful Life**

19 *Remaining economic life* is the estimated period of time from the valuation date that an
20 improvement or a component thereof can be expected to continue to contribute to a property's
21 value. Remaining economic life extends from the valuation date of the improvement or component
22 to the end of its economic life.

23 *Remaining useful life* is the estimated period of time from the actual age (discussed below) of an
24 improvement or a component thereof to the end to the improvement's or the component's useful
25 life expectancy.

26 **Actual Age and Effective Age**

27 The *actual age* of an improvement or a component thereof is simply its chronological age, or the
28 actual number of years since it was constructed. In contrast, *effective age* refers to the stage of an
29 improvement's or component's economic life as reflected by its actual condition and utility on the
30 valuation date. If a subject building, for example, is better maintained than typical buildings in its
31 market, the subject building's effective age will probably be less than its actual age, and vice
32 versa. Remodeling a building tends to reduce its effective age. Effective age is related to
33 remaining economic life:

$$34 \quad \text{Effective age} + \text{Remaining economic life} = \text{Total economic life}$$

35 **METHODS OF ESTIMATING DEPRECIATION**

36 There are several methods of estimating depreciation. Four methods are discussed in this section:
37 the percent good, age-life, market extraction, and observed condition, or breakdown, methods. Of

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1 the four, only the observed condition (breakdown) method measures depreciation according to its
2 separate sources: physical deterioration, functional obsolescence, and external obsolescence. The
3 other methods measure depreciation from all sources in a lump sum. Estimates derived using the
4 market extraction and breakdown methods are time-consuming, and they may not be practical in
5 mass appraisal (particularly the observed condition (breakdown) method). Nevertheless, these
6 methods may be appropriate for selected assessment appeals or appraisals of complex properties.

7 **Percent Good Method**

8 The Board publishes percent good tables in AH 531, *Residential Building Costs*, AH 534, *Rural*
9 *Building Costs*, and Assessors' Handbook Section 581 (AH 581), *Equipment Index and Percent*
10 *Good Factors*.

11 Percent good factors complement the percentage of depreciation. For example, if total
12 depreciation on a property is 20 percent, the percent good is 80 percent. Percent good tables
13 applicable to residential buildings are designated as "R," while percent good tables applicable to
14 other-than-residential buildings are designated as "OR." Each designation has a number of tables
15 organized by life expectancy (e.g., the percent good table applicable to a residential building with
16 a 60-year life expectancy is designated as "R-60"). Note that percent good tables are valid only
17 when a subject property has experienced average depreciation for its age, quality, and use type.²⁷

18 **Age-Life Method**

19 In the age-life method, percent depreciation is estimated simply by dividing the estimated effective
20 age of the subject property's improvements by the total economic life of those improvements.
21 Depreciation is then converted to dollars by multiplying the percent depreciation by the cost new
22 of the improvements. An example is given below:

EXAMPLE 2-4: Age-life Method	
Cost new:	\$1,000,000
Effective age:	10 years
Total economic life:	50 years
Percent depreciation:	$10 \div 50 = .20$ (20%)
Depreciation in dollars:	$.20 \times \$1,000,000 = \$200,000$

23
24 The age-life method allows an estimate of depreciation to be expressed in annual terms. In the
25 example above, since the improvements have a total economic life of 50 years the annual
26 depreciation is 2 percent (i.e., the reciprocal of 50). Because of the simplicity of the age-life
27 method, it is particularly useful in mass appraisal. However, while an estimate of depreciation is
28 easily achieved, the result is an approximation based on the usually faulty assumption that

²⁷ Use type refers to the current use of a building—for example, residential, commercial, industrial, agricultural, or special purpose.

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1 property depreciates on a straight-line basis throughout its economic life. Therefore, this method
2 should be used in combination with another method or methods.

3 **Market Extraction Method**

4 The market extraction method (also called the market or comparable sales data method) is the
5 only method that uses comparable sales data to estimate depreciation. The estimate of
6 depreciation for the subject property is based on the amount of depreciation incurred by
7 comparable sales properties. The method requires sales of improved properties that are highly
8 comparable to the subject property. It also requires comparable data concerning site values of the
9 comparable properties and accurate estimates of cost new for the comparable properties.
10 Application of the method is summarized in the following steps:

- 11 1. Identify comparable sales properties.
- 12 2. Adjust the comparable sales, if necessary, for any differences relating to property rights
13 conveyed, financing, or non-real property items included in the sales price. Adjustment for
14 market conditions is not required; depreciation is estimated as of the sale date of the
15 comparable. Adjustment for physical and locational characteristics is also not required;
16 presumably, these factors are the sources of depreciation in the comparable property.²⁸
- 17 3. Subtract the estimated value of the land, or site, as of the sale date, from each comparable sale
18 in order to arrive at an estimate of the residual, depreciated value of the improvements.
- 19 4. Estimate the cost new of the improvements for each comparable property as of the sale date.
20 The type of cost estimated (i.e., replacement or reproduction cost) should be the same as that
21 used for the subject improvement.
- 22 5. Subtract the depreciated value of the improvements (item 3) from cost new (item 4) to arrive
23 at a dollar estimate of total depreciation for each comparable sale property.
- 24 6. Convert each dollar estimate of total depreciation into a percentage by dividing it by the cost
25 new of each comparable sale's improvements. (The percentage may be expressed as either (1)
26 overall rates of depreciation, to be applied to the lump sum cost new of the subject
27 improvements, or (2) annual rates of depreciation, to be applied to the subject improvements
28 according to their actual age. Annualizing the results introduces the assumption that
29 depreciation occurs on a straight-line basis over time.) Reconcile the results and select an
30 appropriate percentage to apply to the cost new of the subject property's improvements; this
31 produces the estimate of total depreciation for the subject property's improvements.

32 The following example illustrates the application of the market extraction method:

²⁸ Adjusting comparable sales for elements of comparison is discussed in Chapter 3.

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EXAMPLE 2-5: Market Extraction Method			
	Sale 1	Sale 2	Sale 3
Sales Price	100,000	130,000	120,000
Less Land Value	<u>40,000</u>	<u>70,000</u>	<u>55,000</u>
Market Value of Improvements	60,000	60,000	65,000
Replacement Cost New	90,000	110,000	120,000
Less Market Value of Improvements	<u>60,000</u>	<u>60,000</u>	<u>65,000</u>
Lump Sum Depreciation	30,000	50,000	55,000
Percentage Depreciation	33%	45%	46%

1
2 In reconciling these results, the appraiser might estimate that the subject property's improvements
3 have depreciated 45%, 33%, or some other amount based upon the relative comparability of the
4 sales and the subject property.

5 **Observed Condition (Breakdown) Method**

6 The observed condition, or breakdown, method is the most comprehensive of the three
7 depreciation methods discussed here. It is the only method that separately measures each source
8 of depreciation. The method is complex; however, a working knowledge of it provides the
9 appraiser with a better understanding of the causes of depreciation and the relationship between
10 these causes and market value. The following discussion attempts to merely describe the method
11 rather than provide a complete exposition. For more detailed information, the appraiser is referred
12 to standard appraisal texts.²⁹

13 Under a traditional application of this method, an appraiser would attempt to measure
14 depreciation from:

- 15 1. Curable Physical Deterioration
- 16 2. Incurable Physical Deterioration (Long-lived items and short-lived items)
- 17 3. Curable Functional Obsolescence
- 18 4. Incurable Functional Obsolescence
- 19 5. External Obsolescence

20 **ESTIMATING PHYSICAL DETERIORATION**

21 As previously discussed, physical deterioration is a form of depreciation that reduces the value
22 and utility of virtually all improvements as they age. In the observed condition (breakdown)
23 method, the components of improvements are analyzed in three categories: curable physical
24 deterioration, incurable physical deterioration (short-lived items), and incurable physical
25 deterioration (long-lived items). Physical deterioration may occur in any of these categories. Each
26 item of physical deterioration is separately estimated.

²⁹ For example, Appraisal Institute, *The Appraisal of Real Estate*, Eleventh edition, 378-394; or International Association of Assessing Officers, *Property Assessment Valuation*, Second edition, 164-180.

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1 Curable Physical Deterioration

2 Curable physical deterioration, also referred to as deferred maintenance, consists of items in need
3 of repair or replacement as of the valuation date. Typical examples of deferred maintenance are a
4 leaky roof, peeling paint, a broken or stuck window, a non-working air conditioner, faulty
5 plumbing, interior decorating, pest control, fire or safety hazards, etc.

6 There are two tests for determining whether physical deterioration is curable. First, the appraiser
7 must determine whether the cost to cure an item of deferred maintenance will result in added
8 value equal to, or greater than, the cost to cure. Second, even when the cost to cure exceeds the
9 added value, if curing the item will allow the entire property to maintain its value, the item is
10 generally considered curable.

11 This type of physical deterioration is measured by the "cost to cure" the defect—that is, the cost
12 to restore the item to new or relatively new condition. The cost to cure is sometimes higher than
13 cost new. This occurs, for example, when costs are incurred to remove a non-working item before
14 a replacement can be installed, or when a bulk unit discount is unavailable when replacing only
15 one unit.

16 Incurable Physical Deterioration

17 Incurable physical deterioration is physical deterioration that is not economical to repair as of the
18 valuation date—that is, the cost to cure the defect exceeds the added value of the repair.
19 Incurable physical deterioration includes both short-lived and long-lived physical components. As
20 discussed earlier, a short-lived component (e.g., roof covering, exterior paint, interior decorating,
21 floor covering, water heater, furnace, and kitchen appliances) has a remaining useful life shorter
22 than the remaining economic life of the primary improvement (usually a building). Most short-
23 lived items will become deferred maintenance items before the end of the primary improvement's
24 remaining economic life expectancy. A long-lived component (e.g., a building's structural and
25 electrical systems) has a remaining useful life at least as long as the remaining economic life of the
26 primary improvement. Since it is normally not economically feasible to replace such components
27 before the economic life of the primary improvement ends, physical deterioration incurred by
28 long-lived components is considered incurable.

29 To measure the loss in value caused by physical deterioration for each short-lived component, the
30 appraiser calculates an age-life ratio from its actual age and total useful life expectancy. The age-
31 life ratio is then applied to the cost new to replace each item as of the valuation date. A similar
32 procedure is followed for long-lived components; however, the actual age and useful life
33 expectancy of the primary improvement may be assigned to all long-lived items. Thus, all long-
34 lived items are analyzed together. Data sources for estimating total useful life of the primary
35 improvement and all long-lived items include: (1) the age of other primary improvements
36 (buildings) when torn down for redevelopment to a similar use; (2) information provided by
37 construction experts; (3) data obtained from demolition permits; and, (4) analysis of sales
38 comparables. Physical deterioration must be calculated separately for short-lived and long-lived
39 components in order to avoid the double depreciation of short-lived components.

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1 ESTIMATING FUNCTIONAL OBSOLESCENCE

2 As defined previously, functional obsolescence is a loss in utility and value due to a reduction in
3 the desirability of an improvement or a component thereof, as measured by market standards on
4 the valuation date. Functional obsolescence may be curable or incurable and may result from a
5 deficiency or a superadequacy. A deficiency results from an improvement component that is
6 below market standards; a superadequacy results from an improvement component that exceeds
7 market standards. The tests for determining the curability of functional obsolescence are the same
8 as the tests for the curability of physical deterioration. That is, an item of functional obsolescence
9 is considered curable if (1) the value added will be equal to or greater than the cost to cure, and
10 (2) curing the item will allow the entire property to maintain its value. When it is possible to cure
11 an item, but without any economic advantage to do so, the item is considered incurable. As a
12 result, most superadequacies are considered incurable.

13 There are three types of curable functional obsolescence and two types of incurable functional
14 obsolescence estimated in the observed condition (breakdown) method, as shown in the table
15 below:

Curable

- A deficiency requiring addition of a new item;
- A deficiency requiring replacement/modernization of an existing item; and,
- A superadequacy that is economically feasible to cure.

Incurable

- A deficiency that is not economically feasible to cure; and
- A superadequacy that is not economically feasible to cure.

16 Curable Functional Obsolescence

17 As noted in the above table, there are three types of curable functional obsolescence: a deficiency
18 requiring an addition, a deficiency requiring replacement or modernization, and a superadequacy
19 economically feasible to cure.

20 **Deficiency Requiring An Addition.** This type of functional obsolescence is characterized by the
21 lack of an item in the subject improvement that would typically be found in comparable
22 improvement and that would be economically feasible to add. A deficiency requiring an addition is
23 not included in the estimate of cost new. Depreciation in this case is measured by how much the
24 cost of the addition exceeds the cost of the item if it had been installed during the construction of
25 the improvement—this is sometimes called the "excess cost to cure."

26 **Deficiency Requiring Replacement/Modernization.** This type of functional obsolescence
27 involves a property component needing replacement (e.g., an older HVAC system below current
28 standards), where the obsolescence is curable.

29 A deficiency requiring replacement or modernization is included in the estimate of cost new.
30 Depreciation is measured as the cost of the existing item in the cost new estimate, less any
31 physical deterioration of the item already charged, less any salvage value of the replaced item,
32 plus the cost to install the new item (including the removal costs for the old item).

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1 **Superadequacy Economically Feasible to Cure.** This type of functional obsolescence involves a
2 property component in excess of market standards that does not significantly contribute to value.
3 Most superadequacies are incurable; that is, even when a cure is physically possible, there is
4 typically no economic advantage to do so.

5 Depreciation caused by a curable superadequacy is measured differently depending on the cost
6 basis used. If replacement cost is used, the cost of the superadequacy is not included in the
7 estimate of cost new, and depreciation is simply the cost to cure the superadequacy—that is, the
8 cost to remove the item, less any salvage value. If reproduction cost is used, the cost of the
9 superadequate item is included in the estimate of cost new. In this case, the measure of
10 depreciation is the cost new of the item, less any physical deterioration already charged, plus the
11 removal cost of the item, less any salvage value of the item.

12 **Incurable Functional Obsolescence**

13 There are two types of incurable functional obsolescence: a deficiency that is not economically
14 feasible to cure, and a superadequacy that is not economically feasible to cure.

15 **Deficiency Not Economically Feasible to Cure.** The most common type of incurable deficiency
16 is a one that was not included in the estimated cost new but should have been. In this case, the
17 depreciation, or loss in value, is measured by the loss in value attributable to the deficiency, less
18 the cost of the deficient item had it been included in the estimate of cost new.

19 The loss in value attributable to the deficiency is generally measured in two ways: (1)
20 capitalization of the net (i.e., after allowable expenses) income loss, or (2) analysis of otherwise
21 comparable sales, with some containing the deficiency and others not containing it. The annual
22 income loss can be capitalized into an estimate of value loss using either direct capitalization or
23 gross income multiplier analysis. The second method attempts to isolate the value loss through
24 direct sales comparisons; this method is also called paired sales analysis. Paired sales analysis, or
25 paired data analysis, is a quantitative technique where nearly identical properties are analyzed to
26 determine a single characteristic's effect on value. This analysis is relevant, for example, where a
27 comparable sale suffers the same negative influence as the subject property (e.g., proximity of
28 residential property to large fuel tanks) and can be compared to a similar comparable sale located
29 away from the negative influence. The accuracy of this method depends in part on the
30 comparability of the properties. When land sales are used, paired sales analysis will measure
31 external obsolescence attributable to the land value. But when improved property sales are used,
32 they measure external obsolescence attributable to the property as a whole.³⁰

33 **Superadequacy Not Economically Feasible to Cure.** This type of functional obsolescence
34 involves a property component in excess of market standards, for which there is no apparent
35 economic advantage to cure. The presence of a superadequacy can create additional costs of
36 ownership such as higher utility, maintenance, and repair expenses.

³⁰ Paired sales analysis is discussed in Chapter 3, in the context of the comparative sales approach.

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1 As is the case with a curable superadequacy, depreciation caused by an incurable superadequacy is
2 measured differently depending on the cost basis used. If replacement cost is used, the cost of the
3 superadequacy is not included in the estimate of cost new, and the measure of depreciation is the
4 extra cost of ownership resulting from the superadequacy, less the added value, if any, due to the
5 superadequacy. If reproduction cost is used, depreciation is measured as the reproduction cost of
6 the superadequacy, less any physical deterioration already charged, plus the extra cost of
7 ownership resulting from the superadequacy, less the added value, if any, resulting from the
8 superadequacy.

9 ESTIMATING EXTERNAL OBSOLESCENCE

10 As discussed earlier, external obsolescence is a loss in value caused by negative influences outside
11 of the subject property that are beyond the control of the subject property's owner or tenant to
12 correct. External obsolescence can affect both a site and its improvements.

13 Depreciation resulting from external obsolescence is generally estimated using the two methods
14 described above under incurable functional obsolescence: namely, capitalization of the net income
15 loss or market comparison (i.e., paired sales analysis). However, external obsolescence generally
16 affects the entire property—that is, both land and improvements—but obviously only the loss in
17 value attributable to the improvement should be counted as depreciation. Correctly estimated,
18 land, or site, value used in the cost approach should already reflect the portion of value loss
19 attributable to the site. Thus, with external obsolescence that affects the entire property, it is
20 necessary to make an allocation of a portion of the total value loss to the improvement in order to
21 avoid a double counting of depreciation.

22 As the above discussion demonstrates, the estimation of depreciation using the observed condition
23 (breakdown) method is a relatively complicated undertaking. The essence of the method is that
24 each type of depreciation, or loss in value, is estimated separately, taking care to not double count
25 any depreciation. The measure of depreciation in a given circumstance may be affected by the cost
26 basis used—i.e., replacement or reproduction cost—and whether the item was or was not
27 included in the estimate of cost new. Again, the reader is referred to standard appraisal texts for
28 more information regarding this method.

29 LAND VALUATION IN THE COST APPROACH

30 In the cost approach, the value of the subject land, or site, is generally estimated as of the
31 valuation date as though vacant and available to be developed to its highest and best use. Site
32 value is then added to depreciated cost of the subject improvements as of the valuation date to
33 arrive at an indicator of value. Additionally, both the California Constitution, article XIII, section
34 13 and the Revenue and Taxation Code, section 607, direct that an appraisal for property tax
35 purposes requires an allocation of the value between the land and the improvements, even though
36 the property is appraised as a single integral unit. Thus, the appraiser must estimate the value of
37 land when preparing an appraisal.

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1 For property tax purposes, land is generally valued under a highest and best use analysis, as
2 discussed in detail in Assessors Handbook AH 501, *Basic Appraisal*. Even when a subject
3 property is improved, the site is valued as though vacant and available for development to its
4 highest and best use. The highest and best use analysis answers several important questions
5 regarding the most productive use of land, the contribution of various types of improvements
6 which could be constructed on the land, and selecting comparable properties with the same
7 highest and best use as the subject. For these reasons, it is helpful to periodically review the
8 highest and best use concepts in AH 501.

9 The comparative sales approach is the most reliable method of valuing land. However, when a
10 sufficient number comparable sales are not available, four other valuation procedures may be
11 used: (1) allocation; (2) extraction; (3) land residual; (4) ground rent capitalization; and, (5)
12 subdivision development analysis. To support the market analyses required to value land without
13 comparable sales, it is important for appraisers to maintain an ample database of cost data, sales,
14 rents, and rates of return over time. The techniques of land valuation are provided in AH 501,
15 Chapter 5: "Measurement of Value," and are also described briefly here.

16 **COMPARATIVE SALES**

17 The comparative sales approach to value requires analysis, comparison, and adjustment of
18 comparable sales to provide an indication of value for the subject site. A comparison is made
19 based on analysis of the similarity or dissimilarity of the comparables. Elements of comparison
20 include:

- 21 • Property rights conveyed (e.g., fee simple);
- 22 • Financing terms (above, at, or below typical market financing);
- 23 • Conditions of sale (e.g., arm's length sale versus foreclosure);
- 24 • Market conditions (e.g., a decline in value since the sale);
- 25 • Location (e.g., corner, freeway frontage, or downtown);
- 26 • Zoning and legal encumbrances, restrictions, or entitlements (e.g., construction density allowance; or
27 city approval to rezone to highest and best use); and,
- 28 • Physical characteristics (e.g., parcel size, shape, and topography; and level of on- and offsite
29 improvements).

30 Measurements of adjustments, such as paired sales analysis, are discussed in Chapter 3: Advanced
31 Issues in the Comparative Sales Approach.

32 **ALLOCATION**

33 In the allocation method, the appraiser estimates a ratio of site value to total property value. This
34 estimate is based on the ratios of site value to total value from comparable sales of both vacant
35 and improved properties. The ratio is then applied to the total value estimate for the subject
36 property to estimate the subject property's site value. Allocation ratios may be obtained from mass
37 appraisals performed by assessors offices. When a site value percentage is estimated from past
38 trends, the appraiser is cautioned that the ratio of site value to total property value can change
39 over time. This method is typically used to estimate the site value of improved properties.

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1 **EXTRACTION**

2 The extraction method is a variation of the allocation method. In this method, land value is
3 extracted from the total value of an improved property by deducting the contributory value of the
4 improvements from the sale price or total property value. This method is most reliable for
5 properties with limited improvements.

6 **LAND RESIDUAL**

7 The land residual technique may be used to: (1) estimate the profitability of alternative land uses
8 to determine highest and best use; or, (2) estimate land value when insufficient comparable land
9 sales are available from the market.

10 To apply the land residual approach, the appraiser must: (1) reliably estimate the property's
11 improvement value and net operating income (both under the premise of highest and best use),
12 and (2) extract appropriate capitalization rates for both land and improvements from the market.

13 Using the improvement capitalization rate, the appraiser estimates the portion of the property's
14 total income attributable to the improvements, and subtracts that amount from the net operating
15 income. What remains is the income attributable, or residual, to the land. To estimate the land
16 value, the appraiser capitalizes the income attributable to the land at the market-derived land
17 capitalization rate.

18 When appraising land in a depressed market, the highest and best use is sometimes holding the
19 land for future development. Past sales can be used to estimate a land value that is discounted
20 over an estimated marketing period.

21 **GROUND RENT CAPITALIZATION**

22 Like the land residual technique, ground rent capitalization³¹ is a form of direct capitalization in
23 the income approach. If the subject property's ground rent is similar to ground rents typically
24 found in the market, the indicator of value will be the estimated market rent less expenses,
25 capitalized at the land capitalization rate. However, if the subject property's ground rent is not at
26 market levels, that rent must be adjusted to derive a proper estimate of market value of the fee
27 simple interest in the subject property's site.

28 **SUBDIVISION DEVELOPMENT ANALYSIS**

29 Subdivision development analysis is a specific application of discounted cash flow analysis (DCF)
30 when applied to land valuation. This analysis considers the development potential of vacant land
31 to its highest and best use as a subdivision or a higher use. This land valuation technique may be
32 used when market data on sales of vacant tracts of land are inadequate, but sales of developed lots
33 are available. DCF may also provide a useful cross-check to the comparative sales approach.

³¹ Ground rent is the rent paid for the right to use and occupy land.

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1 First, the appraiser estimates the number of lots that will be developed (e.g., into single-family
2 homes), considering legal and physical constraints (e.g., zoning and topography) and market
3 demand for development. As part of this estimate, the appraiser should conduct an absorption
4 study (1) to determine market supply and demand and (2) to project a marketing time frame for
5 the sale of the developed units.

6 Second, the appraiser then estimates the retail market values of the subject property's
7 hypothetical units upon sale to individual owners. (As opposed to a sale to intermediate owners,
8 such as bulk purchasers, who will sell the land later to individual owners.) The retail market
9 values of those units may be estimated from comparable sales using the comparative sales
10 approach.

11 Third, the appraiser estimates the full economic cost to develop the subdivision, including these
12 components: direct costs, indirect costs, and entrepreneurial profit. Marketing costs should be
13 included with the indirect costs. A more in-depth discussion of full economic cost appears earlier
14 in this chapter.

15 Fourth, cash flows from revenues and costs are projected over regular intervals (e.g., annually,
16 semi-annually, or quarterly) during the absorption time frame, beginning with the property in its
17 current condition and continuing until all units are sold. When projecting cash flows, the appraiser
18 should consider possible changes to revenues and/or costs during the absorption period (e.g., due
19 to declining or strengthening market conditions).

20 Finally, net cash flows over the absorption time frame are discounted at a rate extracted from the
21 market to estimate the net present value of those cash flows. The discount rate selected should
22 reflect the risks associated with development of the subject property. The total net present value
23 of the cash flows reflects the estimated land value of the subject property.

24 For further information on discounted cash flow analysis, refer to Chapter 4: Advanced Issues in
25 the Income Approach.

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CHAPTER 3: ADVANCED ISSUES IN THE COMPARATIVE SALES APPROACH

INTRODUCTION

In the comparative sales approach, the appraiser: (1) selects comparable properties based on their similarity to the property being appraised (i.e., the subject property); (2) compares the selected properties to the subject property; and, (3) adjusts the sales prices of the comparable properties to reflect significant differences between the subject and comparable properties. The standards for comparison should be those of the market in which the subject and comparable properties compete; that is, the adjustments to the comparable sales prices should be market-derived. The adjusted sales prices of the comparable properties represent estimates of what each comparable property would have sold for had it possessed all of the significant characteristics of the subject property. Each adjusted comparable sale price thus becomes a value indicator for the subject property. These separate indicators of value are finally reconciled into a single indicator of value.³²

The primary theoretical basis for the comparative sales approach is the principle of substitution, i.e., the concept that an informed market participant would not pay more for a property than the cost of acquiring a substitute property of equal utility. The comparative sales approach is summarized in the following steps:

1. Investigate and research market data (e.g., sales, listings, and pending offers to purchase) concerning properties comparable to the subject property;
2. Verify and select the comparable sales data;
3. Analyze the comparable sales data for significant differences between the subject and comparable properties, adjusting the sale price of each comparable property as necessary;
4. Convert the adjusted sales prices of the comparable properties into relevant units of comparison (e.g., price per square foot, price per acre, price per unit, price per room, etc.) and further adjust the unit prices as necessary in order to derive value indicators; and,
5. Reconcile the value indicators from the group of comparable sales into a single value indicator for the subject property.

³² The comparative sales approach is also referred to as the sales comparison approach or the direct sales comparison approach.

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APPLICABILITY AND LIMITATIONS

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2 The comparative sales approach is applicable when there is an active market for the type of
3 property being appraised and an adequate amount of verified, reliable sales data regarding
4 comparable properties. Comparable sales that require fewer and less significant adjustments
5 produce the most reliable indicators of value. Support for the adjustments made in this approach
6 must be derived from market data. Under rule 4, the comparative sales approach is preferred
7 when reliable market data are available.

8 In practice, the comparative sales approach is the primary approach for valuing single-family
9 residential properties, smaller multi-residential properties, and smaller commercial and industrial
10 properties. It is difficult to apply the comparative sales approach to special-purpose properties
11 (e.g., a ski resort) because of the frequent lack of comparable sales data. For larger income-
12 producing properties, which are typically purchased based on expected future cash flows, the
13 income approach is generally the primary approach.

COMPARABLE SALES DATA

COMPARABILITY

14
15
16 The appraiser's primary task in the comparative sales approach is finding comparable sales data. A
17 threshold consideration in determining comparability is whether or not the sale meets the
18 conditions of a fair market value transaction. Fair market value is defined in rule 2 as

19 [T]he price at which a property, if exposed for sale in the open market with a
20 reasonable time for the seller to find a purchaser, would transfer for cash or its
21 equivalent under prevailing market conditions between parties who have
22 knowledge of the uses to which the property may be put, both seeking to maximize
23 their gains and neither being in a position to take advantage of the exigencies of
24 the other.

25 This is, essentially, the "open-market, arm's length" concept with which most appraisers are
26 familiar. If a sale does not meet the conditions of a market value transaction, it should not be used
27 as a comparable sale in the comparative sales approach.

28 Section 402.5 establishes basic criteria for comparability. It provides:

29 When valuing property by comparison with sales of other properties, in order to be
30 considered comparable, the sales shall be sufficiently near in time to the valuation
31 date, and the properties sold shall be located sufficiently near the property being
32 valued, and shall be sufficiently alike in respect to character, size, situation,
33 usability, zoning or other legal restriction as to use unless rebutted pursuant to
34 Section 402.1, to make it clear that the properties sold and the properties being
35 valued are comparable in value and that the cash equivalent price realized for the
36 properties sold may fairly be considered as shedding light on the value of the

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1 property being valued. "Near in time to the valuation date" does not include any
2 sale more than 90 days after the lien date.

3 Thus, comparable sales must be sufficiently comparable in terms of location, physical
4 characteristics (e.g., utility, size, age, quality, condition, amenities) and use (zoning and other
5 enforceable government restrictions) so as to "shed light" on the value of the subject property. In
6 addition, the comparable sales prices must reflect a cash equivalent amount and have occurred no
7 more than 90 days after the valuation date.³³ The appraiser's objective, of course, is to find sales
8 data that require as few adjustments as possible.

9 Comparable properties are those properties that effectively compete with (i.e., are close
10 substitutes for) the subject property. The type of property being valued and the nature of the
11 market in which it is traded define the geographic scope from which comparable properties can be
12 drawn. For many properties, particularly single-family residences, neighborhood is an important
13 determinant of comparability; that is, comparable properties are typically located within the
14 subject property's neighborhood or within comparable neighborhoods. Some types of properties,
15 however, compete in regional, national, or even international markets.³⁴

16 DATA REQUIREMENTS AND SOURCES

17 Application of the comparative sales approach requires detailed, verified data regarding the
18 subject and comparable properties. Whenever possible, sales data should be verified with the
19 buyer, seller, or authorized agent of either. Comparable data includes data regarding the
20 transaction (e.g., date of sale, sale price, terms of financing, and conditions of sale) and data
21 regarding the locational, physical, and economic characteristics of the subject and comparable
22 properties. There is no strict rule in appraisal regarding the number of comparable sales required.
23 Typically, several comparable sales are preferred. The objective is to obtain sufficient market data
24 to render a supportable value estimate. It is often necessary to research and investigate several
25 sales for each comparable sale that is finally selected.

26 Sales data can be obtained from many sources. Each assessor's office should have a wealth of data
27 regarding transactions in its particular county. Commercial data sources offer sales data that is
28 available by county or by region for many different property types. Multiple-listing services
29 contain data concerning completed transactions. Finally, real estate brokers and other appraisers
30 are often sources of sales data.

³³ Section 402.5 uses the term "lien date" and not "valuation date." However, section 75.54 defines lien date for real property to mean the date of the change in ownership or completion of new construction. Thus, lien date is synonymous with valuation date.

³⁴ Rule 4 also includes sales of the subject property as potential sales data for valuing the subject property. This includes sales data relating to a prior or subsequent sale of the subject property (i.e., prior or subsequent to the transaction for which the subject property is being valued) and sales data relating to the transaction for which the subject property is being valued. In the latter case, rule 2 is pertinent. Under conditions described in rule 2(a), and as provided in subdivision (b), the cash equivalent sale price of a property is rebuttably presumed to be the market value of the property.

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ELEMENTS OF COMPARISON

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It is unlikely that the appraiser will find sales data so closely comparable to the subject property that no adjustments will be required. The types of differences for which adjustments are often required are referred to as *elements of comparison*. Elements of comparison, which are enumerated in section 402.5 (above) and also in rule 4, are the important factors that should be separately considered and adjusted for, if necessary, when analyzing comparable properties.³⁵ Rule 4 provides that when using the sales prices of the appraisal subject or of comparable properties in valuation, the assessor shall:

(a) Convert a non-cash sale price to its cash equivalent by estimating the value in cash of any tangible or intangible property other than cash which the seller accepted in full or partial payment for the subject property and adding it to the cash portion of the sale price and by deducting from the nominal sale price any amount which the seller paid in lieu of interest to a lender who supplied the grantee with part or all of the purchase money.

(b) When appraising an unencumbered fee interest, (1) convert the sale price of a property encumbered with a debt to which the property remained subject to its unencumbered fee price equivalent by adding to the sale price of the seller's equity the price for which it is estimated that such debt could have been sold under value indicative conditions at the time the sale price was negotiated and (2) convert the sale price of a property encumbered with a lease to which the property remained subject to its unencumbered fee price equivalent by deducting from the sale price of the seller's equity the amount by which it is estimated that the lease enhanced that price or adding to the price of the seller's equity the amount by which it is estimated that the lease depressed that price.

(c) Convert a sale to the valuation date of the subject property by adjusting it for any change in price level of this type of property that has occurred between the time the sale price was negotiated and the valuation date of the subject property.

(d) Make such allowances as he deems appropriate for differences between a comparable property at the time of sale and the subject property on the valuation date, in physical attributes of the properties, location of the properties, legally enforceable restrictions on the properties' use, and the income and amenities which the properties are expected to produce. When the appraisal subject is land and the comparable property is land of smaller dimensions, and it is assumed that the

³⁵ Courts have held that rule 4 is mandatory and must be strictly followed. In the context of an assessment appeal, this means that the assessor must give explicit, separate consideration to each element of comparison described in rule 4. An opinion of value from within a "range of values" or an opinion of value based on an "overall adjustment" is not in accord with rule 4 and does not provide the assessment appeals board with an evidentiary foundation for its assessment. (See *Main and Von Karman Associates v. County of Orange* (1994) 23 Cal.App.4th 337, 342; *Midstate Theatres, Inc. v. County of Stanislaus* (1976) 55 Cal.App.3d 864, 880-881; and *Prudential Ins. Co. v. City and County of San Francisco* (1987) 191 Cal.App.3d 1142, 1149.)

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1 subject property would be divided into comparable smaller parcels by a purchaser,
2 the assessor shall allow for the cost of subdivision, for the area required for streets
3 and alleys, for selling expenses, for normal profit, and for interest charges during
4 the period over which it is anticipated that the smaller properties will be marketed.

5 Elements of comparison that must be considered by the appraiser are summarized as follows:

- 6 1. Property rights and interests conveyed;
- 7 2. Cash equivalence;
- 8 3. Non-real property items included in the sale, such as tangible personal property (e.g.,
9 equipment and furnishings) and non-taxable intangible assets and rights;
- 10 4. Market conditions;
- 11 5. Highest and best use and legally enforceable restrictions; and,
- 12 6. Location and physical and economic characteristics.

13 **PROPERTY RIGHTS CONVEYED**

14 Property rights appraised are those legally associated with the subject property. If the rights
15 associated with the subject and a comparable property differ, the comparable sales price must be
16 adjusted to reflect this difference. In cases where the subject or comparable properties are subject
17 to legally enforceable governmental restrictions, or other limitations or enhancements of property
18 rights, the appraiser must also adjust for these differences. In the vast majority of property tax
19 appraisals, the complex of rights appraised is the full bundle of rights—that is, the unencumbered
20 or unrestricted full fee simple interest. The sales prices of both the subject and comparable
21 properties must either reflect the full fee simple interest or be adjusted to reflect this interest.

22 The most common adjustment for property rights conveyed involves income-producing property
23 subject to a lease. The sale price of a property sold subject to an existing lease or leases (i.e., the
24 leased fee interest) reflects the rent to be obtained under existing leases. If the subject or a
25 comparable property is encumbered with a lease that enhances the sale price of the property—the
26 typical example of such enhancement being a property leased at a rental rate above the current
27 market rent—an estimate of the amount of this enhancement must be deducted from the sale
28 price. If the subject or a comparable property is subject to a lease that depresses the sale price of
29 the property—the typical example being a property leased at a rental rate below the current
30 market rent—an estimate of the amount the lease depressed the sale price must be added to the
31 sale price.

32 To estimate an adjustment for lease terms, data regarding existing and current market lease terms
33 and conditions for both the subject and comparable sales must be obtained and analyzed. The
34 adjustment is typically accomplished by discounting (using compound interest factors) the
35 difference between current market rent and contract rent (i.e., the rent under the existing lease)
36 over the remaining term of the lease(s) and then adjusting by adding or subtracting this amount
37 from the sale price as appropriate.

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1 **CASH EQUIVALENCE**³⁶

2 Section 110 defines fair market value in terms of "cash or its equivalent." In using sales prices of
3 the subject or comparable properties for the purpose of valuation, rule 4 provides that the
4 appraiser shall adjust purchase prices to reflect amounts equivalent to cash. That is, any non-cash
5 components of a sale must be converted to a cash equivalent amount. A cash equivalent
6 adjustment may be required for sales involving (1) assumed loans or new loans (i.e., promissory
7 notes) that reflect non-market, or atypical, financing terms; (2) seller-paid loan points paid to a
8 third party (e.g., an institutional lender) as part of the buyer's financing; (3) tangible or intangible
9 property other than cash that the seller accepted as full or partial consideration for the property
10 and (4) improvements financed under 1911, 1913, and 1915 Bond Acts.

11 **Loans Not at Market Terms**

12 The necessity for a non-market financing adjustment depends on the interest rate of the new or
13 assumed loan. If the loan's stated interest rate is not equal to the market rate of interest for similar
14 loans at the time of the sale, an adjustment for financing terms is necessary. If the stated interest
15 rate is lower than the market rate at the time of sale, it is assumed that the seller compensated for
16 the lower rate by increasing the sale price of the property, in which case the value of the loan
17 should be discounted (i.e., reduced) to its cash equivalent amount in order to estimate the market
18 value of the property. If the stated interest rate is higher than the market rate, it is assumed that
19 the seller compensated by reducing the sale price, in which case the loan's value exceeds its
20 nominal (or face) value, requiring an upward cash equivalent adjustment to estimate the market
21 value of the property. An adjustment for financing terms is not required in the case of a third-party
22 loan (i.e., a loan made by someone other than the seller), because such a loan is cash to the seller.

23 **Seller-Paid Points**

24 A seller may incur costs in order to obtain third-party financing for the buyer. Such costs are
25 referred to as "seller's points." Seller's points may be paid as part of government guaranteed or
26 insured loan programs.³⁷ If the market interest rate is above the current maximum allowed by such
27 programs, the seller may pay loan points to an institutional lender to compensate for the difference
28 in rates. Points may also be paid by the seller/builder in "buydown programs" so that loans can be
29 offered to buyers at below-market interest rates. When points are paid, the seller receives less
30 than the nominal sale price by the amount of the points. Accordingly, an adjustment to the sale
31 price for the points paid by the seller is required.

32 **Non-Cash Items as Part of the Purchase Price or Consideration**

33 Non-cash items accepted by the seller as all or part of the consideration for the property must also
34 be converted to cash equivalence. For example, a seller may accept \$10,000 in cash and an
35 automobile for a parcel of real estate. In order to use the sale price as an indicator, the value of

³⁶ A further discussion of cash equivalence, including techniques for calculating cash equivalent adjustments using compound interest formulas or tables, is contained in Assessors' Handbook Section 503, *Cash Equivalent Analysis*.

³⁷ One point equals one percent of the loan amount.

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1 the automobile in terms of money (i.e., its cash equivalent value) must be estimated and included
2 as part of the purchase price.

3 **1911, 1913, and 1915 Improvement Act Bonds**

4 Local governments sometimes assist private parties in financing the development of land by
5 participating in the formation of special assessment districts. To obtain improvement bond
6 financing, land parcels benefiting from the improvements must be pledged as a security for the
7 bonded debt. In the case of the 1911, 1913, or 1915 Bond Acts, the indebtedness is tied to
8 specific parcels for certain designated improvements; in other words, at any point in time it is
9 possible to identify the benefits these parcels received and to determine and to pay off the exact
10 bond principal outstanding against each parcel.

11 "Purchase price" is defined in section 110(b) as "the total consideration provided by the purchaser
12 or on the purchaser's behalf, valued in money, whether paid in money or otherwise."
13 Consequently, it may appear that the sale price of a property encumbered by a 1911, 1913, or
14 1915 Act improvement bond must automatically be adjusted to reflect the fair market value of the
15 outstanding improvement bond, as a form of cash equivalent adjustment.

16 However, recent legislation amending Section 110(b) provides as follows:

17 There is a rebuttable presumption that the value of improvements financed by the proceeds
18 of an assessment resulting in a lien imposed on the property by a public entity is reflected
19 in the total consideration, exclusive of that lien amount, involved in the transaction. This
20 presumption may be overcome if the assessor establishes by a preponderance of the
21 evidence that all or a portion of the value of those improvements is not reflected in that
22 consideration.³⁸

23 The above, in effect, precludes a cash equivalent adjustment to a purchase price *unless* there is a
24 preponderance of evidence sufficient to overcome the above presumption that the value of
25 improvements financed by the proceeds of a bond is already reflected in the total consideration
26 paid for a property, exclusive of any outstanding improvement bond lien amount, in any given
27 transaction.

28 An analysis of market sales data, using otherwise comparable properties from areas developed
29 without the use of improvement bonds, or otherwise comparable properties with retired
30 improvement bonds, must be undertaken in order to determine whether there is sufficient
31 evidence to rebut the presumption. When otherwise comparable properties not subject to
32 improvement bonds sell for the same price or less, the presumption cannot be overcome and a
33 sales price adjustment should not be made. On the other hand, when a difference in sales prices
34 between two or more otherwise comparable properties is clearly attributable to an improvement
35 bond, the presumption could be overcome and a sale price adjustment justified. The value
36 enrolled must be fair market value.

³⁸ SB 1997 (Johnson), effective September 22, 1998.

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1 Cash equivalent adjustments, when justified, can be estimated using discounting formulas or tables
2 or through paired sales analysis.³⁹ A cash equivalent adjustment should, whenever possible, be
3 derived from and supported by direct market evidence. Mathematical calculations using
4 compound interest formulas or tables may not reflect actual market behavior.

5 **ADJUSTMENT FOR NON-REAL PROPERTY ITEMS INCLUDED IN THE PURCHASE**

6 Non-real property items include financial assets (e.g., cash, stocks, bonds), tangible personal
7 property, and intangible assets and rights.⁴⁰ In complex transactions, the sale price may include
8 rent guarantees, post-sale performance requirements, and other non-real property elements. When
9 the sale price of the subject and/or a comparable property includes non-real property items, the
10 estimated market value of these items must be removed from the sale price.

11 **MARKET CONDITIONS AND PRICE LEVEL**

12 Comparable sales may require adjustment so that they reflect the same market conditions that exist on
13 the valuation date of the subject property. Market conditions change due to shifts in supply and
14 demand and/or inflationary or deflationary economic forces. Although the adjustment for market
15 conditions is commonly referred to as the "time" adjustment, the need for this adjustment is not
16 caused by the simple passage of time. Shifting economic variables affecting supply and demand
17 and/or inflationary or deflationary forces in the economy create the need for this adjustment.

18 Market condition adjustments can be estimated in two primary ways: (1) by measuring the
19 difference in sales prices when the same property sells more than once over a period of time and
20 no significant change in the property has occurred between sales; and (2) by measuring the
21 difference in sales prices for different but very similar properties that sell at different times. The
22 market conditions adjustment is typically stated as a percentage change in value per time period
23 (e.g., per month or per year). Because different types of property may be subject to different
24 economic forces, the market conditions adjustment should be estimated using data from the same
25 property type as the subject. The adjustment for market conditions is complex and can have a
26 significant impact on the estimated value. It is preferable to use comparable sales occurring near
27 the valuation date (sale) of the subject property.

28 **HIGHEST AND BEST USE AND LEGALLY ENFORCEABLE RESTRICTIONS**

29 An estimate of market value for property tax purposes must be premised on the property's highest
30 and best use, and the appraiser must make a determination of highest and best use as part of the
31 appraisal process.⁴¹ As discussed earlier, there are two distinct concepts in highest and best use:
32 (1) highest and best use of the land as though vacant and (2) highest and best use of the property
33 as improved. Highest and best use as though vacant applies to both vacant and improved
34 properties. It attempts to identify the type of building or other improvement that should be
35 constructed on the parcel (which may or may not actually be vacant) in order to realize the

³⁹ Paired sales analysis is discussed in a later section.

⁴⁰ The treatment of intangible assets and rights is addressed in a chapter 6.

⁴¹ However, as discussed in AH 501, *Basic Appraisal*, there are several statutory exceptions to the highest and best use assumption in property tax appraisal.

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1 highest land value. Land or site value should always be based on the highest and best use as
2 though vacant. In contrast, the analysis of highest and best use as improved addresses the
3 question of how an already-improved property should be utilized. Highest and best use as
4 improved thus applies only to improved properties. It attempts to determine whether the existing
5 use of the property should be intensified, changed, or remain the same. The determination of
6 highest and best use as improved might involve the expansion and/or renovation of the existing
7 improvement or perhaps its demolition and replacement. It is possible for a given property to have
8 a highest and best use of the land as though vacant, that is different from the same property's
9 highest and best use as improved.

10 Highest and best use is an important consideration in the selection of comparable properties. In
11 particular, since a property's highest and best use must be legally permissible, enforceable
12 government restrictions, notably zoning, are an important aspect in highest and best use
13 determination. The highest and best use (both as though vacant and as improved) should be the
14 same or highly similar for the subject and comparable properties. If this is not the case, an
15 adjustment for a difference in "use potential" must be made. A difference in use potential generally
16 results in a significant difference in value, but an adjustment for this difference may be very
17 difficult to quantify. It is preferable to select comparable properties with the same highest and best
18 use as the subject property.

19 **LOCATION AND PHYSICAL AND ECONOMIC CHARACTERISTICS**

20 **Location**

21 An adjustment for location is required when the locational characteristics of a comparable
22 property differ from that of the subject property. The location of a real estate parcel can be
23 analyzed and compared to that of other parcels by evaluating (1) its convenience relative to
24 competing parcels (in moving or transferring people, goods, and services to and from other
25 parcels with which they are spatially linked) and (2) the neighborhood, or external, characteristics
26 of the parcels.

27 Since real estate is immobile—that is, it occupies a fixed point in geographic space—a given
28 parcel of real estate must be spatially linked to other parcels having complementary land uses.
29 Each type of land use, and hence each real estate parcel, faces a particular set of linkage
30 requirements (e.g., a residence is spatially linked to schools, stores, and places of employment; a
31 business is spatially linked to its customers, suppliers, and work force). The cost (as measured in
32 time or money) of meeting its linkage requirements is an important measure of a parcel's
33 locational quality.

34 Also because of its immobility, a real estate parcel is sensitive to neighborhood effects or
35 influences, both positive and negative. This is why the concept of neighborhood is so important in
36 appraisal. Neighborhood effects originate from outside the parcel and are thus an aspect of the
37 parcel's location. The characteristics of a parcel's neighborhood, typically evaluated by considering
38 a variety of social, economic, political, and physical factors, is a key determinant of the parcel's
39 locational quality.

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1 Properties within the same neighborhood often have similar locational characteristics, but
2 sometimes even small locational differences within a neighborhood can have a significant effect on
3 value. For example, one parcel located in a residential development may have a lakefront or
4 wooded view, while another parcel, located on an adjacent street, may have only a street view.
5 Although geographically close and within the same neighborhood, the parcels may have
6 significantly different values. Similarly, in the case of commercial property, a corner location is
7 generally significantly more valuable than an otherwise similar, and even contiguous, parcel.

8 An adjustment for location can be estimated using the "paired sales" technique.⁴² However,
9 location has such a profound influence on the value of real property that a significant difference in
10 the locational characteristics of the subject and a potential comparable property—even if they are
11 highly similar in other attributes—may remove the other property from consideration as a valid
12 comparable.

13 **Physical Characteristics**

14 The adjustment for salient differences between the physical characteristics of the subject and
15 comparable properties is perhaps the most obvious type of adjustment in the comparative sales
16 approach. As with all types of adjustments, an adjustment based on a physical characteristic
17 should reflect the marginal, or contributory, effect of the characteristic on value, not simply the
18 cost to reproduce or remove the characteristic.

19 Physical characteristics can be classified as either variables, which can be reduced to a unit basis
20 (e.g., size or number of rooms) or attributes, which are qualitative in nature (e.g., condition or
21 quality of design). Which physical characteristics are significant may vary depending on the type
22 of property being appraised. Some types of commercial or industrial properties, for example,
23 often require specialized physical features. A relatively general list of significant physical
24 characteristics includes the following:⁴³

- Building size
- Construction quality
- Style and design
- Functional utility
- Age
- Condition
- Size of site
- Site amenities
- On-site environmental conditions

25 Environmental contamination, which may be viewed as a negative physical characteristic of a
26 property, often has a substantial effect on property value. An adjustment should be made to
27 comparable sales prices to reflect differences between the subject and comparable properties
28 relating to this property characteristic.

29 **Economic Characteristics**

30 Economic characteristics include all property attributes that affect its income stream. This
31 element of comparison is generally applicable only to income-generating properties. Significant
32 economic characteristics include the following:

⁴² See the later discussion under "Paired Sales Analysis."

⁴³ Locational and physical characteristics are discussed greater detail in AH 501, *Basic Appraisal*, in chapter 4 under "Nature of Real Estate Productivity."

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- 1 • Level of operating expenses
- 2 • Quality of management
- 3 • Tenant quality (e.g., credit rating)
- 4 • Certain lease provisions (rent concessions, expense stops and recoveries, lease expirations, renewal
- 5 options, etc., but not including above- or below-market rents)

6 Adjustments for economic characteristics should not be confused with adjustments for differences
7 in property rights conveyed (e.g., rents that are not at current market) or market conditions.
8 Frequently, adjustments for economic characteristics are difficult to isolate and measure within the
9 comparative sales approach. A paired sales analysis, for example, would require two comparable
10 sales that differ only in the economic characteristic whose marginal value is being measured. This
11 is a very rigorous data requirement. Whenever possible, the appraiser should identify comparable
12 properties with economic characteristics similar to the subject and thereby avoid the need for this
13 type of adjustment.

14 UNITS OF COMPARISON

15 When comparing the subject and comparable properties, it is often desirable to reduce the
16 properties to a common or standard unit and express sales prices on the basis of this unit. These
17 standard units are referred to as "units of comparison." Units of comparison can be based on
18 physical components of a property (e.g., sale price per square foot or sale price per cubic foot) or,
19 with income-producing property, on units of use or operation that are closely related to the
20 property's income-producing ability (e.g., sales price per bed or sales price per seat). The unit of
21 comparison may also be the entire property.

22 Any unit of comparison chosen by the appraiser should reflect market behavior; that is, the
23 appraiser should reflect the thinking and behavior of actual buyers and sellers. The unit should be
24 useful in identifying a pattern of prices. Depending on the market, there may be more than one
25 meaningful unit of comparison for a given type of property. Because many properties can be
26 analyzed using several units of comparison, the appraiser should derive all appropriate units of
27 comparison, compare the results, and examine the reasons for variations. This will help in the
28 selection of the most reliable unit.

