

ABSTRACT

This article describes the theory behind, and the practical concerns of working with, formulas relating the whole or overall property to its parts. The article clarifies misconceptions and misapplications pertaining to application of the three approaches to value and offers insights into a broader set of asset valuation issues, such as the valuation of personal property and business intangibles, and insights into what the three approaches to value measure in real-world circumstances.

Relationships between the Overall Property and Its Parts, and the Three Approaches to Value

by Mark Pomykacz, MAI

In theory, the three approaches to value can be used to determine real, personal, or business property values. In practice, many real estate appraisers mistakenly believe that the traditional sales comparison and income capitalization approaches usually, depending on property type and complexity, produce pure real property values. Many times, the sales comparison and income capitalization approaches do not produce pure real property value.

A fundamental principle of appraisal theory is that the overall value of an asset¹ can be determined by summing the values of a complete and properly matched set of the parts of the asset. This principle is sometimes expressed as “the whole is equal to the sum of the parts,” and is defined herein as the *principle of summation*.² The whole is commonly known as a combination, aggregate, or the overall asset. The parts of an overall asset are known as components or elements or partial interests.³ The principle of summation takes several classic

1. An asset can be a business enterprise, an improved real property, land, mortgage, equity, personal property, business intangibles, or any other tangible or intangible item of value or some combination thereof.
2. Surprisingly, a review of the real estate appraisal theory literature finds no previously given name for what is one of the most basic principles of appraisal. A closely related principle is *contribution*, which *The Dictionary of Real Estate Appraisal*, 4th ed., defines as “the value of a particular component is measured in terms of its contribution to the value of the whole property, or as the amount that its absence would detract from the value of the whole.” Appraisal Institute, *The Dictionary of Real Estate Appraisal*, 4th ed. (Chicago: Appraisal Institute, 2002), 63.
3. *The Dictionary of Real Estate Appraisal*, 4th ed., defines *partial interest* as the “divided or undivided rights in real estate that represent less than the whole.” Note that this definition is real property-centric. While this is appropriate when only used to describe real property, it leads some appraisers to believe that the underlying concept only applies to real property. There is a broader concept alluded to in the definition that is essential to this point of this article. Consider the meaning and utility of the above definition should one replace the words real estate with the word asset. The revised definition can then be applied to all economic activities, such as a hotel with real and personal property, not just the real property of the hotel land and building. *The Dictionary of Real Estate Appraisal*, 4th ed., 209.

mathematical forms in real estate appraisal, including the following:

$$V_o = V_l + V_b \quad (1)$$

$$V_o = V_m + V_e \quad (2)$$

$$V_{fs} = V_{lf} + V_{lh} \quad (3)$$

$$V_o = V_{income} + V_{reversion} \quad (4)$$

where:

V = market value

o = overall

l = land

b = building

m = mortgage

e = equity

fs = fee simple

lf = leased fee

lh = leasehold

Formula 1 is the basis of the cost approach to value. One can have multiple building elements, each with its own value, where together they sum to the total value of the buildings or improvements. Formula 2 is a foundation of the mortgage industry. Corollary formulas about capitalization rates form the basis of the band-of-investment formulas (also known as the weighted average cost of capital formulas) and the income capitalization approach. Formula 4 may be fully presented as V_o = present value of income stream + present value of reversion. This formula is a pillar to the discounted cash flow analysis (DCF) income approach to value.

Business appraisers, accountants, the Internal Revenue Service (IRS) and the U.S. Securities and Exchange Commission (SEC) have a different classic formula to represent the principle of summation: The value of the overall business asset, referred to as a *business enterprise value*⁴ or a *going-concern value*,⁵ is equal to the sum of the value of the real estate, the value of personal property, and the value of business intangibles ($V_o = V_{rp} + V_{pp} + V_{bi}$), where rp = real

property, pp = personal property, and bi = business intangibles.⁶ In some cases, elements of the business appraisers' overall summation formula are equal to zero, but their appraisal theory begins with the critical observation that overall value (V_o) can include values from real, personal, and business assets.

While both groups of appraisers claim to be describing overall value, the real estate appraisers' overall value is only part of the business appraisers' overall value, because the value of the real property is only part of business value. Consequently, there can be different and incompatible summation definitions and formulas of the value of an asset. Such a relativistic view of value causes substantial problems for appraisers, clients, and the public.

Note that the principle of summation requires consistency; the items summed in one approach to value or by one appraiser must be the same items summed in the other approaches or by other appraisers, for the same appraisal subject. The Uniform Standards of Professional Appraisal Practice (USPAP) alludes to this issue and appraiser responsibility when it requires proper analysis and reporting of the market or market level of an appraisal subject.⁷

An example of the market-level concern might be a restaurant appraisal, which may be appraised at the real property level only, at the real and personal property level, or at the business enterprise level with real and personal property and business intangibles. For real estate appraisers, the classic formulas for the three approaches to value are sometimes incorrectly applied because these formulas—which are pervasive throughout the valuation industry, literature and education, law and regulation, and finance—are actually special-case formulas that often do not apply in practice, depending on the market level of valuation.

