

# UNIT, SUMMATION, AND BUSINESS VALUE IN PROPERTY TAX VALUATIONS

ROBERT F. REILLY

**Although the differences between unit value, summation value, and business value are subtle, the distinction is important as each one values a different bundle of taxpayer interests.**

Within the context of industrial and commercial property ad valorem tax valuations, property owners and their tax counsel do not always understand the differences between business enterprise valuations, unit principle valuations, and summation principle valuations. In fact, some valuation analysts (analysts) do not understand the differences between these three types of property tax valuation analyses. The differences between these three types of valuation analyses are both conceptual and practical. There are somewhat similar—but subtly different—generally accepted valuation approaches and methods within these three different types of valuation analyses. However, most importantly, these three types of valuations analyze fundamentally different bundles of taxpayer company ownership interests.

Business valuations value the taxpayer company's debt and equity securities (and the associated security investment attributes). Accordingly, business valuation conclusions include: (1) all of the taxpayer company assets (including all working capital, tangible assets, and intangible assets) in place on the valuation date, and (2) the present value of growth opportunities (or the present value of the expected net cash flow

from future assets not yet in place on the valuation date). Unit valuations value all of the taxpayer company's operating assets (including all tangible assets and all intangible assets) in place as of the valuation date. Summation valuations value only specified bundles of taxpayer property (typically tangible assets only) in place as of the valuation date. Accordingly, since they value different ownership interests, these three different types of analyses will quantify three different value conclusions for the same taxpayer company property owner.

This discussion describes the analytical differences between business valuations, unit valuations, and summation valuations. These differences are particularly relevant for industrial and commercial property valuations prepared for state and local ad valorem property tax purposes.

## Valuations prepared for ad valorem property tax purposes

For ad valorem property tax purposes, both corporate taxpayer property owner/operators and tax assessment authorities have to value special purpose industrial and commercial properties. These valuations (and assessments) are performed for state or local property tax planning, compliance, or controversy (administrative appeal or judicial appeal) purposes.

*ROBERT F. REILLY, CPA, is a managing director in the Chicago office of Willamette Management Associates, a valuation consulting, forensic analysis, and financial advisory firm.*

Sometimes the subject industrial and commercial property is fairly simple. For purposes of this discussion, the word simple means that the subject property includes primarily (if not exclusively) real estate and tangible personal property. Examples of such simple properties may include garden apartment complexes, high rise apartment complexes, high rise office buildings, and strip shopping malls.

The subject industrial and commercial property may also be fairly complex. For purpose of this discussion, the word complex means that the subject property includes real estate, tangible personal property, intangible personal property, and elements of a going-concern business enterprise. Examples of such complex properties may include hospitals and nursing homes, hotels and hospitality facilities, mining and extraction properties, marinas, racetracks, sports stadiums, oil and gas refineries, and chemical and other specialized processing plants.

In addition to the above-listed examples, a utility-type property often represents particularly complex issues for state and local property tax purposes. These utility-type properties are frequently special-purpose properties. That is, these types of properties can only be used in their current utility-type industry application. These properties do not have a practical alternative use.

For purposes of this discussion, utility-type properties include electric generation, transmission and distribution properties, telecommunications properties, pipelines, natural gas distribution properties, cable television properties, railroads, airlines, and water and wastewater properties.

These types of special purpose properties typically include complex bundles of tangible assets and intangible assets. For purposes of this discussion, tangible assets include both real estate and tangible personal property. For property tax and other purposes, these types of properties are often valued using the unit (sometimes also called the utility) principle of valuation.

This discussion describes both the conceptual and the practical differences between:

1. The use of the unit valuation principle to value complex (including utility-type) industrial and commercial properties.
2. The use of the summation valuation principle to value more simple industrial and commercial properties.

This discussion summarizes the procedural differences between unit principle valuation analyses and summation principle valuation analyses. Also, particularly in the property tax context, this discussion explains when and why analyst should consider each valuation principle.

Some inexperienced analysts believe that a unit valuation of a bundle of operating property is the same thing as a business (or business enterprise) valuation. This belief is simply incorrect. This discussion considers the quantitative and qualitative differences between a business valuation, a unit valuation, and a summation valuation.

Finally, this article focuses on the analytical differences between a business valuation, a unit valuation, and a summation (or simple property) valuation—particularly within an ad valorem property tax context.

As this discussion explains, these analytical differences involve valuing different (but reconcilable) bundles of ownership interests. Accordingly, these analytical differences also involve reaching different (but reconcilable) value conclusions for the different subjects of each type of valuation analysis.

## Summation valuation versus unit valuation

A summation principle valuation involves the separate valuation of each asset category or asset component of the subject industrial or commercial property. The total value of the subject property is the additive sum (therefore the name summation) of the values of the individual asset categories. Whatever categories of assets encompassed in the subject industrial or commercial property are summed (or added in) the summation valuation.

For example, assume that the subject property is a central business district (CBD) office building. If the property subject to ad valorem taxation includes land, building, and equipment (tangible personal property), then those three categories of assets would be added in the summation valuation. If the property subject to ad valorem taxation includes land and building only, then only those two categories of assets would be added in the summation valuation. Also, if only buildings (and not land) are subject to ad valorem taxation in this jurisdiction, then only that one asset category would be added in the summation valuation.