29 The need to explicitly adjust for a size difference between properties is often eliminated if sales
30 prices are converted to size-related unit of comparison. Relatively small differences in size can
31 then be considered in value reconciliation within the comparative sales approach. However, if
32 properties differ significantly in size, they may not compete in the same market.

33 Standard units of comparison and the property type(s) with which they are generally associated
34 include the following (this list is illustrative, not all inclusive):⁴⁴

⁴⁴ Gross income or rent multipliers are sometimes regarded as units of comparison in the comparative sales approach. An income or rent multiplier compares properties through the ratio of sales prices to gross income or rent; that is, the unit, or variable, by which the subject and comparable properties are compared is the income generated by the properties. In this manual, gross income or rent multiplier analysis is discussed in the chapter on the income approach.

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TABLE 3-1: Common Units of Comparison

Property Type	Common Units of Comparison	
Agricultural	• Sale price per acre	
Commercial and Industrial	• Sale price per square foot of gross building area • Sale price per cubic foot	• Sale price per square foot of net leasable area
Multi-Family Residences	• Sale price per unit • Sale price per square foot	• Sale price per room
Hotels and Motels	• Sale price per room	
Hospitals	• Sale price bed	
Movie Theaters, Convention Centers, and Civic Auditoriums	• Sale price per seat	
Golf Courses	• Sale price per round • Sale price per hole	• Sale price per member
Tennis/Racquetball Clubs	• Sale price per court	
Manufactured Home Parks	• Sale price per pad	
Marinas and Docks	• Sale price per boat slip	
Vacant Land	• Sale price per square foot • Sale price per front foot	• Sale price per acre
Single-Family Residential Dwellings	• Sale price of the total property	• Sale price per square foot of gross living area

1
2
3
4

ESTIMATING ADJUSTMENT AMOUNTS

Several quantitative techniques can be used to estimate adjustment amounts. Recognized techniques discussed below include the following:⁴⁵

- Paired sales analysis
- Statistical analysis
- Cost analysis
- Capitalization of rent difference (gain or loss)
- Discounting and time value of money concepts

⁴⁵ In addition to quantitative techniques of adjustment, some appraisal texts discuss qualitative techniques. Qualitative techniques compare comparable properties with the subject property by ranking them as "superior" or "inferior" (or similar terms) to the subject; adjustments not explicitly stated as either lump-sum dollar amounts or percentages. The subject property is then placed within the qualitatively ranked array of comparable sales in order to estimate its value. Appraisers often refer to this as "bracketing" the subject property. While this may be a widely used and valid appraisal technique, it is not in accord with provisions of rule 4. Also, see footnote 34.

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1 PAIRED SALES ANALYSIS

2 Paired sales analysis is perhaps the most common method for estimating adjustments. The
3 technique requires sales properties that are identical in all characteristics except the characteristic,
4 or element of comparison, that is being measured. Alternatively, and less reliably, if the sold
5 properties differ in more than one characteristic, adjustments must already have been made for
6 characteristics other than the one being measured. The adjustment is estimated by simply
7 subtracting one sale price from the other. In theory, paired sale analysis can be used to estimate
8 the adjustment for any element of comparison, provided sufficient data are available.

9 Paired sales analysis is a popular technique for estimating the market conditions adjustment. Sales
10 and resales of the same property or of highly similar properties are required. To make the
11 adjustment, the appraiser should: (1) list the sales, (2) calculate the percentage change between
12 the sale and resale prices, (3) divide this percentage change by the number of months between
13 sales dates, and (4) apply this monthly estimate of the change in market conditions to comparable
14 properties.

15 Paired sales analysis is also used for estimating adjustments for differences in physical
16 characteristics. The paired sales must have occurred at the same time or have been adjusted for
17 market conditions. To estimate an adjustment for physical characteristics, the appraiser first
18 selects a sale property with a given set of characteristics. This sale property is then paired with
19 another sale property (or properties) identical in all characteristics, except the one whose value is
20 being estimated. The sale price of the first property is subtracted from the sale price of the second
21 property in order to obtain an estimate of the value of the isolated characteristic.

22 In theory, paired sale analysis is a sound analytical technique. However, often there is an
23 insufficient number of applicable paired sales—especially in the case of commercial properties. In
24 addition, an estimated adjustment amount derived from only a single pair of sales may not be
25 valid. However, when there are sufficient market data to apply the technique, paired sales analysis
26 is practical and useful.

27 STATISTICAL ANALYSIS

28 Statistical techniques (e.g., linear and multiple regression) can be used in the measurement of
29 adjustments. If an adequate database of sales data is available, multiple regression analysis is a
30 valid technique for estimating the contributory value of selected elements of comparison that does
31 not require the strict similarity between parcels required in most other methods of estimating
32 adjustments. Using multiple regression analysis for this purpose involves the same methodology as
33 valuation models based on multiple regression. A discussion of this technique is beyond the scope
34 of this manual.⁴⁶

⁴⁶ See *Property Appraisal and Assessment Administration*, (Chicago: International Association of Assessing Officers, 1990), page 159 and chapter 14.

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1 COST ANALYSIS

2 An appraiser can use a cost analysis to estimate adjustment amounts, particularly for physical
3 characteristics. Cost indicators such as an estimate of replacement or reproduction cost less
4 estimated *depreciation*, an estimate of cost to cure, an estimate of deferred maintenance, etc., are
5 used as the basis for adjustments in cost analysis. Although this method is widely used, its
6 shortcoming is that the adjustment is not market derived—that is, estimated cost may or may not
7 equal fair market value.

8 CAPITALIZATION OF RENT DIFFERENCE

9 Differences in rent (either a gain or loss) due to a specific property characteristic may be
10 capitalized into an estimate of an adjustment amount. This technique is typically used to make
11 adjustments for differences in physical characteristics, although it can be used for any difference
12 between properties for which a permanent rent difference can be estimated. Obviously, an
13 estimated capitalization rate is also required. For example, the subject property may have an
14 elevator while a comparable property does not. Using market rental data, a rent differential for the
15 two properties is estimated and capitalized—using direct capitalization—into an estimate of the
16 adjustment. Both the rent difference and the capitalization rate should be market supported.

17 DISCOUNTING AND TIME VALUE OF MONEY CONCEPTS

18 An adjustment for above- or below-market leases (a property rights adjustment) can be estimated
19 by discounting the difference between market and contract rent over the remaining term of the
20 lease into a present value estimate. This technique requires an estimate of both the difference
21 between market and contract rent and an appropriate discount rate. For example, assume that the
22 sale price of a comparable property reflects a contract rent that is above market and that the lease
23 has a remaining term of five years. A lump-sum adjustment is estimated by discounting the difference
24 between contract and market rent at a market-derived discount rate over the five-year period.

25 An adjustment for non-market financing (a cash equivalent adjustment) can be estimated using
26 discounting and time value of money concepts. Essentially, this technique involves discounting the
27 periodic payment of the non-market loan into a cash equivalent, present value amount. The
28 payments are discounted at the market interest rate over either the remaining term of the loan or a
29 shorter assumed holding period.⁴⁷

30 ADJUSTMENT PROCESSES AND METHODS

31 As noted above, adjustments are made to the comparable sales prices to account for differences
32 between the comparable properties and the subject property. The final result is a set of adjusted
33 comparable sales prices representing estimates of what the comparable properties would have sold
34 for had they possessed all of the important characteristics of the subject property. The adjusted
35 sales prices thus become value indicators for the subject property. The process by which
36 adjustments are made is sometimes referred to as "comparative analysis." This process involves

⁴⁷ See Assessors' Handbook Section 503, *Cash Equivalent Analysis*.

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1 several considerations, which include: (1) the direction and sign of adjustments; (2) the sequence
2 of adjustments; (3) whether adjustments should be made in lump-sum dollar amounts or
3 percentages; and, (4) whether adjustments should be made to the total property sale price or to a
4 unit of comparison.

5 **Direction and Sign of Adjustments**

6 Adjustments to a comparable sale price are made toward, or relative to, the subject property.
7 When a characteristic of a comparable property is inferior to that of the subject property, the
8 adjustment to the comparable sale price is positive (i.e., the adjustment amount is added to the
9 comparable sale price). When a characteristic of a comparable property is superior to that of the
10 subject property, the adjustment to the comparable sale price is negative (i.e., the adjustment
11 amount is deducted from the comparable sale price). This procedure applies to both lump-sum
12 dollar adjustments and to percentage adjustments.

13 **Adjustment to Total Sale Price or Unit of Comparison**

14 Adjustments can be made to a total sale price, an appropriate unit of comparison, or both.
15 Sometimes, adjustments are made to the total sale price for property rights conveyed, market
16 conditions, cash equivalence, and non-real property items. This adjusted sale price is then
17 converted into a unit of comparison (per square foot, per unit, per acre, etc.) that is further
18 adjusted for the remaining elements of comparison (i.e., location, use, and physical and economic
19 characteristics). Alternatively, all adjustments can be made to the entire property first, then this
20 adjusted sale price can be divided by the relevant unit to derive a unit of comparison. The second
21 method is more direct and preferable.

22 **Lump Sum or Percentage Adjustments**

23 Adjustments can be made as lump-sum dollar amounts or as percentage amounts. A general
24 principle regarding adjustments is that they should be applied in the adjustment process based on
25 the manner in which they were derived. Since most adjustments are derived in the form of dollar
26 amounts (exceptions are the market conditions, i.e., time adjustment and perhaps the location
27 adjustment), this leads to a general preference for dollar adjustments. Further, the particular
28 sequence is not significant in the case of dollar adjustments, which is not always the case with
29 percentage adjustments.

30 If multiple percentage adjustments are used, they can sometimes be applied in either an additive or
31 multiplicative manner, producing different net adjustment amounts. "Additive" simply means that
32 the percentages are added to arrive at a net percentage adjustment. "Multiplicative" means that
33 the percentages are multiplied to arrive at a net percentage adjustment. A multiplicative
34 adjustment implies that the factors considered in the adjustment process are causally related and
35 hence correlated with each other. Multiplicative percentage adjustments should not be used unless
36 this correlation can be verified, which is not often the case.

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1 **Sequence of Adjustments**

2 A suggested sequence for adjustments is as follows: (1) property rights and interests conveyed;
3 (2) cash equivalence; (3) non-real property items; (4) market conditions; (5) highest and best use
4 and legally enforceable restrictions; and (6) location and physical and economic characteristics.

5 Adjustments for the first three items—property rights and interests, cash equivalence, and non-
6 real property items—are made, typically, in terms of dollars. The result is an adjusted sale price
7 that reflects property rights and financing terms equivalent to the subject property, and that
8 reflects only real property. This provides an appropriate amount from which to apply the market
9 conditions adjustment, since this adjustment is typically derived in a manner that does not reflect
10 property rights and interests, cash equivalence, and non-real property items.

11 Next, the market conditions adjustment, typically a percentage adjustment, is made to the
12 adjusted sale price described above. This provides an appropriate amount from which to apply
13 the adjustments for highest and best use and for location and physical and economic
14 characteristics.

15 Finally, adjustments for highest and best use and for location and physical and economic
16 characteristics are made to the adjusted sale price that was further adjusted for market conditions
17 as described above. If percentage adjustments are used, they should be applied as additives to this
18 amount.

19 **Presentation of Adjustments—Sales Adjustment Grids**

20 The sales comparison approach uses a "column and row" (i.e., spreadsheet) format to organize
21 the data for comparison and presentation. The sample sales adjustment grid on page 49 arrays the
22 previously discussed elements of comparison in a standard sequence. The grid includes separate
23 rows for each element of comparison and the adjustment relating to that element. Rows may be
24 added as necessary in a given appraisal (e.g., several rows might be required to adjust for more
25 than one physical characteristic). A row could also be added if the appraiser wishes to convert the
26 adjusted sales prices to a unit of comparison (e.g., sale price per square foot, sale price per unit,
27 etc.). The final two rows are designed to help the appraiser analyze the degree of comparability of
28 each sale. They are used in the reconciliation of the adjusted sales prices into a single estimate of
29 value. One row contains the absolute gross adjustment for each comparable sale. The other
30 expresses the absolute gross adjustment as a percentage of sale price. The sample adjustment grid
31 presented here is generalized. Particularly in the case of physical characteristics, attributes for
32 which adjustments are made depend on the property type being appraised. Applicable units of
33 comparison also vary by property type.

34 In many appraisals, a narrative discussion provides detailed transaction and property data
35 regarding the subject and comparable properties, as well as an explanation of the adjustments
36 made to the comparable sales. This discussion complements the information provided on the sales
37 adjustment grid.

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TABLE 3-2: Sample Sales Adjustment Grid					
	Subject	Sale 1	Sale 2	Sale 3	Sale 4
Sale Price					
Property rights conveyed					
<i>Adjustment</i>					
Cash equivalency					
<i>Adjustment</i>					
Non-real property items					
<i>Adjustment</i>					
Adjusted Sale Price					
Market conditions					
<i>Adjustment</i>					
Adjusted Sale Price					
Location					
<i>Adjustment</i>					
Physical characteristics					
<i>Adjustment</i>					
Economic characteristics					
<i>Adjustment</i>					
Highest and best use					
<i>Adjustment</i>					
Other					
Final Adjusted Sale Price					
Gross adjustment					
Total adjustment as % of total sale price					

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1 **Reconciliation within the Comparative Sales Approach**

2 Reconciliation is the last analytical step in any valuation in which two or more value indicators
3 have been estimated. In reconciliation, the appraiser reviews and summarizes the data and
4 analyses that resulted in each of the value indicators. The separate indicators are then resolved, or
5 reconciled, into a single value estimate. Reconciliation is performed both (1) within a value
6 approach, to produce a single value estimate within that approach; and (2) among indicators from
7 alternative approaches, to value to produce a final value estimate. Value indicators may be
8 reconciled to a range of value or to a single value estimate. In property tax appraisal, value
9 indicators are reconciled to a single, or point, estimate.

10 In the comparatives sales approach, each adjusted sale price is a separate value indicator of the
11 subject property. Typically, the comparative sales approach involves the estimation of several
12 value indicators—i.e., the set of adjusted sales prices—that must be reconciled to arrive at a
13 single value estimate for the approach. Generally, the appraiser should not use a simple arithmetic
14 average of the separate value indicators, since to do so would presume that the adjusted sales
15 prices have equal validity. Rather, greater emphasis should be placed on the adjusted sales prices
16 for the properties that are most comparable to the subject property.

17 Two guides to comparability are (1) the number of adjustments required and (2) the "absolute
18 gross adjustment" made for each sale. As previously noted, one rule of thumb is that the greater
19 the number of adjustments, the less comparable the sale. The absolute gross adjustment is perhaps
20 a better indicator of comparability. This amount is the sum of the absolute values of all
21 adjustments made to a sale. It measures the differences between the subject and comparable
22 property based on the market-derived adjustment made for each element of comparison. The
23 adjustments are thus weighted by market factors. Absolute gross adjustments, as a percentage
24 basis of the sale price, can be compared. The sale that requires the least significant absolute gross
25 adjustment (i.e., the sale for which this represents the lowest percentage of sale price) is often the
26 most comparable sale and the one that should be given the most weight.

27 **Sales Adjustment Example**

28 The subject property is a 2,800 square foot, D7.5 two-story residence. It contains nine total
29 rooms, four bedrooms, three bathrooms, a three-car garage, covered entry and patio, and central
30 air conditioning. It sits on a 12,000 square foot site with typical improvements. The comparable
31 properties are described as follows:

32 The first comparable is a 2,800 square foot, D7.5 two-story residence located in the subject's
33 tract. It contains nine total rooms, four bedrooms, three bathrooms, a three-car garage, covered
34 entry, wood deck, and central air conditioning. It sits on a 12,500 square foot site with typical
35 improvements. It sold for \$267,000 three months prior to the effective date of appraisal, with
36 non-market financing.

37 The second comparable is a 3,100 square foot, D7.5 two-story residence located in the subject's
38 tract. It contains nine total rooms, four bedrooms, three and one-half bathrooms, a three-car
39 garage, covered entry and patio, and central air conditioning. It sits on a 11,500 square foot site

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1 with typical improvements. It sold for \$277,000 three months prior to the effective date of
2 appraisal with non-market financing.

3 The third comparable is a 2,800 square foot, D7.5 two-story residence located in the subject's
4 tract. It contains eight total rooms, four bedrooms, three bathrooms, a three-car garage, covered
5 entry and wood deck, and central air conditioning. It sits on a 12,500 square foot site with typical
6 improvements. It sold for \$258,000 one month prior to the effective date of appraisal with
7 conventional financing.

8 The fourth comparable is a 2,800 square foot, D7.5 two-story residence located in a competing
9 neighborhood. It contains nine total rooms, four bedrooms, three and one-half bathrooms, a two-
10 car garage, covered entry and patio, central air conditioning, pool, and spa. It sits on a 12,105
11 square foot site with typical improvements. It sold for \$268,000 one month prior to the effective
12 date of appraisal with conventional financing.

13 The fifth comparable is a 2,600 square foot, D7.5 one-story residence located in a competing
14 neighborhood. It contains eight total rooms, four bedrooms, two and one-half bathrooms, a two-
15 car garage, covered entry and wood deck, central air conditioning, pool, and spa. It sits on a
16 12,000 square foot site with typical site improvements. It sold for \$264,000 one month prior to
17 the effective date of appraisal with conventional financing.

18 The following sales adjustment grid shows that the subject property differs from the comparable
19 properties in these elements of comparison: financing terms, gross living area, garage parking, and
20 pool/spa. Adjustments for these elements are estimated as follows: (1) non-market financing,
21 \$10,000; gross living area, \$36.00 per square foot; garage adjustment, \$3,500/car; and pool/spa
22 adjustment, \$12,500. These adjustments will be used in the analysis to reconcile the value
23 indicators into a single estimate of value.

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TABLE 3-3: Sales Adjustment Grid						
	Subject	Sale 1	Sale 2	Sale 3	Sale 4	Sale 5
Sale Price		\$267,000	\$277,000	\$258,000	\$268,000	\$264,000
Financing		Non Mkt.	Non Mkt.	Market	Market	Market
<i>Adjustment</i>		<\$10,000>	<\$10,000>	0	0	0
Adjusted Sale Price		\$257,000	\$267,000	\$258,000	\$268,000	\$264,000
Living Area	2800 SF	2800 SF	3100 SF	2800 SF	2800 SF	2600 SF
<i>Adjustment</i>		0	<\$10,800>	0	0	+\$7,200
Garage	3-car	3-car	3-car	3-car	2-car	2-car
<i>Adjustment</i>		0	0	0	+\$3,500	+\$3,500
Pool/Spa	None	None	None	None	Pool/Spa	Pool/Spa
<i>Adjustment</i>		0	0	0	<\$12,500>	<\$12,500>
Final Adjusted Sale Price		\$257,000	\$256,200	\$258,000	\$259,000	\$262,200
Absolute gross adjustment		\$10,000	\$20,800		\$16,000	\$23,200
Gross adjustment as % of sale price		3.75%	7.6%	0.0	5.9%	8.8%

1
2 With this data, the value range is from \$256,200 to \$262,200. When reconciling the indicators
3 into a single value estimate, the appraiser should consider the number of adjustments required for
4 each comparable sale, any large adjustments for any comparable sale, the absolute gross
5 adjustment for each sale, and any other relevant factors. Most reliance is typically placed on the
6 comparable sale(s) that required the fewest adjustments and/or the smallest gross dollar
7 adjustment. In this hypothetical appraisal, comparable sale #3 required no adjustments, while all
8 other sales required between one to three adjustments. Accordingly, comparable sale #3 should be
9 given the most weight, indicating an estimate value of the subject property of \$258,000.

10 Alternatively, using the same data as above, the appraiser might explicitly weight each value
11 indicator. The most comparable sale is given a weight of 5 and the least comparable sale is given a
12 weight of 1. Thus:

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TABLE 3-4: Reconciliation of Value Indicators		
<u>Adjusted Price</u>	<u>Weighting</u>	<u>Numerical Product</u>
Sale 1 \$257,000	X 4	\$1,028,000
Sale 2 \$256,200	X 3	\$768,600
Sale 3 \$258,000	X 5	\$1,290,000
Sale 4 \$259,000	X 2	\$518,000
Sale 5 \$262,200	X 1	\$262,200

1 Total of numerical products: \$3,866,800

2 Total of weightings: 15

3 Weighted average and estimated value of subject property:

4 $\$3,866,800 \div 15 = \$257,787$, or \$258,000

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CHAPTER 4: ADVANCED ISSUES IN THE INCOME APPROACH

INTRODUCTION

The income approach includes any method of converting an income stream into an indicator of market value. The income approach is also called the capitalization approach because capitalization is the process of converting an expected income into an indicator of market value.

The approach requires careful application because small variations in its key variables can be mathematically leveraged into a wide range of estimated value. The accuracy of the approach depends on the validity of the assumptions used to estimate its key variables. Mathematical techniques used in the approach, which are sometimes complex, are merely tools for converting these assumptions into an estimate of market value.

Although several appraisal principles are relevant to the income approach, the principle of anticipation is fundamental. The principle of anticipation states that value is created by the anticipation of future benefits, which leads in fact to one definition of value as the present worth of future benefits. All income capitalization methods and techniques are attempts to convert expected future benefits into an estimate of present value.

APPLICABILITY, LIMITATIONS, AND ASSUMPTIONS

Rule 8(a) addresses the applicability of the income approach:

The income approach to value is used in conjunction with other approaches when the property under appraisal is typically purchased in anticipation of a money income and either has an established income stream or can be attributed a real or hypothetical income stream by comparison with other properties. It is the preferred approach for the appraisal of land when reliable sales data for comparable properties are not available. It is the preferred approach for the appraisal of improved real properties and personal properties when reliable sales data are not available and the cost approaches are unreliable because the reproducible property has suffered considerable physical depreciation, functional obsolescence or economic obsolescence, is a substantial over or underimprovement, is misplaced, or is subject to legal restrictions on income that are unrelated to cost.

The three fundamental assumptions of the income approach are that (1) value is a function of income; (2) value depends on the size, shape, duration, and risk of the income stream; and (3) future income is less valuable than present income. If the nature of the property being appraised is not consistent with these assumptions, the income approach to value should not be given great weight as an indicator of its market value.

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1 **VALUE IS A FUNCTION OF INCOME**

2 A basic assumption of the income approach is that people purchase property for the income that
3 the property will yield. That is, a property's value depends on the income that it will produce. To
4 apply the income approach, the property being appraised must be of a type that is commonly
5 bought and sold on the basis of its income stream.

6 Income from rental of properties is preferred over income derived from property operation—the
7 latter may be influenced by managerial skills or may arise in part from nontaxable property or
8 other sources. Where income from operating a property is used, adjustments must be made to
9 exclude income that is not attributable to the taxable property pursuant to rule 8(e).⁴⁸

10 The income that is capitalized is expected future income; past income should only be a guide for
11 estimating, or forecasting, future income. The income to be capitalized is the income that a
12 typical, prudent buyer would expect the property to yield over the income projection period.

13 **VALUE DEPENDS ON THE SIZE, SHAPE, DURATION AND RISK OF THE INCOME STREAM**

14 The prudent investor estimates the size, shape (i.e., how the size of the income changes over
15 time), duration, and risk of a property's income stream before purchasing it. The income stream
16 may remain level, increase, or decrease over time. The duration of the projected income stream
17 may be perpetual or finite. The income from land is generally considered to be perpetual;
18 however, improvements have finite economic lives and the expected income stream for improved
19 properties is finite. The risk of an income stream refers to its certainty—that is, the likelihood of
20 its receipt. The greater the uncertainty of the income, the higher the capitalization rate applied to
21 the income capitalized. Not all investments are subject to the same level of risk, with the result
22 that not all income streams should be capitalized at the same rate.

23 **FUTURE INCOME IS LESS VALUABLE THAN PRESENT INCOME**

24 The third assumption of the income approach is that future income is less valuable than present
25 income. Future income must be discounted to make it equivalent to present income. Discounting
26 is the process of finding the present value of an amount receivable at some future date. The
27 present value is the amount that, when compounded, usually at an annual rate, will accumulate to
28 the future sum. Because investors prefer immediate returns to future returns (essentially because
29 money in hand can be invested to end up with more money in the future), they discount future
30 income, or reduce its value, when analyzing investments.

31 **CONVERSION OF INCOME INTO VALUE**

32 In its most basic form, income capitalization is represented by the equation $V = I / R$, where V is
33 the indicated present value of the income stream, I is the income to be capitalized, and R is the

⁴⁸ See a later section of this manual, "Treatment of Intangible Assets and Rights," for further discussion about excluding income that cannot be attributed to the taxable property.

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1 capitalization rate. If any two of these three variables are known, the third can be calculated. That
2 is, $I = V \times R$ or $R = I / V$.

3 An income stream can also be converted into an indicator of value using a capitalization factor.
4 The basic capitalization formula is then modified to $V = I \times F$, where F is a capitalization factor.
5 In this variation, capitalization becomes a matter of multiplication rather than division.
6 Arithmetically, a factor is the reciprocal of a rate—that is, $F = 1 / R$. Capitalization factors are
7 often taken from compound interest or annuity tables.

8 Finally, an income stream can be converted into an indicator of value using an income multiplier,
9 which is also a factor, but one derived from the ratio of a sales price to annual gross income. With
10 an income multiplier, $V = I \times M$, where I is again income and M is the market-derived income
11 multiplier. Most common is the gross income multiplier, in which case $V = GI \times GIM$, where GI is
12 gross income and GIM is a market-derived gross income multiplier.

13 TIME VALUE OF MONEY

14 Financial decision-making involves the analysis of costs and benefits spread out over time. Time
15 value of money concepts and techniques are used to calculate and to compare the values of sums
16 of money at different points in time. The "time value of money" refers to the fact that a dollar
17 today is worth more than a dollar in the future. The fundamental reason for this is that one can
18 invest money in hand and end up with a greater amount of money in the future.

19 FUTURE VALUE AND COMPOUNDING

20 Compounding is the process of going from today's value to a value in the future. Today's value is
21 referred to as the present value, and the value in the future is referred to as the future value. The
22 future value of \$1 is the amount to which \$1 will grow at a given periodic interest rate and
23 number of compounding periods. The formula for the future value (or worth) of \$1 (FV\$1) is:

$$24 \quad \text{FV\$1} = S^n = (1 + i)^n$$

25 where

FV\$1 = future value of 1\$;

i = periodic interest rate, usually expressed in percent per
year or percent per month; and

n = number of periods, usually expressed in years or months

26
27 (The periodic interest rate must match the length of the period selected. For example, if n is stated
28 in years, i must be stated in as annual percentage rate; if n is stated in month, i must be stated as
29 the monthly percentage rate; etc.)

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EXAMPLE 4-1: Future Value

\$1,000 is placed into a savings account earning a compound interest rate of 10% per year. What is the future value of the account at the end of five years?

$$FV\$1 = (1 + i)^n$$

$$(1.10)^5 = 1.61051$$

$$(\$1,000) (1.61051) = \mathbf{\$1,610.51}$$

1

2 Distinguish Between Compound Interest and Simple Interest

3 Compound interest should be distinguished from simple interest. With compound interest, interest
4 is earned on the original principal plus the subsequent interest payments. In other words, interest
5 is earned on interest already earned. With simple interest, interest is only earned on the original
6 principal amount. In the above example, at simple interest, \$100 would have been earned each
7 year (\$1000 x 10%) and the amount accumulated after 5 years would have been only \$1500
8 (\$1000 + \$500). Simple interest is not an important concept in finance and investment analysis,
9 which rely on compound interest.

10 PRESENT VALUE AND DISCOUNTING

11 Discounting is the process of going from a value in the future to today's value; that is, from future
12 value to present value. The present value of \$1 is the amount one would have to invest today in
13 order for it to accumulate to \$1, assuming a given a periodic interest rate and number of periods.
14 Calculating present value is the reverse of calculating future value. The formula for the present
15 value of \$1 (PV\$1) is:

$$PV\$1 = \frac{1}{S^n} = \frac{1}{(1 + i)^n}$$

16

EXAMPLE 4-2: Present Value

How much must be invested today at an annual compound interest rate of 10% in order to have \$1,000 five years from now?

$$PV\$1 = \$1,000 / (1 + i)^n =$$

$$\$1,000 / (1.10)^5 =$$

$$\$1,000 / 1.61051 = \mathbf{\$620.92}$$

17

18 ANNUITIES

19 The preceding discussion addresses only single payments or cash flows. However, many
20 investments involves multiple payments over time. An annuity is a series of equal payments made
21 at fixed periods for a specified number of periods. For example, the distribution of a \$10 million
22 Lotto winning by equal periodic payments (e.g., monthly payments over 20 years) is an example
23 of an annuity. Annuity payments can be made at the end of each period (an ordinary annuity) or at

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1 the beginning of each period (an immediate annuity, or annuity due). In appraisal, payments are
2 typically assumed to occur at the end of each period—that is as an ordinary annuity. The
3 following discussion and examples pertain to ordinary annuities.

4 **Future Value of an Annuity**

5 The future value of an annuity is the amount to which a series of periodic level payments will
6 accumulate at a given interest rate over a given number of payment periods. The future value of
7 an annuity is the sum of the future values of each single payment in the series. The formula for the
8 future value of an annuity of \$1 (FV\$1/P) is:

$$\text{FV\$1/P} = S_{\overline{n}|} = \frac{[(1+i)^n - 1]}{i}$$

9

EXAMPLE 4-3: Future Value of an Annuity

If \$1,000 is invested at the end of each of the next 3 years, assuming an annual interest rate of 10%, what is the resulting sum at the end of year 3?

$$\begin{aligned}\text{FV\$1/P} &= [(1+i)^n - 1] / i = \\ &= [(1.10)^3 - 1] / 0.10 = 3.310000 \\ \$1,000 \times 3.310000 &= \mathbf{\$3,310}\end{aligned}$$

10

11 **Present Value of an Annuity**

12 The present value of an annuity is the sum of the present values of each future annuity payment,
13 assuming a given rate of interest and number of payment periods. The formula for the present
14 value of an annuity of \$1 (PV\$1/P) is:

$$\text{PV\$1/P} = a_{\overline{n}|} = \frac{[1 - (1+i)^{-n}]}{i}$$

15

EXAMPLE 4-4: Present Value of an Annuity

If \$1,000 is received at the end of each of the next three years, assuming an annual interest rate of 10%, what is the present value of this annuity?

$$\begin{aligned}\text{PV\$1/P} &= [1 - (1+i)^{-n}] / i = \\ &= [1 - (1.10)^{-3}] / 0.10 = 2.486852 \\ \$1,000 \times 2.486852 &= \mathbf{\$2,486.85}\end{aligned}$$

16

17 **Perpetual Annuity**

18 A special type of annuity is a perpetual annuity or perpetuity. A perpetuity is a stream of equal
19 payments that continues forever. Despite having an infinite number of payments, however, a

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1 perpetuity does have a finite, determinable value. The formula for the present value of a level
2 perpetuity is

$$PV = \frac{C}{i}$$

3 where

4 C is the periodic perpetuity payment

5 i is the interest rate.

EXAMPLE 4-5: Present Value of a Perpetual Annuity

What is the present value of a perpetuity (or perpetual annuity), assuming an annual interest rate of 10%, that pays \$1,000 per year forever?

$$PV = C / i = \\ \$1,000 / 0.10 = \$10,000$$

By way of illustration: \$10,000 deposited in a bank account earning 10% per year will grow to \$11,000 after one year. One could take out \$1,000 at the end of the first year and leave \$10,000 in the account for the second year. During the second year, the account would again grow to \$11,000, and one could again withdraw \$1,000. If the interest rate stays at 10% this process could continue in perpetuity.

6

7 Variable Payments

8 Annuities involve equal payments in each period. In many appraisal situations, payments are
9 variable. For example, the net income received from an apartment building may fluctuate from
10 year to year. The present or future value of a variable series of payments (or cash flows) is the
11 sum of the present or future values of the individual cash flows. The most direct way to calculate
12 the present value of a series of variable cash flows is to calculate the present value for each
13 individual cash flow using the present value of \$1 factor and then to add these present values
14 together. Similarly, the future value of a variable series of cash flows can be calculated by
15 calculating the future value of each individual cash flow using the future value of \$1 factor and
16 then adding them together. Calculating the present value of a series of variable cash flows is the
17 basis for discounted cash flow analysis, which is discussed in a latter section.

18 PERIODIC REPAYMENT

19 The present value of \$1 per period is used to calculate the present value of an annuity. Its
20 reciprocal, the periodic repayment, is used to calculate the periodic amount necessary to amortize,
21 or pay off, a loan of \$1, given a periodic interest rate and the number of repayment periods. Part
22 of the periodic repayment is interest on the outstanding loan balance and part is repayment of loan
23 principal. The formula for the periodic repayment of \$1 (PR) is:

$$24 \quad PR = 1/a_{\overline{n}|i} = i / [1 - (1 + i)^{-n}]$$

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EXAMPLE 4-6: Periodic Repayment

What is the annual payment on a fully amortized \$75,000 loan with a term of 7 years and an interest rate of 10%?

$$PR = i / [1 - (1 + i)^{-n}] = 0.10 / [1 - (1 + 0.10)^{-7}] = 0.10 / 0.48684 = 0.20540$$
$$0.20540 \times \$75,000 = \mathbf{\$15,405}$$

SINKING FUND FACTOR

The future value of \$1 per period is used to calculate the future value of an annuity. Its reciprocal, the sinking fund factor, is used to calculate the periodic payment required, at a given interest rate and number of periods, such that the series of payments accumulates to a future amount of \$1. The formula for the sinking fund factor for \$1 (SFF) is:

$$SFF = S_{\overline{n}} = i / [(1 + i)^n - 1]$$

EXAMPLE 4-7: Sinking Fund Factor

An apartment is scheduled to have the roof replaced in 5 years at an estimated future cost of \$10,000. If an amount is set aside each month and deposited in a bank earning 10% per year, how much is required to be saved each year?

$$SFF = i / [(1 + i)^n - 1] = 0.10 / [(1 + 0.10)^5 - 1] = 0.10 / 0.61051 = 0.163797$$
$$(0.163797) (\$10,000) = \mathbf{\$1,637.97}$$

ANNUAL LOAN CONSTANT

The annual loan constant is the ratio of the annual loan payment to the principal amount of the loan. In real estate, the annual loan constant is called the mortgage constant. It is also referred to as the "mortgage capitalization rate," or R_M . The mortgage constant is calculated by multiplying the *monthly* periodic repayment by 12. In real estate appraisal, annual amounts are typically capitalized, and the mortgage constant annualizes monthly mortgage payments.

COMPOUND INTEREST TABLES

The preceding discussion used formulas for presenting time value of money concepts and for solving examples. Fortunately, published tables of time value of money factors exist covering a range of interest rates and amortization periods. The tables typically contain:

1. Future Worth of \$1 (FW\$1, S^n)
2. Future Worth of \$1 Per Period (FW\$1/P, $S_{\overline{n}}$)
3. Sinking Fund Factor (SFF, $1/S_{\overline{n}}$)
4. Present Worth of \$1 (PW\$1, $1/S^n$)
5. Present Worth of \$1 Per Period (PW\$1/P, $a_{\overline{n}}$)
6. Periodic Repayment (PR, $1/a_{\overline{n}}$)

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1 Assessors' Handbook Section 505 (AH 505), *Capitalization Formulas and Tables*, contains
2 compound interest factors for the functions listed above. Both monthly and annual factors are
3 presented for interest rates from 1 to 25%. It also contains factors for the annual mortgage
4 constant (R_M). In addition to financial tables, financial calculators and most spreadsheet software
5 are programmed to include time value of money functions.

6 RETURN ON AND RETURN OF CAPITAL

7 An investor's expected return must include both an economic reward and a recovery of invested
8 capital. The economic reward is the *return on* capital, which is the amount an investor receives for
9 the use of his or her capital until it is recovered. The return on capital is also referred to as the
10 investment yield. Except in the case of the income from land, which is capitalized in perpetuity,
11 real property income is capitalized over a finite period. Capitalization over a finite period requires
12 a recovery of capital, which is referred to as the *return of* capital (or capital recapture or
13 recovery). All capitalization rates, factors, and income multipliers (excluding the case in which
14 income from land is capitalized in perpetuity) provide, explicitly or implicitly, for both the return
15 on and the return of capital.

16 In income capitalization, capital is recovered over an income projection period that matches the
17 capital recovery period. There are several possible income projection/capital recovery periods in
18 appraisal. The most important are (1) income projected over the remaining economic life of the
19 improvements and (2) income projected over a market-derived investment holding period. The
20 remaining economic life of the improvements is the period of time (as of the valuation date) that
21 the improvements are expected to contribute to the value of the property. The investment holding
22 period is the period of time (projected forward from the valuation date) that the investor expects
23 to hold the property before selling it.

24 Depending on the capitalization technique, capital recovery may be accomplished in several ways
25 (e.g., straight-line, sinking fund, and level annuity capital recovery and recovery all or in part from
26 the value of the property at the end of the income projection period).

27 COMPONENTS OF RETURN ON INVESTMENT OR INVESTMENT YIELD

28 Conceptually, the return on investment, or investment yield, comprises several separate return
29 components: time preference; investment management; liquidity preference; and risk.

30 Time Preference

31 The return for time preference is the yield component investors demand for forgoing present
32 consumption. Time preference reflects the pure time value of money. The minimum, or "risk free,"
33 rate is the lowest yield rate that would be acceptable given no requirement for management effort,
34 perfect liquidity, and no risk.

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1 **Investment Management**

2 Investment Management is the yield component that compensates the investor for personal efforts
3 involved in making decisions regarding alternative investments. It is not compensation for the day-
4 to-day management efforts, which is an operating expense of the property.

5 **Liquidity Preference**

6 An asset is liquid if it can be readily converted to cash at its current market value. All else being
7 equal, investors prefer to hold assets that are liquid. The return for liquidity preference is the yield
8 component required for holding assets that are not readily convertible to cash. Most financial
9 assets are liquid. Real estate and most business assets, however, are relatively illiquid, and real
10 estate investors must be compensated for this reduced liquidity.

11 **Risk**

12 **Risk and Uncertainty**

13 Uncertainty exists when one does not know exactly what will happen in the future. As a result of
14 uncertainty, things may not turn out as well as expected. In an economic context, risk is the
15 possibility of earning less than the expected return on an investment or incurring a negative return.

16 Most investors are risk averse. This does not mean that they avoid risk entirely; but it does mean
17 that they require a higher expected return as compensation for bearing risk. Investors have the
18 option of investing in risk-free investments such as U.S. Treasury securities. If they choose to
19 invest in risky investments, such as real estate (or a risky financial asset such as corporate stock),
20 they require a risk premium, or added return, for doing so.

21 **Modern Financial Theory and Risk**

22 Modern financial theory defines risk in terms of the variability of expected returns and quantifies
23 risk through the use of probability distributions and related statistical concepts. Financial theory
24 also makes an important distinction between total risk, which is the relevant risk for assets held in
25 isolation or on a "stand-alone" basis, and portfolio risk, which is the relevant risk for assets held in
26 a portfolio.

27 **Financial Leverage and Risk**

28 Financial leverage is the use of borrowed funds when financing an asset. Most real estate
29 investments involve the use of financial leverage, which creates an equity and a debt (or
30 mortgage) interest in the property. Financial leverage increases the risk to the equity interest
31 because it increases the variability of possible equity returns; that is, the possible spread of equity
32 returns is widened. Leverage is favorable, or positive, as long as the rate of return on the total
33 investment in the property exceeds the cost of borrowing; positive leverage increases the rate of
34 return on equity. However, leverage is unfavorable, or negative, when the cost of borrowing
35 exceeds the rate of return on the total investment; negative leverage decreases the rate of return
36 on equity.

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1 Financial leverage also increases the risk to the lender's interest (i.e., the mortgage interest)
2 because it raises the break-even occupancy rate for a property. This increases the probability that
3 actual net income—should it not equal the forecasted amount due to one of the business risks
4 discussed above—will not be sufficient to meet the required debt service. This increases the
5 default risk to the lender.

CAPITALIZATION RATES AND INCOME MULTIPLIERS

COMMONLY APPLIED CAPITALIZATION RATES

7
8 A capitalization rate is any rate used for the conversion of net income into value.⁴⁹ Although there
9 are several types of capitalization rates used in appraisal, they can be classified as either *income*
10 *rates* (also known as cash flow rates) or *yield rates*.

11 An income rate expresses the relationship between a single year's net income and the value of the
12 entire property or a specified property component (e.g., the equity or mortgage interest). Income
13 rates are derived from sales and implicitly provide for both the return on and the return of capital.

14 The *overall capitalization rate* (R_O) is perhaps the most commonly used income rate. It represents
15 the relationship between a single year's total property net income and total property value. The
16 *equity capitalization rate* (R_E) represents the relationship between a single year's pre-tax cash
17 flow (net income minus debt service) and the value of the equity interest in a property. The
18 "mortgage capitalization rate" (R_M), or "annual mortgage constant," represents the relationship
19 between a single year's debt service to the principal amount of the loan, that is, to the value of the
20 debt interest in a property. Both R_E and R_M are used in the band-of-investment technique to
21 derive R_O .

22 A yield rate is a rate of return on capital; it is usually expressed as a compound annual percentage
23 rate. A yield rate considers all expected benefits from the property over the income projection
24 period, including both annual net income and any remaining value, or sale proceeds, at the
25 termination of the investment. This remaining value is referred to as the reversion, reversionary
26 interest, or terminal value. When a yield rate is used in yield capitalization to discount future
27 income payments into a value indicator, it is also referred to as a discount rate. In appraisal, the
28 terms *yield rate* and *discount rate* are virtually synonymous. Although a yield rate, per se,
29 includes only the return on capital, in the capitalization process yield rates are almost always
30 used in conjunction with a corresponding compound interest or annuity factors that explicitly
31 provide for the return of investment, or capital recovery.⁵⁰

⁴⁹ The term "net income" is used here in a general sense to refer to a level of income after certain operating expenses have been deducted. Subsequent sections will discuss the various levels of income used in the income approach more precisely.

⁵⁰ The exception, which was mentioned earlier, is the capitalization of income from land. Since land is assumed to be a non-wasting asset, no capital recovery is required. The income from land is capitalized in perpetuity using a yield rate only.

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1 The overall yield rate (Y_o) is perhaps the most commonly used yield rate. It is the required rate of
2 return on total invested capital and is used to discount the annual net income of the entire
3 property and any income derived from the reversion into an indicator of total property value. The
4 *equity yield rate* (Y_E) is the required rate of return on equity capital. It is used to discount the
5 annual net income attributable to the equity interest (i.e., net income minus debt service) and the
6 equity reversion (i.e., the total property reversion less any outstanding debt claims) into an
7 indicator of value for the equity interest only. Finally, the yield rate on the mortgage (Y_M) is the
8 required rate of return on the mortgage. It is referred to simply as the interest rate. It is the rate at
9 which mortgage payments can be discounted into the present value of the mortgage. Y_E and Y_M
10 are also used in the band of investment technique to derive an overall yield rate, or Y_o .

11 The *internal rate of return* (IRR) is a yield/discount rate that makes the present value of future
12 income payments equal to the present value of the property. An IRR can be calculated for the
13 total property or for only the equity interest. In order to compute an IRR, the present value of the
14 total property or equity interest must already be known. The IRR calculation is used to derive a
15 yield/discount rate from sales data.

16 INCOME MULTIPLIERS

17 Income can also be converted into an indication of value using an income multiplier. An income
18 multiplier is an income factor that is used to convert a single year's gross income into an
19 indication of property value. The most commonly used income multiplier is the *gross income*
20 *multiplier* (GIM). The gross income of the a property is multiplied by a GIM to estimate the value
21 of the entire property. As with income rates, the GIM implicitly provides for both the return on
22 and the return of the investment.

23 Depending on the technique, income capitalization can be applied to a variety of property interests
24 and the incomes attributable to those interests. Appraisal for property tax purposes generally
25 involves the valuation of the full fee simple interest in the entire property rather than separate
26 valuations of various property interests. For this purpose, the most common rates used to convert
27 income into value are the overall capitalization rate (R_o) and the overall yield rate (Y_o). Both of
28 these rates are applied to the total net income attributable to the property being appraised. The
29 overall capitalization rate applies to a single year's income and the overall yield rate applies to a
30 projected income stream.

31 A fundamental principle of income capitalization, which applies when either deriving a
32 capitalization rate or valuing property using a capitalization rate, is that the level and type of
33 income must be correctly matched to the type of capitalization rate that is being derived or used in
34 valuation. The capitalization rate or income multiplier must be consistent with the income to be
35 capitalized or the income from which the capitalization rate or income multiplier is being derived.
36 This point will be emphasized in subsequent sections.

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METHODS OF INCOME CAPITALIZATION

1

2 From a historical perspective, income capitalization methods and techniques have been classified
3 in a changing and often confusing number of ways. In the contemporary appraisal, there are two
4 primary income capitalization methods: *direct capitalization* and *yield capitalization*.

5 **DIRECT CAPITALIZATION**

6 Direct capitalization is an income capitalization method in which a single year's income is
7 converted into an indicator of property value by either (1) dividing the single year's income by an
8 appropriate capitalization rate (i.e., $V = I / R$) or (2) multiplying the single year's income by an
9 appropriate income multiplier (i.e., $V = I \times M$). The capitalization rate or income multiplier is
10 derived from the sales of comparable properties and represents the relationship between a single
11 year's projected income and value. Direct capitalization has two defining characteristics: (1) it
12 does not explicitly consider the projected size, shape, and duration of the income stream and any
13 projected change in the value of the property; and (2) it does not explicitly differentiate between
14 the return on and the return of capital. These elements, however, are implicitly considered in the
15 sense that they are reflected in the sales prices from which the rates or multipliers are derived. The
16 only two variables in direct capitalization are a single year's income and a sale price. It is
17 necessary to match the definition of income used to determine the capitalization rate with the
18 income of the subject property. If the definition of income is not the same, an error may be
19 introduced into the valuation process.

20 **YIELD CAPITALIZATION**

21 Yield capitalization is an income capitalization method in which income is converted into an
22 indicator of value by forecasting each future year's income (including any income derived from
23 the estimated terminal, or reversionary, value of the property) over an income projection period,
24 discounting these future income payments at an appropriate yield, or discount, rate into present
25 value amounts, and then summing these amounts to produce a value indicator for the property.
26 The discount rate represents a rate of return that a prudent investor would require to invest in the
27 property given its level of risk. The mechanics of discounting the income is accomplished through
28 the use of compound interest or annuity factors (i.e., $V = IF$). Thus, in contrast to direct
29 capitalization, yield capitalization explicitly considers the size, shape, and duration of the income
30 stream and any change in the value of the property. It also considers, through the compound
31 interest and annuity factors used to discount future income, both the return on and the return of
32 capital; the provision for return of capital is built into the mathematics of the factors. Yield
33 capitalization is also referred to discounted cash flow analysis.

34 **Variation of Yield Capitalization**

35 In a variation of yield capitalization, an overall capitalization rate is mathematically developed,
36 through the use of yield capitalization formulas or "models," reflecting a property's forecast
37 income pattern, value change, and yield rate. A projection of a single-year's income is then
38 divided by this overall capitalization rate to arrive at an indicator of value. This variation of yield

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1 capitalization resembles direct capitalization mechanically (i.e., $V = I / R$) but not conceptually.⁵¹
2 The Ellwood mortgage equity formula is a notable example of this variation of yield capitalization.

3 ESTIMATING THE INCOME TO BE CAPITALIZED

4 GENERAL CONSIDERATIONS

5 This section discusses some general issues related to estimating the income to be capitalized.
6 These are income and expenses as a forecast, the treatment of inflation, the cash flow basis of
7 forecast income and expenses, and the market basis of forecast income and expenses.

8 Income as a Forecast

9 The income to be capitalized should be based on a forecast; that is, the estimate should be
10 oriented toward the future. This requires a forecast of the gross income a property is expected to
11 produce and a forecast of future operating expenses. Although the past and current experience of
12 the subject and comparable properties can be used as guide, a forecast should not be a simple
13 projection of past experience.

14 A forecast of gross income should be based on a consideration of factors that influence the future
15 rent- or income-generating potential of the subject property. These factors include the locational
16 and physical characteristics that affect the subject property's relative desirability, the rent levels
17 and availability of competing properties, possible changes in factors affecting the demand for the
18 subject and competing properties, and possible changes in factors affecting the supply of
19 competing properties. Cost trends relating to the components of operating expenses should be
20 studied to estimate the future level of operating expenses.

21 Forecasts of income and expenses can be for a single year or multiple years. In direct
22 capitalization, only the next year's income is forecast. In yield capitalization, income is forecast for
23 multiple years. In discounted cash flow analysis, for example, income and expenses are forecast
24 for each year of the holding period, and the terminal, or reversionary, value of the property at the
25 end of the holding period is also forecast.

26 Income Forecasting and Inflation

27 Inflation is an increase in the general level of prices; it can also be expressed as a decrease in the
28 purchasing power of the dollar. For example, if the annual inflation rate is 5 percent, this means
29 that the purchasing power of the dollar has annually declined by 5%. There can also be
30 deflationary changes in the general price level, but this has not been a common occurrence.

31 Analysts distinguish between nominal prices and real prices. Nominal prices have not been
32 adjusted for a decrease in the purchasing power of money caused by inflation. Real prices have

⁵¹ It is conceptually different because yield capitalization formulas explicitly consider income pattern, change in property value, and return on and return of capital. Furthermore, unlike the overall capitalization rate in direct capitalization, this overall capitalization rates is not derived from sales data.

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1 been adjusted for a decrease in purchasing power of dollars. A similar distinction is made between
2 capitalization rates expressed in nominal terms and rates expressed in real terms. Nominal rates
3 include a premium for expected inflation. Real rates are nominal rates that have been adjusted for
4 expected inflation. For example, if the nominal rate of return is 8 percent per year and the inflation
5 rate is 2 percent per year, the real rate of return is approximately 6 percent.⁵²

6 There are two ways to treat inflation: (1) use a nominal rate to discount income estimated in
7 nominal terms or (2) use a real discount rate to discount income estimated in real terms. The
8 important point is that the type of rate must be matched to the type of income. The conventional
9 method, at least in real estate valuation, is to use nominal rates and nominal income. Most real
10 estate investors think in terms of nominal cash flows and each of the conventional rate-derivation
11 techniques derives a nominal rate.