The importance of the issue increases as the complexity of the overall asset increases. Confusion about special-case formulas that do not apply in practice can result in costly property and income

4. The value of "a commercial, industrial, service, or investment enterprise or ownership interest therein." Shannon P. Pratt, Robert F. Reilly, and Robert P. Schweih, *Valuing a Business*, 4th ed. (New York: McGraw-Hill, 2000), 912.

5. According to the American Society of Appraisers, which has adopted the International Glossary of Business Valuation's definition, *going-concern value* is "the value of a business enterprise that is expected to continue to operate into the future." American Society of Appraisers, "American Society of Appraisers Business Valuation Standards Glossary," <http://www.bvappraisers.org/glossary/glossary.pdf>. *Going-concern*, as defined by *The Appraisal of Real Estate*, 13th ed., is "All tangible and intangible assets of an established and operating business with an indefinite life." Appraisal Institute, *The Appraisal of Real Estate*, 13th ed. (Chicago: Appraisal Institute, 2008), 29.

6. Business appraisal theory employs residual formulas extensively, most notably in the valuation of intangibles, i.e., $V_o - V_{rp} - V_{pp} = V_{bi}$, or as a variation on the basic formula, V_{bi} (goodwill only) = $V_o - V_{rp} - V_{pp} - V_{bi}$ (all intangibles other than goodwill). These theories are well established in business appraisal texts, court rulings, and in IRS and SEC regulations. See the section of this article entitled The Internal Revenue Service and the Securities and Exchange Commission for more information.

7. See Standards Rule 6-8(n), Standards Rule 7-3(a), Standards Rule 8-2(a)(ix), and others. Appraisal Standards Board, *Uniform Standards of Professional Appraisal Practice*, 2008–2009 ed. (Washington, DC: The Appraisal Foundation, 2008), U-51, U-56, U-61.

taxation issues, in faulty reporting to investors, and in miscollateralization in loan underwriting.

There's Only One Overall Value

If overall value (V_o) equals the market value of a combination of assets as they are commonly bundled and sold in the market, then $V_o = V_l + V_b$ only works in special cases where the commonly bundled property is typically sold without the inclusion of any personal property or business intangibles whatsoever. If hospitals, nursing homes, theaters, golf courses, restaurants, or hotels, for example, are commonly sold with real property, personal property, and business intangibles, then the overall value (V_o) does not equal just $V_l + V_b$, but rather equals $V_l + V_b + V_{pp} + V_{bi}$. Categorically, the classic real estate formula, $V_o = V_l + V_b$, is a special-case formula, where V_{pp} and V_{bi} equal zero and are hence dropped.

Overall value (V_o) ought to be reserved to designate the market-predominate combination of asset types bundled together. It is not up to the appraiser to define overall value. Rather overall value, which represents market value, is defined by the market, and is merely discovered and accepted by the appraiser and client. An appraisal report must clearly state how overall value is defined by the market of the subject property.

To report precisely, the appraiser needs to conduct market research to determine what bundle of asset types are commonly transferred together when assets like the appraisal subject are transferred. While the purpose of an appraisal may be to find the market value of real property (V_{rp}), the appraiser should not define overall value (V_o) as equal to the market value of real property, when the market defines overall value as something more than the value of real property.

If a type of real property is most commonly sold bundled with other types of assets, either personal property or business intangibles, then the market is defining overall value (V_o) as something more than the value of real property (V_{rp}). When appraisers report their real property value as an overall value and the market is defining overall value as something more than the value of real property, then the appraiser is creating confusion and may be misleading.⁸

For example, if hotels in a given market are commonly sold with hotel furniture, fixtures, and equipment (FF&E), then overall value (V_o) equals $V_{rp} + V_{pp}$ (or $V_l + V_b + V_{pp}$), and overall value (V_o) is not equal to only $V_l + V_b$. The sales comparison and income capitalization approaches in such a market must employ $V_o = V_{rp} + V_{pp}$, because the market prices and values include values from both real and personal property. A cost approach in such a market that sums the land value and value of the real property improvements will not equal overall value (V_o), but only equal real property value (V_{rp}).

Even if the client needs only the value of the real property, say for a real property tax assessment issue, it is essential to note that overall value in such a market does not equal the real property value. The appraiser may need to employ a residual technique,⁹ an allocation technique, or some other technique to discern the value of the real property, which is part of the overall value derived from the sales comparison or income capitalization approaches.

The Predominate Combination and the Definition of Market Value

Good appraisal practice dictates that *market value* is fully defined. The definition includes widely accepted concepts such as willing, able, and knowledgeable buyers and sellers who are reasonably informed, competent, typically motivated, and are aware of market-based expectations of the marketing/exposure time of the subject property.¹⁰ The definition of market value intrinsically assumes the highest and best use, and what is typical and reasonably probable in the market.¹¹

Similarly, since market value intrinsically reflects the predominate combination of assets in the market, good appraisal practice ought to require that appraisers explicitly state their opinions as to the combination of assets typically found in the market and what combination is under appraisal, especially when the two differ.