So to perform a summation principle valuation, each category of industrial or commercial

taxpayer assets should be subject to separate identification and separate valuation. That is, the analyst should be able to identify each asset category and value each asset category.

The total value of the taxpayer property (for example, the CBD office building) is a sum of the parts. If the tangible personal property is not subject to ad valorem taxation in that jurisdiction, that asset value is not included in the summation.

**For ad valorem property tax purposes, both corporate taxpayer property owner/operators and tax assessment authorities have to value special purpose industrial and commercial properties.**

Of course, to perform a summation principle valuation, the analyst should have empirical data available. In the example, the analyst should be able to perform a separate cost approach analysis for the property land, building, and equipment. Likewise, in an income approach analysis, the analyst should be able to assign a separate rental income stream to the land, building, and equipment (even if the subject taxpayer lessor does not lease each asset category separately).

Also, in a market approach analysis, the analyst should rely on empirical data related to the sales of land versus buildings versus tangible personal property (even if the current taxpayer owner would not sell each of the asset categories individually).

A unit principle valuation involves the collective valuation of a total bundle of operating assets. The bundle of operating assets could be located on a single parcel of land, such as an electric generation plant or a chemical processing plant or an oil refinery. Alternatively, the bundle of operating assets could be located on numerous parcels of land, such as an interstate gas pipeline or a multistate electric transmission system or a national railroad. Nonetheless, in a unit principle valuation, all of the industrial or commercial taxpayer asset categories are valued collectively, in the aggregate, as a single operating unit of assets (therefore the name unit valuation).

The unit valuation principle is often called the utility valuation principle. This is because, for property taxation purposes, most utility-type properties (e.g., energy, communications, transportation, pipeline, water and wastewater services) are typically valued by reference to the unit valuation principle.

For property tax and many other purposes, analysts perform unit principle valuations (instead of summation principle valuations) for various reasons, including the following:

1. The subject taxpayer industrial and commercial property is physically integrated; it may be physically impossible to disaggregate the total unit of assets into separate parcels or asset categories; it would certainly not be the highest and best use (HABU) of the subject property (for example, pipeline, gas distribution network, electric transmission lines, railroad) to assume that the property starts and ends in one taxing jurisdiction.
2. The subject taxpayer industrial and commercial property is functionally integrated; all of the asset categories operate together in a continuous flow process where the parts cannot function independently; it would certainly not be the HABU of the subject property (such as oil or gas refinery, water or wastewater operation) to value each other asset component without the contributory value of each other asset component.
3. The subject taxpayer industrial and commercial property is economically integrated; the taxpayer does not (and cannot) prepare separate financial statements for the different asset components of the unit; for example, a railroad, airlines, or telephone company does not prepare separate financial statements for each taxing jurisdiction in which it operates.
4. The subject unit components operate collectively as a going-concern business enterprise; that is, the assets do not generate rental income exclusively (or primarily) from the use of land, buildings, and equipment only; rather, the total unit of assets generates operating income from the sale of goods and services (and the land, buildings, and equipment is used in the production of those goods and services).
5. The subject unit includes intangible property as well as tangible property; in other words, the subject unit includes intangible assets as well as tangible assets; so in addition to operating land, buildings, and equipment, the subject unit may need to operate intangible assets like the following in order to generate operating business income, trademarks and trade names, proprietary technology, contracts and licenses, computer software, and a trained and assembled workforce.
6. The comparable sale data available to the analyst involve the sales of going-concern business enterprise units; that is, the analyst researches

the market and finds that all the sales of comparable (to the taxpayer unit) refineries, pipelines, gas utilities, water utilities, etc., are in fact sales of going-concern business entities; these going-concern business sale transactions include bundles of working capital assets, tangible assets, and intangible assets.

7. The obsolescence analysis components of the taxpayer property cost approach valuation can be performed on only a collective (or total unit) basis; that is, the analyst cannot effectively identify and quantify obsolescence adjustments on an asset-by-asset basis; rather, the subject taxpayer industrial or commercial property experiences functional or economic obsolescence on a total unit basis.
8. There is statutory, judicial precedent, or administrative ruling requirements to value the subject taxpayer property on a unit valuation basis; that is, many taxing jurisdictions require the property tax assessor and the taxpayer to value the railroad, pipeline, or other utility-type property based on the unit valuation principle for property tax purposes.

Analysts consider each of the above factors when deciding if and when it is appropriate to apply the unit valuation principle (versus the summation valuation principle) to appraise the subject taxpayer industrial or commercial property. In theory, the analyst's final property value conclusion should be the same regardless of whether the unit valuation principle or the summation valuation principle is applied. Of course, this statement assumes that: (1) each valuation principle is properly applied, and (2) appropriate reconciling adjustments are made in order to appraise the same bundle of operating assets. However, practically, data constraints often dictate which valuation principle is used.

If taxpayer summation data are available, then the summation valuation principle will typically be applied. However, when only taxpayer unit valuation data are available, then the unit valuation principle will typically be applied.