12 Not all of the forecasted changes in income and expenses are due to expected inflation. In part,
13 they reflect expected changes in supply and demand factors only partially related to the general
14 inflation rate. For example, rental income may be forecast to increase due to an expected increase
15 in demand, not inflation, or utility costs may be forecast to decrease because of increasing
16 competition in the power generation industry. Thus, an income and expense forecast requires
17 consideration of both inflation and relevant supply and demand factors.

18 **Cash Flow Basis**

19 The income and expenses in appraisal analysis are cash flows. They are based on "cash in and cash
20 out." They are not based on accounting income and expenses, which are developed using accrual
21 methods. Cash flows reflect cash receipts and expenditures in the period when they are forecast to
22 be received or expended. Although cash receipts and expenditures occur throughout the year,
23 cash flows are conventionally expressed as annual flows occurring at the end of the year. In direct
24 capitalization, this concept is adjusted slightly to annualize certain expenditures. For example, if
25 an insurance premium is prepaid for a number of years, a pro-rated annual amount would be used
26 as annualized expense. Another example is the treatment of replacement reserves, which is
27 discussed below.

28 **Market (or Economic) Income and Expenses**

29 When estimating the income to be capitalized, income and expenses are estimated on a market, or
30 economic, basis. Market income, which is generally income from property rental, is based on
31 market rent, which is the rent that a property would command, assuming prudent management, if
32 placed for rent on the market as of the appraisal date. It is the rental rate prevailing in the market
33 for comparable properties, in contrast to contract rent, which is the actual rental income of a
34 property as specified by the terms of a lease. Market expenses reflect the level of operating
35 expenses that a prudent buyer would expect to pay assuming prudent management.

⁵² The expected real rate of return is approximately equal to the expected nominal rate of return minus the expected inflation rate. The formula relating the real rate of return to the nominal rate of return and the rate of inflation is
$$(1 + \text{real rate}) = (1 + \text{nominal rate}) / (1 + \text{expected rate of inflation}).$$

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1 PROCESSING THE ANNUAL INCOME STREAM

2 Processing an income stream refers to subtracting out amounts of income from the total, or gross,
3 income that a property is expected to produce. At each level of income, expense item(s) are
4 subtracted from the previous level. In estimating the income to be capitalized, income is
5 processed, on an annual basis, to the following levels:

$$\begin{array}{r} \text{Market Potential Gross Income (MPGI)} \\ - \text{Market Vacancy and Collection Losses} \\ \hline = \text{Market Effective Gross Income (MEGI)} \\ - \text{Market Operating Expenses} \\ \hline = \text{Market Net Income Before Recapture} \\ \text{and Property Taxes (MNIBR\&T)} \end{array}$$

6

7 Estimating Market Potential Gross Income

8 Potential gross income is the total income attributable to a property before any allowance for
9 vacancy and collection loss and before deductions for any operating expenses. Rule 8(c) refers to
10 potential gross income as "gross return." Gross return is defined as "any money or money's worth
11 which the property will yield over and above vacancy and collection losses, including ordinary
12 income, return of capital, and the total proceeds from sales of all or part of the property." Gross
13 income is forecast on an annual basis.

14 With most income-producing properties, potential gross income is primarily in the form of rent.
15 Rule 8(e) recommends using income from property rental rather than business operation, since
16 income derived from operation is more likely to be influenced by managerial skills and may arise
17 in part from nontaxable property or other sources. If operating income must be considered,
18 sufficient income must be excluded to provide a return on working capital and other nontaxable
19 operating assets and to compensate unpaid or underpaid management. In the case of owner-
20 occupied properties, rental income can often be imputed by reference to rental data from
21 comparable properties.

22 As discussed, when valuing property for tax purposes, the relevant rent is market, or economic,
23 rent. Market rent is the rent a property would command, assuming prudent management, if placed
24 for rent on the market as of the appraisal date. It is the rental rate prevailing in the market for
25 comparable properties. Market rent is typically estimated using recently negotiated rents for the
26 subject and comparable properties.⁵³

27 A rental rate is applied to a spatial unit in order to calculate the rental amount (e.g., gross building
28 area, net leasable area, or a unit of occupancy).⁵⁴ Corresponding rental units of comparison

⁵³ Market rent is in contrast to contract rent, which is the actual rental income of a property as specified by the terms of a lease.

⁵⁴ Gross building area (GBA) is the total floor area, generally measured from the outside walls; net leasable area (NLA) is the floor area that can be occupied by tenants and typically includes a pro-rata share of common areas. The appraiser should be familiar with common rental units of comparison used in his or her market area.

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1 (similar to units of comparison used in the comparative sales approach) can be developed (e.g.,
2 rent per square foot of gross building area, net leasable area, or net usable area or rent per
3 apartment unit or single-family residence). Rental units of comparison may vary depending on the
4 conventions of a given market. When estimating market rent, rental units of comparison should be
5 applied consistently to the subject and comparable properties.

6 Because the property interest being appraised is the unencumbered fee simple interest, the
7 estimate of market rent must be made without regard to actual lease arrangements. Rule 8(d)
8 states that in "valuing property encumbered by a lease, the net income to be capitalized is the
9 amount the property would yield were it not so encumbered, whether this amount exceeds or falls
10 short of the contract rent and whether the lessor or the lessee has agreed to pay the property tax."

11 In addition to rental income, some properties generate income from sources other than rent.
12 Depending on the property type, non-rental income may include income from laundry facilities,
13 parking, concessions, equipment rental, etc. In most cases, the unit to be valued (i.e., the appraisal
14 unit) is the real property only. If non-rental income is present, the appraiser must determine
15 whether the additional income is attributable to real property, personal property, or, perhaps, to
16 intangible assets and rights.⁵⁵

17 The estimate of market rent derived from comparable rental properties should reflect the same
18 pattern of services as those provided by the subject property. The responsibility for paying
19 expenses (e.g., property taxes, insurance, utilities, repairs, and maintenance) varies depending on
20 lease terms. In a gross lease, all operating expenses are paid by the lessor. In a net lease, all
21 expenses are paid by the lessee. Other lease terms lie between a gross and net rental basis. Rent
22 should be estimated on the same basis for both the subject and comparable properties. For
23 example, if rent is estimated for the subject property on a gross basis, rental data stated on a net
24 basis is obviously not directly comparable. An analysis of comparable rents should also consider
25 the effects of any rent concessions. Rent concessions are discounts or other additional benefits
26 given by the landlord. Rent concessions include free or reduced rent for a specified period of time,
27 extra tenant improvements, and other inducements. Rent concessions effectively lower the quoted
28 market rental rate.

29 **Estimating Market Vacancy and Collection Loss**

30 Vacancy and collection loss is an annual allowance for the reduction in potential gross income due
31 to vacancy, tenant turnover, and nonpayment of rent. Almost all income-producing properties
32 experience losses of this type over their economic lives. Vacancy and collection loss is typically
33 stated as a percentage of annual potential gross income.

34 The recent history of the subject and comparable properties is the starting point for estimating
35 vacancy and collection loss. The appraiser should also consider projected market conditions and

⁵⁵ According to section 110, the value of intangible assets and rights relating to the going concern value of a business using taxable property shall not enhance or be reflected in the value of the taxable property. Taxable property may be assessed and valued by assuming the presence of intangible assets and rights necessary to put the taxable property to beneficial or productive use. The treatment of intangible assets and rights is discussed in a subsequent chapter.

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1 neighborhood trends. Vacancy studies are sometimes published by trade or research groups, often
2 by property type and geographic area.

3 **Estimating Market Effective Gross Income**

4 Effective gross income is the level of income that remains after deducting vacancy and collection
5 loss from potential gross income. Effective gross income, in addition to rental income, may
6 include non-rental income attributable to the real property being appraised.

7 **Estimating Market Operating Expenses**

8 Operating expenses are expenditures necessary to maintain the real property and continue the
9 production of gross income. They are typically estimated on an annual basis. Rule 8(c) refers to
10 operating expenses as "gross outgo" Gross outgo is defined as "any outlay of money or money's
11 worth, including current expenses and capital expenditures (or annual allowances therefor)
12 required to develop and maintain the estimated income." Depending on the terms of the lease, the
13 tenant may directly pay certain operating expenses or reimburse the landlord for certain operating
14 expenses paid by the landlord. Operating expenses paid or reimbursed by the tenant should not be
15 deducted from rental income when estimating the income to be capitalized.

16 Operating expenses are estimated at a market level—i.e., on the basis of what a prudent
17 owner/investor would expect—which may differ significantly from the subject property's current
18 or historical operating expenses. Although the starting point for estimating operating expenses is
19 often the subject property's recent history, this information should be checked against recent data
20 from comparable properties and, perhaps, published data regarding typical expense levels and
21 ratios. Operating expenses can be estimated as a lump-sum amount, an amount per square foot, an
22 amount per unit, or as percentage of effective gross income.

23 The treatment of some operating expenses may vary depending on whether direct capitalization or
24 yield capitalization (i.e., discounted cash flow analysis) is used. In direct capitalization, expenses
25 are annualized, even though some expenditures may not actually occur on an annual basis. This is
26 a slight deviation from the typical cash flow basis of real estate income and expense analysis. It is
27 necessary because in direct capitalization only a single year's income is capitalized. For example,
28 property insurance may be prepaid for three years, but the appraiser would annualize this expense
29 in direct capitalization. By contrast, in discounted cash flow analysis, expenditures for expenses
30 are typically deducted in the years the expenditures are actually forecast to occur—that is,
31 expenses are reflected on an actual cash flow basis. Thus, in discounted cash flow analysis, the full
32 expenditure for three years of prepaid property insurance would be deducted in the year that the
33 expenditure is forecast to occur.

34 **Allowable Expenses**

35 Allowable operating expenses include, but are not limited to, outlays for property management,
36 insurance, leasing expenses, maintenance and repair, utilities, security, janitorial and cleaning,

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1 garbage removal and pest control, grounds and parking area maintenance, and replacement
2 allowance.⁵⁶ Several of these expenses are elaborated on below.

3 **Property management.** All property management expenses are deductible, whether paid directly
4 by the owner or indirectly through payment to outside management. All properties incur
5 management expenses, even if they are owner managed. Management expenses do not include
6 expenses to manage or operate the investment entity (e.g., a limited partnership or corporation) or
7 any non-property-related personal expenses of the owner. Insurance expenses include only those
8 insurance costs associated with operating the property.

9 **Leasing expenses.** Leasing expenses are costs associated with securing tenants, and often include
10 commissions paid to leasing agents and/or costs for tenant improvements incurred by the lessor.
11 In direct capitalization, leasing expenses are allowable operating expenses when space is released
12 after initial occupancy (i.e., after stabilized occupancy has been reached and at subsequent tenant
13 turnover); such recurring leasing expenses would typically be annualized as described earlier. In
14 yield capitalization, all expected leasing expenses over the anticipated holding period are
15 allowable operating expenses (whether or not stabilized occupancy has been reached); they would
16 be typically be deducted when forecast to occur.

17 **Maintenance and Repair.** Maintenance and repair expenses are expenditures to preserve a
18 property's condition and operating efficiency. Typical maintenance and repair expenses include
19 roof repair, painting, maintenance of heating, ventilating, and air conditioning equipment, and
20 plumbing and electrical repair. Maintenance and repair does not include the replacement of
21 significant components of an improvement or a change in its form.

22 **Replacement allowance.** Replacement allowance (also called reserve for replacement) is an
23 expense to replace components of an improvement that must be replaced at least once, and often
24 several times, during the improvement's economic life. Examples of such components include,
25 but are not limited to, roof covering, paving, and heating, ventilating, and air conditioning
26 equipment. Tenant improvements paid for by the lessor on tenant turnover (but not tenant
27 improvements constructed during the initial lease-up) are also sometimes treated as replacement
28 items.

29 In direct capitalization, an annual amount for replacement allowance is estimated and deducted
30 as an expense. There are a number of ways of doing this, but all essentially involve estimating
31 the cost of the replacement items over the economic life of the improvement and then annualizing
32 this cost. It is necessary to annualize the cost since, as discussed above, in direct capitalization
33 only a single year's income is capitalized. In yield capitalization (i.e., discounted cash flow
34 analysis), an annual replacement allowance can be estimated as in direct capitalization.
35 Alternatively, and perhaps more typically, expected expenditures for replacement items can be
36 deducted as expenses in the years the expenditures are actually forecast to occur over the holding

⁵⁶ Expenses are often classified as either fixed or variable. Fixed expenses do not vary with the level of occupancy or use (e.g., property insurance or maintenance contracts); variable expenses vary with the level of occupancy or use (e.g., utilities).

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1 period. That is, they are reflected on an actual cash flow basis. In addition, the reversionary, or
2 terminal, value of the property would also, presumably, reflect any necessary expenditures for
3 replacement items that were imminent.

4 A deduction for replacement allowance is not always made. Whether or not the appraiser makes
5 such a deduction typically depends on market practice. It is important, however, to treat
6 replacement allowance consistently in both capitalization rate derivation and property valuation. If
7 a capitalization rate has been derived from an income stream that includes a deduction for
8 replacement allowance, it should be applied, when valuing property, to an income stream from
9 which replacement allowance has been similarly deducted.

10 **Non-Allowable Expenses**

11 Rule 8(c) explicitly excludes certain items as expenses. Excluded from "gross outgo" are property
12 taxes, amortization or depreciation, debt payments (i.e., both the interest on debt and the
13 retirement, or repayment, of debt), and corporate and personal income taxes.

14 **Ad valorem property taxes.** When estimating the income to be capitalized, *ad valorem*
15 ("according to value") property taxes should not be deducted as an expense because to do so
16 assumes that the value of the subject property is already known.⁵⁷ Rather, in accordance with rule
17 8(f), a component for property taxes is added to the capitalization rate. Under a net lease, the
18 tenant pays the property taxes, and the addition of a component for property taxes is not
19 required.⁵⁸

20 However, only ad valorem property taxes should be excluded as an expense. Some property taxes
21 are non-ad valorem, including Mellos-Roos bond payments, which are considered a property tax,
22 and other "special taxes" which are also non-ad valorem (i.e., levied as lump-sum amounts rather
23 than part of the general tax rate). The previously noted rationale for excluding property taxes as
24 an expense does not apply to non-ad valorem property taxes.

25 **Accounting depreciation.** The reference to depreciation and amortization in subdivision (c)
26 refers to the accounting concept of depreciation (in this context, amortization is a synonym for
27 depreciation). Accounting depreciation and amortization charges are non-cash expenses designed
28 to spread, or match, the cost of a previously incurred cash expenditure over future accounting
29 periods.

30 There are at least two theoretical reasons for the exclusion of accounting depreciation charges as
31 expenses. First, doing so incorporates the recognized cash flow concept of the amount of income
32 to be capitalized. Second, accounting depreciation is a means of capital recovery based on past
33 expenditures. However, in real estate valuation the point is not to recover past expenditures, but

⁵⁷ In some instances, primarily dealing with railroad and utility properties, the Valuation Division deducts ad valorem property taxes as an expense prior to income capitalization; therefore, no adjustments for property taxes in the rate or multiplier are necessary.

⁵⁸ Property taxes are treated differently when processing the income stream to derive capitalization rates or income multipliers. When deriving rates or multipliers, anticipated property taxes are treated as an expense. This point will be reiterated in the sections addressing rate and multiplier derivation.

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1 rather to estimate the value that future income will be able to recover. In appraisal, an allowance
2 for recovery of capital is reflected in the capitalization rate or income multiplier.

3 **Debt payments.** Debt payments reflect the return on and return of the debt, or mortgage, interest
4 in a property. They reflect the contractual share of property income received by creditors.
5 However, the amount of income that a property is capable of producing is not affected by the way
6 in which the returns to the property are allocated between debt and equity interests. Since, for
7 property tax purposes, the entire interest in the property is being appraised (i.e., the value of both
8 debt and equity interests), and not the equity interest only, debt payments are not an allowable
9 expense.

10 **Federal and state taxes on income.** Federal and state taxes on income, corporate or individual,
11 are determined in significant measure by a corporation's or individual's particular tax position,
12 which may be affected by a number of factors extraneous to the operating results of the property
13 being appraised. For this reason, taxes on income should not be deducted as an expense. Income
14 taxes are reflected in the capitalization rate or income multiplier. For example, when a
15 capitalization rate is derived from sales using a level of income before a deduction for income
16 taxes, and the rate or multiplier is applied to an income at the same level, any effect of income
17 taxes on property value is included in the market-derived capitalization rate.⁵⁹

18 **Estimating Market Net Income Before Recapture and Property Taxes**

19 Market net income before recapture and taxes is the level of income that remains after deducting
20 all allowable operating expenses from market effective gross income. This level of income is
21 capitalized into an estimate of value. In rule 8(c) this level of income is referred as the "net
22 return"—that is, the difference between gross return and gross outgo.

23 **PROCESSING THE REVERSION**

24 Yield capitalization requires the selection of an income projection period. Typically, this is either
25 the expected remaining economic life of the improvements or, in discounted cash flow (DCF)
26 analysis, an investor's anticipated holding period—that is, the period of time the investor expects
27 to own the property before selling it. In DCF analysis, the anticipated holding period is also
28 sometimes called the investment horizon.

29 At the end of the income projection period, something of value will remain—either the land at
30 the end of the economic life of the improvements, or the improved property at the end of an
31 investor's anticipated holding period. The value of what remains at the end of the income
32 projection period is referred to as the reversion. In DCF analysis, it is also called the terminal
33 value, or the "going out" value. The value of the reversion, or more precisely, the net value of the
34 reversion, which reflects any related disposition costs, is part of the income to be capitalized.
35 Estimating the value of the reversion (or terminal value) is discussed in a subsequent section in the
36 context of discounted cash flow analysis.

⁵⁹ Although subdivision (c) is silent on the exclusion of personal income taxes (it addresses only corporate income taxes), the exclusion of personal income taxes as an expense is logically implicit.

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DIRECT CAPITALIZATION

1

2 The direct capitalization method is relatively straightforward. A single year's income estimate is
3 converted into a value indicator by either dividing the income to be capitalized by a capitalization
4 rate or multiplying it by an income multiplier. The income used is usually the next year's income
5 (i.e., the income in the year following the valuation date). Direct capitalization requires no
6 assumptions regarding the pattern of income, change in value of the property, investment holding
7 period, or the return on and return of (i.e., capital recovery) of the investment. In essence, the
8 method simply expresses value as a ratio between income and a rate or multiplier.

9 The following sections address (1) estimating the income from which an overall capitalization or
10 income multiplier can be derived, (2) derivation of a gross income multiplier from sales data, (3)
11 derivation of an overall capitalization rate from sales data, (4) derivation of an overall
12 capitalization rate using the band of investment, and (5) valuation using a gross income multiplier
13 or overall capitalization rate.

14 **ESTIMATING THE INCOME FROM WHICH AN OVERALL RATE OR INCOME MULTIPLIER IS** 15 **DERIVED**

16 As previously discussed, when estimating the income to be capitalized, income and expenses are
17 forecast on a "market" basis. However, when deriving an income multiplier or capitalization rate,
18 the relevant income and expenses are those anticipated by the buyer, which may or may not be the
19 same as market income and expenses. The objective when deriving a rate or multiplier is to
20 ascertain the buyer's anticipated rate of return, and for this only the buyer's anticipated income
21 and expenses are relevant.⁶⁰

22 As previously discussed, when estimating the income to be capitalized, ad valorem property
23 taxes are not deducted as an expense, because to do so would assume that the value being
24 estimated is already known. However, when deriving a capitalization rate, this reasoning does not
25 apply. Consequently, the buyer's anticipated property tax expense is deducted from the income
26 stream when deriving a rate. Thus, when deriving a rate or multiplier, income is processed as
27 follows:

	Anticipated Potential Gross Income (APGI)
-	Anticipated Vacancy and Collection Losses
=	Anticipated Effective Gross Income (AEGI)
-	Anticipated Operating Expenses
=	Anticipated Net Income Before Recapture and Property Taxes (ANIBR&T)
-	Anticipated Property Taxes
=	Anticipated Net Income Before Recapture (ANIBR)

28

⁶⁰ The only way to determine a buyer's anticipated income and expenses is to ask the buyer.

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1 DERIVING A GROSS INCOME MULTIPLIER FROM SALES DATA

2 Rule 8(i) addresses gross income multipliers:

3 Income may be capitalized by the use of gross income, gross rent, or gross
4 production multipliers derived by comparing sales of closely comparable properties
5 (adjusted, if necessary, to cash equivalents), with their gross incomes gross rents,
6 or gross production.

7 To derive a gross income multiplier, the sale price is divided by the buyer's anticipated gross
8 income. The sale must meet the conditions of a market value transaction set forth in section
9 110(a) ("willing buyer, willing seller," "open market," etc.) and should be adjusted, if necessary,
10 for cash equivalence. Thus,

$$\text{GIM} = \frac{\text{SP}}{\text{APGI}}$$

11

where

GIM = gross income multiplier
SP = cash equivalent selling price of the property
APGI = buyer's anticipated potential gross income for the property
(which may differ from its actual income or market income)

12

EXAMPLE 4-8: Gross Income Multiplier

A property sold for \$1,000,000 on a cash equivalent basis. The buyer's anticipated gross income was \$125,000. A gross income multiplier is derived from this transaction as follows:

$$\begin{aligned}\text{GIM} &= \text{SP} / \text{APGI} \\ \$1,000,000 / \$125,000 &= \mathbf{8.0}\end{aligned}$$

13

14 When appraising smaller residential properties, a gross *rent* multiplier is commonly used because
15 such properties typically have no, or very little, non-rental income. A gross *income* multiplier is
16 used for properties (e.g., large apartment projects) that produce significant non-rental income
17 attributable to the real property (e.g., income from parking, laundry facilities, or rental of storage
18 areas, etc.). Gross production multipliers, mentioned in rule 8, are multipliers based on measures
19 other than income. They are seldom used in real property appraisal.

20 DERIVING AN OVERALL CAPITALIZATION RATE FROM SALES DATA

21 Rule 8(g)(1) states that a capitalization rate may be developed:

22 By comparing the net incomes that could reasonably have been anticipated from
23 recently sold comparable properties with their sales prices, adjusted, if necessary,
24 to cash equivalents (the market-derived rate). This method of deriving a

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1 capitalization rate is preferred when the required sales prices and incomes are
2 available.

3 Subtracting the buyer's anticipated expenses, including anticipated property taxes, from
4 anticipated effective gross income produces anticipated net income before recapture. The overall
5 capitalization rate (R_o) derived from sales data is the buyer's anticipated net income before
6 recapture divided by the sale price. Again, the sale price should meet the conditions of a market
7 value transaction according to subdivision (a) of section 110 and be adjusted, if necessary, for
8 cash equivalence. Thus,

$$R_o = \frac{ANIBR}{SP}$$

9 where

- R_o = overall capitalization rate derived from sales data;
- ANIBR = buyer's anticipated net income before recapture for the property,
which may differ from actual or market income; and
- SP = cash equivalent sale price.

10

EXAMPLE 4-9: Overall Capitalization Rate

A property sold for \$800,000 on a cash equivalent basis. The buyer's anticipated potential gross income is \$120,000. Anticipated vacancy and collection losses are 3% of anticipated potential gross income. Anticipated operating expenses, including anticipated property taxes, are \$40,000. The overall capitalization rate (R_o) derived from this transaction is as follows:

Anticipated potential gross income	\$120,000
Less: Anticipated vacancy and collection losses (3%)	<u>3,600</u>
Anticipated effective gross income	\$116,400
Less: Anticipated operating expenses (incl. ant. prop taxes)	<u>40,000</u>
Anticipated net income before a deduction for recapture	<u>\$ 76,400</u>

$$R_o = ANIBR / SP \\ = \$76,400 / \$800,000 = 0.0955, \text{ or } \mathbf{9.55\%}$$

11 This rate expresses the relationship between the value of the entire property and the income
12 stream. An overall rate should only be used in the appraisal of properties that are comparable to
13 the properties from which the rate was derived. The ratio of land to improvement value and the
14 remaining life of the improvements are particularly important aspects of comparability.
15

16 DERIVING AN OVERALL CAPITALIZATION RATE USING THE BAND OF INVESTMENT

17 Rule 8 (g)(2) provides that a capitalization rate may also be developed by deriving a weighted
18 average of the capitalization rates for debt and equity, with the weights based on the typical
19 proportions of debt and equity—that is, based on a typical loan-to-value ratio for the property
20 being appraised.

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1 **Band of Investment**

2 This technique is called the band of investment, which has been described more generally as "a
3 technique in which the capitalization rates attributable to components of a capital investment are
4 weighted and combined to derive a weighted-average rate attributable to the total investment."
5 The "bands" in this case are based on the components of financing—that is, debt and equity.⁶¹
6 Because most properties are purchased with both debt and equity capital, the overall capitalization
7 rate must satisfy the market return requirements of both debt and equity interests.

8 **Debt Capitalization Rate**

9 As previously discussed, the debt capitalization rate (R_M) is the ratio of the annual debt service to
10 the principal amount of a loan. In real estate appraisal, it is called the mortgage constant. The
11 mortgage constant is a function of the interest rate, the frequency of amortization, and the term of
12 the loan. Given prevailing mortgage terms for the type of property being appraised, the mortgage
13 constant can be readily calculated using a financial calculator or obtained from published financial
14 tables.

15 **Equity Capitalization Rate**

16 The equity capitalization rate (R_E) is the ratio between the buyer's anticipated pre-tax cash flow
17 to equity (typically, for the next year) and the equity investment in the property.⁶² The pre-tax
18 cash flow to equity is the buyer's anticipated net income before recapture less the annual debt
19 service. The equity investment is the total property value less the outstanding loan balance.
20 Equity capitalization rates can be derived from comparable sales or, secondarily, by surveying
21 investors.⁶³

22 The formula for developing an overall capitalization rate using the band of investment can be
23 expressed as

$$24 \quad R_o = M \times R_M + (1-M) \times R_E$$

where

- M = debt proportion;
- (1-M) = equity proportion;
- R_M = debt capitalization rate (mortgage constant); and
- R_E = equity capitalization rate.

25

⁶¹ *The Dictionary of Real Estate Appraisal*, Third Edition, Appraisal Institute, 1993, 27. A band of investment capitalization rate can also be developed using the physical components of a property (i.e., land and improvements), which is an important feature in the land and building residual techniques.

⁶² The equity capitalization rate is also called the cash-flow rate, the cash-on-cash rate, or the equity dividend rate.

⁶³ Thus:

Annual pre-tax cash flow to equity = anticipated net income before recapture – annual debt service

Equity capitalization rate = annual pre-tax cash flow to equity / equity investment

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EXAMPLE 4-10: Band of Investment

A typical loan for the property being appraised has a term of 30 years, a loan to value ratio of 75%, fully amortized level payments, and an interest rate of 10%. The equity capitalization rate, estimated from comparable sales, is 5%. An overall capitalization rate (R_o), using the band of investment, is developed as follows:

$$\begin{aligned}R_o &= M \times R_M + (1-M) \times R_E \\ &= 0.75 \times 0.105309 + (1 - 0.75) \times 0.05 \\ &= 0.078982 + 0.0125 \\ &= 0.091482, \text{ say } 0.0915, \text{ or } 9.15\%\end{aligned}$$

In an alternative format:

Capital Source	Weighting		R_M or R_E		Weighted Amount
Debt	0.75	x	0.105309	=	0.0789820
Equity	0.25	x	0.05	=	0.0125
R_o (overall rate) =					0.091482, say 0.0915 or 9.15%

1

2 OTHER METHODS OF DERIVING AN OVERALL CAPITALIZATION RATE

3 In addition to derivation from comparable sales and the band of investment using financial
4 components, standard real estate texts discuss the following additional methods for deriving an
5 overall capitalization rate: (1) derivation using an effective gross income multiplier and net income
6 ratios; (2) derivation by the band of investment using physical property components (i.e., land and
7 improvements; (3) derivation using a debt coverage formula; and (4) derivation using yield
8 capitalization formulas.

9 Method (1) uses "standard" operating expenses to derive an overall rate from a transaction
10 wherein anticipated operating expenses are not available. This is not always reliable because when
11 deriving a rate the buyer's anticipated expenses are relevant, not "standard" expenses. Method (2)
12 is difficult to apply because market-derived land and improvement (i.e., building) capitalization
13 rates are extremely difficult to obtain. It is discussed in a later section addressing residual
14 techniques. Method (3) uses a typical *debt coverage ratio* in conjunction with the mortgage
15 constant and the loan-to-value ratio to derive an overall capitalization rate.

$$16 \quad R_o = DCR \times R_M \times M$$

17 where

R_o = overall capitalization rate;

DCR = debt coverage ratio;

R_M = mortgage constant; and

M = loan-to-value ratio.

18 Method (4) is actually a form of yield capitalization and is discussed in the next section.

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1 DIRECT CAPITALIZATION: VALUATION

2 Valuation Using a Gross Income Multiplier

3 The formula for valuing property using a gross income multiplier requires multiplying the
4 estimated market potential gross income (MPGI) by a gross income multiplier derived from the
5 sales of comparable properties. Note that market income, not the buyer's anticipated income, is
6 used. Thus,

$$7 \quad MV = GIM \times MPGI$$

where

- MV = indicated market value of the subject property;
GIM = gross income multiplier selected from multipliers derived from
comparable properties; and
MPGI = market potential gross income of the subject property.

8

EXAMPLE 4-11: Valuation Using a Gross Income Multiplier

The estimated annual market potential gross income of the subject property is \$720,000. Based on an analysis of gross income multipliers derived from comparable properties, a gross income multiplier of 6.25 is selected to value the subject property. The market value of the subject property is estimated as follows:

$$\begin{aligned} MV &= GIM \times MPGI \\ &= 6.25 \times \$720,000 = \mathbf{\$4,500,000} \end{aligned}$$

9

10 Gross income multipliers are easily applied, but they should be used only when the comparable
11 sales are very similar to the subject property. Thus, each comparable sale must be comparable to
12 the subject property in terms of its income potential, expense ratios, location, land to building
13 ratio, and physical characteristics.

14 When using a GIM, an appraiser capitalizes the market potential gross income of the subject
15 property before allowing for property related expenses. Any variance in the relationship of net
16 income to gross income, between the subject property and each comparable sale, will not be
17 reflected in the resulting value estimate. Such a variance may distort the value estimate.

18 Valuation Using an Overall Capitalization Rate

19 The formula for valuing property by direct capitalization using an overall capitalization rate is to
20 divide the estimated market net income before recapture and taxes by the sum of the overall rate
21 obtained from the sales of comparable properties and the effective ad valorem property tax rate.
22 As previously discussed, since ad valorem property taxes cannot be deducted as an expense in
23 arriving at the income to be capitalized, the capitalization rate includes both the overall
24 capitalization rate derived from comparable sales or the band of investment and an added
25 component for ad valorem property taxes. Thus:

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$$MV = MNIBR\&T / R_o + ETR$$

where

MV = indicated market value of the subject property;

MNIBR&T = market net income before recapture and property taxes of the subject property;

R_o = overall capitalization rate derived from comparable sales or the band of investment; and

ETR = effective ad valorem property tax rate.

EXAMPLE 4-12: Valuation Using an Overall Capitalization Rate

The subject property's estimated market net income before recapture and property taxes is \$780,000. The overall capitalization rate selected from OAR's derived from comparable sales (or the band of investment) is 9.50%. The effective ad valorem property tax rate is 1.10%. The market value of the property is estimated as follows:

$$\begin{aligned} MV &= MNIBR\&T / R_o + ETR \\ &= \$780,000 / 0.095 + 0.011 \\ &= \$780,000 / 0.106 \\ &= \$7,358,490 \text{ say } \$7,355,000 \end{aligned}$$

Although overall rates account for differences in property related expenses, they also require the comparable sales to be very similar to the subject property. Thus, each comparable sale must be comparable to the subject property in terms of its income potential, location, land to building ratio, and physical characteristics.

When using an OAR, an appraiser capitalizes the market net income before recapture and property taxes of the subject property—allowing for property related expenses other than property taxes. Any variance in the relationship of net income to gross income, between the subject property and each comparable sale, will be reflected in the resulting value estimate.

VALUATION OF PROPERTIES NOT AT STABILIZED OCCUPANCY

General

A property in stabilized condition has reached the level of utility for which it was designed. For income-producing property this generally means *stabilized occupancy*. Stabilized occupancy is a level of occupancy that is expected to continue over the remaining economic life of the property.

A property reaches stabilized occupancy when the vacancy rate has reached a state of equilibrium—that is, when the vacancy rate is not expected to increase or decrease dramatically over the foreseeable future. Typically, stabilized occupancy reflects the investor's anticipated rent loss due to average market vacancy and tenant turnover. This is sometimes called "normal vacancy."

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1 A lower level of occupancy resulting from conditions of supply and demand or other transitory
2 factors is not stabilized occupancy. Situations associated with a non-stabilized occupancy level
3 may include new construction prior to initial lease-up, significant loss of tenants in a soft or
4 overbuilt market, and properties undergoing significant renovations.

5 Occupancy level has a significant effect on market value. All else being equal, a property at
6 stabilized occupancy is more valuable than a property at a lower level of occupancy. Consider two
7 otherwise identical properties. One is at a stabilized occupancy of 90 percent (i.e., the normal
8 vacancy), the other at a non-stabilized occupancy of 40 percent. Most buyers would pay more for
9 the property at the higher, stabilized occupancy level. The property with the lower occupancy
10 level would sell for less because of the additional costs most prudent buyers would anticipate as
11 necessary to bring it to stabilized occupancy. If a property is at a non-stabilized occupancy level,
12 the market value estimate should reflect this condition.

13 The direct capitalization method of the income approach assumes that the income to be
14 capitalized is at a stabilized level and does not reflect transitory conditions. It also assumes that
15 the comparable sales properties from which capitalization rates or income multipliers are derived
16 are also operating at stabilized occupancy. Direct capitalization should only be used when these
17 assumptions are met.

18 **Methods for Valuing Property Not at Stabilized Occupancy**

19 The value of a property not at stabilized occupancy can be estimated using the following methods:

- 20 1. Estimate a hypothetical value of the subject property as if stabilized using the comparative
21 sales approach and/or direct capitalization, and then deduct a market-derived discount
22 from the value as if stabilized to estimate the market value of the property in its current,
23 non-stabilized condition.
- 24 2. Use discounted cash flow analysis to directly estimate the value of the property at its
25 current (i.e., non-stabilized) level of occupancy. This requires estimates of the periodic
26 cash flows during the absorption period necessary to reach stabilized occupancy and an
27 estimate of the terminal, or reversionary, value of the property at the point in time
28 stabilized occupancy is reached.
- 29 3. Use the comparative sales approach to directly value the property in its non-stabilized
30 condition. This requires an adequate number of comparable sales properties that, in
31 addition to being comparable in terms of physical and locational characteristics, also have
32 a level of occupancy similar to the subject property.

33 Method 2 is simply an application of discounted cash flow analysis to a property not at stabilized
34 occupancy. Method 3 is simply a special application of the comparative sales approach. Method 1
35 is discussed in greater detail below.

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1 Method 1 compares the estimated cash flows of the subject property as if stabilized with the
2 estimated cash flows during the absorption period required to reach stabilized occupancy.
3 Typically, the two sets of cash flows will differ because of rent loss, leasing commissions, landlord
4 improvements, and different operating expenses paid by the owner during lease-up vis-a-vis those
5 at stabilized occupancy. Rent loss, leasing commissions, and landlord improvements are all added
6 costs to the property owner relative to stabilized occupancy. Operating expenses, some of which
7 generally increase with the level of occupancy, may be lower for a property that is not at stabilized
8 occupancy. The present value sum of the incremental cost for each year is subtracted from the
9 value as if stabilized in order to estimate the non-stabilized, or as is, value. The method involves
10 the following steps:

- 11 1. Estimate a hypothetical value of the subject property as if stabilized on the valuation date
12 using the comparative sales approach or the direct capitalization method of the income
13 approach.
- 14 2. Estimate the amount of space to be absorbed. This requires an estimate of the "excess
15 vacancy"—that is, the difference between the current, non-stabilized level of occupancy
16 and stabilized occupancy. The average excess vacancy per period is half the sum of the
17 beginning excess vacancy and the ending excess vacancy. This assumes that the space is
18 absorbed uniformly during the period. The average excess vacancy is used to estimate the
19 rental loss.
- 20 3. Estimate the absorption period and the pattern of absorption. The absorption period is the
21 expected length of time required to achieve stabilized occupancy. The length and pattern
22 of absorption should be based on current and forecast market conditions for the subject
23 property.
- 24 4. Estimate the market rent for the subject property over the absorption period.
- 25 5. Estimate the rent loss for each period during absorption. This is the average excess
26 vacancy per period multiplied by the market rent.
- 27 6. Estimate leasing commissions and any other marketing costs associated with achieving
28 stabilized occupancy. The amount and payment schedule for leasing commissions may
29 vary depending on the conventions of the respective market.
- 30 7. Estimate the cost of landlord improvements (also called tenant improvements) paid for by
31 the landlord as part of the lease contract.
- 32 8. Estimate any difference in operating expenses paid by the property owner over the
33 absorption period relative to expenses at stabilized occupancy. The estimate of differential
34 expenses should take into account the structure of the lease (i.e., gross or net). For
35 example, under a gross lease the owner pays all operating expenses, and variable expenses
36 may be less than those at stabilized occupancy. In effect, lower expenses at non-stabilized
37 occupancy represent a "cash inflow" to the owner in this analysis.

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- 1 9. Estimate the differential cash flows for each year of the absorption period (i.e., the
2 difference between the cash flows assuming stabilized occupancy and those during the
3 period required to reach stabilized occupancy, or the sum of 5, 6 7, and 8.
- 4 10. Calculate the present value sum of these cash flows using an appropriate discount rate. If
5 the absorption rate is properly forecast, the risk of the cash flows during the absorption
6 period should not exceed the risk of cash flows with a stabilized property. The present
7 value sum is the estimated adjustment amount. If the absorption period is short, the
8 adjustment could be made without discounting the cash flows; this, of course, results in a
9 slightly larger adjustment.
- 10 11. Subtract the adjustment amount from the estimated stabilized value of the subject
11 property. The result is the estimate of subject property's non-stabilized value.
- 12 The above is summarized in the following worksheet, which shows a 3-year absorption period.

EXAMPLE 4-13: Method for Valuing Property Not at Stabilized Occupancy			
	Year 1	Year 2	Year 3
Beginning Excess Vacancy			
Ending Excess Vacancy			
SF Leased			
Avg. Excess Vacancy			
Rent Loss			
Leasing Comm. and other Marketing Expenses			
Landlord Improvements			
Differential Operating Expenses			
Total Income Loss			

13

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EXAMPLE 4-14: Sample Valuation of a Property Not at Stabilized Occupancy

Assume the Following Property Data:

Total Rental Area	100,000 sf
Stabilized Occupancy	90,000 sf
Current Occupancy	60,000 sf
Excess Vacancy	30,000 sf
Market Rent	\$30/sf/year (gross basis)
Landlord Improvements	\$20/sf
Leasing Comm. ¹	6% of first year's rent
Absorption Period	3 years
Differential Expenses ²	1st year: <\$75,000>; 2nd year: <\$45,000>; 3rd year: <\$15,000>
Est. Stabilized Value ³	\$16,715,000

¹This may vary by market.

²That is, operating expenses will be lower by these estimated amounts relative to expenses at stabilized occupancy.

³By comparative sales and/or direct capitalization.

Adjustment Worksheet:

	Year 1	Year 2	Year 3
Beginning Excess Vacancy (SF)	30,000	20,000	10,000
Ending Excess Vacancy	20,000	10,000	0
SF Leased	10,000	10,000	10,000
Avg. Excess Vacancy (SF)	25,000	15,000	5,000
Rent Loss ⁴	\$750,000	\$450,000	\$150,000
Leasing Comm. and other Marketing Expenses	24,000	24,000	24,000
Landlord Improvements	200,000	200,000	200,000
Differential Operating Expenses (minus)	<u>= 75,000</u>	<u>= 45,000</u>	<u>= 15,000</u>
Total Income Loss	\$899,000	\$629,000	\$359,000

⁴For example, for year 1, 25,000 SF x \$30/SF = \$750,000

Present Value Calculations (all cash flows are assumed to occur at year's end):

Year	Cash Flow	x	PV Factor	=	PV
1	\$899,000	x	0.892857	=	\$802,678
2	\$629,000	x	0.797194	=	501,434
3	\$359,000	x	0.711780	=	<u>255,529</u>
Total Present Value					\$1,559,641

Estimated Value of Subject Property:

Estimated Value of Subject Property =	Estimated Stabilized Value	–	Adjustment
=	\$16,715,000	–	\$1,559,641
=	\$15,155,359		say \$15,155,000

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YIELD CAPITALIZATION

1

2 In yield capitalization, future income is discounted into an estimate of present value by either
3 discounting each future income payment at a specified yield, or discount rate or developing an
4 overall capitalization rate that explicitly reflects the investment's income pattern, value change,
5 and yield rate. The primary application of yield capitalization is discounted cash flow (DCF)
6 analysis. A secondary application of yield capitalization involves yield capitalization formulas,
7 which are used to develop an overall capitalization rate given assumptions regarding the pattern of
8 income and a yield rate.

9 The following sections address (1) DCF analysis and yield capitalization formulas in greater detail,
10 (2) yield rate derivation, and (3) valuation using discounted cash flow analysis and yield
11 capitalization formulas.

12 DISCOUNTED CASH FLOW ANALYSIS

13 In DCF analysis, each future income payment (cash flow) is separately discounted to a present
14 value amount, and these amounts are then summed to arrive at an indicator of total property
15 value. Since each year's cash flow is discounted separately, the forecast can reflect expenditures as
16 they are expected to occur, making DCF analysis appropriate for irregular as well as regular
17 patterns of cash flows. DCF analysis is succinctly described as follows:⁶⁴

18 Property value = Present value of annual cash flows + Present value of reversion

19 The primary steps in DCF analysis are:

- 20 1. Determine a typical holding period for the type of property being appraised based on
21 market behavior;
- 22 2. Forecast the future cash flows over the holding period, including the reversionary cash
23 flow;
- 24 3. Select an appropriate yield/discount rate, given the risk of the cash flows;
- 25 4. Convert each cash flow into its present value amount through the discounting process;
- 26 5. Sum these present values to arrive at an estimate the value of the property.

⁶⁴ Or, more formally, in the following equation:

$$PV_0 = \frac{CF_1}{(1+Y)^1} + \frac{CF_2}{(1+Y)^2} + \dots + \frac{CF_t}{(1+Y)^t} + \dots + \frac{CF_n}{(1+Y)^n} = \sum_{t=1}^n \frac{CF_t}{(1+Y)^t}$$

where

- PV₀ = the present value, or estimated market value, of the property;
- CF_t = the expected cash flow at time t, including any reversionary cash flow;
- Y = the yield/discount rate; and
- n = the number of periods over which the cash flows are expected to be generated.

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1 As with all capitalization methods or techniques, the assumptions concerning the key variables on
2 which the estimated value is based are more important than the mathematical aspects of the
3 process. In DCF analysis, these assumptions involve the pattern of annual cash flows, the amount
4 of the reversionary cash flow, and the yield/discount rate used to discount the cash flows to
5 present value. The actual discounting is done using compound interest and/or annuity factors
6 corresponding to the selected yield rate. The computational aspect, given financial calculators and
7 spreadsheet software, is a relatively insignificant part of the analysis.

8 The present value of the reversion often represents a significant portion of the total value
9 estimate for the property being appraised in DCF analysis. The reversion value is generally based
10 on the estimated net proceeds from the sale of the property at the end of the expected holding
11 period. The most common method for estimating the value of the reversion uses direct
12 capitalization. As discussed earlier, in direct capitalization a single year's income, typically the
13 expected first year's income, is capitalized into a value estimate using an overall capitalization
14 rate (R_o). Direct capitalization can also be used to estimate a reversionary value by capitalizing
15 the forecast income (i.e., NIBR&T) for the year following the end of the expected holding period.
16 For example, if the expected holding period were 5 years, the forecast income from year 6 would
17 be capitalized.⁶⁵ When an overall capitalization rate is used within DCF analysis in this manner,
18 it is called a terminal capitalization rate and the estimated value is sometimes called a terminal
19 value.

20 A latter section contains a valuation example using DCF analysis.

21 YIELD CAPITALIZATION FORMULAS AND INCOME MODELS

22 In addition to discounted cash flow analysis, yield capitalization includes a number of other
23 techniques for converting income into value. Yield capitalization formulas (also called "property
24 models") are a form of yield capitalization involving the development of an overall capitalization
25 rate (R_o) given a specified yield rate (Y_o) and certain assumptions regarding expected changes in a
26 property's income and/or value. The Ellwood mortgage equity formula, for example, is a yield
27 capitalization formula that incorporates financing considerations.

28 In addition to yield capitalization formulas, yield capitalization also includes a related group of
29 techniques called "income models." Whereas yield capitalization formulas, or property models,
30 can incorporate expected changes in property value, income models can only be used to value
31 "standard" types of income streams such as a single income payment, a level perpetual income
32 stream, a level terminating income stream, and others; any property reversion must then be
33 separately valued. Essentially, income models are just applications of standard compound interest
34 and annuity factors and time value of money concepts put in a context of valuation.

⁶⁵ Consider the point of view of a hypothetical buyer for the property being appraised at the end of the expected holding period. That buyer, using direct capitalization, would estimate the value of the property by dividing the income for the following year by an overall capitalization rate.

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1 The following two sections discuss the basic yield capitalization formula and the Ellwood
2 mortgage equity formula. In a latter section, valuation examples involving both yield capitalization
3 formulas and income models will be presented.

4 **Basic Yield Capitalization Formula**

5 An appraiser may wish to base a value estimate on the assumption that the value of the subject
6 property will change by a certain percentage amount (annual or total) over a given holding period.
7 Yield capitalization formulas provide a way of solving problems of this type; they might be called
8 percentage change in value formulas. The value estimate produced using a yield capitalization
9 formula is the same as that produced by discounting a set of cash flows based on the same
10 assumptions. That is, a value estimate based on a yield capitalization formula can always be
11 proved through DCF analysis.⁶⁶

12 Capitalization using yield capitalization formulas resembles direct capitalization because the
13 conversion of income to value is done in one step (using the basic capitalization formula $V = I/R$);
14 however, the derivation of the overall capitalization rate is completely different. In direct
15 capitalization, R_o is derived directly from market data, without explicitly considering the income
16 pattern and the return on and return of investment.

17 The basic yield capitalization formula is:

18
$$R_o = Y_o - \Delta a,$$

where

R_o = overall capitalization rate

Y_o = total property yield rate

Δ = change in property value over the holding period

a = annual conversion factor such as an annual sinking fund factor
or other annual capital recovery rate

19 If property value increases, Δa is positive and the overall yield rate, Y_o , is greater than the overall
20 capitalization rate, R_o ; if property value decreases, Δa is negative and the yield rate, Y_o , is less
21 than the overall rate, R_o .

22 In a special case, if both income and value are expected to change at a constant annual rate, the
23 annual compound rate of change, CR , replaces Δa in the general formula above, and an overall
24 capitalization rate can be obtained using the following formula:

25
$$R_o = Y_o - CR.$$

⁶⁶ However, note the difference in logic compared to discounted cash flow (DCF) analysis. In DCF analysis a forecast set of cash flows, including the reversionary cash flow, is discounted at a given yield/discount rate. With a yield capitalization formula, typically, a beginning cash flow, percentage change in income/value (not a dollar amount), and yield rate are given, from which an overall rate is derived to value the property.

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1 The basic yield capitalization formula will be used in a latter section concerning valuation
2 applications.

3 **Mortgage Equity Formula**

4 Mortgage financing creates both a mortgage (i.e., debt) and an equity interest in the property, and
5 each of these interests can be analyzed and valued separately. The total value of a property is the
6 sum of the values of these two financial components. *Mortgage-equity analysis*, broadly defined,
7 refers to any income capitalization or investment analysis procedure that explicitly considers how
8 mortgage terms and equity yield requirements affect the value of a property. Mortgage-equity
9 analysis thus includes both the band of investment procedure for estimating a capitalization rate
10 and discounted cash flow analysis when that technique is used to separately value cashflows to the
11 equity interest.

12 A well-known application of mortgage equity analysis is the use of the mortgage-equity (or
13 Ellwood) formula for developing an overall capitalization rate. The Ellwood formula is similar in
14 kind to the basic yield capitalization formula discussed earlier, but is different in two ways: first, it
15 requires a given *equity* yield rate (Y_E) rather than an *overall* yield rate (Y_O); and second, it
16 incorporates assumptions regarding the terms of financing (interest rate, length of loan, loan-to-
17 value ratio) in addition to those regarding an expected holding period and change in property
18 income and/or value. Similar to the basic yield capitalization formula, the mortgage equity formula
19 provides a direct method of solving for the present value of the property, given the set of
20 assumptions described above, even though both the future value of the property (i.e., the
21 property's expected value at the end of the holding period) and the loan amount are based on the
22 property's present value. The basic mortgage-equity formula is as follows:

$$23 \quad R_O = Y_E - M(Y_E + P 1/S_N - R_M) - \Delta_O 1/S_n$$

24 where

- R_O = overall capitalization rate
- Y_E = equity yield rate
- M = loan-to-value
- P = percentage of loan paid off
- $1/S_n$ = sinking fund factor (SFF) at the equity yield rate
- R_M = mortgage capitalization rate (mortgage constant)
- Δ_O = percentage change in total property value over the holding period.

25
26 The basic mortgage-equity formula can be used only with a level income stream. However, it can
27 be modified to accommodate changes in income using income stabilization factors (so-called "J"
28 and "K" factors). A series of tables containing solutions for many of the variables needed to solve
29 the basic Ellwood formula and its refinements are also available, although these tables are now
30 largely obsolete given programmable financial calculators and spreadsheet software.⁶⁷

⁶⁷ An alternative to the algebra-based Ellwood approach is an arithmetic analogue developed by Charles Akerson known as the "Akerson format." Given the same assumptions, both methods produce the same results.