For example, if restaurants in an area commonly sell with restaurant FF&E, but the purpose of the appraisal is loan underwriting using only the real prop-

8. The Competency Rule prohibits mistakes of substance, and the Ethics Rule prohibits misleading appraisal reports. *Uniform Standards of Professional Appraisal Practice*, 2008–2009 ed., U-11, U-7.

9. Corollary theories to the summation formulas described earlier in this article include residual techniques, i.e., $V_o - V_b = V_l$, and others. According to *The Dictionary of Real Estate Appraisal*, 4th ed., a *residual* is “the quantity left over; in appraising, a term used to describe the result of an appraisal procedure in which known components of value are accounted for, thus solving for the quantity that is left over, such as land residual or building residual.” Appraisal Institute, *The Dictionary of Real Estate Appraisal*, 4th ed., 246.

10. *The Appraisal of Real Estate*, 13th ed., 23.

11. See Standards Rule 1-3 and Standards Rule 2-2. *Uniform Standards of Professional Appraisal Practice*, 2008–2009 ed., U-17, U-21.

erty as collateral, then the appraiser ought to clearly report that the predominate combination of assets in the market includes real property and personal property, but that the appraisal analyzes and concludes with only the real property value. Then, the appraiser should exercise appropriate appraisal procedures to isolate the value of the real property.

Overall Value and Whole Economic Units

The concept of an *economic unit*¹² is critical in appraisal. Herein it is meant to describe an elemental business unit or asset unit. *Elemental* implies that any further division of the unit would change the character of the unit, its utility, highest and best use, and the value of the combination of assets comprising the unit. Of course, appraisers may define their value any way they want, so long as they have sound reasons and fully disclose their definitions.

However, if the goal is to capture the market value of the economic unit, then appraisers should not use definitions that exclude some essential part of the economic unit, without which the economic unit cannot operate as it predominately does in the market. A hotel or restaurant, as an economic unit, cannot function without FF&E. As far as a hotel or restaurant is concerned, using the traditional real estate appraisal formula, $V_o = V_l + V_b$, is an incomplete and misleading description of the subject property as a complete economic unit.

Many appraisers are unaccustomed to describing their subject real estate as part of a business or economic unit, but that is how the market behaves for many property types. Consider the difference in value of a business entity both with and without the workforce in place, the leases, or the FF&E. Consider the improbability of prudent, informed sellers selling their property with no consideration for the personal property included with the real property.

Legal Definitions of Overall Value

While the market creates its own definition for overall value, an appraisal may be subject to jurisdictional exceptions. In such cases, the appraiser will need to account for and adjust for differences between the

definitions implicit in the market and the definitions dictated by the jurisdiction.

For example, on the topic of real property tax assessment, refrigeration assets in refrigerated warehouses may be classified as real property in one state. In another state, refrigeration assets may be nontaxable personal property. Assuming no highest and best use issues in either state, in the first state the appropriate formula for real property tax assessment would be $V_o = V_l + V_b$, where V_b includes the refrigeration assets among others.

In the second state, refrigerated warehouse comparable sales would need to be adjusted using an appropriate technique based on the formula $V_o = V_l + V_b + V_{pp}$ in order to take the comparables from a market definition of overall value (V_o) to the jurisdiction's definition of the value of the real property. Comparables sold under market definitions in the second state (including refrigeration assets), reflect true overall value in that market.

The appraiser would need to subtract the value of the refrigeration assets (V_{pp}) from the sale prices (V_o) in order to find the value of real property (V_{rp}) in the comparables and to use the sales to evaluate the subject taxable property, which the jurisdiction has defined as the value of real property (V_{rp}) only. The correct formula is $V_o - V_{pp} = V_l + V_b = V_{rp}$, where the refrigeration assets are nontaxable personal property.

Appraisers should be aware of statutes particular to specific jurisdictions. For example, under Florida Statute 193.011(8), when appraising for real property tax, appraisers make a cost of sale adjustment to both residential and commercial properties. Commonly, a downward adjustment of 10% to 20% to the reported sale price is made, to deduct the cost to complete the sale, a nonreal property cost, in order to find the value of solely the real property.

Distinctions between Sources of Overall Value Definitions

In some definitions, overall value (V_o) for real estate appraisal is determined before the value added for personal property and business assets. These definitions would describe the overall value of the various

12. The *Dictionary of Real Estate Appraisal*, 4th ed., defines *economic unit* as, "A combination of parcels in which land and improvements are used for mutual economic benefit. An economic unit may comprise properties that are neither contiguous nor owned by the same owner. However, they must be managed and operated on a unitary basis and each parcel must make a positive economic contribution to the operation of the unit." Note that this definition is real property-centric. While this is appropriate when only used to describe real property, it leads some appraisers to believe that the underlying concept only applies to real property. There is a broader concept alluded to in the definition that is essential to this point of this article. Consider the meaning and utility of the above definition should one replace the words *parcel, land and improvements*, and *property* with the word *asset*. The revised definition can then be applied to all economic activities, such as a hotel with real and personal property, not just the real property of the hotel land and building.

real property elements, i.e., $V_{o(\text{real property elements})}$. This is often true, but also reveals part of the issue.