## Going-concern valuations

Unit principle valuations involve valuing a total bundle (sometimes called a universe) of operating assets on a going-concern basis. Inexperienced analysts sometimes confuse this going-concern premise of value with the valuation of a going-concern business enterprise. However, a going-concern premise versus the valuation of a going-concern business are two fundamentally different concepts.

A premise of value is a hypothetical transaction structure. Some common alternative premises of value include the following:

1. Value in continued use, on a going-concern basis.
2. Value in place, but not in current use.
3. Value in exchange, as a voluntary disposition of assets.
4. Value in exchange, as a voluntary liquidation of assets.
5. Value in exchange, as an involuntary liquidation of assets.

The premise of value indicates how (i.e., under what assumed set of transactional circumstances) the sale or transfer of the subject bundle of assets will occur. In a property tax valuation context, the selection of a premise of value may be determined by statutory authority, judicial precedent, or administrative ruling in the subject taxing jurisdiction.

For example, some jurisdictions may require that the taxable assets be valued based on a going-concern premise of value. Alternatively, other taxing jurisdictions may require that the taxable assets be valued based on a value in exchange premise of value.

Outside of the property tax context, the selection of a premise of value is often determined based on the analyst's HABU analysis. That is, the analyst will apply the premise of value to the valuation analysis that concludes the highest indication of value for the subject taxpayer bundle of operating assets.

Some analysts confuse the above-listed going-concern premise of value (also called the value in continued use premise of value) with the valuation (or the sale) of a going-concern business enterprise. In the first instance, a specified bundle of operating assets will be sold together—as an entire unit. Most likely, that specified bundle of assets will be operated to generate some measure of income. The value in use or going-concern premise is that the specified bundle of assets (and only that specified bundle of assets) will be transferred. However, all of those assets in the bundle will be sold together, at one time. Also, all of the assets will be used together (by both the seller and the buyer) to generate some measure of income.

In the second instance, a going-concern business enterprise is sold. That going-concern business enterprise usually has a legal form—a partnership, a corporation, a limited liability company, and the like.

The securities of the going-concern business enterprise are sold. That is, the taxpayer company's stock and debt instruments are sold. Typically, ownership of the business operating assets is not sold. The taxpayer company's debt and equity securities are transferred from the seller to the buyer. The business entity itself (i.e., the taxpayer company) owns the operating assets before the corporate merger or acquisition—and the business entity itself owns the operating asset after the corporate merger or acquisition.

For example, assume a business entity called the Alpha to Omega Railroad (AORR). AORR owns track, yards, locomotives, rolling stock, and maintenance buildings (and other business assets). The AORR business enterprise is sold from one private equity investor to another private equity investor. The AORR still owns the same real estate and tangible personal property. The AORR operating assets did not sell. The stock and debt securities of the AORR did transfer from a seller to a buyer. In that transfer of a going-concern business, a bundle of ownership interests transferred. The buyers paid the sellers for more than the AORR real estate and tangible personal property—operating on a going-concern basis.

## Differences between business value, unit value, and summation value

When comparing business enterprise valuations, unit principle valuations, and summation principle valuations, there are both: (1) valuation purpose and objective differences, and (2) valuation analysis and variables differences.

Next, this discussion considers some of the valuation purpose and objective differences. Then, this discussion considers some of the valuation analysis and variables differences.

### Valuation purpose and objective differences

Typically, the subject of a business valuation is either:

1. The total invested capital of the subject business.
2. The total equity structure of the subject business.
3. The total common equity of the subject business.
4. A particular equity ownership interest in the subject business.

## In theory, the analyst's final property value conclusion should be the same regardless of whether the unit valuation principle or the summation valuation principle is applied.

Rather, in this simple example, the buyer is paying the seller for the ownership of the AORR:

1. Financial (working capital) assets.
2. Owned and leased real estate.
3. Owned and leased tangible personal property.
4. Identifiable intangible personal property.
5. Intangible value in the nature of goodwill.
6. Intangible attributes (such as income tax attributes, investment liquidity, investment diversification, investment diversability, etc.).

So, value as a going concern indicates the transactional circumstances under which a specific bundle of assets will sell. The value of a going-concern business is the corporate business enterprise that owns all of the entity's tangible assets and intangible assets in place—and the present value of all of the entity's future business opportunities. While the two phrases may sound similar to the inexperienced analyst, the two different types of valuations include two fundamentally different bundles of ownership interests

That is, the business valuation typically focuses on the “right hand side” of the company's balance sheet. The business valuation focuses on the “liabilities and owners' equity” section of the company's balance sheet.

Arguably, the most common objective of a business valuation is the total invested capital (TIC) of the subject business. The TIC is also called the total capital structure of the company. The total capital structure typically includes all of the capital components for which there is a measurable cost of capital.

These capital structure components commonly include:

1. Long-term interest-bearing debt.
2. Preferred stock.
3. Common stock.

Considering the remaining components of the “right hand side” of a balance sheet, the TIC usually excludes current liability accounts, non-interest-bearing liability accounts (i.e., non-debt instrument liabilities), and non-cost equity components (e.g., noncontrolling interests).