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EXAMPLE 4-15: Mortgage Equity Formula

Assume a level income stream for 5 years, an increase in the value of the property of 15 percent over the 5 year projection period, a loan at 10.25 percent for 30 years, loan-to-value ratio of 75 percent, and a 15 percent before-tax equity yield rate. Derive the overall capitalization rate.

$$R_o = Y_E - M(Y_E + P 1/S_n - R_M) - \Delta_o 1/S_n$$

$$Y_E = 0.15$$

$$1/S_n = 0.148316$$

$$M = 0.75$$

$$R_M = 0.107532$$

$$P = 0.032688$$

$$\Delta_o = 0.15.$$

$$\begin{aligned} R_o &= 0.15 - 0.75 [0.15 + (0.032688)(0.148316) - 0.107532] - 0.15(0.148316) \\ &= 0.092266 \\ &= \mathbf{9.23\%} \end{aligned}$$

1

2 DERIVING YIELD, OR DISCOUNT, RATES

3 Estimating the Income from which Yield, or Discount, Rates are Derived

4 When deriving yield/discount rates, the level and type of income used is the same as was discussed
5 in an earlier section concerning the derivation of an overall rate or income multiplier. That is, the
6 buyer's anticipated income and expenses are used, and the income is processed to the level of
7 anticipated net income before recapture. With the exception of ad valorem property taxes,
8 allowable income and expenses are the same as when estimating the income to be capitalized.
9 Thus, when deriving a yield/discount rate, income is again processed as follows:

	Anticipated Potential Gross Income (APGI)
-	Anticipated Vacancy and Collection Losses
=	Anticipated Effective Gross Income (AEGI)
-	Anticipated Operating Expenses
=	Anticipated Net Income Before Recapture and Property Taxes (ANIBR&T)
-	Anticipated Property Taxes
=	Anticipated Net Income Before Recapture (ANIBR)

10

11 Deriving Discount Rates from Sales Data

12 As previously discussed, rule 8(g)(1) describes a method for developing a capitalization rate (a
13 "market-derived" rate) from actual sales of properties. While subdivision (g)(1) is in the context
14 of direct capitalization, the language can also be applied to yield capitalization. Discounted cash
15 flow (DCF) analysis can be used to derive overall yield/discount rates from sales of comparable
16 properties by calculation of the yield/discount rate that equates the present value of a buyer's
17 anticipated cash inflows from a property with its sale price. (As described later, this requires the
18 calculation of the internal rate of return (IRR) of the property's anticipated cash flows.) When
19 sufficient data are available, the preferred method of developing a yield/discount rate is from sales
20 data.

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1 Deriving a discount rate from a sale requires the following steps:

- 2 1. Determine that the sale meets the conditions of section 110(a) ("open market" conditions
3 and cash equivalency);
- 4 2. Obtain the buyer's anticipated income and expenses (i.e., the anticipated cash flows) and
5 reconstruct the buyer's anticipated income and expense data into a format consistent with
6 rule 8(c), if necessary;
- 7 3. Calculate the overall yield/discount rate that equates the present value of the buyer's
8 anticipated cash flows to the cash equivalent sale price (i.e., calculate the IRR for the
9 anticipated cash flows).

10 **Sales Data**

11 The sales from which discount rates are derived must meet the requirements of an open market
12 transaction and cash equivalency as set forth in section 110(a).

13 **Anticipated Income and Expenses**

14 In order to derive a yield rate from a sale, detailed information concerning the buyer's anticipated
15 income and expenses must be obtained. The appraiser must use the buyer's anticipated income and
16 expenses—not those of the appraiser or the "typical" market participant—in order to derive a
17 valid yield/discount rate.

18 Income should be processed to the level of anticipated net income before recapture (NIBR). In
19 addition to annual cash flows, most forecasts will include a reversionary cash flow. Allowable
20 income and expenses—with the exception of ad valorem property taxes, which are allowable as an
21 expense when deriving a rate but not when capitalizing income into a value estimate—are the
22 same as described in the earlier section regarding estimating the income to be capitalized. In many
23 cases, the data from the buyer may have to be reconstructed to restate income and expenses in
24 proper manner for property tax valuation.⁶⁸

25 **Computation of the IRR, or Yield/Discount Rate**

26 Although DCF analysis is typically used to discount future payments into an estimate of present
27 value given a yield/discount rate, it can also be used to solve for a yield/discount rate given a sale
28 price and a set of future cash flows. When it is used for this purpose, DCF analysis is called
29 internal rate of return (IRR) analysis.

30 The IRR can be defined in a general manner as the yield/discount rate that equates the present
31 value of expected cash inflows to the present value of expected cash outflows. In the context
32 here, the IRR is the yield/discount rate that equates the present value of the anticipated income
33 (cash flows) from the property with the cash equivalent sale price of the property. Thus:

34
$$\text{Cash equivalent sale price of the property} = \text{PV of anticipated income (cash flows)}$$

⁶⁸ See the previous section "Estimating the Income to be Capitalized."

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1 The calculation of the IRR (that is, the yield/discount rate) is typically done with the assistance of
2 a financial calculator or spreadsheet software. Using anticipated net operating income before
3 recapture, the rate derived is a total property yield rate (Y_o).

EXAMPLE 4-16: Calculation of IRR

The sale price of the property is \$2,000,000. The buyer's anticipated cash flows, over a 5 year anticipated holding period are as stated below, including an expected net proceeds of \$2,400,000 from the sale of the property at the end of the holding period. What is the internal rate of return, that is, the yield/discount rate derived from the sale?

	Year 1	2	3	4	5
APGI	280,000	290,000	300,000	310,000	320,000
Ant. V&C Loss	<u>20,000</u>	<u>21,000</u>	<u>22,000</u>	<u>23,000</u>	<u>24,000</u>
AEGI	260,000	269,000	278,000	287,000	296,000
Ant. Operating Exp.	<u>50,000</u>	<u>55,000</u>	<u>60,000</u>	<u>65,000</u>	<u>70,000</u>
ANIBR&T	210,000	214,000	218,000	222,000	226,000
Ant. Prop. Taxes	<u>10,000</u>	<u>10,000</u>	<u>10,000</u>	<u>10,000</u>	<u>10,000</u>
ANIBR	200,000	204,000	208,000	212,000	216,000
Reversion Value					2,400,000

The internal rate of return is the rate at which the sum of the present values of 200,000, 204,000, 208,000, 212,000, and 2,616,000 (which includes the 2,400,000 reversion at the end of year 5) is equal to the sale price of \$2,000,000. Using a financial calculator, the IRR calculated from these cash flows is **13.41%**. This market derived discount rate reflects the return expectations of market participants and can be used to discount an income stream of comparable risk.

4 Deriving Yield Rates Using the Band of Investment

6 In a previous section, an overall capitalization rate (R_o) was derived using the band of investment
7 technique. As discussed, the band of investment is based on the premise that a capitalization rate
8 can be derived using a weighted average of the different financing "bands," or components, used
9 in a real estate investment—namely, the equity component and the mortgage component.

10 The band of investment can also be used to derive an overall yield rate (Y_o). Recall that a
11 capitalization rate must provide for both a return on and a return of the investment while a yield
12 rate provides for only the return on the investment (with the return of the investment, or capital
13 recovery, typically provided for in the compound interest or annuity factor used in conjunction
14 with the yield rate). In the case of an overall capitalization rate derived using the band of
15 investment, the return of the investment is provided for in the amortization component of the
16 mortgage constant (R_M) and, implicitly, in the equity dividend rate (R_E) derived from the market.
17 Since a yield rate does not provide for return of the investment, the parameters used in the band
18 of investment when estimating a yield rate are slightly different from the parameters used when
19 estimating an overall capitalization rate. Instead, of using the mortgage constant for the debt
20 component, the interest rate (I) on the loan is used; instead of using an equity capitalization rate,
21 an equity yield rate (Y_E) is used. Thus:

$$22 \quad Y_o = M \times I + (1-M) \times Y_E$$

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where

- M = debt proportion;
- I = interest rate on the mortgage; and
- (1-M) = equity proportion;
- Y_E = equity yield rate.

1
2 Mortgage interest rates are available from a variety of sources. However, an equity yield rate is
3 much more difficult to obtain; and this is the basic weakness of the method. Also, if an equity
4 yield rate can be obtained from market data, usually an overall yield rate can also be obtained. If
5 this is the case, there is not much point in deriving an overall yield rate using the band of
6 investment. The next section discusses a technique closely related to the band of investment that
7 uses capital market data to estimate an equity yield rate.

EXAMPLE 4-17: Deriving a Yield Rate Using the Band of Investment

A typical loan for the property being appraised has an annual interest rate of 10%. A typical loan-to-value ratio is 0.75. The equity yield rate, derived from comparable sales, is 18%. An overall yield rate (Y_O), using the band of investment, is developed as follows:

$$\begin{aligned} Y_O &= M \times I + (1-M) \times Y_E \\ &= 0.75 \times 0.10 + (1 - 0.75) \times 0.18 \\ &= 0.75 \times 0.10 + 0.25 \times 0.18 \\ &= 0.07500 + 0.0450 \\ &= 0.1200, \text{ say } \mathbf{12.0\%} \end{aligned}$$

8 9 **Deriving a Discount Rate Using the Weighted Average Cost of Capital and Data** 10 **from the Capital Market**

11 As discussed in the previous section, a capitalization rate can be developed by weighting the
12 separate rates of return associated with the financial components of a real estate investment—that
13 is, the mortgage component and the equity component—using the band of investment technique.
14 A related concept from corporate finance is the weighted average cost of capital (WACC). A
15 WACC is developed by weighting the costs of a firm's permanent sources of financing—typically
16 common stock, bonds, and, perhaps, preferred stock—obtained from capital market data, with the
17 weights based on the relative market values of these components. This section provides an
18 overview of the WACC and a limited discussion of its applicability in property tax valuation.
19 Appendix A addresses this subject in greater detail.

20 A primary application of the WACC is in corporate capital budgeting. Capital budgeting is the
21 process by which corporations generate proposals for investment projects, evaluate the proposals,
22 and decide which ones to accept. Most capital budgeting proposals involve investments in real
23 assets—a new factory or other facility, a new product, etc. Project valuation is a key aspect of

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1 capital budgeting. To estimate a project's value, its expected cash flows are discounted at a risk-
2 adjusted discount rate, or cost of capital, for the project.⁶⁹

3 **Pure Play, or Comparable Company, Method**

4 A given firm's WACC reflects the average risk of the firm. The WACC is the minimum rate of
5 return that the firm should expect on an investment of average firm risk. A publicly traded firm
6 estimates its WACC using rate of return data relating to its own securities taken from the capital
7 market. However, an important point is that a particular project's cost of capital should reflect the
8 risk of that project, which may or may not reflect the average risk of the firm. Some projects
9 considered by a given firm will be of above-average risk; some will be of below-average risk.
10 Thus, the firm's WACC is not the correct discount rate for the firm to use when valuing a project
11 that differs from the average risk of the firm. The "pure play," or comparable company, variation
12 of the WACC method provides a means of estimating a discount rate for a specific project—that
13 is, a discount rate that matches the risk of the project. In this variation of the, the appraiser
14 attempts to find several publicly traded, single product companies in the same line of business as
15 the project or property being valued. Capital market return data from this sample of companies is
16 then used to estimate a WACC, or discount rate, for the project. It is this variation of the WACC
17 that is most often used in property tax valuation.

18 **Estimating Parameters for the WACC**

19 Estimating a WACC requires estimates for three parameters: capital structure, the cost of debt,
20 and the cost of equity. The following sections briefly describe the estimation of these parameters
21 in the comparable company variation of the WACC.

22 ***Capital Structure***

23 Capital structure refers to the relative proportions of a firm's permanent financing components,
24 with the proportions based on market values outstanding (i.e., not book values). Typically, a
25 firm's significant permanent financing components are limited to common stock, preferred stock,
26 and bonds. Data from the sample of comparable companies relating to capital structure is used to
27 derive a representative financial structure for the property being valued.

28 ***Cost of Debt***

29 The cost of debt is typically based on the yield to maturity or interest rate on new debt issues for
30 the comparable companies as of the valuation date. Debt rate information is obtained from
31 published sources. A cost of debt is estimated for each of the comparable companies and used to
32 estimate a cost of debt for the asset or entity being valued.

⁶⁹ This is an application of DCF analysis quite similar to DCF analysis in a real estate valuation. The sources of the cash flows and the methods of estimating them, of course, are different.

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1 *Cost of Equity*

2 Although other methods are available, the cost of equity is typically estimated using the Capital
3 Asset Pricing Model (CAPM), the Dividend Growth Model, and the Bond Yield Plus Risk
4 Premium Method. Based on these methods, a cost of equity is estimated for each of the
5 comparable companies. This data is then reconciled into an estimate of the cost of equity for the
6 property being valued.

7 **Capital Asset Pricing Model.** The CAPM is a financial/economic model that quantitatively
8 relates risk and return. Although the model was developed in the context of security valuation, it
9 is also applicable to the valuation of real assets (it is widely used, for example, in corporate capital
10 budgeting).

11 The primary insight of the CAPM is that risk-taking is rewarded. Investors are risk averse; in
12 order to assume greater risk, they must be rewarded with a greater returns. Financial theory
13 defines and measures risk in terms of the variability of returns. For example, the expected return
14 on a savings account is relatively low but highly predictable. The expected return on an average
15 share of common stock is significantly higher, but the return is also much less predictable (i.e.,
16 more variable, or risky) than the return on a savings account. Risk is also defined in a portfolio
17 context. In a portfolio, some of the risks of the portfolio's constituent securities cancel each other
18 out; that is, an event that reduces the return on one security in the portfolio may increase the
19 return on another security in the portfolio, or vice versa. The only risk that matters in a portfolio
20 context is risk that cannot be eliminated through diversification, which, in CAPM theory, is called
21 systematic risk.

22 According to the CAPM, the size of the risk premium offered by a risky security (i.e., the
23 increment of return above that available on a risk-free security) is proportional to its systematic
24 risk, as measured by the security's beta. Beta measures the degree of co-movement of a security
25 with the "market as a whole," which, in the CAPM, is referred to as the market portfolio.⁷⁰ The
26 market portfolio has a beta of 1. Stocks that are more volatile than the market portfolio have
27 betas greater than 1; stocks less volatile than the market portfolio have betas less than 1. The
28 amount by which investors expect the future return on the market portfolio to exceed the return
29 on a risk-free security (i.e., a security whose return is certain) is called the market risk premium.

30 The cost of equity for a firm (i.e., the required rate of return on the firm's common stock) is
31 related to the risk-free rate, beta (the systematic risk measure), and the expected market risk
32 premium as follows:

⁷⁰ Theoretically, the market portfolio contains not only common stock, but all investable assets. Real estate, for example, in theory, should be included in the market portfolio. In practice, the market portfolio is proxied by a broad stock index such as the Standard and Poor's 500, which includes only common stock. A fundamental criticism of the CAPM is that it cannot be tested because no good proxy for a true market portfolio exists.

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$$r_E = r_f + \beta \times \text{MRP}$$

where

r_E = cost of equity;

r_f = risk-free rate of return;

β = expected beta; and

MRP = expected market risk premium.

The risk-free rate is directly observable as a rate of return on a U. S. Treasury security; betas are available from several published sources, and the expected market risk premium is usually estimated from historical data—that is, average annual returns on a broad stock index subtracted from average annual returns on a U. S. Treasury security, with the averages calculated over a long period. Forward looking (ex ante) models can also be used to determine the expected market risk premium.

Dividend Growth Model. The dividend growth model (also called the discounted cash flow model) is based on the idea that the value of a share of common stock is the present value of all future dividends attributable to it. This rationale follows the basic present value rule—that is, the value of any asset is the present value of the future income, or cash flows associated with it. The value of a share of stock can be thought of as the present value of its dividends in perpetuity. For a firm in stable growth, the cost of equity, that is the required rate of return on a firm's common stock, can be estimated according to the following equation:

$$r_E = D_1 / P_0 + g,$$

where

r_E = cost of equity;

D_1 = next year's expected dividend;

P_0 = current price of the company's stock; and

g = estimated constant growth rate in dividends.⁷¹

The expected dividend is typically estimated using analysts' published dividend forecasts. The current price of a publicly traded stock is readily available. It is more difficult to estimate the long-term growth rate in dividends, and unfortunately, the estimated cost of equity is very sensitive to this variable.

⁷¹ Methods for estimating the long-term growth rate, g , are discussed in the Appendix A. The basic dividend growth model is only applicable to firms in stable growth, although a refinement of the model allows consideration of multi-stage growth. .

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1 **Bond Yield Plus Risk Premium Method.** The bond yield plus risk premium method estimates
2 the cost of equity (or required return on common stock) by first estimating a long-term debt cost
3 for the firm and then adding an estimated equity-over-debt risk premium. Thus,

4
$$r_E = r_D + RP$$

where

- r_E = cost of equity;
- r_D = estimated bond yield for the subject property; and
- RP = estimated equity-over-debt risk premium.

5
6 The bond rate is based on either the current yield to maturity on long-term debt for the firm or on
7 corporate debt of comparable rating. The equity-over-debt risk premium is the return the firm's
8 common stock investor requires in excess of the firm's bond investor. It can be estimated using
9 historical data by subtracting the long-term average return on common stock from the average
10 bond returns.

11 **Calculating the WACC**

12 As mentioned at the outset, the WACC is a weighted average of the component costs of
13 financing, with the weights based on capital structure proportions. However, the WACC is
14 typically calculated on an after-corporate income tax basis, requiring an adjustment to the cost of
15 debt. Since interest payments are deductible, a firm's true cost of debt is its after-corporate
16 income tax cost. The after-corporate income tax cost of debt equals the before-tax interest rate
17 multiplied by the marginal corporate income tax rate (i.e., the tax rate paid on each incremental
18 dollar of income). Given this adjustment the WACC is calculated as follows:

19
$$r_C = (w_E) (r_E) + (w_D) (r_D) (1 - T_C)$$

where

- r_C = after-tax weighted average cost of capital;
- w_E = proportion of equity in the capital structure;
- r_E = after tax cost of equity;
- w_D = proportion of debt in the capital structure;
- r_D = before-tax cost of debt; and
- T_C = combined state and federal marginal corporate income tax

20
21 To be in accord with rule 8, a capitalization rate must be a before-income tax rate because the
22 income to be capitalized for property tax purposes is before income taxes. This can be
23 accomplished by first estimating an after-corporate income tax WACC considering the tax effect
24 on the cost of debt as described above, and then converting this WACC to a before-corporate
25 income tax WACC. In addition, a property tax component must also be added to the before-
26 income tax WACC. A discussion of these two adjustments is contained in Appendix A.

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1 **Applicability and Limitations of the WACC in Property Tax Valuation**

2 The Property Taxes Department's Valuation Division uses a variation of the comparable company
3 method in its annual capitalization rate study. The study collects data regarding the parameters
4 needed to estimate a WACC (i.e., capital structure proportions, cost of debt, and cost of equity)
5 from a large sample of firms, groups this data by industry groups/subgroups, estimates
6 representative values for the WACC parameters by industry group/subgroups, and finally, uses
7 these representative values to estimate a discount rate for each industry group/subgroup that is
8 used in the unit valuation of state assessed property in each industry group/subgroup.

9 In theory, the pure play, or comparable company, method could also be used to value individual
10 real estate properties, if one could find pure plays, or publicly traded comparable companies,
11 whose earnings, and hence rates of return, were closely related in terms of risk and return to the
12 earnings of the property being valued. One possible application involves the estimation of
13 discount rates used in the valuation of natural resource properties—for example, oil and gas
14 properties. Using the WACC approach, a discount rate could be estimated using capital market
15 data from a sample of companies in that industry.

16 Using data from the capital markets to estimate a discount rate to be used in the valuation of
17 "traditional" investment real estate (e.g., office buildings, shopping centers, etc.) is also possible,
18 but involves several limitations, which are discussed in Appendix A. To date, however, this
19 approach has not been widely used in the valuation of such "traditional" real estate.

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- 1 **YIELD CAPITALIZATION: VALUATION**
- 2 **Valuation Using Discounted Cash Flow Analysis**

EXAMPLE 4-18: Valuation Using Discounted Cash Flow Analysis

Set forth below are the assumptions on which the valuation is based. As with direct capitalization, the income to be capitalized is estimated on a market basis and is processed to the level of net operating before recapture and taxes (NIBR&T). The reversionary value is estimated as described below. A component for ad valorem property taxes must be added to both the yield rate and the overall capitalization rate.

Assumptions

Expected holding period	5 years
Rentable area	60,000 sf
Annual rent (gross rent basis)	\$24.00/sf rentable area
Annual vacancy and collection loss	6% of anticipated gross income
Annual operating expenses (excl. property taxes)	\$8.00/sf rentable area
Market rents to grow at 4% a year	
Operating expenses to grow at 2% a year	
Terminal overall capitalization rate (R_o)	10.0%
Overall yield rate (Y_o)	14.0%
Ad valorem tax rate	1.0%

Estimated Annual Cash Flows

	Year 1	2	3	4	5	6
MPGI	1,440,000	1,497,600	1,557,504	1,619,804	1,684,596	1,751,980
V&C Loss	86,400	89,856	93,450	97,188	101,076	105,119
MEGI	1,353,600	1,407,744	1,464,054	1,522,616	1,583,521	1,646,861
Operating Exp.	480,000	489,600	499,332	509,380	519,567	529,959
NIBR&T	873,600	918,144	964,662	1,013,236	1,063,953	1,116,903

Estimated Value of the Reversion Using Direct Capitalization

The value of the reversion, or terminal value, is estimated by capitalizing the 6th year's income at an overall capitalization rate of 11.0%. (R_o of 10.0% and effective ad valorem tax rate of 1%). For simplicity, the example assumes that this estimated reversion value is net of any disposition costs.

$$\begin{aligned}
 \text{Reversion/terminal value} &= 6\text{th year's income} / R_o + \text{ETR} \\
 &= 1,116,903 / 0.10 + 0.01 \\
 &= 1,116,903 / 0.11 \\
 &= 10,153,663
 \end{aligned}$$

Present Value Calculations

The present value factors are based on the yield rate plus the effective tax rate (in this case, 14%+1%=15%).

Year	Cash Flow		PV Factor	=	PV
1	873,600	x	0.869565	=	759,652
2	918,144	x	0.756144	=	694,249
3	964,662	x	0.657516	=	634,281
4	1,013,236	x	0.571753	=	579,321
5	1,063,953	x	0.497177	=	528,973
Reversion	10,153,663	x	0.497177	=	<u>5,048,163</u>
			Total present value		8,244,639

The estimated value of the property is \$8,244,639, say **\$8,244,500**.

3

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1 Valuation Using Yield Capitalization Formulas and Income Models

2 In addition to discounted cash flow analysis, yield capitalization includes a number of other
3 techniques for converting income into value. Yield capitalization formulas were described in a
4 preceding section. Other yield capitalization techniques are actually just applications of standard
5 compound interest and annuity factors put in a context of valuation. They are used to value
6 "standard" income streams such as a single income payment, a level income stream in perpetuity, a
7 level terminating income stream, and a straight-line declining terminal income stream.

8 Capitalization of a Single Income Payment (Reversion)

9 The discounting of a single income payment due some time in the future is the basic building
10 block of all capitalization procedures—any income stream is, in fact, a series of single payments.
11 In appraisal, a single income payment is also called a reversion.

12 To capitalize a single income payment, the expected payment is multiplied by the compound
13 interest factor for the present value of \$1 at the selected discount rate. A component for ad
14 valorem property taxes is added to the discount rate. Thus:

$$15 \quad PV = \text{NIBR\&T (Single payment)} \times \text{PW\$1 (@ } Y_o + \text{ ETR)}$$

where

PV	=	present value of the payment
NIBR&T	=	net income before recapture and taxes
PW\$1	=	present worth (or value) of \$1
Y_o	=	overall yield rate
ETR ⁷²	=	effective tax rate

16

EXAMPLE 4-19: Capitalization of a Single Income Payment

Assume that a single income payment prior to the deduction for property taxes (i.e., NIBR&T) of \$100,000 is to be received 10 years from today. The overall yield rate (Y_o) is 15.0% and the effective ad valorem tax rate is 1.0%. The income is capitalized as follows:

$$\begin{aligned} PV &= \text{NIBR\&T (Single payment)} \times \text{PW\$1 (@ } Y_o + \text{ ETR)} \\ &= \$100,000 \times \text{PW\$1 (@ } 15.0\% + 1.0\%) \\ &= \$100,000 \times \text{PW\$1 (@ } 16.0\%) \\ &= \$100,000 \times 0.226684 \\ &= \mathbf{\$22,668.40} \end{aligned}$$

⁷² Ad valorem property taxes are not deducted as an expense from the income stream because they are based on the value being sought. This requires that a before-tax discount rate be used; hence, a property tax component equal to the ad valorem property tax rate must be added to the yield, or discount, rate.

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1 Capitalization of Level Perpetual Income Stream (Level Perpetuity)

2 Since income stream is perpetual, there is no need to provide for the recovery of capital; the
3 capitalization rate reduces to the overall yield rate (Y_o). In real estate valuation, capitalization in
4 perpetuity is typically applied only to land.

5 To capitalize income into perpetuity, the net income is divided by a capitalization rate composed
6 of an overall yield rate plus the effective ad valorem tax rate. Thus:

$$7 \quad PV = NIBR\&T / (Y_o + ETR)$$

8 where PV is the present value; NIBR&T is the net income before recapture and property taxes;
9 Y_o is the overall yield rate; and ETR is the effective ad valorem property tax rate.

EXAMPLE 4-20: Capitalization of Level Perpetual Income Stream

What is the capitalized value of a perpetual net income before recapture and property taxes of \$100,000, given an overall yield rate of 8%, and an effective ad valorem property tax rate of 1%?

$$\begin{aligned} PV &= NIBR\&T / (Y_o + ETR) \\ &= \$100,000 / 8.0\% + 1.0\% \\ &= \$100,000 / 9.0\% \\ &= \mathbf{\$1,111,111.11} \end{aligned}$$

10

11 Capitalization of a Level Terminal Income Stream

12 This income stream is a series of level, terminating payments; there is no reversionary value. This
13 income stream can be capitalized into a value indicator by using the annuity factor for the present
14 worth of \$1 per period. The general formula is $V = I \times F$, where V is present value, I is the
15 relevant income and F is the appropriate annuity factor for the present worth of \$1 per period at
16 the given overall yield rate for the given number of periods. The annuity factor itself provides for
17 the recovery of capital.

18 To capitalize a level terminal series of payments, net income before recapture and property taxes
19 is multiplied by an annuity factor based on the sum of the overall yield rate and the effective ad
20 valorem property tax rate. Thus:

$$21 \quad PV = NIBR\&T \times PW\$1/P (@ Y_o + ETR)$$

22 where PV is the present value; NIBR&T is the net income before recapture and taxes; $PW\$1/P$ is
23 the present worth of \$1 per period for the requisite number of years; Y_o is the overall yield rate;
24 and ETR is the effective ad valorem tax rate.

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EXAMPLE 4-21: Capitalization of a Level Terminal Income Stream

What is the present value given an annual net income before recapture and property taxes of \$100,000 for 5 years, a yield rate of 8%, and an ad valorem tax property tax rate of 1%?

$$\begin{aligned}PV &= \text{NIBR\&T} \times \text{PW\$1/P} (@ Y_o + \text{ETR}) \\ &= \$100,000 \times 3.88965 (\text{PW\$1/P}, @ 9\%, 5 \text{ years}) \\ &= \mathbf{\$388,965}\end{aligned}$$

1

2 Capitalization of Constant Level Income with a Change in Property Value

3 This technique can be used to capitalize a level income stream together with an expected
4 percentage change (increase or decrease) in property value. An overall capitalization rate with
5 which to capitalize this income stream can be developed using the basic yield capitalization
6 formula, $R_o = Y_o - \Delta a$, discussed earlier. In this application, the annualizer (a) is the annual
7 sinking fund factor ($1/s_n$) at the specified overall yield rate, and Δ is the percentage change in
8 property value (positive if value increases, negative if value decreases). The tax rate is added to
9 the yield rate and the sinking fund factor is based on the yield rate plus the tax rate. Thus:

10

$$R_o = Y_o + \text{ETR} - \Delta 1/S_n (@ Y_o + \text{ETR})$$

11 where R_o is the overall capitalization rate; Y_o is the overall yield rate; ETR is the effective ad
12 valorem property tax rate; and $\Delta 1/S_n$ is the sinking fund factor at Y plus the effective tax rate for
13 the requisite number of years.

14 To capitalize this income stream, net income before recapture and taxes for the first year is
15 divided by the overall capitalization rate as developed above. This overall capitalization rate does
16 not require an adjustment for ad valorem property taxes because the adjustment was made in the
17 yield rate and sinking fund factor in the above formula. Thus:

18

$$PV = \text{NIBR\&T} / R_o$$

19 where PV is the present value; NIBR&T is the net income before recapture and taxes; and R_o is
20 the overall capitalization rate as developed above.

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EXAMPLE 4-22: Capitalization of Constant Level Income with a Change in Property Value

Assume a property will generate a level NIBR&T of \$25,000 for 10 years. The property is expected to increase in value by 40% over this time period. The overall yield rate is 15%. The ad valorem property tax rate is 1%. Estimate the value of the property.

$$\begin{aligned}R_o &= Y_o + ETR - \Delta 1/S_n \text{ (@ } Y_o + ETR, 10 \text{ years)} \\ &= 15.0\% + 1.0\% - (0.40 \times 1/S_n \text{ (@ } 16.0\%, 10 \text{ years)}) \\ &= 15.0\% + 1.0\% - (0.40 \times 0.046901) \\ &= 16.0\% - 1.8761\% \\ &= 14.1239\%\end{aligned}$$

$$\begin{aligned}PV &= \text{NIBR\&T} / R_o \\ &= \$25,000 / 14.1239\% \\ &= \mathbf{\$177,004.93}\end{aligned}$$

1

2 Capitalization of a Terminating Series of Straight-Line Declining Income Payments

3 This income stream declines an equal amount each period until the income terminates. It is most
4 often associated with the straight-line capitalization in which an equal amount of capital is
5 recovered each period (straight-line recapture). The rate of capital recovery is the reciprocal of
6 the property's remaining economic life, or 1/REL. This type of income stream is associated with a
7 wasting asset with no reversion value.

8 The most direct way to value this income stream is to again develop an overall capitalization rate
9 using the basic yield capitalization formula, $R_o = Y_o - \Delta a$. In this case, Δ is -1.0 since the property
10 is assumed to lose all its value; and the annualizer (a) is 1/REL. The ad valorem property tax rate
11 is again added to the yield rate. Thus:

$$12 \quad R_o = Y_o + ETR + (1/REL)$$

13 where R_o is the overall capitalization rate; Y_o is the overall yield rate; ETR is the effective ad
14 valorem tax rate; and 1/REL, the capital recovery rate, is the reciprocal of the property's
15 remaining economic life.

16 To capitalize this income stream, the first year's net income before recapture and taxes is divided
17 by the overall capitalization rate as developed above. Again, this overall capitalization rate does
18 not require an adjustment for ad valorem property taxes because the adjustment was made in the
19 above formula. Thus:

$$20 \quad PV = \text{NIBR\&T} / R_o$$

21 where PV is present value; NIBR&T is net income before recapture and taxes; and R_o is the
22 overall capitalization rate as developed above.

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EXAMPLE 4-23: Capitalization of a Terminating Series of Straight-Line Declining Income Payments

What is the present value of a straight-line declining terminal income stream given a first year's net income before recapture and property taxes of \$20,000, a yield rate of 14.0%, an ad valorem property tax rate of 1.0% percent, and a remaining economic life of property of 10 years.

$$\begin{aligned}R_o &= Y_o + ETR + 1/REL \\ &= 0.14 + 0.01 + 0.10 \\ &= 0.25 \\ PV &= NIBR\&T / R_o \\ &= \$20,000 / 0.25 \\ &= \mathbf{\$80,000}\end{aligned}$$

1

2

RESIDUAL CAPITALIZATION TECHNIQUES

3 Residual income capitalization techniques allow an appraiser to capitalize the income attributable
4 to an investment component with an unknown value. Assuming that the value of one property
5 component is known or can be estimated, residual techniques can be applied to physical
6 components of a property (land and improvements), financial components (debt and equity), and
7 ownership components (leased fee and leasehold). Residual capitalization concepts are applicable
8 to both direct and yield capitalization. Residual techniques involving the physical and financial
9 components are used in direct capitalization; techniques involving ownership estates are used in
10 yield capitalization.

11 When using residual techniques, the appraiser:

- 12 1. Applies an appropriate capitalization rate to the value of the known property component in
13 order to determine the amount of income needed to support the investment in that component;
- 14 2. Deducts this amount from the total economic, or market, net income before recapture and
15 property taxes (MNIBR&T) of the subject property to derive the residual income attributable
16 to the unknown component;
- 17 3. Capitalizes the residual income into an estimate of value of the unknown component using an
18 appropriate capitalization rate for that component; and
- 19 4. Obtains a value indicator for the total property by adding the value of the known component
20 to the estimated value of the unknown component.

21 Building Residual Technique

22 The building residual technique is used when the value of the land is known, but the value of the
23 building is unknown. After processing the income of the subject property to the level of
24 MNIBR&T, deduct the income attributable to the land (the land value multiplied by the
25 appropriate capitalization rate for land.) The residual income is attributable to the building (or

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1 improvements) and may be converted to an estimate of the building's value by capitalizing it, using
2 an appropriate building capitalization rate.

3 The capitalization rate for the land, which assumes a constant perpetual income stream, is a
4 combination of a yield rate and an ad valorem property tax rate. The capitalization rate for the
5 building is a combination of a yield rate, a recapture rate for the return of the investment in the
6 building, and an ad valorem property tax rate.

EXAMPLE 4-24: Building Residual	
Assume the following: (1) MNIBR&T is \$50,000; (2) the value of the land, which must be known to use the method, is \$200,000; (3) the yield rate is 8 percent; (4) the estimated remaining economic life of the improvements is 50 years; (5) the recapture rate for the building is 2 percent (based on a straight-line declining income premise); and (6) the ad valorem tax rate is 1 percent.	
NIBR&T (first year)	\$ 50,000
Less income imputable to land: (.09 x \$200,000)	<u>18,000</u>
Income attributable to building	<u>32,000</u>
Indicated building value: (\$32,000 ÷ .11)	290,909
Land value	<u>200,000</u>
Indicated total property value	<u>\$490,909</u>

7
8 The building residual technique assumes that the land value remains constant and that land income
9 is a perpetual series of level payments. The recapture rate for the building reflects the income
10 premise and corresponding recapture method selected.

11 Land Residual Technique

12 The land residual technique is used when the value of the building is known or can be estimated,
13 but the value of the land is unknown. The income attributable to the building (the building value
14 multiplied by an appropriate capitalization rate) is deducted from the estimated MNIBR&T of the
15 subject property. The residual income is attributable to the land and may be converted into an
16 estimate of land value using an appropriate land capitalization rate. The land residual technique is
17 not appropriate when the land and building are part of an operating business which contains other
18 significant tangible and intangible assets and the estimated MNIBR&T is from the entire business
19 enterprise. (See a later section of this manual, "Treatment of Intangible Assets and Rights," for
20 further discussion about excluding income that cannot be attributed to taxable property).

21 The capitalization rate for the land, which assumes a constant perpetual income stream, is a
22 combination of a yield rate and an ad valorem property tax rate as above. Also as above, the
23 capitalization rate for the building is a combination of a yield rate, a recapture rate for the return
24 of the investment in the building, and an ad valorem property tax rate.

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EXAMPLE 4-25: Land Residual

Assume the following: (1) MNIBR&T is \$40,000; (2) the value of the building, which must be known to use the method, is \$300,000; (3) the yield rate is 8 percent; (4) the recapture, or capital recovery rate for the building is 2 percent (based on a straight-line declining income premise); and (5) the ad valorem tax rate is 1 percent.

Net income in the first year	\$40,000
Less income imputable to building	
$\$300,000 \times .11 (.08 + .01 + .02)$	<u>33,000</u>
Income attributable to land	<u>7,000</u>
Land value: $\$7,000 \div .09 (.08 + .01)$	77,778
Building value	<u>300,000</u>
Total property value	<u>\$377,778</u>

1
2 The land residual technique allows an appraiser to estimate land value when comparable land sales
3 data are not available—for example, in built-up areas where few vacant land sales are available. In
4 such cases, the appraiser must hypothesize an improvement representing highest and best use,
5 projecting income based on this use (in the case of recently constructed improvements the existing
6 use may be the highest and best use of the site). In a similar manner, this technique can be used as
7 a test for highest and best use of the land as though vacant—that is, to identify highest and best
8 use.

9 The technique can also be used to estimate the value of the total property (i.e., land and building)
10 in the limited case where the existing improvements reflect the highest and best use of the land or
11 site and does not suffer from depreciation. If these conditions cannot be met, the technique cannot
12 be used to estimate a total property value.

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CHAPTER 5: RECONCILIATION AND FINAL VALUE ESTIMATE

Typically, more than one approach to value is used in an appraisal, and each approach typically produces a different value indicator. The process of resolving the differences among value indicators is called reconciliation. In reconciliation, the appraiser should consider the various factors influencing value that are either not reflected or only partially reflected in the indicators. The result of reconciliation should be a meaningful, defensible conclusion concerning the final value estimate.

Since more than one value indicator may be developed within a single approach to value, reconciliation occurs both within and among the value approaches. In the comparative sales approach, for example, each comparable sale produces an adjusted sale price, which is, technically, a separate indicator of value. Similarly, within the income approach, different value indicators may result from direct capitalization and discounted cash flow analysis. Multiple value indicators within a given approach are usually resolved within that approach. In fact, each time the appraiser makes a selection or choice among various alternatives in the appraisal process, a form of reconciliation occurs. Much of the following discussion applies to the concept of reconciliation both within and among approaches to value.

Reconciliation and final value estimate are usually treated as one topic. To provide a more thorough treatment of the subject matter, the following discussion divides this topic into three sections: (1) reviewing the appraisal; (2) reconciliation criteria; and, (3) reaching and presenting the final value conclusion.

REVIEWING THE APPRAISAL

Reviewing the appraisal is not reconciliation; however, it provides a basis for reconciliation. In reviewing the appraisal, all previous work and analysis is checked and verified. A good starting point is a reconsideration of the appraisal problem. The appraiser should review the fundamental premises on which the estimate of value is based in order to avoid basic conceptual errors.

In reviewing the appraisal problem, the appraiser should again consider:

1. The identification of subject property to be appraised;
2. The identification of property rights to be valued;
3. The purpose and use of the appraisal;
4. The definition of value to be estimated;
5. The date of value estimate; and,
6. Highest and best use of the subject and comparable properties.

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1 Other important aspects of the review process include checking all mathematical calculations for
2 accuracy, and ensuring the consistent use of data in each value indicator. An independent check of
3 calculations is preferred. Calculations should also be checked in a logical framework in order to
4 prevent duplicate adjustments. For example, in the comparative sales approach, an adjustment for
5 an age difference might be partially duplicated in an adjustment for physical condition.

6 The relationship and consistency of the data and reasoning applied in each approach and the
7 correlation between the approaches should also be examined in the review process. For example,
8 depreciation reflected in the cost approach should be consistent with related adjustments made in
9 the comparative sales approach. Similarly, the effective age and condition of the property
10 reflected in the cost approach should be consistent with the physical condition (quality, age and
11 condition) used as the basis for adjustments to comparable sales in the comparative sales
12 approach.

13 RECONCILIATION CRITERIA

14 In theory, the valuation approaches and methods used should produce a reasonably narrow range
15 of value indications. This is not always the case, however, and value indicators may be divergent.
16 Several criteria are presented below for analyzing value indicators and reconciling them to arrive
17 at a final estimate of value. These criteria are (1) appropriateness of the approach; (2) accuracy of
18 data and adjustments in the approach; and, (3) the quantity of evidence available in the approach.

19 APPROPRIATENESS OF APPROACHES

20 Rule 3 requires that, in estimating value, the assessor shall consider one or more of the
21 approaches to value "as may be appropriate for the property being appraised." The
22 appropriateness of an approach is often related to the type of property being appraised and the
23 available data. For example, an appraisal to estimate the market value of a 20-year-old single-
24 family residence would ordinarily emphasize the comparative sales approach, with the cost and
25 income approaches being less applicable. On the other hand, an appraisal of a special-purpose
26 property with few or no comparable sales and no indicators of economic rent, such as a church
27 building, would typically emphasize the cost approach.

28 Rules 4, 6, and 8 provide direction concerning the appropriateness of each value approach. In
29 general, that direction is based on the nature of the property being appraised and the availability
30 and reliability of pertinent data.

31 For example, rule 4 expressly provides that the comparative sales approach is preferred when
32 reliable market data are available:

33 When reliable market data are available with respect to a given real property, the
34 preferred method of valuation is by reference to sales prices.

35 Rule 6(a) states that the cost approach is preferred when neither reliable sales data nor income
36 data are available:

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1 The reproduction or replacement cost approach to value is used in conjunction
2 with other value approaches and is preferred when neither reliable sales data
3 (including sales of fractional interests) nor reliable income data are available and
4 when the income from the property is not so regulated as to make such cost
5 irrelevant. It is particularly appropriate for construction work in progress and for
6 other property that has experienced relatively little physical deterioration, is not
7 misplaced, is neither over- nor underimproved, and is not affected by other forms
8 of depreciation or obsolescence.

9 Rule 8(a) prescribes that the income approach should be used in conjunction with other
10 approaches when the property being appraised is typically purchased in anticipation of a money
11 income and has an established income stream or can be attributed a real or hypothetical income
12 stream by comparison with other properties:

13 It is the preferred approach for the appraisal of land when reliable sales data for
14 comparable properties are not available. It is the preferred approach for the
15 appraisal of improved real properties and personal properties when reliable sales
16 data are not available and the cost approaches are unreliable because the
17 reproducible property has suffered considerable physical depreciation, functional
18 obsolescence or economic obsolescence, is a substantial over- or
19 underimprovement, is misplaced, or is subject to legal restrictions on income that
20 are unrelated to cost.

21 ACCURACY OF VALUE INDICATORS

22 The accuracy of a value indicator is based on the reliability of the data and in any adjustments
23 made. That is, the accuracy of a value indicator depends on the amount of comparable data, the
24 number and type of adjustments, and the dollar amount of adjustments.

25 If a large amount of comparable data is available for a given approach, the appraiser may have
26 more confidence in that approach. For example, if there is an abundance of sales of properties
27 similar to the subject property being appraised, the appraiser may attribute significant accuracy to
28 the comparative sales approach. If income, expense, and capitalization rate data can be obtained
29 from many properties comparable to the subject, the appraiser may attribute significant accuracy
30 to the income approach. If a large amount of data is available relating to land values and
31 development costs (including market-derived estimates of entrepreneurial profit) regarding
32 recently developed or newly constructed properties similar to the subject, the appraiser may
33 attribute significant accuracy to the cost approach.

34 The number and type of adjustments made to comparable properties within an approach should
35 also affect the appraiser's confidence in the approach. If many adjustments are required, the
36 appraiser may conclude that the approach is unreliable. The type of adjustments may also reflect
37 the accuracy of an approach. For example, it may be especially difficult to find market data to
38 support an adjustment for location.

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1 The dollar amount of adjustments also reflects the accuracy of an approach. For example, in the
2 comparative sales approach, an appraiser may analyze five comparable sales, each requiring
3 several adjustments. The total dollar amount of the adjustments required, however, may vary
4 significantly from one comparable sale to another. In general, less accuracy should be attributed to
5 comparable properties requiring larger adjustments.

6 **QUANTITY OF DATA**

7 As an additional criterion for reconciliation, the appraiser should consider the quantity of the data.
8 When using any generally accepted approach to value, the quantity of the data used should be
9 adequate to provide reasonable support for the value indicator. For example, if an apartment is
10 being appraised, and there are numerous sales of closely-comparable properties, and the sales
11 prices are well confirmed, there is a substantial quantity of data supporting a comparable sales
12 approach. If the quantity of data regarding income and expenses is more limited, however, greater
13 weight might logically be given to the value indicator from the comparative sales approach over
14 the value indicator from the income approach.

15 **REACHING AND PRESENTING THE FINAL VALUE ESTIMATE**

16 **REACHING THE FINAL VALUE ESTIMATE**

17 The final value estimate is an appraiser's opinion of value. There is no mathematical formula or
18 statistical technique to which the appraiser can ultimately refer in order to reach the final value
19 estimate. It is an opinion that should be based on the appraiser's application of generally accepted
20 appraisal methods and procedures.

21 It is generally inappropriate to use the arithmetic mean of the value indicators as the final value
22 estimate. Simply calculating an average implies that all the value indicators have equal validity.
23 While this may occur in certain instances, it is usually not the case. Appraisers must follow rule 3,
24 noted above, and consider the appropriateness of the value approaches, the relative accuracy of
25 the value indicators, and the quantity and quality of the data available when reconciling value
26 indicators to reach the final value estimate.

27 **PRESENTING THE FINAL VALUE ESTIMATE**

28 **Point Estimates and Rounding**

29 In property tax appraisal, the final value estimate is expressed as a single amount. This is referred
30 to as a *point estimate* of value. Since the appraisal objective is to reach a value on which a tax
31 will be levied, a final value conclusion stated as a "range" is not feasible or permitted. The final
32 value estimate should, however, be rounded to reflect the standards of the market and the price
33 level or range within which the value estimate falls. Rounding should be accomplished in a
34 manner reflecting the degree of precision associated with a value estimate. Generally, the more
35 confidence the appraiser has in the accuracy of the value estimate, the less need there is for
36 rounding.

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1 Implicit or Explicit Weighting of Value Indicators

2 As noted above, the greatest reliance should be placed on that approach or combination of
3 approaches that best measures the type of benefits the subject property yields. The final value
4 estimate reflects the relative weight that the appraiser assigned, either implicitly or explicitly, to
5 each approach.

6 As an example of explicit weighting, assume an appraiser valuing a commercial building obtains
7 value indicators from the comparative sales and income approaches of \$12,000,000 and
8 \$10,000,000 respectively. Assume further that the income approach is assigned 60% of the
9 total weight and that the comparative sales approach is assigned 40%, as shown below:

TABLE 5-1: Explicit Weighting of Value Approaches			
<u>Valuation Approach</u>	<u>Value Indicator</u>	<u>Weight</u>	<u>Total</u>
Comparative Sales	\$ 12,000,000	0.40	\$ 4,800,000
Income Capitalization	10,000,000	<u>0.60</u>	<u>6,000,000</u>
	Final Value Conclusion	1.00	<u>\$10,800,000</u>

10

11 The shortcoming of explicit weighting is that it may imply a degree of quantitative accuracy or
12 assurance that is not present. Even though the weighting is ultimately based on analysis and
13 judgment and not a formal quantitative model, explicit weighting forces the appraiser to present
14 his or her opinions in quantitative terms. The benefit of explicit weighting is that it motivates the
15 appraiser to clearly indicate the relative emphasis placed on the value indicators.

16 With implicit weighting, the appraiser presents the value indicators for each approach, along with
17 the final value estimate. As an example, assume that an appraiser valuing a commercial building
18 obtains value indicators from the cost, comparative sales, and income approaches of \$8,000,000,
19 \$12,000,000, and \$10,000,000, respectively, as shown below:

TABLE 5-2: Implicit Weighting of Value Approaches	
<u>Valuation Approach</u>	<u>Value Indicator</u>
Cost	\$ 8,000,000
Comparative Sales	12,000,000
Income Capitalization	<u>10,000,000</u>
Final Value Estimate	<u>\$ 10,500,000</u>

20

21 This analysis clearly presents the value conclusion. However, the analysis may be considered
22 incomplete unless the appraiser addresses the relative emphasis given to each of the value
23 indicators.

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CHAPTER 6: SPECIAL TOPICS

ASSESSMENT OF NEW CONSTRUCTION

MEANING OF "NEWLY CONSTRUCTED" OR "NEW CONSTRUCTION"

Section 2 of article XIII A of the California Constitution provides that the full cash value of real property includes the appraised value of that property when "newly constructed:"

The full cash value means the county assessor's valuation of real property as shown on the 1975-76 tax bill under "full cash value" or, thereafter, the appraised value of real property when purchased, newly constructed, or a change in ownership has occurred after the 1975 assessment.

Both the Legislature and the Board of Equalization have sought to provide clear definitions of the terms "newly constructed" and "new construction." The statutory definitions in section 70 read, in part:

(a) "Newly constructed" and "new construction" means:

(1) Any addition to real property, whether land or improvements (including fixtures), since the last lien date; and

(2) Any alteration of land or of any improvement (including fixtures) since the last lien date which constitutes a major rehabilitation thereof or which converts the property to a different use.

(b) Any rehabilitation, renovation, or modernization which converts an improvement or fixture to the substantial equivalent of a new improvement or fixture is a major rehabilitation of such improvement or fixture.

The Board adopted rule 463 to provide the practical guidelines for the statutory definitions of newly constructed and new construction. Rule 463 reads, in part:

(b) "Newly constructed" or "new construction" means and includes:

(1) Any substantial addition to land or improvements, including fixtures, such as adding land fill, retaining walls, curbs, gutters or sewers to land or constructing a new building or swimming pool or changing an existing improvement so as to add horizontally or vertically to its square footage or to incorporate an additional fixture, as that term is defined in this section.

(2) Any substantial physical alteration of land which constitutes a major rehabilitation of the land or results in a change in the way the property is used.

Examples of alterations to land to be considered new construction are:

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1 Site development of rural land for the purpose of establishing a residential
2 subdivision.

3 Altering rolling, dry grazing land to level irrigated crop land.

4 Preparing a vacant lot for use as a parking facility.

5 In any instance in which an alteration is substantial enough to require reappraisal,
6 only the value of the alteration shall be added to the base year value of the pre-
7 existing land or improvements. Increases in land value caused by appreciation or a
8 zoning change rather than new construction shall not be enrolled, for example:

1. Land value 1975	=	\$10,000	
2. Land value 1978	=	\$20,000	
3. Value of alteration 1978	=	\$5,000	
4. Value of structure added 1978	=	\$75,000	
1979 roll value (1+3+4)	=	\$90,000	(must be adjusted to reflect appropriate indexing)

9
10 Alterations to land which do not constitute a major rehabilitation or which do not
11 result in a change in the way the property is used shall not result in reappraisal.