Appraisers defining overall value (V_o) this way are employing a description that is easily confused with the overall value of the economic unit that includes the real property. Some argue that appraisers are entitled to define overall value as they see fit for their purpose of estimating the value of the real property. This relativism is problematic. The definition for overall value ought to be identical in all cases, regardless of who the appraiser is, and regardless of what the purpose and use of the appraisal is.

Single-Family Homes

Even single-family homes are commonly sold as an overall asset that includes both real and personal property bundled together. Homes are commonly sold with washers and dryers, refrigerators, furniture, equipment, and tools. In the case of single-family homes, the contribution from personal property to overall value is typically small to nominal.

In a survey of residential sales brokers from suburban New Jersey,¹³ nearly 50% of the brokers reported that their sales and listings included personal property, and that the value of the personal property amounted to between 1% and 2% of the total sale price. Also, the survey indicated buyers and sellers considered the value of the personal property when buying and selling.¹⁴ Thus, using the theoretically incorrect formula is admittedly inconsequential in most cases.

However, in some cases homes sell with significant personal property value bundled in. In many ski, lake, and ocean resort markets, homes are regularly sold furnished, which often contributes significantly to the home's overall value. In a resort market where the subject and the comparable homes are all similarly bundled with furnishings, and where the purpose of the appraisal is an overall value for a divorce settlement, then it would not be necessary to adjust the comparables for the bundled value of personal property.

Conversely, in such a market where the appraisal purpose is real property taxation or real property lending, the comparables must be adjusted for their value of personal property (V_{pp}), as the appraisal

target is the value of real property (V_{rp}) while the comparables represent the combined value of real property (V_{rp}) and personal property (V_{pp}).

Complex Property Types and Business Intangibles

The consequences of using a theoretically incorrect formula can be substantial with more complex property types. Consider the sales of existing National Association for Stock Car Auto Racing (NASCAR) race tracks or deregulated electricity power generation stations. Nearly all such assets sell with significant personal property and business intangibles, which are essential to operate the business unit.

The business intangibles may include such items as workforce in place; cash accountants; software; licenses and permits; proprietary policies and procedures; copyrights; patents; engineering drawings; service, supply and vendor contracts; and customer lists. The personal property may include inventory, supplies, machinery, and FF&E needed to operate the overall asset. Further, consider that such bundled sales are typical for the market. The overall and partial values of such properties can only be represented as follows: $V_o = V_l + V_b + V_{pp} + V_{bi}$

In these examples, $V_l + V_b$ does not equal overall value (V_o). Rather, the sum of $V_l + V_b$ can only be properly labeled value of real property (V_{rp}). Even if by jurisdictional exception, or by client request, the personal property or the business intangibles are not the subject of the appraisal, the market has defined overall value (V_o) as including the value of personal property (V_{pp}) and the value of business intangibles (V_{bi}).

Appraisers who use comparables from such a market in a sales approach will be dealing with sale prices that reflect overall value (V_o), not the value of real property (V_{rp}). If the purpose of the appraisal is to estimate overall value, then the appraiser need not make adjustments for the property types or property rights conveyed¹⁵ in the sale of the comparables. Such a purpose may be appropriate for acquisition or disposition planning.

If the purpose of the appraisal is to estimate a part of the overall value (V_o), such as the value of real property (V_{rp}), for real property tax assessment

13. In 2008, Federal Appraisal & Consulting LLC conducted an e-mail invitation, web-based survey of residential brokers participating in a local multiple-listing service in New Jersey. Twenty-seven responses were collected and analyzed.

14. Ibid.

15. *The Appraisal of Real Estate*, 13th ed., 308–310.

or insurance underwriting, then the appraiser must use a residual technique (or some other technique), deducting both the value of personal property (V_{pp}) and the value of business intangibles (V_{bi}) from the sale prices in order for the appraiser's sales analysis to produce the value of real property (V_{rp}), and not the overall value (V_o). Depending on the loan underwriter's or equity investor's criteria concerning whether personal property or intangibles are financeable, it may or may not be appropriate to appraise the overall value without adjustments to the comparables.

Accounting and Legal Counsel

There are differences in the reporting of sales between large and small properties. On larger properties where professional accounting and legal counsel are common, deed stamps and recording taxes are more likely to indicate only the value of the real property, while any personal property or business intangibles involved in the sale will be reported in other filings if locally required.

On smaller properties such as single-family homes, indicated sale prices regularly include personal property, even when local tax laws require separate filings for personal property. A survey of certified public accountants (CPAs) in New Jersey¹⁶ found that nearly 25% of their clients who bought residential property simultaneously acquired personal property. The same CPAs reported that over 56% of their clients who bought commercial property simultaneously acquired personal property, and 43% of their clients who bought commercial property simultaneously acquired business intangibles.