The total equity structure would typically include all classes of the company's equity securities, including preferred stock and all classes of common stock.

The total common equity structure would typically include all classes of the company's common stock. Many (but not all) companies have multiple classes of common stock outstanding.

The final common business valuation subject would be a particular ownership interest in a particular class of securities. For example, the valuation subject could be a 40% noncontrolling ownership interest in the company's Class B nonvoting common stock. Or, the valuation subject could be the company's Series A subordinated debentures that are due in January 2022.

Such business valuations are often performed for transactional purposes. That is, the valuation objective is a proposed acquisition price or a proposed merger equity exchange ratio.

Of course, business valuations could also be performed for various financial accounting, income taxation, gift and estate taxation, shareholder litigation, and other purposes. However, the objective of the business valuation is to conclude a defined value for the company's debt and equity security instruments.

Also, these debt and equity security values (and the TIC business value conclusion) are typically estimated independently from the asset structure of the subject company. That is, the business value typically concludes the capital structure value of the company without any analysis of the asset structure of the company.

In contrast to a business valuation, both the unit valuation and the summation valuation focus on the "left hand side" or the "assets side" of the company balance sheet. The unit valuation concludes the total value of the company operating assets based on aggregate or collective valuation analyses.

The summation valuation concludes the independent values of the company operating assets based on separate or individual valuation analyses. The summation valuation analysis concludes a total value of the company's operating assets by adding the independent values of the individual asset categories.

The unit valuation concludes the total value of all of the company's operating assets. Therefore, the unit value will typically include the following components:

1. Current (financial) asset accounts.
2. Real estate and real property rights.
3. Tangible personal property.
4. Identifiable intangible assets.
5. Intangible value in the nature of goodwill.
6. Intangible investment attributes.

In contrast, the summation value includes only the individual company asset categories that are:

1. Separately appraised.
2. Added in to the summation procedure.

Unless other company assets and components are specifically included in the analysis, the summation value will typically include only the following assets:

1. Real estate and real property rights.
2. Tangible personal property.

Unit principle valuations are not usually prepared for transactional purposes. Typically, the sale of a going-concern business includes several value components that are not included (or that are not supposed to be included) in the unit valuation.

For example, the going-concern business value includes the investor expectations of the present value of future income from future tangible assets and intangible assets that are not yet in place as of the valuation date. This value component is sometimes called the present value of growth opportunities (PVGGO).

The unit value is supposed to include only the value of tangible assets and intangible assets that actually exist as of the valuation date. Accordingly, unit principle valuations are prepared primarily for property tax purposes. In fact, the unit principle of property valuation is primarily a property tax valuation concept.

In comparison, summation principle valuations are performed for a variety of purposes. While summation valuations are not typically performed for merger and acquisition (M&A) transaction pricing purposes, they are performed any time the property owner wants to know the value of the company's individual asset accounts.

This information is often used for financial accounting and income tax accounting purposes. Also, this information can be used for asset-based financing purposes, for investor's asset contributions to the formation of a new business venture, and for investor's asset distributions when the dissolution of a business venture. Further, summation principle valuations are appropriate in a property tax context

**EXHIBIT 1****Typical taxpayer corporation statement of financial position prepared on a current valuation basis as of 1/1/18 (in \$ millions)**

<b>ASSETS</b>		<b>LIABILITIES AND OWNERS' EQUITY</b>	
Current Assets (A):		Current Liabilities (G):	
Cash	50	Accounts Payable	50
Receivables	50	Salaries Payable	20
Inventory	<u>100</u>	Accrued Expense	<u>30</u>
Total Current Assets	200	Total Current Liabilities	100
Net Plant, Property, and Equipment (B):		Long-Term Debt (H):	
Land	100	Bonds Payable	100
Buildings	200	Notes Payable	100
Machinery and Equipment	<u>300</u>	Mortgages Payable	<u>200</u>
Total Plant, Property, and Equipment	600	Total Long-Term Debt	400
Intangible Assets (C):		Other Liabilities (I):	
Patents	100	Pension Liabilities	200
Computer Software	100	Post-Retirement	
Trademarks	100	Health Obligations	100
Trade Secrets	100	Deferred Income Taxes	
Goodwill	<u>200</u>	— Credits	<u>100</u>
Total Intangible Assets	<u>600</u>	Total Other Liabilities	400
Other Assets (D):		Total Liabilities (J)	
Unconsolidated Subsidiary			900
Investments	200	Owners' Equity (K):	
Deferred Income Taxes —		Preferred Stock	100
Debits	<u>200</u>	Common Stock	0
Total Other Assets	<u>400</u>	(includes the value of investment liquidity, diversification, limited liability, Intangible PVGO, income tax attributes, etc.)	<u>1,000</u>
Intangible Attributes (E):	<u>200</u>	Total Liabilities and Owners' Equity (L)	<u>2,000</u>
Total Assets (F)	<u>2,000</u>		

when only certain asset categories (e.g., real estate and tangible personal property) are subject to property taxation.

### Valuation analysis and variables differences

There are different generally accepted valuation approaches, methods, and procedures used in a business valuation, a unit valuation, and a summation valuation. Also, there are different valuation variables that are used in a business valuation, a unit valuation, and a summation valuation. Many of these differences are summarized in the next section of this discussion.