12 (3) Any physical alteration of any improvement which converts the improvement
13 or any portion thereof to the substantial equivalent of a new structure or portion
14 thereof or changes the way in which the portion of the structure that had been
15 altered is used, e.g., physical alterations to an old structure to make it the
16 substantial equivalent of a new building without any change in the way it is used or
17 alterations to a warehouse that makes it usable as a retail store or a restaurant.
18 Only, the value, not necessarily the cost, of the alteration shall be added to the
19 appropriately indexed base year value of the preexisting structure.

20 (4) Excluded from alterations that qualify as "newly constructed" is construction
21 or reconstruction performed for the purpose of normal maintenance and repair,
22 e.g., routine annual preparation of agricultural land or interior or exterior painting,
23 replacement of roof coverings or the addition of aluminum siding to improvements
24 or the replacement of worn machine parts.

25 (5) Any substantial physical rehabilitation, renovation or modernization of any
26 fixture which converts it to the substantial equivalent of a new fixture or any
27 substitution of a new fixture.

28 Substantial equivalency shall be ascertained by comparing the productive capacity,
29 normally expressed in units per hour, of the rehabilitated fixture to its original
30 productive capacity.

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1 (c) For purposes of this section, "fixture" is defined as an improvement whose use
2 or purpose directly applies to or augments the process or function of a trade,
3 industry, or profession.

4 **Terms Related to the Meaning of "Newly Constructed" and "New Construction"**

5 Section 70 and rule 463 make repeated references to certain terms related to the meaning of
6 "newly constructed and "new construction." These related terms require clear definitions to
7 properly guide the assessment of new construction.

8 **Addition**

9 "Addition" is the act or process of adding; also, the unit or component of a unit that is added. The
10 act of adding implies that there is a pre-existing structure or base to which something is added.
11 For property tax purposes, an addition to real property—whether land or improvements—is
12 considered new construction. An addition does not, however, result in a change in either the base
13 year or base value of the pre-existing portion of the property.

14 **Alteration**

15 "Alteration" is the act or procedure of altering; also, a modification or a change. Under rule
16 463(b)(2), an alteration qualifies as new construction when it either (1) rehabilitates real property
17 to the point that it is "substantially equivalent to new" or (2) converts the real property to a
18 different use.

19 **Change in Use**

20 Subdivision (a)(2) of section 70 and rule 463 (b)(2) state that physical alterations that lead to "a
21 change in the way property is used" qualifies as newly constructed. While the value added by the
22 physical alteration is assessable, the value attributable solely to the change in use is not.

23 There are five basic use types: agricultural, residential, commercial, industrial, and recreational.
24 Any physical alteration of land or improvements that leads to a change from one of these use
25 types to another would qualify as new construction.

26 Within each general use type, there are sub-uses. Any physical alteration that leads to a change
27 from one sub-use to another also qualifies as new construction, as indicated in the examples under
28 rule 463 (b)(2). Thus, leveling dry farm land for use as irrigated row cropland, or laying gravel on
29 a vacant lot for use as RV storage, would both qualify as new construction. An alteration that
30 does not lead to a change in use may nevertheless qualify as new construction. For example, a
31 change from a peach orchard to a prune orchard would result in new construction not because of
32 the change in use, but because one improvement is removed and another improvement,
33 substantially equivalent to new, is added. Additionally, even an alteration that does qualify as a
34 change in use will not cause reappraisal unless there is a substantial physical alteration leading to
35 that change. When that occurs, only the additional value created by the new construction that
36 facilitates the change in use may be assessed.

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1 The following table lists general use types and sub-uses within each of the five basic
2 classifications. It is not intended as an all-inclusive list, but rather as an illustration. For example, a
3 change from apartment to condominium would not require reappraisal unless there were physical
4 alterations necessary for the conversion. Even with a physical alteration, only the newly
5 constructed portions of the conversion would be subject to reappraisal.

TABLE 6-1: List of Use Types		
Use Type	Sub-Uses	
Agricultural	<ul style="list-style-type: none">• Undeveloped Land• Dry Farm• Orchards and Groves• Kiwis• Jojoba Beans	<ul style="list-style-type: none">• Irrigated Row and Field Crops• Grape Vines• Asparagus• Bush Berries
Residential	<ul style="list-style-type: none">• Single Family• Multi-Family	<ul style="list-style-type: none">• Condominium• Time Share
Industrial	<ul style="list-style-type: none">• Mining or Extraction• Manufacturing	<ul style="list-style-type: none">• Processing• Warehouse
Commercial	<ul style="list-style-type: none">• Office Buildings• Financial Buildings• Retail Stores• Professional Buildings• Food Services	<ul style="list-style-type: none">• Cocktail Lounges• Food Sales• Automotive Sales• Service and Repair Shops
Recreational	<ul style="list-style-type: none">• Courts• Clubhouses• Ranges• Tracks	<ul style="list-style-type: none">• Swimming Pools• Rinks• Fields

6

7 **Modernization**

8 "Modernization" means taking corrective measures to bring a property into conformity with
9 changes in style, whether interior or exterior, or additions necessary to meet standards of current
10 demand. It normally involves replacing parts of the structure or mechanical equipment with
11 modern replacements of the same kind. If modernization results in a property that is substantially
12 equivalent to new, it qualifies as new construction. Thus, for property tax purposes,
13 modernization implies curing functional obsolescence and physical deterioration to the degree that
14 the structure or fixture is "substantially equivalent to new" after the modernization has been
15 completed.

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1 **Portion Thereof**

2 Both section 70 and rule 463 use the term "portion thereof" in the context of new construction. A
3 "portion" is a component of a land parcel, an individual structure or fixture easily recognized by
4 an appraiser, or a part of an individual structure or fixture designed for independent, separate use
5 within a structure or fixture.

6 For example, a farmer might level only 40 acres of a 640 acre section. In homes, it might be a
7 bedroom or kitchen. Within a hydroelectric plant, a portion could be the penstock that channels
8 flowing water into a generator. On a large industrial machine, it could be the attached stairway
9 and maintenance platform.

10 Correct identification of the newly constructed portion, or portion "substantially equivalent to
11 new," requires appraisal judgment. Similarly, estimating the value of that portion or alteration is
12 also a matter of appraisal judgment.

13 **Rehabilitation**

14 "Rehabilitation" means the restoration of a property to satisfactory condition without changing the
15 plan, form, or style of a structure. It usually involves curing physical deterioration. If rehabilitation
16 brings about the "substantial equivalent of new" condition of a structure or fixture, it qualifies as
17 new construction for property tax purposes.

18 **Renovation**

19 "Renovation" is a "making into new condition." Like rehabilitation, renovation involves curing
20 items of physical deterioration. When renovation restores a structure or fixture to the "substantial
21 equivalent of new," there is new construction for property tax purposes.

22 **Substantially Equivalent to New**

23 Under rule 463(b)(3), new construction is assessable when that new construction has converted a
24 fixture or any other improvement, or a portion thereof, to a state "substantially equivalent to
25 new." For example, a very old house is stripped to its studs and rebuilt from the foundation up.
26 The restoration is such that the old house has been converted into a state comparable to that of a
27 new house. The value added by such a conversion would be assessable as new construction.

28 Whether or not new construction activity transforms an improvement, fixture, or a portion thereof
29 into a state that is substantially equivalent to new (i.e., into a state where its utility is comparable
30 to new) is a factual determination that must be made on a case-by-case basis.

31 **Common Types of New Construction**

32 While not all additions and alterations qualify as new construction under section 70, the
33 following table provides examples of common situations that usually do qualify as new
34 construction:

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TABLE 6–2: Common Types of New Construction

Improvements	<ul style="list-style-type: none">• New residential, commercial or industrial buildings and related structures• Square footage added to existing structures, whether vertical or horizontal• Finishing previously unfinished improvement areas such as basements, attics, and garages• Swimming pools and in-ground spas• Porches and patios• Off-site and on-site improvements including curbs, gutters, utilities, and sewers• Conversion of a warehouse into a restaurant or office space• Incorporation of additional fixtures including new interior partitions, walls, ceilings, lighting, restrooms, doors, carpets, window and wall coverings as additions to existing improvements
Land	<ul style="list-style-type: none">• Retaining walls• Land grading• Land fill• Altering vacant land for the purpose of establishing a residential, commercial, or industrial development• Development of range, grazing, or rolling land to irrigated row crops, trees, or vines• Development of vacant land for use as a parking facility• Ripping, tilling, leaching or the addition of soil amendments to improve the productive capability of agricultural land

1

2 **Exclusions from the Definition of Newly Constructed or New Construction**

3 Under the property tax statutes and rules, certain types of construction activity are excluded from
4 the definitions of newly constructed and new construction. In most cases, these exclusions
5 permanently preclude the assessment of such new construction until there is a change in
6 ownership.

7 **Normal Maintenance and Repair**

8 As provided in rule 463(b)(4), normal maintenance and repair are excluded from the definition of
9 newly constructed, as follows:

10 Excluded from alterations that qualify as "newly constructed" is construction or
11 reconstruction performed for the purpose of normal maintenance and repair, e.g.,
12 routine annual preparation of agricultural land, interior or exterior painting,
13 replacement of roof coverings, replacement of heating or cooling equipment, the
14 addition of aluminum siding to improvements or the replacement of worn
15 machine parts.

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1 "Maintenance" is the action of continuing, carrying on, preserving, or retaining something; it is the
2 work of keeping something in proper condition. When performed on real property, maintenance is
3 normal when it is regular, standard, and typical. Normal maintenance will keep a property in
4 condition to perform efficiently the service for which it is used.

5 In contrast to an addition, which constitutes an entirely new portion of real property, normal
6 maintenance is the upkeep of existing real property. Normal maintenance will ensure that a
7 property will experience a typical economic life.

8 **Replacement**

9 "Replacement" is the substitution of an item that is fundamentally of the same type or utility for an
10 item that is exhausted, worn out, or inadequate. Replacements made as part of normal
11 maintenance are excluded from the meaning of new construction.

12 The following table shows items of replacement that are normally excluded from the meaning of
13 new construction.

TABLE 6-3: Normal Items of Repair and Replacement	
• Re-plumbing corroded galvanized steel pipe with copper pipe	• Replacing a shake shingle roof with fire-resistant concrete tiles
• Replacing an old forced air heating unit	• Replacing kitchen appliances
• Re-painting worn areas	• Replacing wood frame windows
• Replacement of old bathroom fixtures with modern fixtures	• Replacement of wall or floor coverings

14 While most replacements are considered "normal maintenance and repair," replacements can be so
15 extensive as to make a building or fixture substantially equivalent to new. For example, as
16 discussed earlier, when a very old house is stripped to its studs and rebuilt from the foundation
17 up, such work is considered new construction. In such situations, the degree of replacement
18 determines whether the construction activity meets the definition of normal repair and
19 maintenance or if it qualifies as new construction.

20 **Reconstruction after a Misfortune or Calamity**

21 Section 70 provides for the exclusion of reconstruction after a misfortune or calamity, providing
22 that the reconstruction is timely and substantially equivalent to the damaged or destroyed
23 property:

24 (c) Notwithstanding the provisions of subdivisions (a) and (b), where real
25 property has been damaged or destroyed by misfortune or calamity, "newly
26 constructed" and "new construction" does not mean any timely reconstruction of
27 the real property, or portion thereof, where the property after reconstruction is
28 substantially equivalent to the property prior to damage or destruction. Any
29 reconstruction of real property, or portion thereof, which is not substantially

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1 equivalent to the damaged or destroyed property, shall be deemed to be new
2 construction and only that portion which exceeds substantially equivalent
3 reconstruction shall have a new base year value determined pursuant to Section
4 110.1.

5 As an example, consider a 950 sq. ft. D4.5A single-family home built in 1955. During a fire, this
6 home suffers extensive damage, requiring its demolition. The provisions of section 70 may apply
7 to exclude from the meaning of new construction a replacement home that is (1) constructed
8 timely following the fire; and (2) comparable to the damaged or destroyed property, in terms of
9 square footage and construction quality. However, to the extent that the replacement home was
10 either (1) not constructed timely following the fire, or (2) exceeds the size or construction quality
11 of the destroyed home, new construction has occurred.

12 **Seismic Reinforcement**

13 When local ordinances require the reinforcement of improvements built with unreinforced
14 masonry wall construction, subdivision (d) of section 70 provides for a fifteen (15) year exclusion
15 of the construction activity necessary to comply with the local regulations:

16 (d) (1) Notwithstanding the provisions of subdivisions (a) and (b), where a
17 structure must be improved to comply with local ordinances on seismic safety,
18 "newly constructed" and "new construction" does not mean the portion of
19 reconstruction or improvement to a structure, constructed of unreinforced
20 masonry bearing wall construction, necessary to comply with the local ordinance.
21 This exclusion shall remain in effect during the first 15 years following that
22 reconstruction or improvement (unless the property is purchased or changes
23 ownership during that period, in which case the provisions of Chapter 2
24 (commencing with Section 60) of this division shall apply).

25 (2) In the sixteenth year following the reconstruction or improvement referred to
26 in paragraph (1), the assessor shall place on the roll the current full cash value of
27 the portion of reconstruction or improvement to the structure which was excluded
28 pursuant to this subdivision.

29 (3) The governing body which enacted the local ordinance shall issue a certificate
30 of compliance upon the request of the owner who, pursuant to a notice or permit
31 issued by the governing body which specified that the reconstruction or
32 improvement is necessary to comply with a seismic safety ordinance, so
33 reconstructs or improves his or her structure in accordance with the ordinance.
34 The certificate of compliance shall be filed by the property owner with the county
35 assessor on or before the following April 15. The provisions of this subdivision
36 shall not apply to any structure for which a certificate is not filed.

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1 **Fire Sprinklers**

2 Section 74 provides for the exclusion of fire sprinkler systems from the definition of newly
3 constructed:

4 (a) For purposes of subdivision (a) of Section 2 of Article XIII A of the
5 Constitution, "newly constructed" does not include the construction or installation
6 of any fire sprinkler system, other fire extinguishing system, fire detection system,
7 or fire-related egress improvement which is constructed or installed on or after
8 November 7, 1984.

9 (b) Notwithstanding any other provision of this chapter or Chapter 3.5
10 (commencing with Section 75), neither "newly constructed" nor "new
11 construction" includes the construction or installation of any fire sprinkler system,
12 other fire extinguishing system, fire detection system, or fire-related egress
13 improvement which is constructed or installed on or after November 7, 1984...

14 (e) This section shall apply only to fire sprinkler systems, other fire extinguishing
15 systems, fire detection systems, and fire-related egress improvements, as defined in
16 this section, which are constructed or installed in an existing building.

17 As defined above, section 74 excludes fire sprinklers when they are added to an existing building.
18 Section 74 does not, however, exclude any fire safety equipment that is installed during a
19 building's original construction.

20 **Disabled Access**

21 Two different code sections provide for the exclusion of construction activity designed to make a
22 property more accessible to, or more usable by, a disabled person. First, section 74.3 excludes
23 most construction that is for the purpose of making a dwelling more accessible to disabled
24 resident. Section 74.3 states in part:

25 (a) For purposes of subdivision (a) of Section 2 of Article XIII A of the California
26 Constitution, "newly constructed" does not include the construction, installation,
27 or modification of any portion or structural component of an existing single- or
28 multiple-family dwelling that is eligible for the homeowner's exemption as
29 described in Section 218, if the construction, installation, or modification is for the
30 purpose of making the dwelling more accessible to a severely and permanently
31 disabled person who is a permanent resident of the dwelling.

32 (c) For purposes of this section, "accessible" means that combination of elements
33 with regard to any dwelling that provides for access to, circulation throughout, and
34 the full use of, the dwelling and any fixture, facility, or item therein. The
35 construction of an entirely new addition, such as a bedroom or bath, that
36 duplicates existing facilities in the dwelling that are not otherwise available to the
37 disabled resident solely because of his or her disability, shall be deemed to make

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1 the dwelling more accessible within the meaning and for the purposes of this
2 section.

3 (d) The exclusion provided by this section shall apply only to those improvements
4 or features that specially adapt a dwelling accessibility by a severely and
5 permanently disabled person. The value of any improvement, addition, or
6 modification excluded pursuant to this section shall not include any other
7 functional improvement, addition, or modification to the property unless it is
8 merely incidental to the qualified improvements or features.

9 (e) The exclusion provided by this section shall not apply to the construction of an
10 entirely new dwelling.

11 As an example of the application of this section, the owner of a single-family home eligible for a
12 homeowner's exemption constructs a new accessible bedroom and bathroom for a disabled
13 resident. Prior to the new construction, the home had no accessible bedrooms or bathrooms.
14 Provided that the construction meets the requirements set forth in section 74.3, it should be
15 excluded from reassessment. If, however, the home previously had an accessible bedroom and
16 bathroom, the construction would not be eligible for this exclusion.

17 Second, construction that improves accessibility for a disabled person to buildings or structures
18 that do not qualify under the provisions of section 74.3 may still qualify under section 74.6, which
19 states in part:

20 (a) For purposes of paragraph (5) of subdivision (c) of Section 2 of Article XIII A
21 of the California Constitution, "newly constructed" and "new construction" does
22 not include the construction, installation, removal, or modification of any portion
23 or structural component of an existing building or structure to the extent that it is
24 done for the purpose of making the building or structure more accessible to, or
25 more usable by, a disabled person....

26 (d) The exclusion provided for in this section does not apply to the construction of
27 an entirely new building or structure, or to the construction of an entirely new
28 addition to an existing building or structure....

29 (f) For the purposes of the exclusion provided for in subdivision (a), the
30 construction, improvement, modification, or alteration of an existing building or
31 structure may include, but is not limited to, access ramps, widening of doorways
32 and hallways, barrier removal, access modifications to restroom facilities,
33 elevators, and any other accessibility modification of a building or structure that
34 would cause it to meet or exceed the accessibility standards of the 1990 Americans
35 with Disabilities Act (Public Law 101-336) and the most recent edition to the
36 California Building Standards Code that is in effect on the date of the application
37 for a building permit.

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1 As an example of the application of this section, a department store that widens doorways,
2 constructs access ramps, and modifies restrooms to improve accessibility (all within an existing
3 structure) may be eligible to have those modifications excluded from the meaning of new
4 construction. However, should that department store add entirely new accessible restrooms, that
5 portion of the construction would not be eligible for this exclusion.

6 **Commencement of New Construction**

7 Subdivision (c) of rule 463.500 defines "commencement of construction" as follows:

8 (3) "Commencement of construction" means the performance of physical activities
9 on the property which results in changes which are visible to any person inspecting
10 the site and are recognizable as the initial steps for the preparation of land or the
11 installation of improvements or fixtures. Such activities include clearing and
12 grading land, layout of foundations, excavation of foundation footing, fencing the
13 site, or installation of temporary structures. Such activities also include the
14 severance of existing improvements or fixtures.

15 "Commencement of construction" does not include activities preparatory to actual
16 construction such as obtaining architect services, preparing plans and
17 specifications, obtaining building permits or zoning variances or filing subdivision
18 maps or environmental impact reports.

19 Commencement of construction shall be determined solely on the basis of activities
20 which occur and are apparent on the property undergoing new construction.
21 Where several parcels are adjacent and will be used as a single unit by the builder
22 for the construction project, the commencement of construction shall be
23 determined on the basis of the activities which occur on any part of the separate
24 parcels comprising the unit. Where a property has been subdivided into separate
25 lots, the commencement of construction shall be determined on the basis of the
26 activities occurring on each separate lot. Where the property has been subdivided
27 into separate lots and several or all of those lots will be used as a single unit by the
28 builder for the construction project, the commencement of construction shall be
29 determined on the basis of the activities which occur on any part of the several
30 parcels comprising the unit.

31 **Construction-in-Progress**

32 As provided in section 71 and restated in rule 463(d), new construction in progress is assessable
33 on each lien date:

34 New construction in progress on the lien date shall be appraised at its full value on
35 such date and each lien date thereafter until the date of completion, at which time
36 the entire portion of property which is newly constructed shall be reappraised at its
37 full value.

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1 "Construction in progress" (CIP) is property under construction on the lien date and may be an
2 entire property, such as an entirely new single family residence, or may be only a portion of an
3 improvement, such as a room addition. On each lien date, construction in progress is assessed at
4 its full cash value, until the construction is complete and the property is available for use. At the
5 time of completion, the completed construction is reappraised and a new base year value is
6 established for the improvement, fixture, or portion thereof that is newly constructed.

7 For example, assume that a contractor breaks ground for a new home during the month of
8 November. On the January 1 lien date, the foundations, frame, and roof of that home have been
9 completed. As of January 1, the assessor would estimate and enroll a value for the partially
10 completed new construction. In contrast, assume that a developer obtains the necessary building
11 permits to construct a new regional mall on December 15, but does not commence construction
12 until January 14. Although the developer has made significant investment (in plans, permits, and
13 fees) prior to the lien date, construction does not begin until after the lien date. In that case, there
14 is no assessable construction in progress.

15 **Date of Completion of New Construction**

16 The concept of the "date of completion of new construction" is explained in subdivision (b) of
17 rule 463.500 as follows:

18 The date of completion of new construction resulting from actual new construction
19 on the site shall be the earliest of either the date upon which the construction is
20 available for use by the owner or, if all of the conditions of paragraph (b) (1) are
21 satisfied, the date the property is occupied or used by the owner, or with the
22 owner's consent, after the owner has provided a notice in accordance with
23 paragraph (b) (1).

24 (1) The date of completion of new construction resulting from actual physical
25 new construction shall not be the date upon which it is available for use if the
26 owner does not intend to occupy or use the property and the owner notifies the
27 assessor in writing prior to, or within 30 days after, the date of commencement of
28 construction that he/she/it does not intend to occupy or use the identified property
29 or a specified portion thereof.

30 (2) The date of new construction resulting from actual physical new construction
31 shall be conclusively presumed to be the date upon which the new construction is
32 available for use by the owner if the assessor fails to receive notice as provided in
33 paragraph (b)(1).

34 "Available for use" is defined as follows in subdivision (c)(4) of rule 463.500:

35 "Available for use" means that the property, or a portion thereof, has been
36 inspected and approved for occupancy by the appropriate governmental official or,
37 in the absence of such inspection and approval procedures, when the prime
38 contractor has fulfilled all of the contractual obligations. When inspection and

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1 approval procedures are non-existent or exist but are not utilized and a prime
2 contractor is not involved, the newly constructed property is available for use
3 when outward appearances clearly indicate it is immediately available for the
4 purpose intended. Fixtures are available for use when all testing necessary for
5 proper operation or safety is completed.

6 New construction is not available for use if, on the date it is otherwise available for
7 use, it cannot be functionally used or occupied. In that case, the property is not
8 available for use until the date that any legal or physical impediment to functional
9 use or occupancy is removed.

10 DISCOVERY OF NEW CONSTRUCTION

11 Generally, assessors discover new construction activity through a combination of sources, such as
12 building permits provided by the appropriate county or city agencies; information furnished by the
13 taxpayer on business property statements (Form 571); or, for certain types of businesses,
14 documents evidencing required government inspections or approvals. Additional methods of
15 discovery include examination of aerial photographs, field inspections, and news media reports.

16 Building Permits

17 Section 72 requires that county and city building departments furnish the assessor with copies of
18 building permits and certificates of occupancy. This procedure is perhaps the assessor's most
19 effective method of discovering new construction. Subdivisions (a) and (b) of section 72 state:

20 (a) A copy of any building permit issued by any city, county, or city and county
21 shall be transmitted by each such entity to the county assessor as soon as possible
22 after the date of issuance.

23 (b) A copy of any certificate of occupancy or other document showing date of
24 completion of new construction issued or finalized by any city, county, or city and
25 county, shall be transmitted by each entity to the county assessor within 30 days
26 after the date of issuance or finalization.

27 Subdivision (c) of section 72 also provides for the transmittal of specific data to the assessor,
28 including floor plans and exterior dimensions:

29 At the time an assessee files, or causes to be filed, an approved set of building
30 plans with the city, county, or city and county, a scale copy of the floor plans and
31 exterior dimensions of the building designated for the county assessor shall be filed
32 by the assessee or his or her designee. The scale copy shall be in sufficient detail to
33 allow the assessor to determine the square footage of the building and, in the case
34 of a residential building, the intended use of each room. An assessee, or his or her
35 designee, where multiple units are to be constructed from the same set of building
36 plans, may file only one scale copy of floor plans and exterior dimensions, so long
37 as each application for a building permit with respect to those building plans

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1 specifically identifies the scale copy filed pursuant to this section. However, where
2 the square footage of any one of the multiple units is altered, an assessee, or his or
3 her designee, shall file a scale copy of the floor plan and exterior dimensions that
4 specifically identifies the alteration from the previously filed scale copy. The
5 receiving authority shall transmit that copy to the county assessor as soon as
6 possible after the final plans are approved.

7 These provisions create a valuable source of information that allows for the timely discovery and
8 assessment of most new construction activity.

9 **Business Personal Property Statements**

10 An assessor's business property division will often provide information about recent changes to
11 land or improvements. From that information, which may come from business property
12 statements, audit reports, or other sources, an appraiser will investigate the reported changes to
13 determine their classification and assessability. In most situations, the real property division will
14 make the final determination on these issues.

15 As discussed later in this chapter, coordination between the real property appraisers and the
16 business property auditor appraisers serves as an important adjunct to the discovery process.
17 Besides providing a check of construction completed without a building permit, coordination
18 between the two divisions can provide information relevant to the historic costs incurred by the
19 assessee for that new construction.

20 **Health Department**

21 County health departments are required to inspect real property when that property is put to
22 certain uses, such as restaurants, medical offices, etc. By obtaining copies of use permits from the
23 county health department, an assessor's office may discover new construction resulting from a
24 change of use.

25 **Aerial Photographs and Satellite Imagery**

26 A series of aerial photographs, reviewed over time, can provide an important resource for the
27 discovery and location of new construction. By comparing older photographs to newer
28 photographs, appraisers can determine the areas where new construction has taken place. By
29 comparing that information with appraisal records, it is possible to detect new construction that
30 has otherwise escaped discovery.

31 **Field Inspection**

32 In the field, both the real property appraisers and business property auditor-appraisers should be
33 alert for new construction that has escaped assessment. Few can dispute the accuracy of an actual
34 field inspection of real property. For some uses, such as property being claimed as exempt under
35 the welfare exemption provisions, field inspections are mandatory.

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1 **News Media Reports**

2 Trade journal, newspaper, radio, and television reports can provide valuable sources of
3 information to aid in the discovery of new construction activity. News media reports may alert
4 assessors to construction projects such as new industrial facilities, new shopping malls, changes in
5 use, and demolition of existing improvements. Examples of new construction discovery through
6 the media include advertisements for new amusement park rides, grand opening announcements of
7 new port facilities, reports of building demolition, and ground breaking ceremonies.

8 **APPRAISING NEW CONSTRUCTION**

9 Proper valuation of new construction means estimating the full value of the qualifying new
10 construction as of the date of completion or, if the construction is in progress, as of the lien date.
11 Assuming adequate data and proper application of each approach to value, no single approach to
12 value should be precluded from consideration during the appraisal of new construction.⁷³

13 New construction may be any of the following: (1) entirely new structures; (2) square footage
14 added to existing structures; (3) removal of improvements; or (4) changes in use. These activities
15 must be evaluated under the statutes and rules discussed above and—if determined to meet the
16 definition of new construction—properly reflected on the assessment roll. Initial base year values
17 may reflect numerous types of newly constructed property, ranging from a shell structure to fully
18 completed luxury offices ready for immediate occupancy.

19 **Comparative Sales Approach**

20 Under rule 4, the comparative sales approach to value is preferred when adequate market data are
21 available:

22 When reliable market data are available with respect to a given real property, the
23 preferred method of valuation is by reference to sales prices.

24 To value newly constructed property by this method, the property is appraised with and without
25 the new construction as of the date of completion, using the selling prices of comparable
26 properties. The difference between the appraised values is an indicator of the value of the new
27 construction.

28 Alternatively, appraisers may employ a variation of this method when the new construction
29 consists of an addition to an existing structure. The value of an addition may sometimes be
30 derived from sales of similar properties without the need to produce two different appraisals. By
31 subtracting the land value from the selling prices of comparable properties, an appraiser can
32 estimate the value attributable to each square foot of improvement area.

⁷³ This discussion is intended to highlight special valuation issues that arise in the course of appraising new construction. More general information about the application of the various approaches to value to the appraisal of new construction is contained in the chapters that discuss those approaches.

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EXAMPLE 6-1: Addition to a Single Family Home

A 200 sq. ft. addition is added to a 2,000 sq. ft. D7.5 home. Sales of similar homes in the area (D7.5—2,200 sq. ft.) indicate a market value of \$95 per sq. ft. for improvements after deduction of the land value.

Results of this method indicate a value of \$19,000 for the addition. ($\$95 \times 200 = \$19,000$)

Appraisers should use this method with caution, since it relies heavily on an accurate estimate of land value. Using an incorrect estimate of land value will either over- or undervalue the addition.

1

2 **Potential Weaknesses of the Comparable Sales Approach**

3 Two elements of the comparable sales approach may affect its validity when appraising new
4 construction:

- 5 1. This method requires highly comparable market data; and,
- 6 2. An estimate of value derived from the comparable sales approach captures all aspects of a
7 change in value, some of which may be attributable to non-assessable construction.. For
8 example, the construction activity may incorporate elements of normal maintenance, or, in
9 the case of an addition, may reduce the functional obsolescence of the property as a whole.
10 These are increments of value that should not be included in the assessment of new
11 construction.

12 **Cost Approach**

13 The cost approach is the most commonly applied approach in the appraisal of new construction.
14 Since all properties incur costs during their construction, it is the one approach that can be
15 applied to all properties. Although rule 4 establishes a preference for the comparative sales
16 approach when adequate market data are available, the nature of new construction may limit the
17 availability of relevant market data. In such cases, the cost approach may be preferred. As stated
18 in rule 6(a):

19 The reproduction or replacement cost approach to value is used in conjunction
20 with other value approaches and is preferred when neither reliable sales data
21 (including sales of fractional interests) nor reliable income data are available and
22 when the income from the property is not so regulated as to make such cost
23 irrelevant. It is particularly appropriate for construction work in progress and for
24 other property that has experienced relatively little physical deterioration, is not
25 misplaced, is neither over nor underimproved, and is not affected by other forms of
26 depreciation or obsolescence.

27 **Replacement Cost and Reproduction Cost**

28 Estimates of both replacement cost and reproduction cost are used in the valuation of new
29 construction. The replacement cost approach estimates the cost to construct improvements of

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1 equivalent utility to the subject property, as of a specified date of valuation. Typically, the
2 replacement cost of a newly constructed improvement is easier to estimate and more relevant to
3 the basic principle of substitution, because it relies on the cost of comparable improvements rather
4 than the historical costs of the property being appraised. Common sources of replacement cost
5 data include *Marshall Valuation Service*, published by Marshall and Swift; AH 531, *Residential*
6 *Building Costs*, and AH 534, *Rural Building Costs*, published by the California State Board of
7 Equalization.

8 One means of estimating reproduction cost uses the historical, or original, costs incurred by the
9 property owner during the construction of a structure or fixture. When using reproduction cost to
10 appraise new construction, appraisers should distinguish between "uniquely useful" properties and
11 "special-purpose" designs for which there might be a market. Historical, or original, costs for
12 owner-occupied properties may reflect specialized designs, building materials, expedited
13 construction schedules, or other items that would not be recognized by the market for such
14 properties. Under certain conditions, these abnormal costs may reflect value in use, rather than
15 value in exchange.

16 **Costs of Construction May or May Not Equal Value**

17 Appraisers should use caution when applying the cost approach, since construction costs may be
18 highly divergent between different projects. Especially in the cases of over- or under-
19 improvements, the actual market value of new construction may vary widely from the cost to
20 construct those improvements. To compensate for these potential differences, the values derived
21 with the cost approach should be checked against values derived from the other approaches to
22 value whenever possible.

EXAMPLE 6-2: Cost May Not Equal Value

Owners of a single family residence construct a new, average quality, in-ground swimming pool on their property. The owners reported actual costs of construction at \$35,000. An analysis of relevant market data, however, shows that adding a swimming pool increases that property's value by only \$20,000. In this case, the addition of the swimming pool should be assessed at its market value of \$20,000, rather than the actual cost of \$35,000.

23

24 **Income Approach**

25 When new construction involves income-producing properties, the appraiser may estimate the
26 value of new construction using the income approach. Using current market-derived rates, the
27 appraiser may capitalize the difference in the subject property's economic rent with and without
28 the new construction to yield an estimate of value for the new construction. As with the
29 comparative sales approach, application of the income approach requires income data and
30 capitalization rates from highly comparable properties. In certain circumstances, the income
31 approach may capture value attributable to more than just the qualifying new construction.

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1 NEW CONSTRUCTION ASSESSMENT AND BASE YEAR VALUES

2 Under article XIII A of the California Constitution, most locally assessed real property is valued
3 based on its market value at the date of acquisition. Thus, under article XIII A, a property's
4 market value on the date of a change in ownership or the completion of new construction
5 becomes its "base year value." In the case of new construction, only the portion of the property
6 that is newly constructed receives a new base year value. Construction in progress is assessed
7 yearly at its market value on the January 1 lien date. As stated in section 71:

8 The assessor shall determine the new base year value for the portion of any taxable
9 real property which has been newly constructed. The base year value of the
10 remainder of the property assessed, which did not undergo new construction, shall
11 not be changed. New construction in progress on the lien date shall be appraised at
12 its full value on such date and each lien date thereafter until the date of completion,
13 at which time the entire portion of property which is newly constructed shall be
14 reappraised at its full value.

15 Under this section, if new construction occurs on only a portion of a property (e.g., the addition
16 of a bedroom), the newly constructed portion is given a new base year value, based upon its
17 current market value as of the date of completion; the pre-existing portion retains its existing
18 adjusted base year value. Thus, the assessment of a single property can contain multiple base year
19 values, based upon partial new construction or prior fractional ownership changes, until such time
20 as the entire property changes ownership. The following example illustrates the calculation of the
21 total assessed value of a property with multiple base year values.

EXAMPLE 6-3: Multiple Base Year Values

A property owner purchased a two-bedroom, single-family-residence on July 5, 1994 for \$115,000. After evaluating the data, the assessor enrolled the purchase price, allocating \$20,000 to the land and \$95,000 to the improvements. During February 1997, the owner began construction of a third bedroom, completing the project on August 1, 1997. Upon review of relevant market data, the assessor established that the additional bedroom had a market value of \$9,000. Only the addition acquired a new base year value. Assuming no overall decline in value, the assessed value for the total property for the 1998-1999 roll is:

	Base Value	x	Inflation Factor	=	Adjusted Base Year Value
1. 1995 Land Value	\$ 20,000	x	1.05195	=	\$ 21,039
2. 1995 Improvement Value	95,000	x	1.05195	=	99,935
3. 1998 Addition Value	9,000	x	1.00000	=	9,000
					Total 1998-99 Roll Value <u>\$ 129,974</u>

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1 Partially completed new construction does not acquire a base year value. Instead, new
2 construction in progress on any lien date is assessed, in effect, as a separate appraisal unit at its
3 market value on that date, and on each successive lien date until it is completed. Upon
4 completion, the entire portion of the property which is newly constructed is reappraised at its
5 market value, and acquires its own base year value.

6 **PROBLEMS IN THE ASSESSMENT OF NEW CONSTRUCTION**

7 **Impact Fees, Development Fees, and Off-Site Improvements**

8 Impact fees, certain development fees, and off-site improvements may reflect non-assessable
9 enhancements of land value, rather than assessable new construction. When using actual costs to
10 value new construction, appraisers should distinguish between costs attributable to new
11 construction and those costs that may enhance the value of the land but are not costs related to
12 additions or alterations of real property.

13 Consider this example. A large-scale industrial complex is built adjacent to a major freeway. As
14 part of the development, the builder agrees to (1) construct new freeway off-ramps leading to the
15 complex; (2) widen the major streets adjoining the development, and (3) purchase and dedicate a
16 separate parcel of land for wildlife preservation. Although each of these activities may enhance the
17 value of the complex, it is possible that the costs associated with these activities enhance the land
18 value, and should not be included in the new construction valuation of the improvements.

19 **Interpretation of Statutory Terms**

20 The statutory definition of the terms "newly constructed" and "new construction" makes use of
21 other terms that are themselves subject to differing interpretations. Specifically, the terms
22 "rehabilitation," "renovation," "modernization," and "substantially equivalent to new," as used in
23 section 70, have not eased the assessor's task of determining whether a particular project
24 constitutes assessable new construction.

25 Each of these terms was discussed earlier in this section. Determining whether a particular
26 improvement has been converted to a state that is "substantially equivalent to new" is an
27 especially subjective matter, however, and so the definition suggested earlier bears repeating.
28 Specifically, in the interests of promoting uniformity, assessors should apply the following
29 definition for this term: "Substantially equivalent to new" means that the new construction activity
30 under review has transformed an improvement, fixture, or a portion thereof into a state where its
31 utility is comparable to new.

32 **Assessment of Construction in Progress**

33 Although new construction is not assessable as construction in progress until the commencement
34 of actual, physical construction, no guidelines regulate the assessment of soft costs during the
35 construction period. Soft costs are those expenditures necessary for, but indirectly related to, the
36 construction of improvements; often, soft costs are not part of the construction contract.⁷⁴ When

⁷⁴ A detailed description of soft costs can be found in Chapter 2.

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1 using the cost approach to value, it is possible to enroll all preliminary soft costs—soft costs
2 incurred before the commencement of new construction—on the first lien date immediately
3 following the commencement of that new construction. In contrast, it is also possible to "meter
4 in" preliminary soft costs over the entire construction period. Under this procedure, only a
5 percentage of the soft costs are applied: the percentage of soft costs equal to an estimate of the
6 improvement's percentage completed on the lien date.

7 **Multiple-Stage New Construction**

8 Multiple-stage new construction occurs when a total property is constructed in stages. As certain
9 portions of the total development are completed and available for occupancy, the remainder of the
10 property is still under construction. An example is a new shopping center where some shops and
11 one anchor store are complete and available for occupancy, while the remaining stores are under
12 construction or awaiting construction. Under rule 463.500, the date of completion of new
13 construction is the date that the newly constructed property becomes available for use. The
14 following example illustrates how this concept may be applied in the assessment of a project
15 involving multiple-stage new construction:

EXAMPLE 6-4: Multiple Stage New Construction Scenarios

Scenario 1: Assume that a shopping center is being built in stages. One large anchor store and one wing of adjacent stores are complete and occupied. Plans call for the construction of another anchor store and another wing of stores in the next year. The completed improvements should be viewed as an independent phase. The completed store buildings should be assessed as new construction on their date of completion and assigned a base year value. If the initial phase was only partially complete on the lien date, it should be assessed as construction in progress.

Scenario 2: Assume that a high-rise structure has the first floor complete and occupied, while the upper floors are completed, except for interior finishing, on the lien date. Plans call for the completion of the upper floors as they are leased. In this case, the entire structure, as it exists, should be assessed as of the date of completion for its current state and assigned a base year value. Any additional interior finish work should be appraised as new construction on the date or dates of completion.

Scenario 3: Assume that a six-store retail building has one store complete and occupied, while the remaining structure is still under construction. Indications are that the work will continue until the stores are completed. In this situation, the entire project should be assessed as construction in progress on the lien date until the basic structure is complete.

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1 Entrepreneurial Profit

2 Section 401.6 limits the application of an entrepreneurial profit component for the valuation of
3 special use properties and applies similarly to new construction of special use properties. Section
4 401.6 states:

5 (a) In any case in which the cost approach method is used to value special use
6 property for purposes of taxation, the assessor shall not add a component for
7 entrepreneurial profit unless he or she has market-derived evidence that
8 entrepreneurial profit exists and has not been fully offset by physical deterioration
9 or economic obsolescence.

10 (b) For purposes of this section:

11 (1) "Entrepreneurial profit" means either of the following:

12 (A) The amount of a developer would expect to recover with respect to a property
13 in excess of the amount of the developer's costs incurred with respect to that
14 property.

15 (B) The difference between the fair market value of a property and the total costs
16 incurred with respect to that property.

17 (2) "Total costs" means both direct costs of construction, including, but not limited
18 to, the costs of land, building materials, and labor, and indirect costs of
19 construction, including, but not limited to, the costs of construction capital and
20 permit fees.

21 (3) "Special use property" means a limited market property with a unique physical
22 design, special construction materials, or a layout that restricts its utility to the use
23 for which it was built.

24 When appraising owner-built improvements, which may constitute a special use property, an
25 entrepreneurial profit component may be inappropriate when (1) no one else has the ability to
26 construct those improvements, (2) there is no additional market for the property, or (3) the
27 property is an over-improvement. However, section 401.6 does not preclude the application of a
28 market-derived entrepreneurial profit component in the valuation of non-special use properties.

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ASSESSMENT OF IMPROVEMENTS RELATED TO BUSINESS PROPERTY⁷⁵

Improvements related to business property include improvements reported on Schedule B of the Business Property Statement and other improvements owned by or made for a business. Many variables exist regarding the valuation of these improvements. Factors required to make a valid assessment—especially property classification, identification of assessee, and valuation—may be difficult to determine. Depending on the data source, the assessment can be processed by either the real property appraiser, the auditor-appraiser or both, on either the secured or unsecured roll, creating a situation that may result in duplicate or *escape assessments*. Assessment of improvements related to business property is, therefore, an important topic for discussion within this section of the Assessors' Handbook. The discussion is divided into five main sections: definitions of relevant terms, classification, appraisal, determination of assessee, and suggested procedures. It is directed to both real property appraisers and auditor-appraisers.

DEFINITIONS OF RELEVANT TERMS

The purpose of this section is to define and describe the following relevant terms: improvements, building improvements, landlord improvements, leasehold (or tenant) improvements, structure items, and fixtures as used in the context of this section.

Improvements

As defined in section 105, improvements include:

(a) All buildings, structures, fixtures, and fences erected on or affixed to the land.

(b) All fruit, nut bearing, or ornamental trees and vines, not of natural growth, and not exempt from taxation, except date palms under eight years of age.

Improvements within this statutory definition are reported, classified and subclassified on the Business Property Statement, Schedule B.⁷⁶ Examples of such improvements are provided in rule 124(b).

Building Improvements

As used on the property statement, *building improvements* are all improvements to a structure. They may include improvements made by the landlord and improvements made by or for the tenant. They can be sub-classified as structure items and fixtures.

Landlord Improvements

For purposes of this discussion, building improvements made by the real property owner are referred to as *landlord improvements*. This term includes improvements paid for by the landlord whether they benefit the landlord or the tenant. Landlord improvements are either structure items and fixtures, as discussed below.

⁷⁵ Refer to AH 571 for discussions of related business personal property topics.

⁷⁶ No classification between structure and fixture is required for State assessed leasehold improvements.

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1 Leasehold (or Tenant) Improvements

2 For purposes of this discussion, the term *leasehold improvement* and *tenant improvement* are
3 used synonymously to mean all "improvements or additions to leased property that have been
4 made by the lessee."⁷⁷ Leasehold improvements include structure items as well as fixtures paid for
5 by the lessee.

6 For example, two tenants move into separate units.

- 7 • Tenant A moves into a shell and makes basic improvements (e.g., a drop ceiling, floor
8 finish, floor to ceiling partitions for an office) to finish the interior of the structure.
- 9 • Tenant B moves into a space ready for occupancy and only makes improvements designed
10 for a specific trade business, or profession (e.g., shelving attached to a wall or dressing
11 rooms in the case of retail apparel sales).

12 As the definitions below will indicate, Tenant A has made improvements classified as structure
13 items. Tenant B has made improvements classified as fixtures. However, in both cases, the
14 improvements made by the tenants are leasehold (or tenant) improvements.

15 Structure Items

16 A *structure* may be defined as "an edifice or building; an improvement."⁷⁸ Structure items are
17 integral parts of the structure by nature. The Business Property Statement further describes
18 structure items:

19 An improvement will be classified as a structure when its primary use or purpose is
20 for housing or accommodation of personnel, personalty, or fixtures and has no
21 direct application to the process or function of the industry, trade, or profession.

22 Structure items are reported on the property statement on Schedule B, column 1, *Structure Items*.
23 A listing of items commonly reported and classified as structure items can be found in Appendix B
24 and also in Chapter 6 of AH 581, *Equipment Index and Percent Good Factors*.

25 Fixtures

26 Paragraph 1, of rule 122.5(a) defines *fixtures*:

27 A fixture is an item of tangible property, the nature of which was originally
28 personalty, but which is classified as realty for property tax purposes because it is
29 physically or constructively annexed to realty with the intent that it remain annexed
30 indefinitely.

31 Paragraph 2, of rule 122.5(a) sets forth three tests to determine what constitutes a fixture
32 for property tax purposes:

⁷⁷ Appraisal Institute, *The Dictionary of Real Estate Appraisal*, s.v. "leasehold improvement," 204.

⁷⁸ Appraisal Institute, *The Dictionary of Real Estate Appraisal*, s.v. "structure," 353.

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1 The manner of annexation, the adaptability of the item to the purpose for which
2 the realty is used, and the intent with which the annexation is made are important
3 elements in deciding whether an item has become a fixture or remains personal
4 property. Proper classification, as a fixture or as personal property, results from a
5 determination made by applying the criteria of this rule to the facts in each case.⁷⁹

6 Fixtures are reported on the Business Property Statement, Schedule B, column 2, *Fixtures Only*.
7 A listing of items commonly reported and classified as fixtures can be found in Appendix B and
8 also in Chapter 6 of AH 581, *Equipment Index and Percent Good Factors*. It is important to note,
9 however, that these items are fixtures only when they are *not* an integral part of the building, but
10 their "use or purpose directly applies to or augments the process or function of a trade, industry,
11 or profession."⁸⁰

12 **Types of Fixtures**

13 *Trade Fixtures*

14 In the context of the property tax, a *trade fixture* is merely a type of fixture which is "trade-
15 related." All fixtures, including trade fixtures, have received the same treatment by the courts. In
16 the interest of uniformity, neither the statutes nor the courts base the classification of fixtures on
17 whether they are trade-related. As expressed by the court in *Trabue Pittman Corp. v. County of*
18 *Los Angeles* (1946) 29 Cal.2d 385,

19 To classify trade fixtures as real property is not to obliterate the distinction
20 between fixtures and trade fixtures for all purposes, nor to introduce an innovation
21 into the law of trade fixtures. It is well settled that for purposes of taxation the
22 definitions of real property in the revenue and taxation laws of the state control
23 whether they conform to definitions used for other purposes or not. ...Section 104
24 of the Revenue and Taxation Code declares that real estate shall include
25 "improvements," and section 105 defines improvements as "fixtures." No
26 exception is made in the case of trade fixtures. According to Burby, a trade fixture
27 is merely a particular type of fixture, one for which the law makes a special
28 provision permitting its removal under certain circumstances by a lessee from the
29 lessor's real property to which it has been annexed. (See Burby Hornbook of the
30 Law of Real Property (1943) p.28).

31 In a subsequent case deciding similar issues, the court held:

32 It follows [from *Trabue Pittman* above] that the applicable statutes do not permit
33 the division of trade fixtures into classes or distinctions contended for by
34 defendants, and on the contrary require all fixtures or trade fixtures to be taxed as
35 improvements.⁸¹

⁷⁹ Intent is the primary test of classification. Rule 122.5(d).

⁸⁰ Rule 463(c).

⁸¹ *Simms v. County of Los Angeles* (1950) 35 Cal.2d 303.

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1 Additionally, "trade fixture," in section 469 and "fixture" in rule 192(a) are used synonymously in
2 the determination of a mandatory audit. Thus, trade fixtures are merely a particular type of fixture
3 and must be evaluated under the three-part test in rule 122.5.

4 ***Fixed Machinery and Equipment***

5 *Fixed machinery and equipment* (FME) is another type of fixture. FME is equipment which is
6 physically or constructively annexed and intended to remain indefinitely with the realty. Rule
7 122.5(c) sets forth the standard for constructive annexation and some examples are provided in
8 subdivision (e). The concept of constructive annexation of equipment has long been recognized by
9 the courts.

10 In addressing the question of annexation, we initially observe that the common law
11 test of technical affixation of the article to the realty is no longer an absolute
12 prerequisite to "fixture status." On the contrary, the modern trend of case law
13 underlines that fixtures include articles such as heavy machinery whose permanent
14 annexation is not manifested by the use of bolts, screws, and the like, but which are
15 of such weight that the mere retention in place of gravity is sufficient to give them
16 the character of permanency and therefore affixation to the realty.⁸²

17 An assessee may erroneously report FME as personal property (i.e., machinery and equipment) on
18 Schedule A of the Business Property Statement. The assessee may report such property as
19 machinery and equipment because of its use/function as machinery or equipment. However, if the
20 property's weight or method of attachment and the intent as reasonably manifested by outward
21 appearance is that the property remain annexed indefinitely, then based on rule 122.5, such
22 equipment is actually FME, that is, a fixture. Often, the incorrect classification is discovered by
23 physical inspection.

24 **CLASSIFICATION**

25 **Classification on the Property Statement**

26 Schedule B (including the supplemental schedule) of the Business Property Statement requests
27 information regarding building improvements (landlord and leasehold improvements) in relation to
28 a specific property or business. This schedule provides valuable information and may be used by
29 both auditor-appraisers and real property appraisers. Items reported in Column 1 and Column 2
30 are structure items and fixtures, respectively, as defined earlier. Items reported in Column 3, *Land*
31 *Improvements*, include such things as blacktop, curbs, and fences; and items reported in Column
32 4, *Land and Land Development*, include such things as fill and grading.

33 **Why Classification Is Important**

34 Property tax law requires that improvement value be shown separately from land value and
35 personal property value on the assessment roll. However, there is no requirement that fixtures

⁸² *M.P. Moller, Inc. v. Wilson* (1936), 8 Cal.2d 31.