On very high value properties, appraisers are often engaged to provide appraisals for tax and financial reporting purposes, allocating overall value (V_o) to its various components, value of land (V_l), value of building (V_b), value of personal property (V_{pp}), value of business intangibles (V_{bi}), and subcomponents. Buyers will use such an appraisal report to state deed prices, sale and transfer taxes, and federal taxes. This type of appraisal is known as a purchase price allocation appraisal, or a cost segregation study, and is completed in order to comply with reporting regulations.¹⁷

Given that appraisal definitions and reporting requirements vary significantly between the SEC, the IRS, other government agencies, recorded deeds, and other records, it is often not possible to compare a value reported to one source with the value reported to another without adjustments. For example, some SEC filings will list the total consideration paid for a complete business combination as overall value (V_o). While other documents, such as deeds, indicate the value of the real property (V_{rp}), when the personal property value is reported in other filings. Commonly, appraisers use deed-recorded sale prices, or multiple listing services to gather information.

Income Capitalization Approach

An appraiser working on the value of real property may luckily find the income attributable to the real property at the subject property or in the market, even though the income is usually aggregated to include income from real property, personal property, and business intangibles. For more complex properties, it is rare that an appraiser will find income data that can be ascribed to each of the asset sources of the income, such as the income attributable to personal property or business intangibles, or strictly to the real property.

Usually the income data available to appraisers from such properties is an aggregate from all asset types. Unless the appraiser uses some appropriate technique to extract the influence of the personal property and the intangibles, the income analysis will produce an overall value (V_o), and not the value of real property (V_{rp}).

To conclude for the value of real property (V_{rp}) for complex properties, the appraiser may use either a residual or allocation technique (or some other appropriate technique) and deduct both the value of personal property (V_{pp}) and the value of business intangibles (V_{bi}) from the overall value (V_o). Or, the appraiser may deduct the income attributable to the personal property (I_{pp}) and the income attributable to the intangibles (I_{bi}) from the overall asset income (I_o), producing I_{rp} ($I_o - I_{pp} - I_{bi}$), which is then analyzed to find the value of real property (V_{rp}).

For various business reasons, owners rarely keep income and expense records based on the compo-

16. In 2008, Federal Appraisal & Consulting LLC conducted a survey of CPAs specializing in real estate in New Jersey. Forty-eight responses were collected and analyzed. The web-based survey was by e-mail invitation to CPAs who were members of the New Jersey Society of Certified Public Accountants, real estate section.

17. See the section of this article entitled The Internal Revenue Service and the Securities and Exchange Commission for more information.

nents of the overall property. Practically speaking, unless the real property, personal property, or business intangibles are leased, the appraiser is unlikely to find the income differentiated between the asset types.

Restaurant real properties are commonly leased and the leases regularly cover equipment. Power plants, golf courses, nursing homes, and hospitals are virtually never leased, either as real property or a whole property.¹⁸ Accounting records rarely distinguish between income from real property and income from other property types, and if they do, the accounting data may not be the appropriate basis for an appraisal.

Capitalization and Discount Rates

The capitalization rates (R) and discount rates derived for each asset class will be different because each class presents a different risk profile. This is analogous to the real estate appraisal rule of thumb that land capitalization rates are lower than building capitalization rates, because land entails less risk than improvements. The overall real property capitalization rate is between the land capitalization rate and the improvements capitalization rate. Table 1 presents a traditional real estate capitalization rate comparison between the types of property and risk.

Note that partial interest capitalization rates cannot be summed to calculate an overall capitalization rate. Alternatively, a weighted-average calculation must be employed to compute an overall capitalization rate from partial interest capitalization rates.

Table 2 presents what might be found when personal property and business intangibles are included. In this example, land and building assets are least risky, personal property assets are more risky, and business intangibles are most risky, as the risks actually often occur.

As Tables 1 and 2 illustrate, capitalization rates extracted from sales that include only real property (R_{rp}) will be different from capitalization rates extracted from sales that also include personal property and business intangibles. The capitalization rate of real property (R_{rp}) should not be applied to an income stream that includes revenue from personal property and business intangibles. Also, the overall capitaliza-

tion rate (R_o) should not be applied to an income stream that includes only income from real property, when the overall capitalization rate (R_o) includes risks from personal property and business intangibles. The same concepts apply to yield (discount) rates.

Cost Approach

The cost approach has the distinct advantage of usually including in its value indication only those assets explicitly targeted in the appraisal. It is therefore usually a simple matter to ascertain whether the overall value (V_o) or the value of real property (V_{rp}) has been analyzed. Further, given the cost approach's ability to isolate specific assets that comprise overall value, the cost approach is commonly employed, in conjunction with sales comparison and income capitalization approaches, to complete residual and allocation techniques.

The income capitalization and sales comparison approaches are used to determine the overall value (V_o), and the cost approach is used to determine the value of a component. The difference between the reconciled value of the overall asset, and the assets to be excluded produces the value of the residual subject asset. Allocated values are discerned by applying the indicated portions of overall value derived from a cost approach to the reconciled income and sales approaches.