Almost all of these differences are explained by the fact that each type of valuation is intended to estimate a defined value for a different bundle of ownership interests:

1. The business value includes all of the company debt and equity instruments (and their associated investment attributes).
2. The unit value includes all of the company operating assets in place as of the valuation date.
3. The summation value includes only the individual asset categories specifically identified in the summation process.

Exhibit 1 presents a simplified illustration of the various ownership interests included in the different types of valuation analyses. It presents the assets, liabilities, and equity accounts of a hypothetical Typical Taxpayer Corporation. In Exhibit 1, all of the company accounts are assumed to be stated at a specifically defined value. That defined value could be fair value, fair market value, or any other value-based standard of value (i.e., not at historical cost).

**EXHIBIT 2****Typical taxpayer corporation unit of taxable tangible assets as of 1/1/18 (in \$ millions)**

Total Unit Value			1,800
Less:	Working Capital Assets	200	
	Intangible Assets	600	
	Other Assets	400	
	Assets Exempt from Taxation	<u>1,200</u>	
Equals:	Unit of Taxable Tangible Assets		<u>600</u>

Exhibit 1 is a valuation-based balance sheet, and not a U.S. GAAP-based balance sheet.

In this simplified example, one assumes that the analyst can value each of the taxpayer company's tangible asset and intangible asset categories—including goodwill. That is, in this example, the \$200 goodwill value is the result of a discrete valuation analysis. It is not the mathematical residual from a transaction purchase price or an estimated business value.

In Exhibit 1, the concluded business enterprise value would be \$2,000. This value would include net working capital (A minus G) of \$100; long-term debt (H) of \$400; other liabilities (J) of \$400; and total owners' equity (K) of \$1,100.

The common stock value would typically include such investment attributes as common stock liquidity, investors' portfolio diversification, investors' limited liability, expected appreciation in stock value, any income tax attributes related to both the company and the shares, the expectation of future M&A activity, and PVGO related to expected future assets.

On a GAAP-basis balance sheet, the above-listed investment attributes included in the common stock value is included in the goodwill account. This is because, under U.S. GAAP, goodwill is measured as the residual of the purchase price (or the business value) less the identifiable tangible and intangible assets.

In this example, the analyst independently valued goodwill at \$200. Therefore, the residual amount is recorded in an account called "Intangible Attributes (E)." Such a valuation-based account would not be recorded on a GAAP-based balance sheet. Rather, for GAAP accounting purposes, the Typical Taxpayer Corporation residual goodwill amount would be \$400.

In Exhibit 1, the concluded unit value would be \$1,800. This \$1,800 unit value would include the following asset categories: current as-

sets (A) of \$200; plant, property, and equipment (B) of \$600; intangible assets (C) of \$600; and other assets (D) of \$400.

While the total unit value may be \$1,800, this value may include asset categories that are not subject to property tax in the subject jurisdiction. For example, if working capital accounts, intangible assets, and other (nontangible) assets are not subject to property tax, then the taxable unit value would be adjusted as presented in Exhibit 2.

In any event, the intangible attributes component of the total business value would typically not be included in the unit value conclusion. This statement is true for two reasons. First, the intangible attributes category does not represent assets of any kind. Intangible attributes are not assets at all. They are investment features.

Second, intangible attributes do not relate to assets that exist as of the valuation date. To the extent some part of the intangible attributes category can be associated with any assets, they would be the investors' expectations of

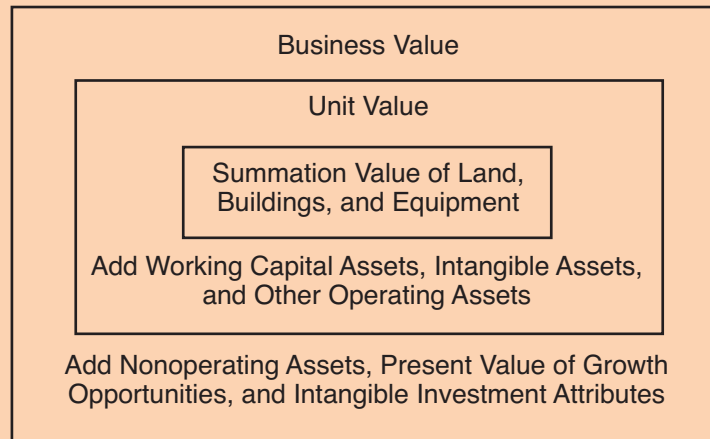
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### EXHIBIT 3

#### Typical taxpayer corporation relationship of business value, unit value, and summation value



tangible assets or intangible assets that the subject company may own or operate in the future.

Finally, in Exhibit 1, the concluded summation value would be \$600. This conclusion assumes that the analyst includes all real estate and tangible personal property in the summation valuation.

Accordingly, the summation principle valuation includes the value of all of (and only) the Typical Taxpayer Corporation tangible assets in place as of the valuation date. This Exhibit 1 summation principle \$600 taxable tangible asset value conclusion agrees with the unit valuation principle \$600 unit of taxable tangible assets concluded in Exhibit 2.