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1 value be shown as a separate category of improvements.⁸³ Nonetheless, it is necessary for the
2 appraiser to make the distinction between fixtures and other improvements prior to enrollment,
3 because classification may affect the audit procedures and valuation of property.

4 It is important to properly classify fixtures separate from other improvement items for several
5 reasons:

- 6 1. Fixtures are a separate appraisal unit when measuring declines in value. (Rule 461(d))
- 7 2. Fixtures are treated differently than other real property (i.e., structure items) for
8 supplemental roll purposes.
- 9 3. Fixtures and personal property values are components in the value criterion for
10 determination of a mandatory audit.

11 **Fixtures are a Separate Appraisal Unit When Measuring Declines in Value**

12 Proposition 8, amended Article XIII A of the State Constitution to require the assessor to
13 recognize declines in value (of real property) if market value on the lien date falls below the
14 property's factored base year value. Section 51 requires that the assessor annually enroll the lower
15 of either (1) a property's base year value factored for inflation; or (2) its full, or market, value as
16 of the lien date. Thus, declines in value under Proposition 8 are determined by comparing the
17 current full value (i.e., current market value) of an appraisal unit to the factored base year value of
18 the unit on the lien date.⁸⁴

19 Appraisal unit is defined in section 51(d) as the unit that (1) persons in the marketplace commonly
20 buy and sell as a unit or (2) that is normally valued separately. Land and improvements, for
21 example, are an appraisal unit because improvements are typically bought and sold with land.
22 Fixtures not typically bought and sold separately in the market are also considered a separate
23 appraisal unit under this section, because they are normally valued separately . Rule 461(d)
24 provides that fixtures, and other machinery and equipment classified as improvements, are a
25 separate appraisal unit when measuring a decline in value.⁸⁵

26 **Fixtures may be a Separate Appraisal Unit for Supplemental Roll Purposes**

27 Generally, all property that changes ownership or which is newly constructed after the lien date is
28 to be assessed on the date of change in ownership or completion of new construction and is
29 subject to supplemental assessment. An exception to this requirement applies to fixtures which
30 "are normally valued as a separate appraisal unit". This provision is set forth in both sections 75.5
31 and 75.15. The language under section 75.5 removes from the definition of "property" subject to
32 supplemental assessment, "fixtures which are normally valued as a separate appraisal unit from a

⁸³ Section 602.

⁸⁴ Rule 461.

⁸⁵ See *County of Orange v. Orange County Assessment Appeals Bd.* (1993) 13 Cal.App.4th 524, which held that under rule 461(d), "the components of taxable property may be separated for valuation purposes," and that section 51, subdivision (e) [currently (d)] "states, albeit ungrammatically, that an appraisal unit can be that which are [sic] normally valued separately. Taken as a whole, neither section 51 in general, nor subdivision (e) in particular, mandates appraisal of the property as a single unit."

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1 structure." Section 75.15(a) prescribes the property treatment of fixtures "normally valued as a
2 separate appraisal unit," including the requirement for the assessee to report the cost and date of
3 completion or removal of such fixtures.

4 Section 75.5 states:

5 "Property" means and includes real property, other than fixtures which are
6 normally valued as a separate appraisal unit from a structure, and manufactured
7 homes subject to taxation under Part 13 (commencing with section 5800

8 Thus, "free standing" fixtures that are not attached to the real property, but constitute a separate
9 appraisal unit, are treated as personal property and are therefore, annually assessed and not
10 subject to supplemental assessment. Where fixtures are included with other real property in an
11 appraisal unit, they are subject to supplemental assessment when that unit changes ownership or is
12 newly constructed.

13 If the entire appraisal unit is reappraised and the appraised value is allocated among land,
14 structures, fixtures, etc., the fixtures are being valued as part of a larger appraisal unit; they are
15 not being valued as a separate appraisal unit. In this case, they *are* subject to supplemental
16 assessment as is the rest of the real property in the larger appraisal unit. On the other hand, if land
17 and structures are appraised as one unit and fixtures are appraised separately, the fixtures are
18 being appraised as a separate appraisal unit and **are not** subject to supplemental assessment.

19 **Fixture Value Included in Value Criterion for Mandatory Audit**

20 The combined total value of personal property and fixtures determines whether an audit is
21 mandatory; the value of structure items is not included in this determination. Section 469 states:

22 In any case in which locally assessable trade fixtures⁸⁶ and business *tangible*
23 *personal property* owned, claimed, possessed, or controlled by a taxpayer engaged
24 in a profession, trade, or business has a full value of three hundred thousand
25 dollars (\$300,000) or more, the assessor shall audit the books and records of that
26 profession, trade, or business at least once every four years. [Emphasis added]

27 Caution should be exercised to avoid misclassification. If fixtures are misclassified—notably, if
28 fixtures are classified as structures or visa versa—the value criterion for mandatory audits cannot
29 be applied properly.

30 **APPRAISAL OF IMPROVEMENTS RELATED TO BUSINESS PROPERTY**

31 **General**

32 In general, improvements related to business property (i.e., landlord improvements,
33 leasehold/tenant improvements, structure items, and fixtures) are valued, as is other real property,
34 in accordance with section 51. As previously discussed, section 51 requires county assessors to

⁸⁶ Fixtures and trade fixtures are synonymous terms in this context, as discussed earlier.

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1 value taxable real property at the lesser of its factored base year or its full cash value as defined in
2 section 110.⁸⁷

3 In accordance with section 110.1, a property's base year value is its fair market value as of either
4 the 1975 lien date or the date the property was last purchased, newly constructed, or underwent a
5 change in ownership after the 1975 lien date. Base year value is generally estimated using one or
6 more of the generally accepted and authorized approaches to value discussed in rule 3 (i.e., the
7 comparative sales approach, the cost approach, or the income approach). The base year value can
8 be adjusted for the effects of inflation up to a maximum of 2 percent per year based on the
9 California Consumer Price Index. For example, an improvement with a 1997-1998 base year value
10 of \$100,000 (and a 1998 inflation factor of 2 percent) has an adjusted base year value of \$102,000
11 in year 1998-1999.

$$\begin{aligned} 12 \quad & \text{Base Year Value} \times \text{Inflation Factor} = \text{Indexed Base Year Value} \\ 13 \quad & \$100,000 \times 1.02 = \$102,000 \end{aligned}$$

14 The full cash value on the lien date is the property's current market value. This value is also
15 estimated by one or more approaches to value allowed by rule 3. If the current market value of a
16 property is below its factored base year value, the property is temporarily reassessed to reflect the
17 lower value, that is, the property's current market value or its full cash value on the lien date
18 (section 51(a)). In some future year, if and when the property's market value exceeds its factored
19 base year value, the factored base year value is restored to the assessment roll. Assume that the
20 improvement mentioned above, with an factored base year value of \$102,000, has a current
21 market value of \$95,000. Since the market value (\$95,000) on the 1998-1999 lien date is less than
22 the indexed based year value (\$102,000), the market value is enrolled until such time that the
23 market value exceeds the factored base year value.

24 The valuation of structure items is normally conducted by the real property appraiser since he or
25 she has the market data, cost manuals, and requisite experience to properly value all real property.
26 In certain circumstances, however, the auditor-appraiser may be required to value this property.
27 In other circumstances, the real property appraiser may be required to value fixtures when they
28 are commonly bought and sold in the marketplace with the land and improvements and are so
29 integrated with the realty such that the highest and best use of the property depends on the
30 valuation of the appraisal unit as a whole.

31 Fixtures are normally valued and assessed by the auditor-appraiser. Since fixtures are property
32 that directly apply to or augment the process or function of a trade, industry, or profession, it
33 follows that fixtures should be valued by the same appraiser (i.e., the auditor-appraiser) valuing
34 other business property.

⁸⁷ Fixtures, although real property, are often valued in a manner similar to personal property. See AH 571 for a complete discussion of personal property and fixtures, and AH 582 for Board approved equipment index and percent good factors and a discussion of their application.

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1 In most cases concerning fixtures, the lower value is the full cash value on the lien date. This is
2 the current market value of the property estimated by the auditor-appraiser using an appropriate
3 approach to value (the cost approach, the comparative sales approach, or the income approach).

4 **Some Valuation Issues**

5 In valuing improvements related to business property (i.e., landlord and leasehold (tenant)
6 improvements, both structure items and fixtures), careful consideration should be given to new
7 construction, leasehold improvements abandoned on the lien date, and fixtures which have
8 declined in value. Several issues and questions arise and should be addressed regarding these
9 types of improvements. The following discussion addresses these issues.

10 **New Construction**

11 Property tax law governing the valuation of new construction is primarily contained in sections 70
12 through 74.6 and rules 463 and 463.5. An earlier section of this chapter discusses the subject of
13 new construction; and that discussion is generally applicable to new construction involving
14 improvements related to business property.

15 New construction is defined in rule 463(b) to include (1) "any substantial addition to land or
16 improvements, including fixtures"; (2) "any physical alteration of any improvement which
17 converts the improvement or any portion thereof to the substantial equivalent of a new structure
18 or portion thereof or changes the way in which portion of the structure that had been altered is
19 used"; or (3) "any substantial physical rehabilitation, renovation or modernization of any fixture
20 which converts it to the substantial equivalent of a new fixture." Excluded from alterations that
21 qualify as new construction is construction or reconstruction performed for "the purpose of
22 normal maintenance and repair." In addition rule 463.500(c) specifically provides that new
23 construction also includes "the installation of a new fixture which is an addition or is a
24 replacement of an existing fixture."

25 In the context of fixtures, the phrase "a portion thereof" may refer to one machine or even a series
26 of machines that perform a distinct function or process in a trade, industry, or profession. The unit
27 of appraisal could be a lathe, a drill press, an entire processing line, or the initial store fixtures in a
28 commercial establishment. Thus, replacement of the unit or rehabilitation, renovation, or
29 modernization of the unit to substantially equivalent to new construction to a portion thereof.
30 Rule 463(b), relating to fixtures, provides that "substantial equivalency shall be ascertained by
31 comparing the productive capacity, normally expressed in units per hour, of the rehabilitated
32 fixture to its original capacity." Repair to a part of the unit only (e.g., a new gear for a lathe or
33 drill press), does not qualify as the substantial equivalent to new of a portion thereof. Normal or
34 routine maintenance in order to continue the use of function of the unit (i.e., a new roller to
35 replace the old one in a printing press) is also not considered new construction.

36 Landlord and leasehold (tenant) improvements, both structure items and fixtures, are frequently
37 renovated, rehabilitated, or modernized. This is often done in order to provide an interior or
38 exterior "facelift" for the space. Existing improvements may be removed and new improvements
39 added, even before the useful life of the existing improvements is over. If such construction

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1 activity converts the existing improvements to substantially equivalent to new or is the installation
2 of a new fixture or the replacement of an existing fixture, such activity is new construction.

3 When new construction of landlord and/or leasehold improvements occurs, relevant information
4 may be received by the assessor from different sources. Information may originate from (1) the
5 Business Property Statement (Schedule B) as reported by the assessee; (2) building permits; or,
6 (3) county health permits required for some types of construction. The Business Property
7 Statement is received by the business property division, and building permits are received by the
8 real property division. An assessee may report information on the property statement that has also
9 been provided to the real property appraiser in the form of a permit (and perhaps a follow-up
10 construction activity questionnaire submitted by the assessee). Since information is received by
11 both divisions, the landlord and/or leasehold improvements may be assessed by both divisions (or
12 may escape assessment) if a system of effective coordination is not in place. Methods for ensuring
13 such coordination are discussed later in this chapter.

14 After the information regarding construction activity is received, improvements should be
15 classified as a structure item or fixture.⁸⁸ The descriptions of additions and deletions should be
16 reviewed by both an auditor-appraiser and real property appraiser and valued appropriately. The
17 appraiser should examine the data received to determine whether any demolition costs have been
18 excluded, whether some elements of reported cost reflect normal maintenance and hence not new
19 construction, and whether, and to what extent, the new construction adds value.

20 The following example illustrates fixtures qualifying as new construction because they are
21 additions since the last lien date.

EXAMPLE 6-5: Valuation of New Construction (Fixtures)						
On February 1, 1997, an assessee purchased and installed a new walk-in refrigerator (not an integral part of the building). The total installed cost of the refrigerator was \$10,000. At acquisition, it had an estimated <i>average service life</i> of 12 years. The inflation factor for the current year is 2%.						
What is the assessed value on the 1998 lien date, January 1, 1998?						
	<u>Cost</u>	<u>Index Factor</u>	<u>Percent Good Factor</u> ⁸⁹	<u>Fair Market Value</u>	<u>Inflation Factor</u>	<u>Indexed Value</u>
Total 1997 Cost	\$ 10,000	100	.94	\$ 9,400		
Total 1997 Cost	\$ 10,000				1.02	\$ 10,200
Enrolled Value				<u>\$ 9,400</u>		
What is the supplemental assessment value?						
No supplemental assessment applies to this fixture. The fixture is a separate appraisal unit, and is not part of a larger appraisal unit; therefore, the property is not subject to supplemental assessment.						

22

⁸⁸ See "Why Classification is Important" which is discussed earlier in this section.

⁸⁹ Percent good factor taken from "Table 4: Machinery and Equipment Percent Good Factors," 12 year life, AH 581, January 1998.

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1 Valuation of Abandoned Leasehold Improvements

2 Improvements installed by a tenant, but left at a vacant rental space are called abandoned
3 leasehold improvements. The real property appraiser and/or auditor-appraiser may encounter
4 difficulties when assessing this property. For example, to whom are the structure items and
5 fixtures assessed, and what is their value? No two cases will be the same. Facts related to each
6 scenario will differ and appraisal must be based on those facts.

7 Following is an example of one possible scenario involving abandoned leasehold improvements.

EXAMPLE 6-6: Abandoned Leasehold Improvements

A retail business moves into a new indoor mall in 1996. The mall space is leased to the tenant as a shell. It is the tenant's responsibility, and expense, to finish the space to their specifications. The retail business spends \$20,000 to install leasehold improvements. The leasehold improvements, improvements paid for by the lessee, include structure items (dropped ceiling, finished walls, lighting fixtures, and carpet) and fixtures (burglar alarm system, and permanent partitions-less than floor to ceiling).

After two years at this location, the retail business moves out of the space to another mall. The leasehold improvements installed two years earlier are abandoned and the space is left vacant on the lien date, January 1, 1998.

Because the tenant has abandoned the improvements and the leased space in the scenario above, any improvements left behind revert to the owner of the mall; therefore, the mall owner is the assessee. The structure items and fixtures are assessable to the mall owner on the lien date.

The improvements may continue to have value because, in theory, another tenant using the same space and improvements may not be required to spend the same amount of time and money in order to utilize the space for their needs. The value, on the other hand, may be less than indicated by the cost approach, since a future tenant may have different needs than the original tenant. Professional judgment is needed to determine whether the abandoned improvements have the same value, lower value, or no value.

8

9 Valuation of Fixtures Under Decline in Value

10 Measuring declines in value can be simple when only one appraisal unit is involved. Fixtures, for
11 example, as a separate appraisal unit are valued at current market value on the lien date and at the
12 indexed base year value, and the lower value is enrolled. However, measuring declines in values
13 may become more difficult in a total property appraisal because more than one appraisal unit is
14 involved. When a decline in value(s) of such property occurs, the second paragraph of rule 461(d)
15 is extremely important and must be applied.

16 Declines in value will be determined by comparing the current lien date full value
17 of the *appraisal unit* to the indexed base year full value of the same unit for the
18 current lien date. [Emphasis added]

19 In other words, each appraisal unit must be considered separately. The following example
20 illustrates how declines in value and appraisal units should be treated under rule 461(d).

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EXAMPLE 6-7: Total Property Appraisal Under Decline in Value			
	Market Value on the Lien Date (Prop 8 Value)	Factored Base Year Value (Prop 13 Value)	Total Property Value (Assessed Value)
Appraisal Unit 1			
Land	\$515,000	\$100,000	
Building	<u>60,000</u>	<u>85,000</u>	
Unit 1 Value	<u>\$575,000</u>	<u>\$185,000</u>	\$ 185,000
Appraisal Unit 2			
Fixtures	40,000	52,000	
Unit 2 Value	<u>\$ 40,000</u>	<u>\$ 52,000</u>	<u>\$ 40,000</u>
Total Property Value (Unit 1 + Unit 2)			<u>\$225,000</u>
<p>As indicated in the above example, the proper unit values are "Appraisal Unit 1" (land and building) value of \$185,000 and the "Appraisal Unit 2" (fixtures) value of \$40,000. The correct total value of this property is \$225,000. The appraisal units must be defined properly when applying rule 461(d) and recognizing declines in value. If the appraisal units are not defined properly, the assessed value of the property would be erroneous and not in compliance with property tax law.</p>			

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DETERMINATION OF ASSESSEE

When the owner of a business is also the owner of the land and building, there is no question as to the proper assessee of the improvements related to business property (i.e., the landlord or tenant improvements). In this case, taxable property is assessed to one account on the secured roll. In the case where the owner of the real property (other than fixtures) does not own the business, however, other possibilities arise. Improvements related to business property may be constructed and paid for by either the landlord (landlord improvements) or the tenant (leasehold improvements) and in either case are assessable to either party.

When new construction of landlord or tenant improvements occurs, the added value of the new construction is typically assessed to the party who paid for the improvements. A tenant in a shopping center, for example, is typically assessed on the unsecured roll for leasehold improvements—structure items and fixtures—since they are constructed at the tenant's expense. Such construction is generally reported on the Business Property Statement. On the other hand, the landlord is typically assessed on the secured roll for landlord improvements since they are constructed at the building owner's expense. (Such new construction is usually discovered by a building permit.)

However, the above procedure is not a legal requirement. Section 405 allows the assessor to assess property to "the persons owning, claiming, possessing, or controlling it on the lien date." In the case of landlord improvements and leasehold improvements, the courts have interpreted this to mean either the lessor or lessee may be the proper assessee, even if the improvements have been paid for by the opposite party.⁹⁰

⁹⁰ *Valley Fair Fashions, Inc. v. Valley Fair*, (1966) 245 Cal.App. 2d 614, *Tele-Vue Systems, Inc. v. Contra Costa County*, (1972) 25 Cal.App.3d 340, and *Ventura County v. Channel Islands State Bank*, (1967) 251 Cal.App.2d 240.

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COORDINATION IN THE ASSESSMENT OF LANDLORD IMPROVEMENTS AND LEASEHOLD IMPROVEMENTS

Close cooperation between auditor-appraisers and real property appraisers is essential when valuing and assessing landlord and leasehold improvements, because special difficulties arise concerning the uniform assessment and proper enrollment of this type of property. Record management for accurate tracking of base year values and ownership of this type of property is complex and tedious but extremely important in order to ensure correct valuation and assessment. As discussed earlier, information regarding this type of property is received from various sources and may be submitted to either auditor-appraisers and/or real property appraisers. The value may be enrolled on either the secured roll or the unsecured roll, and the assessee may be either the landlord or the tenant.

Internal procedures in assessors' offices should be designed to ensure that all landlord improvements and leasehold improvements are (1) valued on and at the appropriate date and amount, (2) not assessed on multiple accounts, (3) assessed on the proper roll (i.e., secured or unsecured), and (4) assessed to the proper assessee. The means by which this coordination is accomplished may differ from county to county, but general guidelines for coordination should be maintained in all assessment programs.

Establish a Comprehensive Set of Written Procedures Regarding the Assessment of Landlord and Leasehold Improvements

A comprehensive set of written procedures that describes how to systematically identify and assess landlord and leasehold improvements can help promote uniform assessment. As noted above, the assessment of landlord and leasehold improvements requires record management for proper tracking of base year values and ownership. Written procedures clarify each staff member's responsibilities in the valuation process for this type of property, making appraisal and record management easier to maintain.

Clearly Identify Landlord and Leasehold Improvements on Appraisal Records

Proper notes on appraisal records concerning the establishment of value is an important step in the appraisal process. Appraisal notes should include information regarding the existence of landlord and leasehold improvements, a description of the improvements, and the basis for valuation. If the improvements involve more than one account, the appraisal records should indicate in what manner the improvements are assessed (i.e., to whom, secured or unsecured roll, and assessor's parcel number or business property account number). This information will not only assist appraisers and auditor-appraisers who may work on the subject parcel or related business account(s) in the future, but will also help to avoid duplicate or escape assessments.

Coordination of Landlord and Leasehold Improvement Appraisal

Appendix C describes and suggests one method of coordinating the appraisal of landlord and leasehold improvements that is used in some assessors offices. It is not the only proper method. An example is included as illustration. The example starts with the source documents and goes through several steps including classification, determination of assessee, valuation, and enrollment of value.

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HISTORICAL COST APPROACH

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APPLICABILITY TO RATE BASE REGULATED UTILITIES

A generally accepted method for valuing property interests of rate base regulated utilities, whether centrally or locally assessed, is by use of the historical cost approach. Certain industries have been and continue to be subject to rate base regulation, as a result of which authorized earnings, or rates of return, are set by regulators and measured by rate base. Under rule 3(d), the assessing agency shall consider as relevant to value the amount actually invested in the property or the amount invested less depreciation, if the income from the property is regulated by law and the regulatory agency uses historical cost, historical cost less depreciation (HCLD), or trended original cost as a rate base. Thus, the historical cost approach is considered relevant for estimating the market value of public utility properties depending upon regulatory influences.

Regulatory agencies typically define the services a utility is to provide, establish the rates the utility may charge for its services, and prescribe the accounting system and methods used by the utility.⁹¹ In the case of rate base regulated utilities, the regulatory agency periodically establishes an allowed rate base and authorizes a rate of return. Utilities are permitted to have the opportunity to earn the authorized rate of return on rate base. In addition, these utilities are allowed to recover their cost of service. The sum of the cost of service plus the earnings (the allowed rate of return on the rate base) determines the total revenue requirements for the utility. The revenue requirement level is used to set utility rates charged to the utility's customers. The practice of most regulatory agencies, including the California Public Utilities Commission (CPUC), is to use historical or original cost less depreciation of the utility plant in the development of the rate base.

If regulation effectively limits earnings to the rate base selected, at a rate of return acceptable to investors, then the rate base or historical cost less depreciation tends to be a good indicator of market value. Even where rule 3(d) provides that the appraiser shall consider HCLD as an appropriate indicator of value for rate base regulated companies, the appraiser should also consider other indicators. For instance, a Capitalized Earning Ability (CEA) indicator which is much lower than HCLD may indicate that obsolescence exists in the property, to such an extent that the owner may not earn the rate of return allowed by the regulatory agency. If the CEA value indicator is higher than HCLD, it may indicate that regulation is lax and potential purchasers may be willing to pay more than HCLD.

Although historical cost less depreciation (HCLD) is often referred to as rate base, for property tax appraisal purposes it is the historical cost of the utility's taxable assets less the accumulated book depreciation applicable to those assets. The depreciation is calculated according the method used by the regulatory agency. The HCLD for property tax appraisal purposes therefore, differs from the rate base as established by the regulatory agency. Some items included in rate base are

⁹¹ Regulatory agencies often prescribe the accounting methods used by public utilities and railroads. Alternatively, in the absence of regulatory reporting requirements, generally accepted accounting principles (GAAP) prescribe accounting methods (particularly pertaining to historical cost and depreciation) that may be used.

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1 not included in the HCLD, and some items not included in the rate base are included in the
2 HCLD. For example, HCLD does not include items in the rate base that are exempt from property
3 tax, such as working cash, licensed motor vehicles, property located in federal enclaves, and
4 inventory. Property not in rate base but normally included in HCLD is construction-work-in-
5 progress (CWIP), including allowance for funds during construction (AFUDC). Even though
6 CWIP is excluded from the rate base, investors expect that CWIP will generate future benefits in
7 the form of earnings when the construction project is completed and transferred to plant in
8 service.

9 Issues pertinent to the valuation of rate base regulated utilities under the historical cost approach
10 are: deferred income taxes, contributions in aid of construction, advances for construction, the
11 accounting basis to be used in developing the HCLD indicator, and historical cost versus original
12 or acquisition cost.

13 DEFERRED INCOME TAXES

14 Deferred income taxes, also referred to as "deferred tax reserve" or "deferred federal income
15 taxes" (DFIT), is the amount reserved or liability recorded on an assessee's books for the payment
16 of deferred income taxes created by the difference between accelerated tax depreciation for
17 income tax purposes and straight-line depreciation for book purposes. Deferred tax reserve is an
18 accounting entry that reflects a timing difference for reporting income and expenses. It is
19 classified as a liability on a company's balance sheet. It represents the accumulated difference
20 between federal income taxes that would have been paid using straight-line depreciation and the
21 taxes actually paid using accelerated depreciation.

22 When DFIT are generated, the amount of federal income tax not being paid results in increased
23 cash flow because the utility is allowed to collect from its ratepayers a higher income tax expense
24 based on straight-line depreciation, instead of the taxes actually paid using accelerated
25 depreciation. This cash flow can be used for purchasing equipment and acquiring revenue-
26 producing property.

27 Regulatory agencies deduct accumulated DFIT from rate base for rate making purposes so that
28 the utility customers will not have to pay the utility a "return on" investments that were acquired
29 with DFIT. The reasoning is that a utility should not be allowed to earn a return on utility plant
30 represented by DFIT, since the investment was not funded by the utility's shareholders. Although
31 the DFIT plant is not in the rate base, the utility is allowed to recover from its ratepayers a return
32 of the investment represented by the DFIT.

33 CONTRIBUTIONS IN AID OF CONSTRUCTION

34 Contributions in aid of construction (CIAC) represents property which was donated or given to a
35 utility. Customers, usually developers, may contribute property to utilities in order to induce them
36 to connect to or provide service to their projects. The cost incurred by the developers for CIAC
37 property is most likely reflected in the sale price of the property charged by the developers.
38 Property contributed to a regulated utility is not included in rate base in determining the rates the
39 utility can charge its customers, because regulators do not allow the utility to recover the cost

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1 (return of) or earn a profit (return on) on property for which the utility did not pay. Therefore,
2 CIAC should not be included in HCLD, because a prospective purchaser would not pay for
3 property on which he or she is unable to earn a return on or recovery of the investment.

4 **ADVANCES FOR CONSTRUCTION**

5 "Advances for construction" represents money expended by a customer or customers in order to
6 receive service. For example, developers may give advances to utilities in order for the utility to
7 connect to or provide service to their projects. Advances for construction are similar to CIAC,
8 except that the utility will eventually pay for the advances, and costs are fully recoverable over the
9 life of the property. The utility refunds the advances to the developers customer over a stipulated
10 period of time. Advances are added to the rate base as the advances are paid by the utility. An
11 investor's expectation is that this property has the benefits of bringing earnings to the utility,
12 because the investor will be able to earn a "return on" and "return of" investment. The property
13 acquired with advances exists, is held and used by the utility, and contributes to earnings, and
14 therefore, should be included in HCLD at net book value. In calculating the HCLD, the historical
15 cost of the advances should be deducted, and the present worth of the repaid advances should be
16 added.

17 As an example, a building developer may pay a water company for the installation of water lines
18 to the builder's subdivision. The water utility would then slowly refund the amount advanced by
19 the developer. The California Public Utilities Commission rules establish schedules for water
20 utilities, which provide that the amount advanced shall be refunded by the utility, in cash, without
21 interest for a period not to exceed 40 years after the date of the contract. The rules further
22 provide that the utility shall annually refund an amount equal to 2.5 percent of the advances until
23 the principal amounts of the contracts have been fully repaid.

24 **ACCOUNTING BASIS**

25 Accounting rules set by the Financial Accounting Standards Board (FASB)⁹² require regulated
26 companies to follow Statement of Financial Accounting Standards No. 71 (FAS 71), "Accounting
27 for the Effects of Certain Types of Regulation." This standard, among other things, calls for the
28 use of regulatory lives versus economic lives. In accordance with FAS 101, "Accounting for the
29 Discontinuation of Application of FASB Statement No. 71," a utility may discontinue the use of
30 FAS 71, if certain conditions as set forth in FAS 101 are met. The effect of this change in
31 accounting standards and discontinuing the use of FAS 71 is primarily evidenced by an increase in
32 the companies' accumulated depreciation to recognize shorter estimated lives for their fixed
33 assets.

34 The discontinuance of FAS 71 also affects the utility's reporting to the Securities and Exchange
35 Commission (SEC Form 10-K) and their annual report to shareholders. Regulatory agencies,
36 including the CPUC, have not recognized this accounting change for ratemaking purposes and
37 still require that the rate base regulated utilities report depreciation on the FAS 71 basis.

⁹² The FASB's authority to set accounting standards comes from the Securities and Exchange Commission through the Securities Act of 1933 and Securities Exchange Act of 1934.

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1 In calculating HCLD for rate base regulated utilities, the assessing agencies should use the
2 accounting basis prescribed by the regulatory agencies for ratemaking purposes, since this basis is
3 consistent with rule 3 (d). Accordingly, the HCLD value indicator should be calculated on the
4 FAS 71 basis, rather than FAS 101 basis.

5 **HISTORICAL COST VS. ORIGINAL OR ACQUISITION COST**

6 Historical and original costs are frequently synonymous; however, it is important to know
7 technical differences when sales of utility properties are involved. Historical cost reflects the level
8 of cost at the time of a property's original construction or acquisition (sometimes referred to as
9 "first cost"). The historical cost or first cost should include all costs that were necessary to place
10 the property in service, including material, labor, interest on funds during construction, taxes and
11 other overhead during construction. The "original cost" is the acquisition cost of the property to
12 the present owner. The original recorded cost should include all expenditures required to place
13 the property in service, including the purchase price, installation, freight-in (if the property was
14 moved) renovation, etc. Original cost is similar to historical cost to the extent it is the full,
15 undepreciated cost that should be recorded in the owner's accounting records.

16 When a rate base regulated utility property transfers from one owner to another, the purchase
17 price does not alter the rate base. Regulatory agencies, including the CPUC, use costs to the
18 original owner for ratemaking purposes. When a utility is purchased for more than its rate base,
19 regulatory agencies, generally require the acquiring entity to capitalize the amount in excess of
20 rate base in an "Acquisition Cost Adjustment" or "Plant Acquisition Adjustment" account.

21 If the regulatory agency disallows the differential cost adjustment in the rate base, the
22 amortization for acquisition cost adjustment is not deducted as an operating expense but charged
23 against below the line income. Rate base regulated utilities are not allowed to amortize the excess
24 cost, nor permitted to earn a return on their full capital investment.

25 When appraising rate base regulated utilities, the HCLD value indicator should be calculated using
26 accounting information or costs used by the regulatory agency for ratemaking purposes, since this
27 basis is consistent with rule 3(d).

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TREATMENT OF INTANGIBLE ASSETS AND RIGHTS

1

2 INTRODUCTION

3 To properly value a business entity's taxable property, an appraiser has to ensure that the final
4 value indicator does not include the value of any non-taxable property. A business entity's non-
5 taxable property may consist of both tangible items (e.g., licensed vehicles) and intangible assets
6 and rights (e.g., commercial franchises). This chapter discusses the treatment of intangible assets
7 and rights.

8 In California the property tax treatment of intangible assets and rights is governed by two
9 fundamental principles. The first of these is that intangible assets and rights are exempt from
10 taxation. That is, while the state Constitution authorizes taxation of most tangible property, there
11 is no such authority with respect to intangible assets and rights.

12 Even though intangible assets and rights are exempt, the second fundamental principle states that
13 taxable property should nonetheless be assessed and valued by assuming the presence of those
14 intangible assets and rights necessary to put the taxable property to beneficial or productive use.
15 Under this principle, an appraiser valuing taxable property must assume the presence of any
16 intangible assets or rights necessary to the beneficial or productive use of the property being
17 valued. The "beneficial or productive use" is equivalent to the highest and best use of the
18 property.⁹³

19 These two principles, expressly stated in the Revenue and Taxation Code, have been established
20 over several decades of California case law. Applying the principles has, however, proved more
21 difficult than enacting them. Thus, the purpose of this chapter is to aid assessors in the uniform
22 application of these established principles by providing (1) a discussion of relevant terms and
23 concepts; (2) a legal and theoretical framework within which to treat intangible assets and rights
24 in the course of appraising taxable property; and, (3) examples that illustrate the application of
25 that treatment.

26 DISCUSSION OF RELEVANT TERMS

27 AH 501, Chapter 3, discusses some of the terms and concepts related to the appraisal treatment of
28 intangible assets and rights. That discussion introduces the term "going concern value," the
29 principle of unit valuation, and the statutory scheme that governs the treatment of intangible
30 assets and rights in the appraisal of tangible property. In addition, earlier sections of the present
31 manual have touched on the need to account for intangible assets and rights both in defining an
32 appraisal problem and in solving it.

33 Intangible Rights

34 Every business needs certain "intangible rights." The character and value of the intangible rights
35 held will vary with the nature and scope of the business's operations. Thus, while the owner of a
36 small retail shop might have only a routinely acquired business license issued by local

⁹³ For a detailed discussion of the concept of highest and best use, see AH 501, Chapter 4.

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1 government, a large public utility possesses a varied and valuable collection of intangible rights,
2 such as those conferred by government franchises and operating and use permits.

3 Intangible rights may be created by law, and they may or may not represent an owner's economic
4 contribution to the productivity of his or her taxable property. For example, zoning laws and
5 district or municipal boundary service areas may create intangible rights in real property without
6 the owner of the property having to make any independent economic contribution.⁹⁴ Such
7 intangible rights are inherent in the ownership of the property itself, and thus effectively add to the
8 aggregate of property rights that compose the taxable property.

9 Other intangible rights, such as governmental permits to use property for particular purposes,
10 usually do represent economic contributions by property owners. A special use permit, for
11 example, grants to the owner of a particular property the legal right to conduct operations on his
12 or her property which are prohibited on every other property. Thus, a property owner who
13 acquires a special use permit to operate a solid waste disposal facility, for example, has generally
14 made a substantial expenditure to obtain an intangible right to use his or her property for a
15 purpose which, absent such right, would be illegal on every other property in the county. Since
16 the purpose of the special use permit is to authorize a more productive use of taxable property,
17 the presence of the permit must be assumed in an appraisal of that taxable property.

18 An intangible right may also be created by private contract. An example of such an intangible right
19 is the contractual right to operate a particular chain restaurant pursuant to the terms of a
20 commercial franchise. This type of intangible right represents an economic contribution by the
21 owner, who generally has paid a substantial sum as consideration for the franchise contract.
22 Whereas the special use permit described above relates directly to the use of taxable property,
23 however, the right to operate a valuable commercial franchise relates primarily to the business
24 entity's enterprise-related activities. Thus, a franchisee's rights under a valuable commercial
25 franchise are examples of intangible rights whose primary purpose is not to authorize a more
26 productive use of taxable property, but rather to authorize the use of a trade name or other legally
27 protected intellectual property in the conduct of a business entity's enterprise-related activities.

28 **Intangible Assets**

29 An "intangible asset" is similar to an intangible right in that it may authorize a particular use of
30 tangible property. Indeed, intangible assets often create intangible rights. However, an intangible
31 asset is also distinct from an intangible right in that, for tax accounting purposes, an intangible
32 asset is often assigned an allocated value for purposes of depreciation or *amortization* over an
33 estimated useful life.

34 Any intangible rights conferred by an intangible asset may or may not be directly related to the use
35 of taxable property. As discussed above, a valuable commercial franchise is an example of an
36 intangible asset that confers substantial rights (and may thus represent great value to a business)

⁹⁴ Where the owner has expended time and effort to obtain a change in an existing zoning regulation, however, the rights created by the change represent an economic contribution by the owner to the productivity of the taxable property.

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1 but which does not relate directly to the use of taxable property. Similarly, a superior workforce
2 in place, highly skilled management, or an extraordinary customer base may create value in the
3 business entity that cannot be ascribed to the property. That is, such intangible assets would not
4 be considered necessary to the beneficial or productive use of the property to the extent that they
5 make a contribution to income or value beyond that which would normally be anticipated from a
6 typically skillful or prudent operator of the property.

7 **Intangible Attributes of Real Property**

8 Section 110(f) expressly provides that the value of "intangible attributes of real property" shall be
9 reflected in the value of the real property. The section provides that such intangible attributes of
10 real property include "zoning, location, and other attributes that relate directly to the property
11 involved." In this definition of "attributes" are two characteristics of property which the
12 Legislature has classified as "intangible," and whose value, therefore, must be reflected in the
13 value of the property. The first is government zoning, which by statutory scheme includes the
14 General or Specific Plan designation, special use, industrial park, planned unit development or
15 other use classification. The second is location, which inherently encompasses all of the physical
16 attributes of the property, such as view, water availability, soil quality, and proximity to services
17 and amenities.

18 In addition to the characteristics identified in subdivision (f), it is proper to consider as "intangible
19 attributes of real property" any intangible rights which are in the nature of property rights—that
20 is, rights inherent in the ownership of an item of tangible property, including the rights to sell,
21 hold, use, occupy, encumber, dispose of, or otherwise determine the status of the tangible item.

22 **Related Business and Appraisal Terms**

23 Several of the terms that come into play in a discussion about the proper treatment of intangible
24 assets and rights have been used in more than one context. This variability in usage can be found
25 both in the law and in the appraisal literature. Below, several of these terms are discussed in their
26 varying contexts.

27 **Going Concern Value**

28 In the AH 501 the term *going concern value* was defined as referring to "the total value of an
29 operating business enterprise."⁹⁵ In this context, the term is said to include not only the value of all
30 of the tangible and intangible property of the enterprise, but also the incremental value of the
31 business entity.

32 The AH 501 also noted that, in another context, the term going concern is used to refer to
33 property that has been assessed or valued "as a going concern" or "on a going concern basis." In
34 this context, the term going concern value refers to a figure that is based on an appraisal of all of a
35 business entity's operating property functioning as a unit. Although in practice this usage is

⁹⁵ AH 501, 7.

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1 most often used in reference to state-assessed public utilities, the concept of assessing property as
2 a functioning unit is no less applicable to certain locally assessed property.

3 As to the treatment of intangibles, California statutes impose an equivocal prohibition against
4 assessing the value of intangible assets and rights relating to the going concern value of a business
5 using taxable property. That is, such valuations are prohibited except to the extent that the
6 presence of the intangible assets or rights is necessary to put the taxable property to beneficial or
7 productive use. In this context, the term going concern value refers to that portion of the value of
8 a business entity that exceeds the fair market value of the business entity's taxable property.

9 **Business Enterprise Value**

10 "Business enterprise value" is another term that is used differently depending on the context in
11 which it is used. In one context, this term connotes value based on the business operations
12 conducted on the property rather than income produced by the property itself. However, in
13 another context, the term may be used to refer to the value of the entire operating enterprise,
14 including the value of tangible property, intangible property, and the incremental value of the
15 business entity.

16 **Goodwill**

17 Goodwill has also eluded uniform usage. The term has been variously associated with (1) the
18 expectation of continued customer patronage of a business, (2) the presence of "excess earnings,"
19 or earnings in excess of those required to provide a fair return on the otherwise identifiable assets
20 of the business, and (3) the residual value or "gap" in value that is represented by the difference
21 between the value of the business entity as a whole and the value of the otherwise identifiable
22 assets.⁹⁶

23 **Principle of Unit Valuation**

24 The AH 501 provides an introductory discussion of the principle of unit valuation. It is noted
25 there that the principle of unit valuation is based on the concept that the appraisal unit should be
26 the unit most likely to be bought and sold in the market, and that this concept recognizes that
27 market participants value certain properties according to the benefits that will be generated by the
28 entire operating unit rather than the sum of the values of the individual parts that compose the
29 operating unit. The AH 501 notes further that while the principle of unit valuation is usually
30 associated with appraisals of large industrial operations or state-assessed utilities and railroads,
31 the concept of the appraisal unit is more often referred to in the context of appraising locally
32 assessed properties that comprise several parcels.⁹⁷

33 The principle of unit valuation carries with it at least two implications for the treatment of
34 intangible assets and rights. First, since the traditional application of the principle of unit
35 valuation begins with an appraisal of an entire operating property, including both taxable property

⁹⁶Gordon V. Smith and Russell L. Parr, *Valuation of Intellectual Property and Intangible Assets* (John Wiley & Sons, Inc., 1989), 88-89.

⁹⁷ AH 501, 11.

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1 and non-taxable intangible assets and rights, adjustments will have to be made for any non-taxable
2 intangibles. As discussed later in this chapter, such adjustments are expressly required by section
3 110(d)(2).

4 The second implication stems from the legal connection between the principle of unit valuation
5 and the assessment, on a going concern basis, of property operated by certain public utilities.
6 From an appraisal standpoint, that legal connection suggests that there will be few required
7 adjustments for intangibles where the only significant intangibles present are those necessary to
8 put the taxable property to beneficial and productive use. As discussed later in this section,
9 section 110(e) requires that taxable property be assessed and valued by assuming the presence of
10 those intangible assets or rights necessary to the taxable property's beneficial and productive use.
11 Appraisers are required to remove or make adjustments for only those intangible assets and rights
12 whose presence is not required to be assumed.⁹⁸

13 **Components of a Going Concern**

14 **Monetary Assets**

15 Monetary assets are generally liquid assets directly or indirectly involved in the operation of a
16 going concern. As an example, a business entity needs "working cash" in order to cover expenses
17 that are typically paid prior to the time that receivables have been collected.

18 **Real Property**

19 Under the principle of unit valuation, all of the real property owned by a business entity that is
20 necessary to provide the primary utility or product of the business entity constitutes a component
21 of the going concern. This real property may be referred to as the unitary real property or the
22 operating real property. Real property that is not part of the operating unit is not part of the going
23 concern. This concept of unitary real property or operating real property is based on the logical
24 premise that all of a business entity's functionally-related operating assets, including real property,
25 would be transferred together in a sale of the business entity.

26 **Tangible Personal Property**

27 While all tangible property, both real and personal, is generally subject to ad valorem taxation,
28 some types of tangible personal property are exempt. Accordingly, adjustments must be made by
29 the appraiser when such exempt personal property is established as a component of the appraisal
30 unit. Examples include motor vehicles, certain vessels, and assets located in federal enclaves.

31 **Intangible Assets and Rights**

32 When assessing or valuing property under subdivisions (e) and (f) of section 110, the appraiser
33 should assume only the presence of those intangible assets or rights necessary to put the property
34 to beneficial or productive use, and intangible attributes of real property as provided in

⁹⁸ Section 110(f) requires that the value of "intangible attributes of real property" be reflected in the value of the real property, provides an another self-evident exception to the requirement to adjust for intangibles.

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1 subdivision (f). Also noted above is the fact that most operating units include some intangible
2 assets and rights.

3 While some intangible assets, such as working cash, are clearly unrelated to the productive use of
4 the property, and some intangible assets, such as building permits, are obviously related to the use
5 of the property, there are numerous possibilities for intangible assets and rights that fall in
6 between these two ends of the spectrum and may be classified differently in a variety of appraisal
7 units.

8 **STATUTORY AND JUDICIAL FRAMEWORK**

9 Under article XIII, section 2 of the California Constitution only the specific intangible personal
10 property listed in that section may be subject to property tax. Further, the Legislature may provide
11 for the property taxation of these items of intangible personal property, which include notes,
12 debentures, shares of capital stock, bonds, solvent credits, deeds of trust, mortgages, and any
13 legal or equitable interest therein. The Legislature may not, however, provide for the property
14 taxation of any other type of intangible personal property.

15 Under section 212, the Legislature has determined not to tax the intangible personal property
16 listed in article XIII, section 2 of the California Constitution. Thus, except as set forth in
17 subdivisions (e) and (f) of section 110, all intangible assets and rights, including intangible
18 personal property, which are not specifically listed in that section are exempt from property
19 taxation.

20 The California Courts of Appeal have identified intangible assets and rights in certain property
21 tax cases. These intangible assets and rights include, among others, governmental permits
22 (including liquor licenses, cable television franchises, and airport rental car and stadium
23 concessions), stock exchange seats, press association memberships, memberships in social,
24 professional and fraternal clubs, patents, copyrights, goodwill, judgments, causes of action,
25 insurance policies, enterprise value, going concern value, favorable franchise rights, customer
26 lists, the right to do business, marketing and programming contracts, management and operating
27 systems, and work force in place.⁹⁹ In addition, section 107.7(d) provides a list of certain
28 nontaxable intangible assets and rights specifically related to cable television systems. Finally,
29 certain tangible personal property is specifically limited as to the property rights to be
30 appraised.¹⁰⁰

31 Section 212 states the principle that intangible assets and rights are exempt from property
32 taxation and that the value of intangible assets and rights shall not enhance or be reflected in the

⁹⁹ See, *Roehm v. County of Orange*, 32 Cal. 2d 280 (1948); *County of Orange v. Orange County Assessment Appeals Board*, 13 Cal. App. 4th 524 (1993); *Shubat v. Sutter County Assessment Appeals Board*, 13 Cal. App. 4th 794 (1993); *GTE Sprint Communications Corp. v. County of Alameda*, 26 Cal. App. 4th 992 (1994); *De Luz Homes, Inc. v. County of San Diego*, 45 Cal. 2d 546 (1955); *County of Los Angeles v. County of Los Angeles Assessment Appeals Board*, 13 Cal. App. 4th 102 (1993); *Service America Corp. v. County of San Diego*, 15 Cal. App. 4th 1232 (1993).

¹⁰⁰ Some examples are storage media for computer programs (section 995); business records (section 997); motion pictures (section 988); certain works of art (section 986); and, timeshare estate amenities (section 998).

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1 value of taxable property. However, this principle is subject to the last sentence of section 212(c),
2 which states that "taxable property may be assessed and valued by assuming the presence of
3 intangible assets or rights necessary to put the taxable property to beneficial or productive use."

4 Subdivisions (d), (e) and (f) of section 110 also provide guidance regarding the property tax
5 treatment of intangible assets and rights. Subdivision (d) provides that:

- 6 1. The value of intangible assets and rights relating to the going concern value of a business
7 using taxable property shall not enhance or be reflected in the value of the taxable
8 property;
- 9 2. If the principle of unit valuation is used to value properties that are operated as a unit and
10 the unit includes intangible assets and rights, then the fair market value of the taxable
11 property contained within the unit shall be determined by removing from the value of the
12 unit the fair market value of the intangible assets and rights contained within the unit; and,
- 13 3. The exclusive nature of a concession, franchise or similar agreement, whether *de jure* or
14 *de facto*, is an intangible asset that shall not enhance the value of taxable property,
15 including real property.

16 These three provisions contained within subdivision (d), however, are subject to subdivision (e),
17 which states that "taxable property may be assessed and valued by assuming the presence of
18 intangible assets or rights necessary to put the property to beneficial or productive use." Finally,
19 section 110(f) provides that for purposes of determining the full cash value or fair market value of
20 real property, intangible attributes of real property shall be reflected in the value of the real
21 property. These intangible attributes include zoning, location and other such attributes that relate
22 directly to the real property involved.

23 VALUATION ISSUES

24 The valuation question for the appraiser is a practical one. That is, where property is operated by
25 a business entity, what method does an appraiser employ to ensure that the market values of all
26 non-taxable intangible assets and rights are excluded from the final value indicator for the taxable
27 property? Section 110(d)(2) outlines the answer to that question where (1) the principle of unit
28 valuation is used and (2) the unit includes both non-taxable intangible assets and rights.
29 Specifically, subdivision (d)(2) provides that when both of those conditions are present, the fair
30 market value of the taxable property must be determined by removing from the value of the unit,
31 the fair market value of non-taxable intangible assets and rights to the extent that their value is
32 included in the value of the unit.

33 However, subdivision (d)(2) stops short of prescribing a specific method for accomplishing this
34 adjustment. Instead, from a practical standpoint subdivision (d)(2) and subdivisions (e) and (f), as
35 well as section 212, establish for the appraiser two clearly identifiable boundaries. At one end,
36 these provisions imply that tangible property should not be valued at either salvage value or a
37 value based on a summation of the costs merely because the accompanying intangible assets and

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1 rights themselves cannot be taxed. At the other end, the statutory provisions can be interpreted to
2 mean that the value of a business entity does not necessarily, as a matter of law, equal the value of
3 the tangible property owned by the business entity.

4 From a conceptual standpoint, the boundaries are consistent with the fundamental appraisal
5 principle which states that an owner of taxable property will follow a course of action that
6 produces the highest rate of return, on a risk-adjusted basis, and that results in the highest and
7 best use of the property.¹⁰¹ As a practical matter, an appraiser's task is to apply the appropriate
8 valuation methodologies to determine the value of the tangible assets within the two boundaries.
9 Further, the value so determined should reflect the values of intangible assets and rights only to
10 the extent that such intangibles constitute attributes of real property or are necessary to put the
11 tangible property to its highest and best use.

12 In short, the two boundaries establish opposite extremes for the valuation of taxable property
13 used in a business. Thus, under normal circumstances, an appraiser would use a method that
14 avoids any result that approaching either salvage value, or at the other extreme, the value of the
15 business entity.

16 **Determining the Presence of Intangible Assets and Rights,** 17 **Not Covered by Subdivisions (e) and (f),** 18 **that Relate to the Going Concern Value of a Business Entity**

19 Where an appraiser can logically establish the fair market value that an intangible not covered by
20 subdivisions (e) or (f) of section 110 would have apart from its existence within the business
21 entity, it will be possible to explicitly remove that value from a unitary value indicator that is
22 based either on the earnings of the business entity or on a sale of the business entity. In calculating
23 an indicator of value based on the income approach, it will sometimes be possible to remove from
24 the income stream to be capitalized any revenues that cannot be ascribed to the operating
25 property.

26 Where the separate value of an intangible asset or right that is not covered by subdivision (e) or
27 (f) of section 110 cannot logically be established, however, an explicit removal may not be
28 possible. This difficulty is most likely to arise where the activities of the business entity are
29 integrally related to the use of taxable property. In such cases, it may be impossible to even
30 approximate the point at which the taxable property ends and the non-taxable intangible begins,
31 and an attempt to explicitly remove of the value of the intangible may represent an attempt to
32 separate from the value of the taxable property the very thing which gives rise to that value in the
33 first place. Thus, it may be more logical for the appraiser to account for such intangibles
34 implicitly, in the reconciliation process, by placing more relative weight on the indicator(s) that
35 are less likely to include any value other than the fair market value of the taxable property being
36 appraised.