Table 1 Traditional Real Property Comparison of Risks

	Income (I)	Value (V)	Cap Rate (R)
Land (l)	\$2	\$25	8.0%
Building (b)	\$8	\$75	10.7%
Real Property (rp)	\$10	\$100	10.0%

Table 2 Business Asset Comparison of Risks

	Income (I)	Value (V)	Cap Rate (R)
Land (l)	\$2	\$25	8.0%
Building (b)	\$8	\$75	10.7%
Personal Property (pp)	\$2	\$15	13.3%
Intangibles (bi)	\$2	\$10	20.0%
Overall (o)	\$14	\$125	11.2%

18. In the 1990s, structured financing and tax management activities produced various leases, such as synthetic leases and others, on many high-value complex assets within business combinations. A *synthetic lease* is an operating lease that is structured in a way so that it is not recorded as a liability on the balance sheet. Instead, it is considered to be an expense on the income statement. Basically, a synthetic lease allows a company to control real estate without being required to show the real estate as an asset on the financial statements. There is currently some debate as to whether these leases are appropriate for appraisal uses to determine leased fee or leasehold market values. The argument in favor of their use notes that at the time these leases were made, IRS and SEC regulations require that these types of leases represent market value. If they are market-rate leases, they may serve as the basis of appraisal for the elements of overall value (V_o) that are leased. Opponents argue that the leases were financing instruments and/or were based on the tax consequences.

For example, in order to find an acquisition or disposition price of a subject economic unit, the appraiser must ensure that the sales comparison and income capitalization approaches reflect market-typical overall value (V_o), and the cost approach reflects $V_l + V_b + V_{pp} + V_{bi}$ when these components are typically included in a market sale. Alternatively, if the appraisal's purpose is for real property tax assessment, then the sales comparables and income capitalization results must be adjusted to exclude the value of personal property (V_{pp}) and the value of business intangibles (V_{bi}) in order to derive the value of real property (V_{rp}).

The cost approach needs only compute the sum of the value of land (V_l) and the value of building (V_b). To exclude the value of personal property (V_{pp}) and the value of business intangibles (V_{bi}) from the income capitalization and sales comparison approaches, cost approach techniques may be used to estimate the value of personal property (V_{pp}) and the value of business intangibles (V_{bi}), which are then subtracted from the overall value (V_o), which is reconciled from the results of the income capitalization and sales comparison approaches.

Complex Properties

While the principle of $V_o = V_{rp} + V_{pp} + V_{bi}$ applies to virtually all property, the magnitude of the issue increases substantially as the complexity of the property type increases. This is because as the property complexity increases, the property is more likely to be sold as a combination of real property, personal property, and business intangibles.

A traditional income capitalization or sales comparison approach is more likely than a cost approach to produce an overall value (V_o). When the purpose of an appraisal is an estimation of real property (V_{rp}), the income capitalization and sales comparison approaches are more likely to require the application of a residual, allocation, or other adjustment technique in order to find the value of real property (V_{rp}).

Special Case Formula for Physical Component Interests

The general purpose formula for components and partial physical interests is $V_o = V_l + V_b + V_{pp} + V_{bi}$. In the special case formula that many real estate appraisers use, either or both of the values for personal

property (V_{pp}) and business intangibles (V_{bi}) are nominal or equal to zero (\$0). The reduction of the general formula to the special case proceeds as follows: $V_o = V_l + V_b + V_{pp} (\$0) + V_{bi} (\$0)$, so $V_o = V_l + V_b$.

The Internal Revenue Service and the Securities and Exchange Commission

Both the IRS and the SEC have long recognized the fact that sales of economic units are commonly comprised of component assets. The IRS recognizes that a single economic unit may be comprised of several classes of assets.¹⁹ These include tangible and intangible assets, including goodwill, with the details to be discerned by the appraiser. After years of follow-up IRS work, federal legislation and court rulings have permanently resolved the soundness of the IRS recognition that business combinations are comprised of more than just real property.

The SEC insists that public companies disclose the type and value of each component of their acquisitions, so that investors may have a better understanding of the value of a company. While SEC regulations apply only to public companies, the economic principles used to determine the value of components apply equally to public and private companies.

In its relevant regulations, through the Financial Accounting Standards Board Statement 141,²⁰ the SEC recognizes that an economic unit may be comprised of various classes of assets, including balance sheet categories of property, plant, and equipment (real and personal property); and business intangibles. When any economic unit is acquired, the purchaser must report the value of the component assets in the acquired economic unit. These components fall into the general categories of real property, personal property, and business intangibles, wholly consistent with appraisal theory.

Internationally, there is a movement towards a mark-to-market accounting and investor reporting system. This system would require that investors restate booked values periodically at current market values. The system would require a breakdown of overall business values into their component values.