Exhibit 3 illustrates the relationship between the hypothetical Typical Taxpayer Corporation business value, unit value, and summation value. Exhibit 3 illustrates the different bundle of assets included in each value indication.

Exhibit 4 illustrates the relationship of the various ownership interests in the hypothetical Typical Taxpayer Corporation business value, unit value, and summation value. Exhibit 4 illustrates how each value indication includes a different bundle of ownership interests.

The remainder of this discussion summarizes the analytical differences between business valuations, unit valuations, and summation valuations.

### Analytical differences

**Difference one.** As mentioned above, each of the three types of valuation encompasses a different bundle of ownership interests. Accordingly,

the analyst would expect different quantitative conclusions from a business enterprise valuation, a unit principle valuation, and a summation principle valuation.

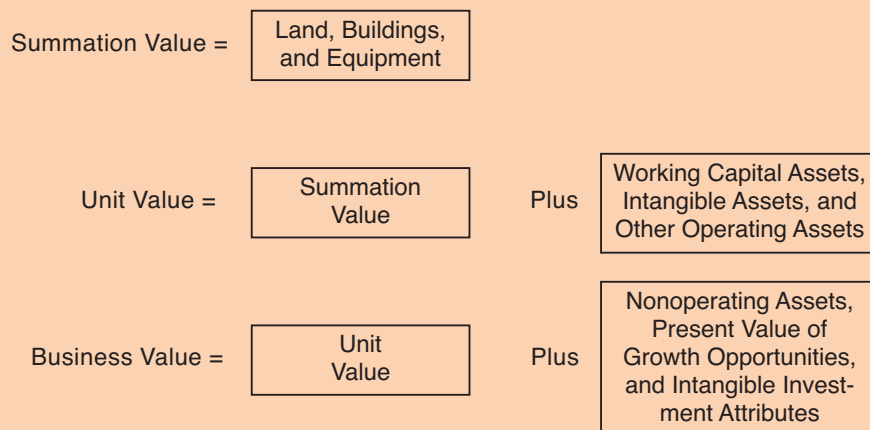
The business enterprise valuation analyzes all of the taxpayer company's debt and equity securities. All investment attributes related to debt and equity security analysis will be included in the business value.

The debt and equity securities are typically valued on a marketable ownership interest level of value. That means these securities are valued as if they were actively traded on the public securities exchanges. Theoretically, the value of these securities is the present value of all of the future income expected to be generated by the subject taxpayer company. That expected future income will come from:

1. Tangible assets in place on the valuation date.
2. Intangible assets in place on the valuation date.
3. Expected future tangible assets not yet in place on the valuation date.
4. Expected future intangible assets not yet in place on the valuation date.

The unit principle valuation encompasses all of the taxpayer company's operating assets in place on the valuation date. The business value includes both operating assets and nonoperating assets. Also, the business value includes investor expectations of future assets.

It is noteworthy that the unit value may include asset categories that are exempt from property taxation in the subject taxing jurisdiction, such as working capital assets, intangible assets, investments in subsidiaries and joint ventures, and the like.

**EXHIBIT 4****Typical taxpayer corporation relationship of various ownership interests in business value, unit value, and summation value**

The summation principle valuation encompasses only the specifically identified taxpayer bundle of assets that were separately considered in the valuation analysis.

**Difference two.** There are different generally accepted valuation approaches, methods, and procedures in the different types of valuations.

The generally accepted business valuation approaches and methods include the following:

1. Income approach: (a) discounted cash flow method, and (b) direct capitalization method.
2. Market approach: (a) guideline publicly traded company method, and (b) guideline merged and acquired company method.
3. Asset-based approach: (a) asset accumulation method, and (b) adjusted net asset value method.

The generally accepted unit valuation approaches and methods include the following:

1. Income approach: (a) yield capitalization method, and (b) direct capitalization method.
2. Market approach: (a) stock and debt method, and (b) comparable transaction method.
3. Cost approach: (a) original cost less depreciation method (OCLD); (b) replacement cost new less depreciation method (RCNLD); (c) reproduction cost new less depreciation method (RPCNLD).

The generally accepted summation valuation approaches and methods include the following:

1. Income approach: (a) yield capitalization method, and (b) direct capitalization method.
2. Sales comparison approach: (a) direct sales comparison method.

3. Cost approach: (a) replacement cost new less depreciation method, and (b) reproduction cost new less depreciation method.

An explanation of each of the above-listed approaches and methods is beyond the scope of this discussion. However, many of the analytical differences in the implementation procedures related to the above-listed methods will be discussed below. It is noteworthy that the business valuation asset-based approach is not the property valuation cost approach.

Again, a description of all of the differences between these two different valuation approaches is beyond the scope of this discussion. However, these differences are well-documented in the valuation professional literature.

**Difference three.** In any income approach analysis performed, the level of income subject to capitalization is fundamentally different between a business valuation, a unit valuation, and a summation valuation.

In a business valuation, typically all of the company's income is subject to capitalization. This amount includes operating income and nonoperating income. Also, all of the company's operating income is generated from the entity's sales of goods and services to its customers. That is, the operating income results from the entity's production of goods and services.