¹⁰¹ See AH 501, 52.

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1 **Analyzing the Relationship Between the Business Entity Operation and the** 2 **Taxable Property**

3 In focus here is the appraiser's evaluation of the extent of the relationship between the business
4 operation and the use of the taxable property. In analyzing this relationship, the appraiser should
5 seek to answer the following questions:

6 First, does the business use the property as an integral part of an operating unit or going concern?
7 The issue is whether the earnings of the business can be ascribed to the use of the taxable
8 property. If the answer is no, then the appraiser should place little or no weight on an indicator
9 derived from an approach to value which is based either on the earnings of the business or on a
10 sale of the business in toto.

11 Second, if the earnings of the business can be ascribed to the use of taxable property, to what
12 extent do the business's earnings depend on a sale or service activity that uses the property only
13 incidentally in carrying out such activity? The answer to this question will guide the appraiser, in
14 the reconciliation process, in the decision to place more or less relative weight on particular
15 indicators. In making this judgment the appraiser should consider the extent to which the earnings
16 of the business depend on either (1) the possession of a valuable commercial franchise or (2) a
17 level of human skill or entrepreneurship that is atypical for the type of property operation which
18 involves the subject taxable property.

19 **Examples**

20 A discussion of different types of business operations will illustrate how an appraiser might
21 account for intangibles that are not covered by subdivisions (e) or (f) of section 110. It is helpful
22 to consider several examples along the range of property uses found in different businesses to
23 understand whether the use of taxable property is integrally related to the operations of the
24 business and, if so, to what extent.

25 First, consider the type of business whose earnings are clearly dependent upon human skill or
26 entrepreneurship. A physician's practice is a good example, since the doctor's earnings are
27 dependent not on the instruments in her medical bag, but rather on her acquired training, skill, and
28 license to use those instruments in the practice of medicine. Thus, even though the doctor uses
29 valuable tangible property (e.g., instruments, equipment, and specially designed offices), the use
30 of that property is only incidental to the doctor's earnings from the practice of medicine.

31 This apparently incidental relationship between the use of taxable property and the doctor's
32 earnings is made even more obvious if one considers what the tangible property would sell for
33 apart from the medical practice as a going concern. Clearly, the earnings of the practice would
34 have little bearing on the price that the tangible property would command in such a sale, since the
35 primary force behind those earnings is not the tangible property, but rather intangible factors such
36 as the doctor's human skill. A similar analysis applies to businesses whose earnings are primarily
37 dependent on the sale of personal property and the provision of personal services.

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1 Secondly, in contrast to a physician's practice, consider an apartment house as an example of a
2 business whose earnings are dependent on the use of taxable property. Although the ownership
3 and operation of an apartment house is a business (i.e., the owner manages the property in order
4 to make a profit on his or her investment), the earnings of that business clearly can be ascribed to
5 the use of the taxable property. Thus, even though the owner of the apartment house exercises
6 some personal effort in the course of managing the apartment house, that effort is generally only
7 incidental to the business's earnings, which are derived almost entirely from rentals of the taxable
8 property. Indeed, each rental of an individual apartment is tantamount to a short-term purchase of
9 the rights to use a portion of the taxable property.

10 This integral relationship between the earnings of the apartment house and the use of taxable
11 property is further illustrated by the scenario that would play out upon the sale of the taxable
12 property apart from the existing business. Unlike the doctor's tangible property, the price
13 commanded by the apartment house would be determined by reference to the earnings of the
14 business. More importantly, investors typically would evaluate the prospective earnings of the
15 apartment house based not on an analysis of the prior operator's acumen in managing the
16 property, but rather on an evaluation of factors such as the location, quality of construction, and
17 remaining useful life of the physical property. A similar analysis applies to other businesses whose
18 earnings are primarily dependent upon the use of taxable property, including electricity-producing
19 dams, ski slopes, bowling alleys, golf courses, many public utilities, and hotels and motels that do
20 not benefit from extraordinary reputations for service or quality or from associations with
21 unusually valuable franchises.

22 The examples of the medical practice and the apartment house represent opposite ends of the
23 range of property uses made in business operations. Property used by businesses falling near either
24 of these two extremes is easy to identify as either a good candidate for an approach to value based
25 on the earnings of the business (the apartment house) or a poor candidate for such an approach
26 (the medical practice).

27 Many businesses fall somewhere in between the two extremes, and this fact may introduce into
28 the appraiser's analysis an ambivalence that, in some cases, cannot logically be resolved by any
29 prescribed formula. In these cases, the choice of value indicators and the degree to which those
30 indicators are eventually relied upon will depend on the appraiser's judgment as to the degree to
31 which the presence of the intangible is needed for the beneficial or productive use of the taxable
32 property.

33 **Valuation of Taxable Property by Assuming the Presence of Intangible** 34 **Assets and Rights Necessary to Put the Taxable Property to** 35 **Beneficial and Productive Use**

36 As discussed above, the law establishes that taxable property must be valued assuming the
37 presence of those intangible assets and rights which are necessary for the beneficial or productive
38 use of the property. Put another way, this means that an appraiser valuing taxable property must
39 not hypothecate the absence of such intangible assets and rights. From either viewpoint, this
40 principle implies at least three things for the appraiser.

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1 First, and most obviously, the principle implies that the "beneficial or productive use" that is under
2 consideration by the appraiser is the property's highest and best use. To interpret the principle as
3 allowing an appraiser to assume a lesser use would be to allow for a valuation at less than full
4 cash value.

5 Secondly, the principle implies that the intangible assets and rights needed for the beneficial or
6 productive use of the taxable property do not have to be currently in place in order for the
7 appraiser to assume their presence. Thus, an appraiser valuing taxable property must assume the
8 presence of those intangible assets or rights that would be necessary to the highest and best use of
9 the taxable property. Whether the current owner of the property actually possesses those
10 intangibles is not important, since the current owner may not be making the highest and best use
11 of the property.

12 Thirdly, and most importantly, if the presence of intangible assets and rights must be assumed by
13 law because they are necessary for the beneficial or productive use of the property, then two
14 requirements must be met: (1) no additional value should be added to the fair market value on
15 account of their presence, and (2) the appraiser should not attempt to adjust the value indicators
16 to remove their value or influence from the fair market value. These requirements would apply in
17 the examples previously noted, including the case of the special use permit necessary to use
18 property for the operation of a solid waste disposal facility. Likewise, the requirements would
19 apply to the presence of a workforce in place that is minimally necessary for the operation of, for
20 example, a large resort hotel.

21 **ADJUSTMENT OF VALUE INDICATORS**

22 Once an appraiser has determined that the earnings of the business can be ascribed primarily to the
23 use of taxable property, and having proceeded with a calculation of a unitary indicator or
24 indicators based upon the earnings of the business or upon a sale of the business, he or she should
25 proceed to deduct from those indicators the market values of any non-taxable intangibles not
26 covered by subdivisions (e) or (f).

27 As discussed earlier, where it is difficult to identify the point at which an intangible ends and the
28 right to use taxable property begins, it may be more logical to account for the presence of the
29 intangible in the reconciliation process, through a weighting of the value indicators.

30 There may, however, be some intangibles not covered by subdivisions (e) or (f) that can be
31 accounted for by an explicit removal of their value from a unitary value indicator. These are
32 intangibles that would have a reasonably ascertainable fair market value apart from the business.
33 As discussed below, such intangibles include all of the financial assets listed under section 212,
34 and—perhaps—trademarks, copyrights, patents, or other intellectual properties.

35 **Intangible Assets**

36 **Financial Assets**

37 As discussed above, there are certain intangible assets whose separate value can reasonably be
38 ascertained. The financial assets listed in subdivisions (a) and (b) of section 212—notes,

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1 debentures, shares of capital stock, solvent credits, bonds, deeds of trust, mortgages, and money
2 kept on hand to be used in the ordinary and regular course of the business—represent such
3 intangible assets. These are intangibles whose value generally can be explicitly removed in the
4 course of an appraisal of the taxable property of an operating enterprise. The preferred method of
5 estimating the fair market value of these intangibles is by reference to separate sales of similar
6 assets.

7 In some cases, however, there will be no reliable market data as to the separate value of an
8 intangible asset. In that event, the appraiser may be able to refer to sales contracts and
9 agreements, asset lists attached to those agreements, and cash flow analyses used to develop the
10 sales price. These documents may provide evidence of the values that a buyer and a seller
11 assigned to particular assets, including intangibles.¹⁰²

12 **Items Based on Relationships between the Business Entity and Employees,** 13 **Customers, or Suppliers**

14 For tax accounting purposes, an assessee who is able to prove that a particular intangible asset
15 can be valued and that it has a limited useful life may depreciate its value over its useful life.¹⁰³
16 Thus, for income tax purposes businesses often assert separate valuations for intangible assets—
17 including those based on relationships between the business and its employees, customers, or
18 suppliers—that would not otherwise be regarded as having any independent existence. However,
19 while the U.S. Supreme Court has upheld particular assessee's claims for depreciation of such
20 intangible assets, it has also noted that it will often be too difficult to prove that such assets can be
21 separately valued.¹⁰⁴

22 If it is difficult in the income tax arena to prove the separate value of intangibles that are based on
23 business relationships, it will be even more difficult in the property tax arena. This is because, as
24 discussed throughout this chapter, for property tax purposes the presence of certain intangible
25 assets and rights is to be assumed to the extent that they are necessary to the taxable property's
26 beneficial or productive use. For example, as indicated above, while the presence of a typically
27 skilled workforce or management team or a minimally necessary customer base creates value in a
28 business entity that cannot be ascribed to the property, those "intangibles" are necessary to put the
29 property to beneficial and productive use. On the other hand, a superior workforce or
30 management team, or an exceptional customer base, are intangibles that go beyond that which
31 would typically be anticipated as necessary to put the property to productive use.

32 Therefore, in valuing operating or unitary properties such as shopping centers, hotels, or public
33 utilities, the appraiser should assume the presence of those intangible assets and rights which are
34 minimally or typically necessary to put such property to beneficial or productive use. The
35 "minimally or typical necessary" intangibles constitute the minimum workforce, management, and
36 customer base, without which an operating property clearly cannot generate a normal level of

¹⁰² In contrast, the appraiser should be cautious of appraisals made for tax accounting purposes; such valuations are made after the fact, and tend to be motivated by a new owner's desire to minimize prospective income tax liabilities.

¹⁰³ *Newark Morning Ledger Co. v. United States*, 113 S. Ct. 1670

¹⁰⁴ 113 S. Ct. at 1681.

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1 revenues. However, when the workforce, management, or customer base is superior or atypical
2 and creates additional value in the business entity above and beyond the value of the operating
3 property, an adjustment is necessary.¹⁰⁵ Data supporting such superior or atypical assets and
4 rights, requested from the business entity operating the property, should be analyzed
5 quantitatively to determine the nature of the adjustment warranted.

6 **Intangible Rights**

7 **Rights to Use Property**

8 Building permits, special use permits, leases, rental agreements, or other items that enable the
9 beneficial or productive use of taxable property will typically come within the scope of section
10 110(e). Accordingly, the presence of such intangible rights should be assumed, and no adjustment
11 is necessary.

12 **Commercial Franchises and Intellectual Property Rights**

13 Commercial franchises and intellectual property rights (e.g. copyrights, patents, and trademarks)
14 generally have an ascertainable market value apart from the business entity that holds them. In
15 that event, the discussion above relating to the treatment of financial assets applies here as well.
16 When such intangibles are not covered by subdivision (e) or (f) of section 110, the preferred
17 method of adjusting for such intangibles is by reference to market data, or, if such data is
18 unavailable, to sales contracts, asset lists, cash flow analyses, and other documents used to
19 develop the sales price of the business. For commercial franchisees, there are, for example,
20 frequent franchise- or enterprise-related activities, such as promotional campaigns,
21 merchandising, or specialized marketing by the business entity. These are activities that go above
22 and beyond the enterprise-related activities of a typical business entity in that same sales or service
23 category.

24 **Comparative Sales Approach**

25 Traditionally, in the comparative sales approach the appraisal unit consists of only taxable
26 property. That is, the adjustment of the sales prices of the comparable properties do not include
27 adjustments for non-taxable intangibles that are part of an operating unit. However, when the
28 appraisal unit consists of an entire business entity (i.e., when the principle of unit valuation is
29 used) adjustments may have to made for the purpose of excluding any value that is not properly
30 included in the fair market value of the taxable property.

31 **Income Approach**

32 Under rule 8, income derived from rental of properties is preferred to income derived from their
33 operation, since the latter is the more likely to be influenced by managerial skills and may arise in
34 part from nontaxable property or other sources. Nevertheless, under a traditional application of
35 the principle of unit valuation, operating income—not rental income—will be the starting point of
36 the appraiser's analysis.

¹⁰⁵ The same reasoning and resultant adjustment should apply in circumstances where the workforce, management, or customer base are inferior, creating a decrease in the value of the business entity below that which would otherwise prevail.

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1 Depending on the business, the operating income may include income from selling merchandise,
2 income attributable to personal services or to intangible assets or rights that are not covered by
3 subdivision (e) or (f) of section 110. It is for these items that the appraiser must make adjustments
4 in order to arrive at the income attributable to the taxable property.

5 These adjustments can be made by adding appropriate amounts to the operating expenses that are
6 used to reduce total operating income to a net income that can then be attributed to the taxable
7 property. Thus, the cost of goods sold, employee salaries, and costs associated with maintaining a
8 superior customer base are examples of items that could be added. Alternatively, for intangibles
9 whose market values can be estimated by reference to separate sales of similar intangibles, lump
10 sum adjustments should be made to the income-based indicator.

11 Generally, if the anticipated net income for a typical operator of the real property either cannot be
12 estimated with reasonable accuracy, or cannot be ascribed to the real property, then a reasonable
13 portion of the anticipated net income may be allocated or imputed to the real property. If there is
14 no reasonable, sound and practical basis for allocation or apportionment, then an economic rent,
15 based on a reasonable return on the real property (derived from sound market data), may be used
16 as the basis for the valuation of the real property.

17 **Cost Approach**

18 The treatment of intangible assets or rights should not be an issue except where an appraiser has
19 relied on an approach to value that is based either on a sale of the business in toto or on the net
20 earnings of the business. Properly employed, an approach based on replacement costs does not
21 give rise to disputes over the treatment of intangibles. Thus, except as may be otherwise required
22 by subdivisions (e) or (f) of section 110, in a replacement cost approach, an appraiser should not
23 add amounts reflecting the costs of acquiring non-taxable intangible assets and rights, since to rely
24 on an indicator so derived would be to implicitly (if not directly) assess those intangibles.¹⁰⁶

¹⁰⁶ However, note that under the principle of substitution it may be proper to add amounts for entrepreneurial services, advertising, recruiting and training employees, or other costs incurred in placing the taxable property into profitable operation. (See rule 6.)

DRAFT**1 Estimating Capital Structure Weights**

2 Capital structure refers to the relative proportions of a firm's permanent financing components.
 3 The cost of capital is a weighted average based on the relative market values of the financing
 4 components, not book values. Only permanent financing components should be included in the
 5 calculation of the cost of capital; these are typically limited to long-term debt (including
 6 conditional sales contracts or long term leases), preferred stock, and common stock. To simplify
 7 the analysis, the percentage of preferred stock is often combined with the percentage of long-term
 8 debt.

9 The assumption is that the property being valued should have a similar debt capacity and capital
 10 structure as that of the comparable companies. Therefore, capital structure weights for the subject
 11 property can be estimated by analyzing the capital structures of the comparable companies.

12 Example: A review was made of published data, and four comparable companies were found. The
 13 comparable company data are presented in the following table.¹⁰⁸

TABLE A-1: Estimating Capital Structure Weights								
Comparable Company	Number of Shares	Stock Price (\$)	Equity Value		Debt Value		Invested Capital Value	
			(\$)	(%)	(\$)	(%)	(\$)	(%)
Able Company, Inc.	10,000	34.5	345,000	58	250,000	42	595,000	100
DSI, Ltd.	15,385	26.0	400,010	53	350,000	47	750,010	100
Sunday Companies	12,195	28.7	349,997	50	350,000	50	699,997	100
Trakmax, Inc.	19,608	25.5	500,004	71	200,000	29	700,004	100
Mean Indicator				58		42		100
Median Indicator				56		45		
Conclusion				60		40		100

14

Number of shares	=	Shares of stock outstanding as of the appraisal date
Stock price	=	Price of the common stock on the appraisal date
Equity value	=	Number of shares of common stock times the stock price (i.e., common shareholders' equity).
Equity value percent	=	Ratio of equity value to total invested capital value
Debt value	=	Market value of long-term debt outstanding
Debt value percent	=	Ratio of debt value to total invested capital value
Invested capital value	=	Sum of equity value plus debt value, or the value of the total invested capital in the business
Invested capital value percent	=	Sum of equity value percent and debt value percent; this summation is always 100%

15

¹⁰⁸ All data are hypothetical. An analysis would typically include a larger sample of comparable companies.

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1 Mean and median percentages of the capital structure weights of the comparable companies can
 2 be calculated and analyzed. If the size of the comparable companies is significantly different, a
 3 value-weighted mean can also be calculated. However, the appraiser should estimate the capital
 4 structure based on a comparability analysis, not simply an averaging process. In the above
 5 analysis, the concluded capital structure is 60% equity and 40% debt.

6 **Estimating the Cost of Debt**

7 The relevant cost of debt is the current cost of debt (i.e., the cost of debt as of the valuation date)
 8 not the historical or "embedded" cost of debt. A generally accepted method for estimating the
 9 cost of debt is to use the current yield to maturity on debt for each comparable company. A
 10 variation on this method is to use the current yield to maturity on other corporate bonds of similar
 11 rating. This method may be necessary because a significant portion of corporate debt is not
 12 publicly traded and data regarding the debt issues of the comparable companies may be difficult to
 13 obtain. Information regarding bond yields is available from several financial publications.¹⁰⁹

14 The relevant cost of debt is its after-tax cost (i.e., after corporate income taxes). Since interest
 15 payments are deductible to a corporation, this is the financing cost that is actually paid. The after-
 16 tax cost of debt equals the before-tax rate multiplied by one minus the marginal corporate income
 17 tax (i.e., the tax rate paid on each incremental dollar of income.)¹¹⁰

18 **Estimating the Cost of Preferred Stock**

19 The cost of preferred stock may be estimated if it is a portion of the permanent financing mix.
 20 Most preferred stock is of infinite maturity. The cost of infinite-maturity preferred stock is its
 21 current annual yield. The cost of finite-maturity preferred stock is its yield to maturity. To simplify
 22 the analysis, preferred stock is frequently treated as a form of long-term debt—that is, it is
 23 included in the portion of long-term debt.

24 **Estimating the Cost of Equity**

25 The cost of equity can be estimated using the following methods:¹¹¹

- 26 1. Capital Asset Pricing Model
- 27 2. Dividend Growth Model
- 28 3. Bond Yield Plus Risk Premium

29 Each of these methods requires financial market data concerning returns on the equity and/or
 30 debt securities of the comparable companies.

¹⁰⁹ For example, *Value Line Investment Survey*, *Moody's Bond Guide*, *Standard and Poor's Bond Guide*, and others. The Internet is also a source for this type of data.

¹¹⁰ However, for property tax purposes, the after-tax weighted average cost of capital must be converted to a before-tax basis in order to match it with proper income stream. This adjustment is discussed in a later section.

¹¹¹ The cost of equity is also referred to as the equity yield rate or the required return on equity.

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1 Capital Asset Pricing Model

2 *Overview*

3 Investors are risk averse. To hold risky assets, such as stocks, such assets must offer greater
 4 returns than that offered by a risk-free asset. The riskier the asset, the greater the expected return,
 5 or risk premium, that is required to attract investment in that asset. The history of capital market
 6 returns indicates that risk has been rewarded. Assets of greater risk have produced higher average
 7 returns. For example, over the period 1926 to 1996, the average annual total return on U.S.
 8 common stocks was 12.7% with a standard deviation of returns of 20.3%; for long-term U. S.
 9 government bonds, the average annual return was 5.4% with a standard deviation of returns of
 10 9.2%. Stocks, on average, were riskier, but also produced higher total returns.¹¹²

11 The Capital Asset Pricing Model (CAPM) is a financial/economic model that postulates an
 12 explicit relationship between expected risk and return. Although the model was developed in the
 13 context of financial assets, it is also applicable to real assets (e.g., investments in plant and
 14 equipment and real estate). To estimate the cost of equity using the CAPM, the appraiser first
 15 estimates the risk of the asset or property being valued using the risk measure "beta," then
 16 converts this risk measure into an estimate of the cost of equity using the model. The CAPM
 17 estimates an after-tax cost of equity (i.e., after corporate income taxes).

18 Portfolio theory is an important part of modern financial theory in general and of the CAPM in
 19 particular. Portfolio theory defines risk in terms of the variability of returns as measured by
 20 standard statistical measures of variability such as the variance or standard deviation. The primary
 21 insight of the theory is that risk can be reduced by combining individual risky assets (real or
 22 financial) into portfolios as opposed to holding them individually (i.e., the same level of expected
 23 return can be obtained at lower risk by diversifying). The theory distinguishes between stand-
 24 alone risk, the variability of an asset held in isolation, and portfolio risk, the risk of an asset when
 25 held in a portfolio including other assets. If returns on the individual assets making up a portfolio
 26 are not perfectly positively correlated (i.e., they do not move together in lockstep fashion), the
 27 same level of expected return can be obtained at lower risk through diversification because some
 28 risks of the portfolio's constituent assets cancel each other out. In order to obtain the highest
 29 expected return for a given level of risk, rational investors should hold portfolios of assets and not
 30 individual assets in isolation. Thus, portfolio theory provides mathematical justification for the
 31 familiar adage, "Do not put all your eggs in one basket."¹¹³

¹¹² *Stocks, Bonds, Bills and Inflation 1997 Yearbook*, Ibbotson Associates, 1997, 118. The data reflects annual total returns, that is, dividend or interest income and capital appreciation.

¹¹³ As described in a finance text: "Consider a sunglasses corporation and an umbrella corporation. Each investment by itself would be risky, since the sunglasses firm's success depends upon sunny days and the umbrella firm's success depends on rainy days. However, an investor holding both stocks would find little risk since, whether it rains or shines, one of the assets in the portfolio will perform well and will cancel out the bad performance of the other asset. Thus, a portfolio of the two assets would have much less risk than either asset held alone." (Donald R. Chambers and Nelson J. Lacey, *Modern Corporate Finance: Theory and Practice*, HarperCollins College Publishers, New York, 1994, 222)

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1 The CAPM separates the total risk of an individual asset into two components: systematic risk
2 and unsystematic risk.¹¹⁴ Systematic risk is the tendency for returns on all assets to move up or
3 down with shifts in the general market. It is the risk that stems from general macroeconomic
4 forces that affect all investments. Returns on almost all assets tend to move up or down with
5 movements in the general market or economy, although the degree of correlation differs.
6 Unsystematic risk, by contrast, is the risk that affects a single asset or a small number of assets. A
7 costly labor dispute is an example of unsystematic risk. It affects one company, or perhaps an
8 industry group, but certainly not all investments.

9 Building on portfolio theory, the CAPM postulates that, in a diversified portfolio, unsystematic
10 risk is eliminated or minimized; the effects of unique events affecting individual stocks tend to
11 cancel each other when stocks are held in a portfolio. Systematic risk, however, cannot be
12 eliminated by diversification. Therefore, according to CAPM theory, the only relevant risk in a
13 portfolio context is systematic risk; and expected returns should reflect only systematic risk. Since
14 rational investors will hold portfolios of assets and not individual assets, the relevant risk of an
15 individual asset is the risk it contributes to a diversified portfolio, not its total, or stand-alone, risk.
16 According to the model, capital markets should provide a return payoff for assuming systematic
17 risk, but not for unsystematic risk, which can be avoided by diversifying.

18 Beta is the measure of systematic risk. It measures the sensitivity (or variability) of a security's
19 returns relative to general market movements. A beta of 1.0 measures the risk level of the market
20 as a whole; an investment with a beta of 1.0 has the same risk as the market as a whole and is
21 expected to provide returns to investors equal to those of the market as a whole. A beta of 2.0
22 indicates a security with a risk level twice that of the market as a whole; a security with a beta of
23 2.0, on average, should rise twice as much as the general market during periods of rising stock
24 prices, and it should fall, on average, twice as much as the market in periods of declining stock
25 prices. A beta of 0.5 a risk level one-half that of the market as a whole; a stock with a beta of 0.5
26 should rise one-half as much as the general market¹¹⁵ during rising prices and fall one-half as much
27 during declining prices.¹¹⁶

28 What is the meaning of the "market as a whole" or the "general market" in the CAPM? The
29 CAPM conceptualizes the market as a whole as the "market portfolio." The market portfolio is a
30 theoretical portfolio composed of all possible investments, including securities, real estate, plant
31 and equipment, and even investments in intangible human capital. In theory, systematic risk
32 should be measured against a market portfolio containing all possible investments, but such a
33 portfolio does not exist. For the purpose of measurement, the market portfolio is typically

¹¹⁴ Systematic risk is sometimes called market risk; unsystematic risk is sometimes called unique risk.

¹¹⁵ Beta is measured using the statistical technique of linear regression analysis. Typically, to measure its beta, historical returns on a given security are regressed against historical returns on the market as a whole (using a proxy, such as a diversified stock index, for the market as a whole). Beta is the slope of the regression line.

¹¹⁶ Although, as mentioned earlier, the CAPM was developed and has been tested in the context of stocks, in theory the concept is applicable to all classes of assets. Thus, a beta can be estimated for real assets as well as financial assets.

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1 proxied by a large, diversified stock index such as the Standard and Poor's 500 Index or the New
2 York Stock Exchange Composite Index.¹¹⁷

3 According to the CAPM, the expected risk premium on any asset is equal to its beta multiplied by
4 the expected risk premium on the market portfolio (also referred to as the expected market risk
5 premium). The expected risk premium on the market portfolio is the amount the return on the
6 market portfolio is expected to exceed the risk-free rate of return. The risk premium on the
7 market portfolio is typically estimated using historical returns on a diversified stock index
8 (proxying returns on the market portfolio) compared to historical returns on U.S. Treasury
9 securities (the risk-free asset). The expected return on equity, or cost of equity of a security, is the
10 sum of the risk-free rate of return and the product of beta and the expected risk premium on the
11 market portfolio. Thus:

$$12 \quad E(r_i) = r_f + \beta_i[E(r_M) - r_f]$$

where

- r_i = Investor's required after-tax return on security i;
- r_f = Risk-free rate of return;
- β_i = Expected beta; and
- $E(r_M) - r_f$ = Expected market risk premium (i.e., the expected return on the
market portfolio above the risk-free rate).

13
14 The above can be simplified to

$$15 \quad r_E = r_f + \beta \times \text{MRP}$$

where

- r_E = cost of equity;
- r_f = risk-free rate of return;
- β = expected beta; and
- MRP = expected market risk premium.

16
17 ***Estimating Cost of Equity Using the Capital Asset Pricing Model***

18 To develop the cost of equity using the Capital Asset Pricing Model (CAPM), estimates must be
19 made of the following parameters:

- 20 1. Risk-free rate
- 21 2. Expected beta, or market volatility measure
- 22 3. Expected market risk premium

¹¹⁷ A fundamental criticism, in fact, of the CAPM is that it cannot be tested because no good proxy for the market portfolio exists.

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1 **Estimating the Risk-Free Rate**

2 The CAPM begins with the risk-free interest rate and then adds a risk premium in order to
 3 estimate the equity rate of return. To estimate the risk-free rate, returns on U.S. Treasury
 4 securities, which have no default risk, are used. Choices include the return on short-term Treasury
 5 bills or the return on intermediate-to-long-term Treasury bonds. A common approach is to match
 6 the maturity of the risk-free security with the investment horizon of the cash flows being valued.
 7 In practice, this means that the return (as of the valuation date) on either a 10 or 20 year Treasury
 8 bond is often selected. The maturity of the risk-free asset must be the same as the maturity of the
 9 risk-free asset from which the market risk premium (discussed below) is estimated.¹¹⁸

10 **Estimating Beta**

11 Historical betas—that is, betas measured using past data—are used to estimate future expected
 12 betas. Several published sources of beta data are available; the easiest way to find betas for the
 13 comparable firms identified is to look them up in one of these sources. The appraiser should
 14 consider more than one source for beta information. Different sources may report different
 15 estimates for a given firm's beta due to variations in measurement techniques.¹¹⁹

16 An analysis should be made of the data before a beta is selected for the property being valued. If
 17 the sample betas (i.e., from the comparable companies)¹²⁰ are close to each other, a simple
 18 average might be taken to arrive at the beta for the property to be appraised. If the sample
 19 contains "outliers" (i.e., some betas in the sample are significantly different from others), the
 20 appraiser might consider eliminating the outliers from the sample and recomputing the average.
 21 The appraiser should also weight the sample betas based on comparability to the subject
 22 property.¹²¹

23 **Estimating the Market Premium**

24 The final input needed for the CAPM is the expected market equity risk premium, which is the
 25 amount the return on the market portfolio is expected to exceed the risk-free rate over the
 26 investment horizon. An historical (ex post) or projected (ex ante) approach to estimate the market

¹¹⁸ For additional discussion on selecting the risk-free rate and related issues, see Ehrhardt, *The Search for Value*, 60, and Chapter 5, "Long-Term Projects."

¹¹⁹ Published sources of beta data include *Value Line Investment Survey*, Ibbotson Associates *Beta Book*, and *Standard and Poor's Stock Guide*.

¹²⁰ Ibbotson Associates' *Cost of Capital Quarterly* publication contains industry average betas organized by Standard Industrial Classification (SIC) Code. Individual betas are estimated for each company in the industry. The individual betas are then weighted according to their market capitalization to arrive at the industry average beta.

¹²¹ The full information (or multiple regression) approach is an alternative method for estimating a pure play beta. This approach assumes that the overall beta of a multi-divisional company is a weighted average of its divisional, or business line, betas. SIC codes are used to define lines of business. Given weights for the business lines of each company in the sample (e.g., by using the percentage of total sales by division), and an estimate of the overall beta of each company, it is possible to extract business line betas through statistical analysis (i.e., cross-sectional multiple regression). This method partially overcomes a limitation of the sample approach—namely, a lack of closely comparable companies. It may produce a more reliable estimate of a pure play beta. See Ehrhardt, *The Search for Value*, 107.

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1 risk premium may be used. Using a historical average approach, the market premium is estimated
 2 by subtracting an arithmetic average of annual total returns on a general market index (again, a
 3 proxy for the market portfolio) from an arithmetic average of income returns on long-term
 4 government bonds (a proxy for the risk-free rate). Using annual total return on common stocks
 5 and annual total return on the government bonds, this premium has averaged 7.5% (12.7% large
 6 company total stock return less 5.2% long-term government bond income return) over the period
 7 1926-1996.¹²²

8 Example: The property to be appraised in an oil and gas property. Four companies engaged in oil
 9 and gas exploration and drilling have been identified; the average of their published betas is 1.25.
 10 The current yield-to-maturity on intermediate-term Treasury bonds is 7.50%. The estimate of the
 11 market risk premium based on historical data is 7.50%. The after-tax cost of equity, or required
 12 rate of return on equity, is estimated as follows:

$$\begin{aligned} r_E &= r_f + \beta \times \text{MRP} \\ &= 7.50\% + 1.25 \times 7.50\% \\ &= 16.875, \text{ say } 16.87\% \end{aligned}$$

13

14 Levered and Unlevered Betas

15 The returns used to estimate equity betas are returns to the equity holder and reflect the financial
 16 leverage employed by the comparable companies. The comparable company approach assumes
 17 that the capital structure of the property being valued is similar to that of the comparable
 18 companies and that no adjustment for financial structure is needed.¹²³

19 If the financial structure of the property being appraised is substantially different from that of the
 20 comparable companies, additional steps are required to estimate the beta for the subject property.
 21 The cost of equity used in the WACC should reflect the most likely financial structure for the
 22 subject property. If that financial structure is different from that derived from the comparable
 23 companies, two additional steps are required to estimate beta for the property being appraised:

- 24 1. The equity, or levered, beta estimated from the sample of comparable companies should
 25 be unlevered to remove the effects of financial leverage.
- 26 2. This beta should be relevered to reflect the specific financial structure of the property
 27 being valued.

28 The equations for these conversions are¹²⁴

¹²² *Stocks, Bonds, Bills and Inflation 1997 Yearbook*, Ibbotson Associates, 118. Returns on large company stocks are based returns to the Standard and Poor's 500 Composite Index; returns on long-term government bonds are based on to a one bond portfolio of 20-year maturity. The averages are arithmetic, not geometric. The reasons for using an arithmetic average and bond income returns rather than total returns are discussed in Ibbotson, 151.

¹²³ Most published beta data are for equity, or levered, betas. Unlevered betas are also referred to as asset betas.

¹²⁴ See Brigham and Gapenski, *Intermediate Financial Management*, 324.

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$$\beta_U = \beta_L / [1 + (1 - T_c) (D / S)]$$

or

$$\beta_L = \beta_U [1 + (1 - T_c) (D / S)]$$

1

where

β_U = unlevered or beta;

β_L = levered or equity beta;

T_c = combined state and federal income tax rate;

D = proportion of debt in capital structure for comparable companies; and

S = proportion of equity in capital structure for comparable companies.

2

3 Example: An equity, or levered, beta of 2.0 has been estimated from comparable company data.
 4 The capital structure derived from comparable company data is 20% debt and 80% equity, and
 5 the composite federal and state tax rate is 41%. The property appraised will be financed with 50%
 6 debt and 50% equity and also will be taxed at a combined income tax rate of 41%. To convert the
 7 levered beta of 2.0 to an unlevered beta:

$$\beta_U = \beta_L / [1 + (1 - T_c) (D / S)]$$

$$\beta_U = 2.0 / [1 + (1 - 0.41) (0.20 / 0.80)]$$

$$\beta_U = 2.0 / [1 + (0.59) (0.25)]$$

$$\beta_U = 1.74$$

8

9 To convert this unlevered beta to a levered beta that reflects the specific capital structure of the
 10 prospective purchaser of the subject property:

$$\beta_L = \beta_U [1 + (1 - T_c) (D / S)]$$

$$\beta_L = 1.74 [1 + (1 - 0.41) (0.50 / 0.50)]$$

$$\beta_L = 1.74 (1.59)$$

$$\beta_L = 2.76$$

11

12 The above is the appropriate beta to use in the CAPM to estimate the cost of equity for the
 13 subject property when the capital structure for the subject property is significantly different from
 14 that derived from comparable companies.

15 Dividend Growth Model

16 Unlike the CAPM, the dividend growth model (sometimes referred as the discounted cash flow
 17 model) is not a general model relating risk and return. Rather, the dividend growth model is based
 18 on the idea that the value of a share of common stock is the present value of all future

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1 dividends attributable to it. The model can be used to estimate the cost of equity for firms in
2 stable growth.

3 Most investors expect two types of cash flows from a stock investment: expected dividends
4 during the time they hold the stock and the expected value or price when they sell.¹²⁵ However,
5 the expected sale price of the stock is itself determined by expected dividends from the sale date
6 forward. Therefore, the value of a share of stock can be thought of as the present value of its
7 dividends in perpetuity, and thus the basic equation for the dividend growth model is

$$P_0 = \sum_{t=1}^{\infty} \frac{D_t}{(1+r_E)^t}$$

8 where

$$\begin{aligned} P_0 &= \text{price of the stock at time 0,} \\ D_t &= \text{dividend at time } t, \\ r_E &= \text{after-tax required return or cost of equity.} \end{aligned}$$

9
10 If dividends grow at a constant rate forever, the infinite series reflecting constant growth
11 converges to a finite value.¹²⁶ Thus,

$$P_0 = \sum_{t=1}^{\infty} D_0 \left[\frac{1+g}{1+r_E} \right]^t = D_0 \frac{(1+g)}{(r_E - g)} = \frac{D_1}{r_E - g}$$

12 or

$$r_E = D_1/P_0 + g$$

13 where

$$\begin{aligned} r_E &= \text{required return on equity, or cost of equity,} \\ D_1 &= \text{next year's expected dividend,} \\ P_0 &= \text{current price of the company's stock, and} \\ g &= \text{estimated constant growth rate in dividends.} \end{aligned}$$

14
15
16 In other words, the after-corporate income tax cost of equity is equal to the expected dividend
17 yield (i.e., next year's expected dividend divided by the current stock price) plus the expected
18 long-term constant growth rate in dividends. Under certain circumstances, growth in projected
19 earnings can be used as a surrogate for projected growth in dividends.

20 The expected dividend is not difficult to estimate. Dividend forecasts are reported in several
21 financial publications, and the current price of a publicly traded stock is readily available. It is

¹²⁵ Note that this is simply a particular application of the general discounted cash flow model.

¹²⁶ The constant growth rate, g , must be less than the cost of equity, r_E , or the stock would have an infinite value.

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1 more difficult to estimate the long-term growth rate in dividends, and unfortunately, in the model
 2 the estimated cost of equity is very sensitive to this variable. This is why the dividend growth
 3 model is only applicable in circumstances of stable earnings growth. The cost of equity should be
 4 derived from comparable companies having with expected stable growth and applied to a subject
 5 property with a similar prospect.¹²⁷

6 The dividend growth rate can be estimated using (1) analysts' forecasts, (2) historical growth
 7 rates, or (3) the sustainable growth method. Several sources of financial information provide
 8 forecasts of future growth rates in dividends and earnings for a wide range of publicly traded
 9 stocks. If analysts' forecasts are not available, historical growth rate data can be used to estimate
 10 the future growth rate. Finally, the sustainable growth method estimates a growth rate using the
 11 plowback ratio (i.e., the portion of earnings retained in the business and not paid out as dividends)
 12 and the return on equity. Multiplying the plowback ratio by the return on equity produces an
 13 estimate of the growth rate. Thus:

$$14 \quad g = (\text{plowback ratio}) (\text{return on equity})$$

15 The appraiser first estimates average values for the plowback ratio and the return on equity for
 16 each comparable company using historical data, then uses these in the estimate of the growth rate.

17 Example: A group of companies were investigated for comparability to the subject property. Four
 18 companies were found to be in similar lines of businesses as the subject and to have stable to
 19 moderate growth prospects, as does the subject property. The current price of the stock (P_0), the
 20 expected annual dividend for upcoming period (D_1), and the projected dividend growth rate (g)
 21 were all obtained from published data.

22

TABLE A-2: Estimating Cost of Equity				
Comparable Company	P_0 (\$/Share)	D_1 (\$)	g (%)	r_E (%)
Able Company, Inc.	34.50	2.25	5.50	12.02
DSI, Ltd.	26.00	2.00	6.00	13.69
Sunday Companies	28.70	1.95	6.00	12.79
Trakmax, Inc.	25.50	1.80	5.50	12.56

23

¹²⁷ What is stable growth? A stable, long-term growth rate for a firm cannot be higher than the long-term growth rate of the economy; otherwise, the firm, over time, would become the economy. The nominal (i.e., in current dollars) long-term growth rate is determined by the expected inflation rate and the real growth rate. For the U.S. economy, a reasonable expectation for long-term nominal growth, based on historical data, is about 6% a year (say 3 to 4% inflation and 2 to 3% real growth). If the expected growth rate of a firm is much above this, it is not in stable growth. However, an elaboration of the dividend growth model allows for the assumption of multi-stage growth; that is, a short-term high growth phase followed by a long-term stable growth phase. See Ehrhardt, *The Search for Value*, 35-51, or an introductory/intermediate finance text.

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1 For example, the cost of equity, r_E , is calculated for Able Company, Inc., as follows:¹²⁸

$$\begin{aligned} r_E &= (D_1 / P_0) + g \\ &= (2.25 / 34.50) + 0.055 \\ &= 0.1202, \text{ or } 12.02\%. \end{aligned}$$

2
3 The data indicate a very tight range for the cost of equity. Concluding a cost of equity of 13%
4 would be supportable.¹²⁹ As with the other methods discussed, the cost of equity estimated using
5 the dividend growth model is after corporate income taxes.

6 Bond Yield Plus Risk Premium Method

7 The bond yield plus risk premium method estimates the cost of equity (or required return to the
8 equity investor) by first estimating a long-term debt cost for the subject property and then adding
9 an estimated equity-over-debt risk premium. This can be stated as

10
$$r_E = r_d + RP$$

where

- r_E = cost of equity;
- r_d = estimated bond yield for the subject property; and
- RP = estimated equity-over-debt risk premium.

11
12 The calculation of the cost equity using this method requires:

- 13 1. Estimating a long-term debt rate (r_d) based on either the yield to maturity for debt of the
14 comparable companies or the yield to maturity on corporate debt of comparable risk and
15 rating.
- 16 2. Estimating an equity-over-debt risk premium (RP) based on the return the equity investor
17 requires in excess of the corporate bond rate. One technique for estimating this premium is
18 to subtract the long-term average return on corporate bonds from the long-term average
19 return on equities; however, this assumes that every company's equity return exceeds its
20 own cost of debt by the approximately the same risk premium and that this risk premium is
21 stable over time.

22 Estimating the Cost of Long-Term Debt

23 Several financial publications provide information concerning the cost of debt. The appraiser can
24 use the yield to maturity on long-term debt of the comparable companies themselves to estimate a

¹²⁸ The data are hypothetical.

¹²⁹ Even if the annual growth in dividends is constant, most firms change dividends only once a year, paying constant quarterly dividends. Thus, dividends actually growth in stepwise fashion, rather than the constant growth assumed by the basic dividend growth model. The basic model can be adjusted to account for constant quarterly dividends. This is a refinement that results in a small change in the estimated cost of equity. See Ehrhardt, *The Search for Value*, 47-51.

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1 cost of debt for the subject property; alternatively, if this information is not available, the appraiser
2 make an estimate using the yield on debt of comparable risk and rating.

3 Estimating the Risk Premium

4 The equity-over-debt premium can be estimated using historical average returns for equity and
5 debt over a long time series.¹³⁰ Using data from 1926 to 1996, an estimate of this premium is
6 6.5%.

7 Example: The estimated long-term bond yield for the subject property is 9.0% as of the valuation
8 date; the estimated equity-over-debt risk premium is 6.5%. Estimate the cost of equity for the
9 subject property.

$$\begin{aligned}
 10 \quad r_E &= r_d + RP \\
 11 &= 9.0\% + 6.5\% \\
 12 &= 15.5\% \\
 13
 \end{aligned}$$

14 Reconciling Cost of Equity Indicators

15 Three methods for estimating the cost of equity—CAPM, dividend growth model, and bond yield
16 plus risk premium—have been discussed. Typically, each method will produce a separate
17 indicator for the cost of equity. Hopefully, the indicators will fall within a relatively narrow
18 range. If not, the appraiser must reconcile the indicators and choose the one that is most
19 supportable.

20 CALCULATING THE WACC

21 The calculation of the WACC is relatively straightforward. Given estimated values for the cost of
22 debt, the cost of equity, and capital structure proportions, the WACC is a simple weighted
23 average using the capital structure proportions as weights.¹³¹

24 The WACC is estimated on an after-tax (i.e., after corporate income taxes) basis. This requires an
25 adjustment in the cost of debt. Because interest expense is tax deductible, and therefore reduces
26 corporate income tax liability, the cost of debt must be adjusted to reflect tax savings. The true
27 cost of debt is its after-tax cost; this is the financing cost that is actually paid. The after-tax cost of
28 debt equals the before-tax interest rate multiplied by the combined federal and state marginal
29 corporate income tax rate (i.e., the tax rate paid on each incremental dollar of income). Including
30 this adjustment, the WACC is calculated as follows:

¹³⁰ Ibbotson Associates *Stocks, Bonds, Bill, and Inflation 1996 Yearbook* (large company equity average returns of 12.5% minus long-term corporate bond average returns of 6.0%).

¹³¹ An advanced issue not discussed in the text is flotation costs. When a company issues debt or equity securities, the company's net proceeds from the issue are less than the gross payments from investors. This difference is due to flotation costs, which include legal fees, underwriting fees and/or commissions, and other related costs. Flotation costs serve to increase both the cost of debt and equity. It may be necessary to adjust both the cost of debt and equity, and hence the WACC, to reflect flotation costs. See Ehrhardt, *The Search for Value*, 131-139; or Brigham and Gapenski, *Intermediate Financial Management*, Chapter 6.

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$$r_C = (w_E) (r_E) + (w_D) (r_D) (1 - T_C)$$

where

- r_C = after-tax weighted average cost of capital;
- w_E = proportion of equity in the capital structure;
- w_D = proportion of debt in the capital structure;
- r_E = after tax cost of equity;
- r_D = before-tax cost of debt; and
- T_C = combined state and federal corporate income tax rate.

2

3 COMBINED STATE AND FEDERAL INCOME TAX RATE

4 Since state income taxes are deductible from federal taxable income, the combined tax rate is less
5 than the sum of the two rates. The combined rate is calculated as follows:

$$6 \quad T_C = 1 - (1 - T_F) (1 - T_S)$$

where

- T_C = effective combined Federal and state corporate income tax rate;
- T_F = federal corporate income tax rate; and
- T_S = state corporate income tax rate.

7

8 For example, using a federal corporate tax rate of 35% and a state corporate tax rate of 8.84%,
9 the combined rate is calculated as follows.¹³²

$$\begin{aligned} T_C &= 1 - (1 - T_F) (1 - T_S) \\ &= 1 - (1 - 0.35) (1 - 0.088) \\ &= 0.4072, \text{ or } 41\% \end{aligned}$$

10

11 Example: The estimated cost of debt is 9.0%. The cost of equity is estimated at 18.0%. The
12 financing mix for the property being valued, based on the capital structure data from the
13 comparable companies, is 40% debt and 60% equity. The combined corporate income tax rate is
14 41%. Using this data, the after-tax WACC, R_C , is calculated as follows:

$$\begin{aligned} R_C &= (w_E) (r_E) + (w_D) (r_D) (1 - T_C) \\ &= (0.60) (0.18) + (0.40) (0.09) (1 - 0.41) \\ &= 0.129, \text{ or } 12.9\% \end{aligned}$$

¹³² For 1997, the marginal federal corporate income tax rate above \$18,333,334 was 35%; the California state rate was a flat 8.84%. Using these rates to calculate the effective corporate income tax rate may overestimate the effective tax rate and the size of the after-to-before tax adjustment for corporate income taxes described in the following section. Because a portion of a purchaser's projected cash flows may not be subject to income taxes due to accounting depreciation, cost depletion, or amortization deductions allowed by the Internal Revenue Code, the cash flows from a property (as opposed to reported net income for financial accounting or income tax purposes) may be taxed at an effective rate that is lower than the combined federal and state marginal rate.

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1

2 CONVERTING A DISCOUNT RATE FROM AFTER- TO BEFORE-TAX

3 According to rule 8, the income stream to be capitalized must be before deductions for accounting
 4 depreciation, interest, income taxes (both corporate and personal income taxes), and property
 5 taxes. The WACC as calculated above is after corporate income taxes.¹³³ Therefore, the after-
 6 corporate income tax WACC must be adjusted to a before-corporate income tax basis in order to
 7 apply it to the before-tax income stream required by rule 8. This is done by dividing the after-tax
 8 WACC by 1 minus the combined state and federal corporate income tax rate calculated as
 9 described above.¹³⁴

10 In addition, since the income stream to be capitalized is also before a deduction for property
 11 taxes, the effective ad valorem property tax rate must also be added to the before-tax weighted
 12 average cost of capital. Thus, to convert an after-tax cost WACC to a before-tax WACC and to
 13 add a component for ad valorem property taxes:

$$14 \quad R_C \text{ (Adjusted)} = [R_C / (1 - T_C)] + \text{ETR}$$

where

$$\begin{aligned} R_C \text{ (Adjusted)} &= \text{adjusted weighted average cost of capital (adjusted for corporate} \\ &\quad \text{income taxes and property taxes);} \\ R_C &= \text{weighted average cost of capital;} \\ T_C &= \text{combined state and federal corporate income tax rate; and} \\ \text{ETR} &= \text{effective ad valorem property tax rate.} \end{aligned}$$

15

16 Example: Using the previously derived WACC of 12.9%, the combined state and federal
 17 corporate income tax rate of 41%, and an ad valorem property tax rate of 1%, the adjusted
 18 WACC is calculated as follows:

$$\begin{aligned} R_C \text{ (Adjusted)} &= [R_C / (1 - T_C)] + \text{ETR} \\ &= [0.12.9 / (1 - 0.41)] + 0.01 \\ &\quad 0.229, \text{ or } 22.9\% \end{aligned}$$

¹³³ Equity return data taken from the capital market are after corporate income taxes. Estimates of the cost of equity derived from these measures are therefore also after-corporate-income estimates.

¹³⁴ This method for making the after-to-before-tax adjustment may be limited to properties that have no tax-sheltered cash flows. For properties where a portion of the cash flow is sheltered because of depletion, depreciation, or amortization deductions allowed by tax authorities or where recovery of investment is not subject to income tax, the after-to-before -tax adjustment may not be as large.

An alternative method of adjustment is to not adjust for the tax effects related to the cost of debt in the WACC. That is, the pre-tax cost of debt is simply multiplied by the proportion of debt in the capital structure. The tax benefit associated with debt and other tax deductions not allowed as expenses in the income stream would instead be reflected in an income tax component that is added to this WACC in the same manner as a component for ad valorem taxes.

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1 **Applicability and Limitations to Property Tax Valuation**

2 This section provides a limited discussion of the application of the CAPM/WACC to the valuation
3 of individual real estate assets. This is not a discussion of the strengths and weaknesses
4 of the CAPM per se; such a discussion is beyond the scope of this manual. Suffice it to say,
5 although the CAPM has been subject to some criticism, it is still the most widely used risk and
6 return model.

7 Real estate and financial assets share two important characteristics: both are valued based on the
8 cash flows they are expected to generate and the risk of those cash flows. In theory, with
9 important caveats, a discount rate could be derived by the CAPM/WACC approach and then used
10 to value an individual real estate asset. A discount rate derived from the capital market is one step
11 removed from the real estate market. Capitalization and yield rates derived from transactions in
12 the real estate market involving the subject and comparable properties are generally preferred.