The basic assumption in these acts and regulations is that overall assets are sold and acquired in combinations of various types of component assets. Another basic assumption is that it is not appropriate

19. IRS Revenue Ruling 59-60, *Tax Reform Act of 1986* and the *Revenue Reconciliation Act of 1993*, Internal Revenue Code Section 1.338-6(b), Internal Revenue Code Section 1060, and Internal Revenue Code Section 167.

20. Also known as FASB 141, SFAS 141, or FAS 141.

appraisal or accounting practice to leave the component assets undistinguished. Appraisal theory, the IRS, and the SEC recognize that sometimes residual and allocation techniques are appropriate appraisal techniques, and can be used to specifically find values of the parts of the overall value, including real property, personal property, and business intangibles.

Mortgage Industry

Contrary to the IRS and the SEC, lenders often focus narrowly on real property value for the purposes of collateralizing loans. Since real estate appraisers most often appraise for real estate financing purposes, they may focus on real property, sometimes to the exclusion of an understanding of personal property and business intangibles, even when that understanding is needed to appraise real property.

Tests for Overall Value Definitions

The work of determining overall value in the mortgage industry is similar to many other appraisal exercises. First, the appraiser will gather market data on sales and listings in the market. Next, the appraiser must create a complete list of the component assets that were included in each sale. Lastly, the appraiser will determine the predominate combination in the market. Overall value is defined as the predominate combination.

Real and Personal Property Taxation

While state and local property tax laws usually state when an asset class is not taxable property, there is often confusion as to whether the sales comparison and income capitalization approaches appropriately exclude the nontaxable property. The confusion springs from the customary understanding of what type of value comes from certain traditional valuation data and approaches. Additional confusion develops when deciding what appraisal methods are appropriate to extract unwanted component values and to derive residual target component values.

For example, a direct capitalization approach on an apartment building or a warehouse produces a real property value, according to the traditional understanding. This is practically true since the value of the personal property and business intangibles with these types of assets is often nominal.

Taxing authorities sometimes mistakenly apply direct capitalization methods to other asset types, such as restaurants, theaters, and gas stations, and

derive what is believed to be value of real property (V_{rp}). However, no adjustments were made to the comparable sale prices, income, capitalization rate, or overall value (V_o) to account for the income from and value of the personal property or business intangibles included in the overall property.

Misconceptions Concerning Intangibles

Intangibles may be either real property intangibles, personal property intangibles, or business asset intangibles. There is a misconception that all intangibles are business intangibles. Depending on the jurisdiction (IRS, local property tax law, state transfer tax or condemnation law, SEC, etc.), property views, lease contracts, easements, and permits are all intangibles, but may or may not be examples of real property intangibles. Similarly, personal property, depending on the jurisdiction, may have intangible qualities of value, such as equipment with market brand recognition, or lease contracts on equipment or furnishings.

Other Types of Components and Reconciliation

Up to this point, this article has focused on physical interests: land, building, personal property, and business intangibles. (Business intangibles may not be a physical interest, strictly speaking, but given the history of their treatment in law and finance, they have been treated here as another type of physical interest). However, the concepts discussed apply equally to other types of components, elements, and partial interests, such as financial interests (equity and debt) and legal/contractual interests (leased fee and leasehold).

Consider the traditional real estate appraisal components formulas: if $V_o = V_l + V_b$, and $V_o = V_m + V_e$, then it is, in fact, true that $V_l + V_b = V_m + V_e$. Remember that this special-case formula implies that the value of personal property (V_{pp}) and the value of business intangibles (V_{bi}) are equal to 0 ($V_l + V_b + V_{pp} + V_{bi} = V_m + V_e$ where V_{pp} and $V_{bi} = 0$).

However, if other market data indicates that the value of personal property (V_{pp}) and the value of business intangibles (V_{bi}) are greater than zero, then the formula is not correct. Thus, when overall value (V_o) is derived from a sales comparison or income capitalization approach, and the value of land (V_l) and the value of the building (V_b) are derived from a cost approach, then $V_l + V_b \neq V_m + V_e$, where the value of the mortgage (V_m) and the value of equity

(V_o) are derived from sales comparison and income capitalization approaches.

The sales comparison and income capitalization approaches implicitly reflect the fact that real and personal property and business intangibles are sold as one package. The sales comparison approach equals overall value (V_o).

Similarly, the overall income (I_o) used in the income capitalization approach, if reflective of market-typical packaged income, includes income from real and personal property and business intangibles ($I_o = I_{rp} + I_{pp} + I_{bi}$). This income should be properly matched to a market-typical capitalization rate, which reflects the aggregation of the capitalization rate of real property (R_{rp}), the capitalization rate of personal property (R_{pp}) and the capitalization rate of business intangibles (R_{bi}).

For complex properties, the sales comparison and income capitalization approaches often cannot be reconciled with the cost approach, which for real property valuation purposes is the sum of the value of land (V_l) and the value of the building (V_b). In order to correct the traditional real property formula, it must be recognized that the value of equity (V_e) and the value of mortgage (V_m) involve more than the real property, and may not include the equity and debt invested in the personal property or business intangibles.