In a unit valuation, typically only the company's operating income is subject to capitalization. This operating income results from the company's production of goods and services. However, nonoperating income is excluded from the unit valuation analysis.

In a summation valuation, typically only the rental income generated from the rental of the subject real estate and tangible personal property is subject to capitalization. This rental income could be actual income (from the actual rents generated by a shopping mall) or hypothetical income (from the rents generated by the hypothetical lease of an oil refinery). However, the summation principle income approach analysis does not include the income from the property owner/operator's production of goods and services to the company's customers.

**Difference four.** In any income approach analysis, the level of the expected income long-term growth (LTG) rate is fundamentally different between a business valuation, a unit valuation, and a summation valuation.

In a business valuation, typically the income LTG comes from the taxpayer company's long-term financial or strategic plan. That LTG rate can be compared to guideline public company estimated LTG rates or the owner/operator industry estimated LTG rate.

The business valuation LTG rate typically considers income from the following:

1. Assets currently in place.
2. Replacement assets as current assets retire.
3. Expansionary capital expenditure assets.
4. Potential mergers and acquisitions.
5. Potential new products, services, and business lines.

In a unit valuation, the income LTG rate typically relates to inflation growth only. In other words, usually there is no real growth included in the unit value LTG rate.

The unit value encompasses only the taxpayer company's assets in place (and their direct replacement assets). The unit value should not include expansionary new properties, new plants, and new facilities. That is, the LTG rate should be supportable from the operation of the assets in place as of the valuation date.

In some industry sectors, the unit value LTG rate may be 0%. In a rate-based regulated utility, for example, the only way for the taxpayer company to generate positive LTG is to add new incremental assets to the company's rate base. Such incremental assets (and their associated income growth) should not be included in the unit of operating assets that are subject to taxation on a particular valuation date.

In a summation valuation, typically the LTG rate relates to the real or hypothetical lease of the existing real estate and tangible personal property only. That is, the summa-

tion analysis does not include any LTG related to replacement assets, incremental assets, merged or acquired assets, or new business assets.

**Difference five.** In any income approach analysis, the level of expected future capital expenditures is fundamentally different between a business valuation, a unit valuation, and a summation valuation.

In all types of business or property valuations, the level of expected capital expenditures should be reconcilable to the income expected LTG rate. In a business valuation, typically the expected future capital expenditures both:

1. Replace the current levels of property, plant, and equipment as those assets wear out over time.
2. Provide for expansionary plant, property, and equipment—needed to generate real revenue and production growth and to accommodate new products and new (or acquired) lines of business.

In a unit valuation, typically the expected future capital expenditures have one function: to replace the cohort of real estate and tangible personal property included in the current unit as these tangible assets wear out.

In a summation valuation, normally the level of expected future capital expenditures is much less than in a unit valuation. In the summation principle valuation, the capital expenditures are intended to maintain the real estate and tangible personal property in place throughout their useful lives—but not to provide replacement assets independently.

For all three types of valuations, the level of depreciation expense should be internally consistent within the analysis with the level of expected capital expenditures.

**Difference six.** In any income approach analysis, the selected discount rate or capitalization rate is fundamentally different between a business valuation, unit valuation, and summation valuation. In all valuation analyses, the selected discount/capitalization rate should be consistent with the level of income subject to capitalization. Also, the selected discount/capitalization rate should be consistent with the bundle of ownership interests that is the subject of the valuation.

In a business valuation, usually the discount rate is based on the taxpayer company's weighted average cost of capital (WACC). The WACC components may come from publicly traded company and capital market return on investment data. The direct capitalization rate

is typically the WACC discount rate minus the expected LTG rate.

In a unit valuation, typically the discount rate is also based on the taxpayer company's WACC. However, the selection of the WACC components may consider the valuation attributes of the unit. Guideline company and capital market return on investment data are based on business enterprise growth rates.

As explained above, the unit LTG rate may be less than the company LTG rate. Accordingly, the unit WACC components may be adjusted for their relative growth rates. The direct capitalization rate is typically the WACC discount rate minus the unit-specific LTG rate.

In a summation valuation, the yield capitalization rate is typically based on the band of investment method. However, both the equity yield rate and the mortgage debt rate for property owners are different from the equity return on investment and public bond interest rate for business investors.

In addition, the debt to equity ratio for a company's capital structure is often different from the mortgage to equity ratio structure for a property financing. Further, the direct capitalization rate could be based on a growth-adjusted yield capitalization rate, or it could be extracted from comparable property sales data.

**Difference seven.** In any market approach analysis, the selected pricing multiples will be different between a business valuation, a unit valuation, and a summation valuation. Of course, in all types of valuation analyses, the selected pricing multiples should be consistent with:

1. The level of income that the pricing multiple is applied to.
2. The expected remaining useful life (RUL) of the income that the multiple is applied to.
3. The expected LTG of the income that the multiple is applied to.

In a business valuation, the pricing multiples are typically extracted from either selected guideline publicly traded company multiples or selected M&A company transaction multiples.