13 The application of the CAPM/WACC method to individual real estate investments involves two
14 general types of problems: (1) measurement and comparability problems associated with
15 estimating a beta for an individual real estate asset, and (2) the possibility that not all risk
16 associated with individual real estate investments is captured in the estimated beta.

17 ***Beta Measurement for Real Estate***

18 The betas of common stocks can be measured because rate of return data for common stocks is
19 readily available. Unfortunately, this is not the case for individual real estate investments. Real
20 estate betas are typically estimated using various indices of real estate performance. Such indices
21 are commonly based on appraised values, property sales, or the returns of publicly traded real
22 estate investment trusts (REITs). Unfortunately, the index approach for measuring beta has
23 several problems.

24 First, performance data for common stocks (and financial assets in general) is available over
25 extremely short time periods (a day, a week, a month), which lends itself to the application of
26 statistical techniques. However, most indices of real estate investment performance are updated
27 only quarterly or annually. This create problems regarding the statistical validity of the estimated
28 betas. Indices of performance based on REIT returns are probably superior in this regard.

29 Second, comparability is a very significant problem. Any real estate beta based on an index of real
30 estate returns represents the average risk of the real estate assets included in the index. For
31 example, if a beta were estimated using data from REITs specializing in office buildings, this beta
32 would only measure the average risk of all the office buildings in those REITs. But how
33 comparable is the individual property being appraised to this "average building"? Is it similar in
34 location, quality, age, etc.? Because of the non-homogeneity of real estate, the estimated beta may
35 not be closely applicable to the particular property being appraised. The best approach to the
36 comparability problem is to use an index of returns—if one can be found—that relates only to the
37 type of property being appraised. For example, some REITs specialize in classes of property. At
38 best, though, this is only a partial solution.

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1 Third, the returns on securitized real estate (i.e., real estate owned indirectly by investors through
2 financial intermediaries such as REITs) may be different from the returns to real estate that is
3 directly held. REIT returns may be lower than returns on direct real estate investment because of
4 the greater liquidity of REIT shares compared to direct real estate investment, and perhaps for
5 other factors. This means that a beta estimated from REIT returns may underestimate the cost of
6 equity for an individual, or stand-alone, real estate asset. As discussed below, a separate
7 adjustment for liquidity can be made.

8 Finally, the market portfolio contains not only common stock, but all assets available for
9 investment. In theory, real estate is an important component of the market portfolio because it
10 represents a significant proportion of investable assets. In practice, for the purpose of
11 measurement, the market portfolio is usually proxied by broad stock market indices (e.g., the
12 Standard and Poor's 500); and such indices do not include real estate.¹³⁵ The failure to include real
13 estate in a proxied market portfolio is statistically significant when one is attempting to measure a
14 real estate beta.

15 The above problems are significant, and, at present, there is no comprehensive solution for them.

16 *Additional Risk Factors for Real Estate Investment*

17 Some argue that real estate investment may entail additional types of risks when compared to
18 investment in financial assets and that these additional risks are not reflected in betas estimated for
19 real estate. Lack of diversification, lack of liquidity, and higher information costs are often
20 asserted as additional real estate risk factors.

21 As explained earlier, the CAPM assumes that investors are well-diversified and that, therefore, the
22 cost of equity reflects only non-diversifiable risk. If real estate investors are in fact not diversified,
23 they are concerned with the total, or stand-alone, risk of a real estate investment, not just the
24 portion of total risk that is non-diversifiable (i.e., systematic risk). If this is true, some sort of
25 additional risk premium for non-diversification should be added to a real estate cost of equity
26 estimated using the CAPM.

27 However, many real estate investors are diversified, especially those investing in "investment
28 grade" properties such as large office buildings, regional shopping centers, etc. Such properties
29 are typically owned by REITs, pension funds, insurance companies, and other fiduciaries—all
30 diversified investors. To the extent that investors in a given real estate market are diversified, no
31 adjustment for lack of diversification should be required. Put differently, if a market is constituted
32 by diversified investors, the rates of return found in that market—and the rates used to value
33 properties—would and should reflect the benefits of diversification.

34 The argument based on lack of liquidity is a much stronger one. There is no question that financial
35 assets are significantly more liquid than real estate assets. Rate of return estimates using the
36 CAPM reflect returns on financial assets; thus, in practice at least, the CAPM assumes that all

¹³⁵ One criticism of the CAPM is that its validity cannot be tested because no good proxy for a true market portfolio exists.

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1 assets are liquid. An adjustment for lack of liquidity can be made in two ways: (1) consider lack of
2 liquidity as an added risk factor and add a premium for it to the cost of equity estimated by the
3 CAPM; or (2) value the real estate asset using the CAPM/WACC without any liquidity
4 adjustment, and then apply a liquidity discount to the estimated value.¹³⁶ In both cases, it is
5 difficult to arrive at a supportable estimate of the adjustment.

6 Finally, real estate is a non-homogeneous asset; every parcel is different. Real estate is also
7 immobile; as a result, a real estate investment is highly influenced by community- and
8 neighborhood-specific factors. Some argue that this results in higher research and information
9 costs for real estate investments—in comparison to most financial assets—and that this cost is not
10 built into a CAPM-estimated cost of equity for real estate. This argument is analogous to that
11 proffered for an additional return premium—beyond that measured by the CAPM—that has been
12 observed and measured on small stocks.

¹³⁶ The second way reflects the manner in which liquidity discounts are applied in the valuation of closely held, illiquid businesses.

DRAFT**APPENDIX B: IMPROVEMENTS AS STRUCTURE
ITEMS V. FIXTURES**

1
2
3 The following list includes a variety of improvements and their typical classifications as structure
4 items or fixtures. As discussed in this text, an improvement will be classified as a structure item
5 when its primary use or purpose is for housing or accommodation of personnel, personalty, or
6 fixtures; or when the improvement has no direct application to the process or function of the
7 trade, industry, or profession. An improvement will be classified as a fixture, if its use or purpose
8 directly applies to or augments the process or function of a trade, industry, or profession. Items
9 which have a dual purpose will be classified according to their primary purpose.

10 It must be emphasized that the listing is illustrative as a guide only. Proper classification as
11 structure item or fixture is determined according to the actual use or purpose of the property and
12 intent as "reasonably manifested by outward appearances."¹³⁷ Appraisal responsibility is
13 determined by an assessor's internal procedures.

¹³⁷ Rule 124.

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1

STRUCTURE ITEMS	FIXTURE ITEMS
Air conditioning—office and building cooling	Air conditioning—process cooling Air lines
Auxiliary power generation equipment—for building purposes	Auxiliary power generation equipment—for trade or production purposes
Awnings	Back bars
Batch plants—buildings, fences, paving, yard lights, and spur tracks	Batch plant—scales, silos, hoppers, bins, machinery
Boilers—office and building heating	Boilers—for manufacturing process
Building renovations	Bowling lanes
Butane and propane installations—used for heating buildings	Burglar alarm systems
Car washes—all buildings, canopies, interior and exterior walls, fences, paving, and normal plumbing	Butane and propane installations—used for trade or production purposes
Carpets and floor coverings affixed to floor—wall-to-wall carpeting and specially installed strip or area carpeting, tile, terrazzo coverings	Car washes—special plumbing, wiring, and car washing equipment
Central heating and cooling plants	Compressors—air
Chutes—built-in	Conveyors—for moving materials and products
Coin-operated laundries—restroom, sanitary plumbing fixtures	Cooling towers—used in a trade or production process
Conveyors—for moving people	Counters
Cooling towers—other than used in a trade or production process	
Crane ways	Cranes—traveling
	Environmental control devices—used in the production process
Dock elevators	Fans and ducts—used for processing

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STRUCTURE ITEMS	FIXTURE ITEMS
Elevators—including machinery and power wiring	Fences and railings—inside of buildings Furnaces—process
Environmental control devices—if an integral part of the structure	Furnishings—built-in, i.e., wall-hung desks
Escalators	Heating—boilers—for the manufacturing process
External window coverings	Hoists
Fans and ducts—which are part of an air circulation or exhaust system for the building	Incinerators—commercial and industrial
Fences—outside of building	Ice dispensers—coin operated
Flagpoles	Kilns—beehive, tunnel, or cylinder type, and equipment
Heating—boilers—used in office or building heating	Kilns—lumber
Inter-communication and telephone systems—if integral part of the building	Laundromat—plumbing, wiring, and concrete work for equipment
Kiosk—permanently attached	Lighting fixtures—lighting associated with a commercial or industrial process
Movie sets—which are a complete building	Machinery foundations and pits—not part of normal flooring or foundation
Paint spray rooms—if an integral part of the building	Miniature golf courses
Parking lot gates	Movie sets—which are not a complete building Ovens
Partitions—floor to ceiling	Paint spray booths
Partitions—annexed—less than floor to ceiling	Partitions—annexed—less than floor to ceiling

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STRUCTURE ITEMS	FIXTURE ITEMS
Pipelines and pipe supports—used to convey air, water, steam, oil, or gas to operate the facilities in a building	Pipelines and pipe supports—used to convey air, water, steam, oil, or gas to equipment used in the production process
Pits—not used in the trade or process	Pits—used as wine and sugar clarifiers, skimming pits, grease pits, sump pits, and pits used to house machinery in the manufacturing
Pneumatic tube systems	Plumbing—special purpose
Radiators—steam	
Railroad spurs	Power wiring, switch gear, and power panels— for manufacturing process
Refrigeration systems—that are an integral part of the building	Refrigeration systems—that are not an integral part of the building
Refrigerators—walk in—which are an integral part of the building—excluding operating equipment	Refrigerators—walk in—unitized—including operating equipment
Restaurants—rough plumbing to fixtures	Restaurant equipment—plumbing fixtures, stainless steel or galvanized sinks in kitchens, bars, soda fountains, garbage disposals, dishwashers, hoods, etc.
Renovations to building structures	Roller skating surface Scales—including platform and pit
Security—Banks and Financial Fire alarm systems Safes-embedded Night depository- if integral part of building Teller cages Vault alarm system Vaults	Security—Banks and Financial Cameras (surveillance) Attached to walls or columns Drive-up and walk-up windows Unitized security type Man traps Night depository- if not integral part of building Vault doors
Service stations—canopies, paving, sign, pylons	Service Stations—gasoline storage tanks, pumps, sign, air and water wells
Shelving—originally designed as integral part of the building	Shelving—other than that which is an integral part of the building
Shielded or clean rooms—if an integral part of the building	Shielded or clean rooms—if not an integral part of the building

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STRUCTURE ITEMS	FIXTURE ITEMS
Signs—include supporting structure which forms an integral part of the building, including sign blades, pylons, or marquee structures serving as canopies. Exclude sign cabinet (face) and lettering	Signs—sign cabinets and free standing signs, including supports
Silos or tanks—whose primary function or intent is to store property for a time period, such as storage tank farms and grain and liquid petroleum storage facilities	Silos or tanks—whose primary function is as part of a process, including temporary process holding such as breweries or refineries
Smog control devices—when attached to incinerator or building heating plant	Ski lifts, tows, trams
Sprinkler systems—where primary function is the protection of a building or structure	Sky slides
Store fronts	Smog control devices—attached to process device
Television and radio antenna towers	
Trout ponds—concrete	Theaters—auditorium equipment—seating, screens, stage equipment, sound, lighting, and projection
Theaters—drive-in—buildings, screen and structures, fencing, paving, lighting	Theaters—drive in—heater and speaker uprights, wiring and units, projection equipment, signs
Water systems at golf courses	Trash compactors and paper shredders Wash basins—special purpose water softeners for commercial or industrial purposes

DRAFT**APPENDIX C: COORDINATION OF LANDLORD AND
LEASEHOLD IMPROVEMENT APPRAISALS*****Develop an Inter-Departmental Memorandum for Coordination***

Transferring information between the real property and business property divisions within an assessor's office can help to avoid duplicate assessment of landlord and leasehold improvements—both of which may include structure items and fixtures. One method used to track and monitor the transfer of information in some assessor's offices is an inter-departmental memorandum. This memorandum is sent between departments (i.e., between the real estate division and business division) with a copy of the improvement source document (e.g., building permit, change in ownership statement, etc.). As shown in the table below, the memorandum includes three copies: one copy retained by the originator to verify completion of the assessment, one copy for the real property file, and one copy for the business property file.

The intent of the memorandum is to provide a complete record of the appraisal, including: classification, valuation, and assessee. It summarizes all appraisal information for the business file and real property record. The following table illustrates how an inter-departmental memorandum may be used in practice.

TABLE C-1: Inter-Departmental Memorandum

- | |
|---|
| TABLE C-1: Inter-Departmental Memorandum |
| <ul style="list-style-type: none"> • The business property division receives a property statement reporting additions on Schedule B. After reviewing the property statement, the auditor-appraiser initiates a memorandum to the real property division addressing these additions. • The originator (auditor-appraiser) keeps the original memorandum (copy #1). Next, the auditor-appraiser attaches copies #2 and #3 to a copy of Schedule B and forwards that information to the real property division. The auditor-appraiser retains the original (copy #1) to track the appraisal of the improvements. • Using the memorandum and its attachments, the real property appraiser determines any applicable value changes. After valuing the property, the real property appraiser places copy #2 in the real property file. • Using the final copy (#3), the real property appraiser notifies the business property division of the appraisal, along with any recommendations for the auditor-appraiser. |

Description of Method

The following steps describe one method of coordinating the appraisal of landlord and leasehold improvements, as it is used by some assessors' offices. Under this method, information regarding landlord or leasehold improvements is referred to and from the real property and personal property divisions for evaluation and appropriate action.

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1 After proper classification, the real property appraiser values the property reported in Columns 1,
2 3, and 4 (i.e., Structure Items Only, Land Improvements, Land, and Land Development), while
3 the auditor-appraiser values the property reported in Column 2 (i.e., Fixtures Only).¹³⁸ This
4 method requires that the business division provide a copy of Schedule B (and the Supplemental
5 Schedule) from the Business Property Statement to the real property appraiser each year, or
6 whenever a change is reported from the prior year's schedule.

7 As discussed above, a memorandum should be attached to this documentation. After a review of
8 the statement and/or inspection of the property, the real property appraiser notifies the auditor-
9 appraiser of the action taken (on copy #3 of the memorandum). In the event that the assessee
10 does not correctly classify the improvements, the real property appraiser's review should include
11 consideration of both non-fixture real property items (Columns 1, 3, and 4) and fixtures (Column
12 2). Based on a building permit received earlier in the year, for instance, the real property appraiser
13 may add value to real property, believing those improvements to be structure items. However, the
14 assessee may report those same improvements on the property statement as fixtures. If the real
15 property appraiser does not receive a copy of Schedule B, and review the costs as they were
16 reported, a double assessment may occur.

17 This communication process works in both directions. Although the memorandum could originate
18 from either division; it more often originates from the business division.

¹³⁸ On Schedule B of the Business Property Statement.

DRAFT**1 Example**

2 Following is an example of an assessment of leasehold improvements using the suggested
 3 procedures outlined above. This example demonstrates only one method to coordinate the
 4 assessment of leasehold improvements; it is not the only proper method.

Assessment of Leasehold Improvements

- 5 • In August 1997, a tenant obtained a building permit valued at \$60,000 to install restaurant
 6 improvements in a new strip mall. During September 1997, the real property division received
 7 a copy of this building permit. The real property appraiser copied the permit and forwarded it
 8 to the business division with an attached memorandum. Since this was done in a timely
 9 manner, a copy of the permit was in the business file prior to receipt of the Business Property
 10 Statement.
- 11 • In April 1998, the business division received a property statement from the assessee (the
 12 tenant) reporting the actual cost of the improvements as \$48,000. The assessee classified and
 13 reported all leasehold improvements as fixtures on Schedule B, column 2. No items were
 14 reported in columns 1, 3, and 4.
- 15 • The property statement included a supplemental schedule that broke down the total cost
 16 additions on Schedule B. The list of additions and their costs are shown below:

TABLE C-2: Supplemental Schedule (Schedule B)	
<u>Description</u>	<u>Cost</u>
Electrical wiring to restaurant equipment	\$ 2,500
Flooring	5,000
Rough plumbing to restaurant equipment	5,000
Walk-in refrigerator	10,000
Store front	2,500
Sign in front of restaurant	500
Interior wall paint	1,000
Light fixtures & ceiling fans	3,500
Stainless steel sink in kitchen	1,000
Booths	10,000
Counters	3,000
Dishwasher	2,500
Hood	1,500
Total	<u>\$ 48,000</u>

17
 18 **Step 1: Verification of Costs**

19 Since the amount on the building permit did not match the actual costs reported by the business
 20 owner, it was appropriate to verify actual costs. It is important to note when the value indicated
 21 on a building permit varies from the total costs reported on a property statement. In general, this
 22 variance may occur due to several reasons: (1) the tenant may have overestimated the cost of

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1 improvements; (2) the landlord and tenant may have split the cost of the improvements; or (3) the
2 business owner may have underreported the cost of the leasehold improvements.

3 In this case, the auditor-appraiser contacted the business owner prior to sending a copy of the
4 property statement to the real property appraiser. The auditor-appraiser found that the business
5 owner overestimated the cost of improvements when applying for the permit. Thus, the property
6 statement represented actual cost.

7 Step 2: Transfer of information

8 The business property division forwarded a memorandum to the real property division with copies
9 of Schedule B and the supplemental schedule. On the memorandum, the auditor-appraiser
10 referenced (1) the September 1997 memorandum received from the real property division and (2)
11 the information received from the assessee in step 1. Utilizing all information available aids in the
12 proper classification of improvements.

13 Step 3: Classification

14 Depending upon the established policy of the assessor's office, either the auditor-appraiser or real
15 property appraiser may classify the property. For this example, the real property appraiser
16 classified the leasehold improvements. The real property appraiser classified the property as
17 follows:

TABLE C-3: Classification by Real Property Appraiser			
	<u>Cost</u>	<u>Structure</u>	<u>Fixture</u>
Electrical wiring to restaurant equipment	\$ 2,500		\$ 2,500
Flooring	5,000	\$ 5,000	
Rough plumbing to restaurant equipment	5,000		5,000
Walk-in refrigerator - not integral part of building	10,000		\$10,000
Store front	2,500	2,500	
Sign in front of restaurant	500		500
Interior wall paint	1,000	1,000	
Light fixtures and ceiling fans	3,500	3,500	
Stainless steel sink in kitchen	1,000		1,000
Booths	10,000		10,000
Counters	3,000		3,000
Dishwasher	2,500		2,500
Hood	1,500		1,500
Total	<u>\$ 48,000</u>	<u>\$12,000</u>	<u>\$ 36,000</u>

18

19 Step 4: Determination of Assessee

20 In this example, the assessee was determined to be the tenant. As discussed earlier, improvements
21 can be assessed to either the landlord or the tenant, on either the secured or unsecured roll.
22 Commonly, as in this example, they are assessed to the party that paid for the improvements.

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1 **Step 5: Valuation**

2 **A. Valuation of Structure Items**

3 After classification, the real property appraiser determined the value of the structure items listed
4 above. If land improvements, land, and land development were reported (columns 3 and 4 of
5 Schedule B), the real property appraiser would have also valued those improvements as well.

6 **B. Valuation of Fixtures**

7 After valuing the structure items, the real property appraiser forwarded a copy of Schedule B
8 along with copy #3 of the memorandum—detailing the action taken—to the auditor-appraiser.
9 Using that information, the auditor-appraiser must then value the fixtures. As discussed earlier,
10 fixtures are real property; they must be valued, at the lesser of (1) their full cash value or fair
11 market value or (2) their factored base year value. The auditor-appraiser valued and enrolled the
12 fixtures as shown below:

TABLE C-4: Valuation of Fixtures					
	<u>Cost</u>	<u>Index Factor</u>	<u>Percent Good Factor</u> ¹³⁹	<u>Fair Market Value</u>	<u>Indexed Value (2% Inflation Factor)</u>
Total 1997 Cost of Fixtures	\$ 36,000	100	.94	\$ 33,840	\$ 36,720
Enrolled Value				<u>\$ 33,840</u>	

13 **Step 6: Enrollment of Value**

14 In general, the assessed value can be enrolled to either the secured or unsecured roll account
15 depending on how the assessor's office enrolls leasehold improvements (i.e., on the secured roll to
16 the land and building owner; or on the unsecured roll to the tenant who paid for improvements).
17 As discussed in step 4, the tenant was determined to be the assessee, both values (structure value
18 and fixture value) were enrolled on an unsecured account with the business personal property.
19 Since the value of fixtures is used in the determination of a mandatory audit, separation of the
20 structure and fixture values on the unsecured account is necessary.

21 **Step 7: Clearly Identify the Leasehold Improvements on the Appraisal Records**

22 The final step documents the assessment on the appraisal records. Notes regarding the leasehold
23 improvements in both the real property records and the business property files will assist in
24 verification of the assessment(s) and can help to avoid duplicate efforts in future assessment years.
25 These notes summarize the information relied upon during the appraisal and identify the actions
26 taken. The memo(s) and attached copies of source documents are kept in the appraisal records as
27 support.

¹³⁹ The appraiser in this example has determined an average 12-year service life for these types of fixtures.

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GLOSSARY OF TERMS

Accounting	The practice of systematically recording, presenting, and interpreting the financial transactions relating to a specific person, property, or business.
Actual Age	The actual number of years since an improvement was constructed.
Ad Valorem	Latin phrase meaning "in proportion to the value." In California, the property tax is considered to be an ad valorem tax.
Amortization	The process of retiring a debt or recovering a capital investment through scheduled, systematic repayment of principal; a program of periodic contributions to a sinking fund or debt retirement fund.
Annuity	A periodic series of obligatory payments; an annuity can be level, increasing, decreasing, or a combination thereof.
Annuity Factor	In yield capitalization, the number, usually obtained from financial tables, that is multiplied by an income amount to produce an estimate of present value.
Anticipated Income	Income payments expected or hoped for by an investor.
Anticipation, Principle of	The principle that value is created by the expectation of benefits to be derived in the future.
Appraisal Unit	The unit that people in the market typically buy and sell.
Appreciation	The increase in property value resulting from an excess of demand for a property relative to its supply.
Assemblage	The combining of two or more parcels, usually but not necessarily contiguous, into one ownership or use.
Assessed Value	The taxable value of a property against which the tax rate is applied.
Assessee	Person who owns, claims, possesses, or controls a property on the lien date.
Assessment Roll	A listing of all taxable property within a county. It identifies, at a minimum: (1) the property (usually by assessor's parcel number); (2) the tax-rate area where the property is located; (3) the name (if known) and mailing address of the assessee; (4) the assessed value of the property, including separate assessed values for land, improvements, and personal property; (5) penalties (if any); and (6) the amount (if any) of specified exemptions (e.g., Homeowners', Church, Welfare, etc.). Distinct assessment rolls include the locally-assessed secured and unsecured regular assessment rolls, the locally-assessed supplemental assessment roll, and the state-assessed roll (which is added to the locally-assessed secured roll).

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Atypical Depreciation	Unexpected depreciation.
Average Service Life	The average life term of a group of items.
Band of Investment	A technique in which the capitalization rates attributable to the components of a capital investment are weighted and combined to derive a weighted-average rate attributable to the total investment.
Base Year Value	In accordance with section 110.1, a property's base year value is its fair market value as of either the 1975 lien date or the date the property was last purchased, newly constructed, or underwent a change in ownership after the 1975 lien date.
Beta Coefficient	Measure of a stock's relative volatility. The beta is the covariance of a stock in relation to the rest of the stock market. The Standard and Poor's 500 Stock Index has a beta coefficient of 1. Any stock with a higher beta is more volatile than the market, and any with a lower beta can be expected to rise and fall more slowly than the market.
Board Roll	Part of the secured roll, containing State assessed property.
Book Value	Capitalized cost less depreciation as estimated by the accountant.
Buffer Zone Land	A zone of land surrounding all or part of a property to protect both it and surrounding landowners from disturbances.
Building Improvements	Improvements to a structure.
Capital Asset Pricing Model (CAPM)	A model of the relationship between expected risk and expected return. The model is grounded in the theory that investors demand higher returns for higher risks. It says that the return on an asset or a security is equal to the risk free return—such as the return on a short term treasury security—plus a risk premium.
Capitalization	Any method of converting expected future benefits into an indicator of present value; the discounting of projected income to a present value.
Capitalization Rate	Any rate used to convert income into an indicator of value; a ratio that expresses a relationship between income and value.
Capitalized Cost	Recorded cost of asset in assessee's books and records.
Capitalized Interest	Cost associated with use of money during construction of an asset whether the source of funds is debt or equity and whether or not the interest is actually incurred.
Cash Flow	Periodic income attributable to the interests in real property.

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Cash Flow Rate	The ratio of annual cash flow to the investment.
Change in Ownership	A transfer of a present interest in real property, including the beneficial use thereof, the value of which is substantially equal to the value of the fee interest.
Comparative Sales Approach	An approach to value by reference to sale prices of the subject property or comparable properties; under rule 4, the preferred approach when reliable market data are available.
Compound Interest	Interest on the sum of principal and the accrued interest, combined at regular intervals; interest on interest.
Conditional Sale Contract	Form of sales contract in which seller reserves title until buyer pays for goods or land, at which time, the condition having been fulfilled, title passes to buyer. Such contract under Uniform Commercial Code is a purchase money security agreement. UCC Section 9-105(h). (See also financing lease.)
Contract Rent	The actual amount of rent a property is earning as specified in a lease; the existing rent on property as distinguished from rent that could be expected if the property were available for rent on the open market.
Cost	The expenditure required to develop and construct an improvement or acquire personal property.
Cost Approach	A value approach using the following procedures to derive a value indicator: (1) estimate the current cost to reproduce or replace an existing structure without untimely delays; (2) deduct for all accrued depreciation; and (3) add the estimated land value and an amount to compensate for entrepreneurial profit (if present).
Cost-Estimating Methods	<p>The estimation of replacement or reproduction cost. Four methods are described below:</p> <p>(1) Quantity Survey Method. Under this method, all costs of each piece of material and all labor are estimated and summed; this method accounts for the quantity and quality of all the agents of production necessary to develop and construct an improvement.</p> <p>(2) Square Foot Method. This method uses the known costs of similar buildings, adjusted for physical differences and market conditions. The costs are estimated in terms of dollars per unit, such as \$100 per square foot; costs per unit for properties of equal utility are often obtained from data compiled and published by cost-estimating firms. Also known as the Comparative Unit method. The Assessors' Standard Classification System is used in conjunction with square foot cost tables to produce a cost estimate using the square foot method.</p>

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(3) Unit-In-Place Method. This method adds together the unit cost of each component of an improvement, such as the cost of a foundation, a wall, or a roof; costs for walls and foundations are usually estimated per linear foot and are often obtained from data compiled and published by cost-estimating firms.

(4) Trended Historical Cost. Under this method, an improvement's historical cost is adjusted (factored forward) to the current price level using trending tables.

Debt Cost of Capital It is the expected return on debt. It is best approximated by the yield-to-maturity on the applicable debt, since that yield is a market observable measure of the cost of debt capital.

Debt Service (I_m) The periodic payment that covers the interest on, and retirement of, the outstanding principal of the mortgage loan.

Debt/Equity Ratio The ratio between an enterprise's loan capital and its equity capital, i.e., the ratio between the amount owed to lenders and the capital account of shareholders or partners.

Debt Coverage Ratio The ratio of net operating income to annual debt service, or the amount that provides for the return on (interest) and return of (principal) on a mortgage loan.

Depreciation A decrease in utility resulting in a loss in property value; the difference between estimated replacement or reproduction cost new as of a given date and market value as of the same date. There are three principal categories of depreciation, described below:

(1) Physical Deterioration. The loss in utility and value due to some physical deterioration in the property; considered curable if the cost to cure it is equal to or less than the value added by curing it.

(2) Functional Obsolescence. The loss in utility and value due to changes in the desirability of the property; attributable to changes in tastes and style or the result of a poor original design. Functional obsolescence is curable if the cost to cure it is equal to or less than the value added by curing it.

(3) External (or Economic) Obsolescence. The loss in utility and value due to an incurable defect caused by external negative influences outside the property itself; results from the immobility of real property.

Direct Capitalization A capitalization method used to convert a single year's income expectancy into an indicator of value, either by dividing the income estimate by an appropriate rate or by multiplying the income estimate by an appropriate factor.

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Direct Costs	Expenditures required for the labor and materials necessary to develop and construct an improvement; sometimes referred to as "hard costs."
Discount	Conversion of future payments to present value.
Discount Rate	A selected yield rate used to convert expected future payments into an estimate of present value.
Discounted Cash Flow (DCF) Method	A capitalization method in which a discount rate is applied to a series of projected income payments, including the reversion, in order to arrive at an estimate of present value (i.e., current market value). The DCF method can be applied with any yield capitalization technique.
Economic Cost	Cost for appraisal purposes. Includes all market costs (direct and indirect) necessary to purchase or construct equipment and make it ready for its intended use.
Economic Life	The period of time over which improvements to real property contribute to property value.
Economic Limit	A point in time when the property is no longer profitable to the operator.
Economic Obsolescence	An element of accrued depreciation; a defect, usually incurable, caused by influences outside the site—sometimes called external obsolescence.
Economic Rent	The amount of rental income that could be expected from a property if available for rent on the open market, as indicated by the prevailing rental rates for comparable properties under similar terms and conditions; economic rent is distinguished from contract rent, which is the actual rental income for the subject property as specified in a lease; economic rent is also referred to as market rent.
Effective Age	The age indicated by the condition and utility of the property.
Effective Gross Income	The estimated potential gross income less allowances for vacancy and collection losses.
Effective Interest Rate (i)	Interest per dollar per period; the nominal annual interest rate divided by the number of conversion periods per year.
Effective Tax Rate	The effective tax rate relates tax expense to before-tax income. A reduction in the effective tax rate from a one-time source (such as an investment tax credit from a major plant expansion) causes overstated earnings from the point of view of the investment analyst.

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Entrepreneurial profit	A market-derived estimate of what an entrepreneur expects to receive for his or her contribution. An estimate of the cost to the entrepreneur of foregoing the opportunity to profit from providing his or her services to some other development project. Entrepreneurial profit reflects the reward that a developer receives for his or her expertise and risk-taking (i.e., his or her entrepreneurial services).
Equipment Index Factor	Multiplier used to "trend" the historical cost of property to an estimated replacement cost new.
Equity Capitalization Rate (R_E)	A rate that reflects the relationship between the equity dividend and the equity investment (i.e., a single year's net income before recapture less debt service divided by the equity investment); a rate used to convert the equity dividend into an indicator of equity value; also known as the equity dividend rate, the cash on cash rate or the cash flow rate.
Equity Cost of Capital	The equity cost of capital is equal to the expected rate of return, or forecast mean return, for the firm's equity.
Equity Dividend	A single year's cash flow after debt service but before income taxes (i.e., a single year's net income before recapture (NIBR) less debt service).
Equity Yield Rate (Y_e)	An annualized rate of return on equity capital, as distinguished from the rate of return on debt capital or interest; the equity investor's internal rate of return.
Escape Assessment	Assessment made after the completion of the regular assessment roll.
Expense Ratio	The ratio of total expenses, excluding debt service, to either potential or effective gross income.
Extended Term Lease	Lease with duration of six months or more. (Commonly referred to as long-term lease.)
External Obsolescence	Form of depreciation. Also referred to as Economic Obsolescence. The loss in utility and value due to an incurable defect caused by external negative influences outside the property itself.
Factor	One of two or more numbers that when multiplied together produce a third number; a multiplier. A capitalization factor is the reciprocal of a capitalization rate.
Fair Market Value	An amount of cash the property would bring if exposed for sale in the open market under conditions in which neither the buyer nor the seller could take advantage of the exigencies of the other.

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Fee Simple Estate	Absolute ownership unencumbered by any other interest or estate, subject only to the limitations of eminent domain, escheat, police power, and taxation.
Financial Corporation	Banks and financial institutions exempt from property taxation by the California Constitution, Article XIII, section 28 and section 23182.
Financing Lease	See Conditional Sale Contract.
Fixed Machinery and Equipment	A type of fixture. Equipment which is physically or constructively annexed and intended to remain indefinitely with the realty.
Fixture	An item of tangible property, the nature of which was originally personal property, but which is classified as real property for property tax purposes because it is physically or constructively annexed to real property with the intent that it remain annexed indefinitely.
Full Cash Value	See market value.
Functional Obsolescence	Form of depreciation. The loss in utility and value due to changes in the desirability of the property; attributable to changes in tastes and style or the result of a poor original design. Functional obsolescence is curable if the cost to cure it is equal to or less than the value added by curing it.
Future Worth of \$1 ($S^n$)	The compound interest factor that indicates the amount to which \$1 will grow with compound interest at a specified rate for a specified number of periods.
Future Worth of \$1 Per Period ($S_n$)	The compound interest factor that indicates the amount to which \$1 per period will grow with compound interest at a specified rate for a specified number of periods.
Going Concern Value	Generally, the total value of an operating business enterprise. It includes the value of the real property, tangible personal property (e.g., machinery and equipment), labor, the marketing operation, and intangible assets and rights. It includes the incremental value of the business concern, which is distinct from the value of the real property
Gross Income	Income from the operation of a business or the management of property, customarily stated on an annual basis. Gross income is income to the property from all sources. In an apartment property, for example, the gross income could be the sum of living unit rent, parking space rent, vending machine, and laundry facility income.

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Gross Income Multiplier	The relationship between sale price (or value) and gross income, expressed as a factor; used to estimate value as a multiple of income. Gross income is usually (though not always) expressed in annual terms, and includes income to the property from all sources; in an apartment property, for example, the gross income could be the sum of living unit rent, parking space rent, vending machine income, and laundry facility income.
Gross Outgo	Any outlay of money or money's worth, including current expenses and capital expenditures required to develop and maintain an estimated income stream.
Gross Rent	Income to the property only from rental of the principal improvements. In an apartment property, for example, the gross rent would be from living units only and would exclude income from parking space rent, vending machine, and laundry facility income.
Gross Rent Multiplier	The relationship between sale price (or value) and gross rent, expressed as a factor; used to estimate value as a multiple of income. Gross rent is usually (though not always) expressed in annual terms, and includes the income to the property derived from the principal improvements only. The gross rent for an apartment property, for example, is from living units only and excludes income from parking space rent, vending machine income, and laundry facility income.
Gross Return	Any money or money's worth which the property will yield over and above vacancy and collection losses, including ordinary income, return of capital, and the total proceeds from sales of all or part of the property.
Highest and Best Use	The most profitable use of a property at the time of the appraisal; that available use and program of future utilization that produces the highest present land value; must be legal, physically possible, financially feasible, and maximally profitable; see text for the distinction between highest and best use as though vacant and highest and best use as improved.
Historical Cost	The total cost of a property when it was originally constructed.
Holding Period	The term of ownership of an investment.
Improvements	All buildings, structures, fixtures, and fences erected on or affixed to the land; all fruit, nut bearing, ornamental trees and vines, not of natural growth, and not exempt from taxation, except date palms under eight years of age; see text for statutory definition.
Income Approach	Any method of converting an income stream or a series of future income payments into an indicator of present value.

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Income Rate (R_O, or R_E)	A rate that expresses the relationship between one year's income and the corresponding total value of a property; or, in the case of R _E , with the value of only the equity interest.
Income Stream	A steady flow of payments or benefits from an investment or property.
Indirect Costs	The outlay for items, other than labor and materials, required to develop and construct an improvement; includes such costs as legal fees, property taxes, construction financing, administrative expenses, appraisal fees, and lease-up expenses; sometimes referred to as soft costs.
Interest Only Mortgage	A nonamortizing loan in which the lender receives interest only during the term of the loan and recovers the principal in a lump sum at the time of maturity.
Interest Rate	The rate of return on debt capital; the price paid for borrowing money.
Internal Rate of Return (IRR)	The annualized rate of return on invested capital which is generated or is capable of being generated within an investment over a period of ownership.
Investment Value	The specific value of property to a particular investor, based upon individual investment requirements, as distinguished from the concept of market value.
Land	Real estate, or real property, except improvements. It includes: the possession of, claim to, ownership of, or right to possession of land; and all mines, minerals, and quarries in the land, all standing timber whether or not belonging to the owner of the land, and all rights and privileges appertaining thereto.
Landlord Improvements	Improvements made by the real property owner.
Lease	A written document in which the rights to use and occupy land or structures are transferred by the owner to another for a specified period of time in return for a specified rent.
Leaseback	A transaction in which an investor purchases property and leases it back to the seller, generally under lease terms and conditions that were negotiated at the time of the sale.
Leased Fee Interest or Estate	The lessor's interest in property; an ownership interest held by a landlord with the right of use and occupancy conveyed by lease to others; the right to receive rent stipulated in the lease and to receive the property (the reversionary right) at the end of the lease term.

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Leasehold	The lessee's interest in property; the right to use and occupy real property during the term of a lease, subject to any contractual restrictions.
Leasehold/Tenant Improvements	Improvements made by the lessee/tenant.
Lessee	One who has the right to use or occupy property under a lease agreement; a tenant.
Lessor	One who conveys the right to use and occupy property under a lease agreement; a landlord.
Level Annuity	An income stream in which the amount of each payment is the same; a level, unchanging flow of income over time.
Leverage	The effect of borrowed funds, which may increase or decrease the return that would be realized on equity free and clear.
Lien date	All taxable property (both state and locally assessed) is assessed annually for property tax purposes as of 12:01 a.m. on January 1, which is called the lien date. It is referred to as the lien date because on this date the taxes become a lien against all real property assessed on the secured roll.
Loan-to-Value Ratio	The ratio between the mortgage amount and the value of the property pledged as security for the debt; usually expressed as a percentage.
Long-term lease	See Extended-term lease.
Market Rent	The amount of rental income that could be expected from a property if available for rent on the open market, indicated by the prevailing rental rates for comparable properties under similar terms and conditions; distinguished from contract rent, which is the actual rental for the subject property as specified in a lease; also referred to as economic rent.
Mid-year Factoring	A method of discounting cash flows that assumes the payment is made in the middle of the discounting period.
Modern Portfolio Theory	A financial theory that risk is reduced with proper diversification of assets.
Mortgage Constant	The capitalization rate for debt; the ratio of the annual debt service to the principal amount of the mortgage loan; the total annual amount required to pay off an amortizing loan with level monthly payments, expressed as a percentage of the original loan amount.
Movable Property	All property which is intended to be, and is, moved from time to time from one location to another.
Multiplier	A figure that is multiplied by income to produce an estimate of value.

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Net Income Before Recapture (NIBR)	Annual net income remaining after deducting all operating expenses including property taxes but before deducting financial charges such as recapture and debt service; also known as net operating income (NOI).
Net Income Before Recapture and Taxes (NIBR&T)	The annual net income remaining after deducting all operating expenses but before deducting other charges such as recapture, debt service, and property taxes. For property tax appraisal purposes, NIBR&T is capitalized into an indicator of value using various income capitalization techniques.
Net Lease	A lease where the lessee pays not only for the use of the property, but also for stipulated additional charges such as property taxes, insurance, and maintenance.
Net Operating Income	The actual or anticipated net income that remains after all operating expenses are deducted from effective gross income, but before mortgage debt service and book depreciation are deducted.
Net Return	The difference between gross return and gross outgo.
New Construction	Any addition to real property, whether land or improvements (including fixtures) since the last lien date; any alteration of land or improvements (including fixtures) since the last lien date that constitutes a major rehabilitation thereof or which converts the property to a different use.
Nonmandatory Audit	Audits not required by law, but authorized by section 470 and rule 192 (e).
Operating Expense Ratio (OER)	The ratio of total operating expenses to the effective gross income.
Operating Expenses	The periodic expenditures necessary to maintain the real property and continue production of the effective gross income, assuming prudent and competent management; sometimes referred to as "allowable expenses."
Ordinary Annuity	A type of level annuity in which income payments are received at the end of each period.
Overage Rent	The percentage rent paid over and above the guaranteed minimum rent or base rent.
Overall Capitalization Rate (R_o)	The relationship between the anticipated net income before deducting for recapture (NIBR) and the sale price; the rate implies the investor's perception of both return on and recapture of the investment.
Percent Good	The complement of depreciation; if a property is 20 percent depreciated, its percent good is 80 percent; percent good refers to the portion of benefits remaining in an asset compared to the total benefits when new.

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Periodic Repayment	The direct reduction loan factor for a loan, given the interest rate and amortization term.
Personal Property	Personal property includes all property except real property.
Physical Deterioration	Form of depreciation. The loss in utility and value due to some physical deterioration in the property; considered curable if the cost to cure it is equal to, or less than, the value added by curing it.
Plottage	An increment of value that results when two or more sites are assembled under single ownership, producing greater utility.
Possessory Interests	(a) Possession of, claim to, or right to possession of land or improvements, that is independent, durable, and exclusive of rights held by others in the property except when coupled with the ownership of the land or improvements in the same person. (b) Taxable improvements on tax-exempt land.
Potential Gross Income	The total income of a property before deducting vacancy and collection losses or operating expenses.
Present Value (PV)	The value of a future payment or series of future payments discounted to the current date or to time period zero.
Present Worth of \$1 (1/Sⁿ)	A compound interest factor that indicates how much \$1 due in the future is worth today.
Present Worth of \$1 Per Period (a_n)	A compound interest factor that indicates how much \$1 paid periodically is worth today.
Principal	A capital sum; a payment for reduction of the capital borrowed as distinguished from the payment of interest.
Principle of Anticipation	The principle that value is created by the expectation of benefits to be derived in the future.
Principle of Substitution	When several similar or commensurate commodities, goods, or services are available, the one with the lowest price attracts the greatest demand and widest distribution. This principle assumes rational, prudent market behavior with no undue cost due to delay. A buyer will not pay more for one property than for another that is equally desirable.
Producer Price Index	Measure of change in wholesale prices (formerly called the wholesale price index), as released monthly by the U.S. Bureau of Labor Statistics. The index is broken down into components by commodity, industry sector, and stage of processing. The consumer equivalent of this index is the Consumer Price Index.

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Projection Period	The holding period; a period of time over which net income is projected for valuation purposes; a presumed period of investment in property.
Property	Property includes all matters and things—real, personal, and mixed—that are capable of private ownership.
Prudent Management	Practically wise, judicious, careful, discreet, circumspect, and sensible in the act of managing, by direction or administration, an enterprise.
Rate	The ratio of one quantity to another.
Real Property	The possession of, claim to, ownership of, or right to the possession of land; all mines, minerals, and quarries in the land; all standing timber whether or not belonging to the owner of the land, and all rights and privileges appertaining thereto; and improvements; in California property tax law, the term is synonymous with "real estate."
Recapture	The return of invested capital; in real estate investments, capital may be returned gradually as part of the annual income; it may be recaptured all or in part through resale of the property, or through a combinations of both. The variety of the methods of recapture require the various capitalization techniques.
Reciprocal	The quantity resulting from the division of 1 by a given number.
Regular Assessment Roll	Roll covering period starting July 1 of the current calendar year to June 30 of the next year. Assessment period for the regular roll must be completed on or before July 1.
Remaining Economic Life	The estimated period during which the improvements will continue to contribute to a property's value.
Replacement Cost	The cost required to replace an existing property with a property that has equivalent utility.
Reproduction Cost	The cost required to reproduce an exact replica of an existing property.
Residual Techniques	Capitalization techniques (within the income approach) in which an income amount is allocated to a property component of unknown value after subtracting the income return required by the property component of known value. This income amount is then capitalized into an estimate of value of the unknown component.
Return of Capital	The recovery of invested capital, usually through income and/or reversion.
Return on Capital	The additional amount received as compensation (profit or reward) for use of an investor's capital until it is recaptured.

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Reversion	A lump-sum benefit in property that an investor receives or expects to receive at the termination of an investment.
Reversionary Rights	The rights of the lessor at the expiration of a lease; the estate returned or due to be returned.
Risk	Uncertainty about the outcome of future events; uncertainty about the future profitability of investments or projects; the possibility of not receiving the projected income.
Risk Component	A component added to the capitalization rate pursuant to Revenue and Taxation Code section 423(b) which shall be a percentage determined on the basis of the location and characteristics of the land, the crops to be grown thereon, and the provisions of any lease or rental agreement to which the land is subject.
Risk Rate	The annual rate of return on capital that is commensurate with the risk or uncertainty assumed by the investor; the rate of return or yield required to attract capital to the level of risk or uncertainty of that investment.
Safe Rate	The minimum rate of return on invested capital. Theoretically, the difference between the total rate of return and the safe rate is considered a premium to compensate the investor for risk, the burden of management, and the illiquidity of the capital invested; also known as the risk-free rate.
Sale Price	The amount of money a buyer agrees to pay and a seller agrees to accept in an exchange of property rights; sale price is based on a particular transaction, not necessarily on what the typical buyer would pay or the typical seller would accept.
Sale Price Adjustments	<p>A procedure for deriving a value indicator by comparing the property being appraised to similar properties recently sold, by adjusting the sale price of each comparable using elements of comparison. The following adjustments are made, in the order presented:</p> <ol style="list-style-type: none">(1) Rights Conveyed. If rights other than the unrestricted fee simple rights in a property sell, the value of the rights must be adjusted to the value of the unrestricted fee simple rights in order to use the sale as an indicator of value for property tax purposes.(2) Cash Equivalence. Fair market value means the price in cash or its equivalent; therefore, if a sale price has been affected by non-cash items received by the seller, the price must be adjusted, e.g., if a seller gives favorable financing to a buyer and then increases the price because of the financing.(3) Market Conditions (Time). The value of property changes with market conditions; if market conditions have changed since a sale occurred, the sale price should be adjusted prior to using it as an indicator of value.

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(4) Location and Physical and Economic Characteristics. The degree of comparability between a sold property and the subject property determines the adjustments necessary; adjustments typically relate to location, size, quality, age and condition of improvements, and zoning.

(5) Non-Real Property Components of the Sale. Non-real property components of value include stocks, bonds, tangible personal property, copyrights, patents, trade names, etc. With the exception of tangible personal property, the other items listed are intangible personal property. The sales prices of the subject property and comparable properties must be adjusted to exclude the value of these items.

Salvage Value	The value of property at the end of its economic life in its present use; the estimated market value for an entire property (e.g., a house) or for a part (or parts) of a property (e.g., the plumbing fixtures or doors of a house) that is removed from the premises for use elsewhere.
Scarcity	The present or anticipated under-supply of an item relative to the demand for it.
Secured Property	Property on the secured roll.
Secured Roll	That part of the assessment roll containing state assessed property and property the taxes on which are a lien on real property sufficient, in the opinion of the assessor, to secure payment of taxes.
Short-term lease	Lease of property on a daily, weekly, or other short-term basis (defined as a period of less than 6 months).
Sinking Fund Factor ($1/S_n$)	The Compound interest factor that indicates the amount per period that will grow, with compound interest, to \$1.
Situs	The place where property is legally situated, the more or less permanent location of the property.
Six Functions of \$1	The six related compound interest functions used in the mathematics of finance and shown in standard compound interest tables.
Stabilized Occupancy	A level of occupancy that is expected to continue over the economic life of a property.
Statute of Limitations	Time period during which an assessment can be made. See section 532.
Straight-line Recapture	The recovery of capital in equal, periodic increments over the remaining economic life of an asset.
Structure	An edifice or building; an improvement whose primary use or purpose is for housing or accommodation of personnel, personalty, or fixtures and has no direct application to the process or function of the industry, trade, or profession.

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Structure Items	Integral parts of the structure. Improvement that has a primary use or purpose for housing or accommodation of personnel, personalty, or fixtures and has no direct application to the process or function of the industry, trade, or profession.
Sublease	An agreement in which the lessee in a prior lease conveys the right of use and occupancy of a property to another.
Substitution, Principle of	When several similar or commensurate commodities, goods, or services are available, the one with the lowest price attracts the greatest demand and widest distribution. This principle assumes rational, prudent market behavior with no undue cost due to delay. A buyer will not pay more for one property than for another that is equally desirable.
Supplemental Assessment	An assessment of the full cash value of property as of the date a change in ownership occurs or new construction is completed which establishes a new base year value for the property or for the new construction.
Supplies	Property used up in the normal operation of a business, but which are not intended for sale of lease.
Tax Shelter	Investment features that provide relief from income taxes or allow the investor to claim deductions from taxable income.
Taxable Value	For real property subject to article XIII A of the California Constitution, the base year full value adjusted for any given lien date as required by law or the full cash value for the same date, whichever is less, as set forth in section 51(a).
Tenant Improvements	See Leasehold Improvements
Trade Fixture	A type of fixture which is "trade-related."
Trade Level	Property normally increase in value as it progresses through production and distribution channels.
Trade-in Allowance	Property used for payment in whole or in part for acquisition of other property (usually older property used as partial payment for new property).
True Lease	Agreement under which an owner gives up possession and use of his property for valuable consideration and for a definite term and at the end of the term, the owner has the absolute right to retake, control, or convey the property.
Typical Depreciation	Expected depreciation for a type of property.

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Unit of Comparison	The components into which a property may be divided in order to make comparisons, e.g., an apartment might be compared by price per apartment unit, price per room, price per gross square footage, or price per leasable square footage.
Unsecured Property	Property on the unsecured roll.
Unsecured Roll	See definition of secured roll. Remainder of the roll is the unsecured roll. The taxes are a personal liability of the owner.
Utility	The capacity of goods to evoke a desire for possession; wantedness; want-satisfying power.
Vacancy and Collection Loss	An allowance for reductions in potential income attributable to vacancies, tenant turnover, and nonpayment of rent.
Value	The power of one commodity to command other commodities in exchange; a ratio of exchange; present worth of future net benefits.
Weighted Average	An average that is calculated by weighting each component by a factor that represents its relative importance to the whole, multiplying each component by its assigned weight, and adding the products; used in the band of investment method.
Working Capital	The readily converted capital that a business uses to conduct operations free from financial embarrassment; in accounting, current assets minus current liabilities as of a certain date.
Yield	The return on investment.
Yield Capitalization	A capitalization method used to convert future benefits to present value by discounting each future benefit at an appropriate yield rate or by developing an overall rate that reflects the investment's income pattern, value change, and yield rate.
Yield Rate	A measure of investment return (usually annualized) that is applied to a series of incomes to obtain the present value of each; examples are the interest rate, the discount rate, the internal rate of return, and the equity yield rate.

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