The traditional special-case formula can be rewritten into a generalized formula as follows: $V_{rp} + V_{pp} + V_{bi} = (V_m + V_e)_{rp} + (V_m + V_e)_{pp} + (V_m + V_e)_{bi}$, where

in each instance, $(V_m + V_e)_{xx}$ represents the value of the mortgage plus the value of the equity and xx is the physical interest in an overall investment.

Fully Generalized Relationships for All Types of Interests

In order to fully generalize the relationships and their formulas, recall that there are three types of components: physical—land (l), building (b), personal property (pp), business intangibles (bi); economic and financial—mortgage (m), equity (e), common shareholders, preferred holders, etc.; and legal and title—leased fee (lf), leasehold (lh), easement, right of way, tenants in common, partial interests, etc. There may also be multiple instances of any type of interest, just as the physical type of real property is regularly divided into land and multiple types of improvements.

There may be multiple buildings, various building/improvement components, first and second mortgages, general and limited equity partners, preferred and common stockholders, leases and subleases, etc. Finally, legal and title issues impact financing and legal and title issues are subordinate to financing issues. The fully generalized formula is as shown in Table 3.

Note that the formula for the overall value is the summation of the items in the Value column of Table 3, and the formula for overall income is the summation of the items in the Income column. Alternatively note that the overall capitalization rate cannot be ascertained by summing the items in the Cap Rate column.

Table 3 Fully Generalized Formula for All Interests

Physical Component	Legal Component	Financial Component	Income		Value		Cap Rate
rp	lf	m	$I_{\{(m)\}f\}rp}$	÷	$V_{\{(m)\}f\}rp}$	=	$R_{\{(m)\}f\}rp}$
pp	lf	m	$I_{\{(m)\}f\}pp}$	÷	$V_{\{(m)\}f\}pp}$	=	$R_{\{(m)\}f\}pp}$
bi	lf	m	$I_{\{(m)\}f\}bi}$	÷	$V_{\{(m)\}f\}bi}$	=	$R_{\{(m)\}f\}bi}$
rp	lf	e	$I_{\{(e)\}f\}rp}$	÷	$V_{\{(e)\}f\}rp}$	=	$R_{\{(e)\}f\}rp}$
pp	lf	e	$I_{\{(e)\}f\}pp}$	÷	$V_{\{(e)\}f\}pp}$	=	$R_{\{(e)\}f\}pp}$
bi	lf	e	$I_{\{(e)\}f\}bi}$	÷	$V_{\{(e)\}f\}bi}$	=	$R_{\{(e)\}f\}bi}$
rp	lh	m	$I_{\{(m)\}h\}rp}$	÷	$V_{\{(m)\}h\}rp}$	=	$R_{\{(m)\}h\}rp}$
pp	lh	m	$I_{\{(m)\}h\}pp}$	÷	$V_{\{(m)\}h\}pp}$	=	$R_{\{(m)\}h\}pp}$
bi	lh	m	$I_{\{(m)\}h\}bi}$	÷	$V_{\{(m)\}h\}bi}$	=	$R_{\{(m)\}h\}bi}$
rp	lh	e	$I_{\{(e)\}h\}rp}$	÷	$V_{\{(e)\}h\}rp}$	=	$R_{\{(e)\}h\}rp}$
pp	lh	e	$I_{\{(e)\}h\}pp}$	÷	$V_{\{(e)\}h\}pp}$	=	$R_{\{(e)\}h\}pp}$
bi	lh	e	$I_{\{(e)\}h\}bi}$	÷	$V_{\{(e)\}h\}bi}$	=	$R_{\{(e)\}h\}bi}$
			Summation (The sum of the above equals I_o)		Summation (The sum of the above equals V_o)		Aggregation ($I_o \div V_o = R_o$)

Conclusion

Appraisers do not create the opinion of value, they discover it. Thus it is not up to the appraiser to define market value. The appraiser must report what they find when they discover it. This article offers appraisers a way to describe their discoveries to others, by drawing distinctions between the traditional real estate mortgage appraisal pedagogy, and the real actions in the market place.

The term *overall value* (V_o) describes the predominate combination of component values. Market value of a market-predominate combination is not necessarily equal to the value of the real property (V_{rp}). When the market-predominate combination of assets includes more than real property assets, the income capitalization and sales comparison approaches will most probably reflect more than the value of the real property (V_{rp}). However, given the appraisal theory of summation, and residual and

allocation techniques, appraisers may properly use cost approaches, and residual, allocation, and other techniques to derive the pure real property value from the income capitalization and sales comparison approaches of overall business values.

Mark Pomykacz, MAI, a managing partner at Federal Appraisal and Consulting LLC. He has over 20 years experience in real estate and business appraisal and advisory services and has developed expertise in complex and non-traditional valuation consulting services. Pomykacz has specifically developed an expertise in the appraisal of electricity generation, transmission and distribution assets, and other utility assets. He has appraised nuclear, fossil fuel-fired, hydro, wind, geo-thermal, and bio-gas facilities in locations both domestic and international.

Contact: mark@federalappraisal.com