In all cases, the capital market-derived pricing multiples should be carefully analyzed and the taxpayer-specific pricing multiples should be based on the following:

1. Relative growth rates.
2. Relative profit margins.
3. Relative returns on investment.
4. Relative risk attributes.

In a unit valuation, the pricing multiples may also be extracted from either selected guideline publicly traded companies or guideline M&A transactions. However, the taxpayer-specific unit pricing multiples will likely be different than the subject-specific business pricing multiples. This is because the relative unit growth rates, profit margins, investment returns, and risk measures will be different than the same financial metrics for the taxpayer business enterprise. Therefore, the unit financial metrics will compare differently to the guideline company/transaction financial metrics—than would the business enterprise financial metrics.

**In contrast to a business valuation, both the unit valuation and the summation valuation focus on the “left hand side” or the “assets side” of the company balance sheet.**

In a summation valuation, the pricing multiples are not extracted from guideline public companies or guideline M&A transactions. Rather, the comparative pricing multiple data are extracted from the sales of comparable bundles of operating assets. In other words, the analyst extracts pricing multiples from the sales of comparable real estate and tangible personal property.

**Difference eight.** In any market approach valuation, the selected financial metrics will be different in a business valuation, unit valuation, and summation valuation. That is, the measure of income that the pricing multiples are applied to is different between a business valuation, unit valuation, and summation valuation.

In a business valuation, the income metric subject to the multiplication process is total company income (both operating income and nonoperating income from goods and services—and other sources).

The common income metrics used in the business valuation market approach analysis include the following:

1. Earnings before interest and tax (EBIT).
2. Earnings before interest, taxes, depreciation, and amortization (EBITDA).
3. Debt-free net income (EBIT minus taxes).
4. Debt-free net cash flow (EBITDA minus taxes).

In a unit valuation, the income subject to the multiplication process is the unit operating income only (operating income only related to the production of goods and services).

The common income metrics used in the unit valuation market approach analysis include the following:

1. EBIT.
2. EBITDA.
3. Net operating income.
4. Net cash flow.

In a summation valuation, the income subject to the multiplication process is the (real or hypothetical) rental income from the (real or hypothetical) lease of the specific real estate and tangible personal property.

The common income metrics in the summation valuation market approach analysis include the following:

1. Gross rental income.
2. Net rental income.
3. Net operating income.
4. Net cash flow.

**Difference nine.** The asset-based approach applied in a business valuation is fundamentally different from the cost approach applied in a unit valuation or a summation valuation. In a business valuation, the asset-based approach may be used to conclude the value of the taxpayer company's:

1. Total assets.
2. Total invested capital.
3. Total equity.

The fundamental principle of the business valuation asset-based approach follows:

1. The defined value of the total company assets, minus
2. The defined value of the total company liabilities, equals
3. The defined value of the total company equity.

In the asset-based approach, total assets include financial assets, tangible assets, and intangible assets. In the asset-based approach, total liabilities include recorded liabilities and contingent liabilities. Each asset category in the asset-based approach may be valued by the application of the market approach, the cost approach, or the income approach. It is common that different asset categories will be valued by reference to different property valuation approaches.

Also, it is very common that at least one intangible asset is valued by reference to the income approach. That intangible asset (that is often—but not always—goodwill) may be valued using one of these income approach valuation methods:

1. The capitalized excess earnings method (CEEM).
2. The multiperiod excess earnings method (MEEM).

In a unit valuation, the cost approach is used to estimate the value of the total bundle of operating assets included in the unit. Depending on the analyst's application of the cost approach (and particularly on the quantification of economic obsolescence, if any), the unit value may include tangible assets only or tangible assets and intangible assets.

In a summation valuation, the cost approach is used to estimate the value of the specifically identified bundle of real estate and tangible personal property included in the summation analysis. The unit valuation and the summation valuation may include any of the generally accepted cost approach valuation methods. However, these methods do not encompass all of the taxpayer company assets and all of the taxpayer company liabilities considered in the asset-based business valuation approach.

**Difference ten.** The analyst may apply different cost metrics in the business valuation, unit valuation, and summation valuation analyses. The cost approach is not a generally accepted business valuation approach. The cost approach may be used to value individual tangible asset or intangible asset categories in the application of the asset-based business valuation approach. For this purpose, the analyst may use the RCNLD method or the RPCNLD method. Except for the company's working capital accounts, the OCLD would rarely be used in an asset-based approach business valuation analysis.

In the unit valuation, the analyst may most commonly use the OCLD method. Since all of the taxpayer company's assets in place are valued collectively, OCLD often provides a meaningful starting point (although not necessarily a stopping point) in the cost approach analysis. While less common than the OCLD method, the RCNLD method and the RPCNLD method may also be used in the unit principle valuation.

In the summation valuation, the RCNLD and the RPCNLD methods are commonly used. The OCLD method is not usually used in a summation principle valuation.

**Difference eleven.** The company asset RULs and the corresponding depreciation lives and rates are often different in the business valuation, unit valuation, and summation valuation. In a business valuation, the analyst typically uses the RULs, asset depreciation lives, and asset depreciation rates that the company already uses for financial accounting purposes. The analyst usually assumes that the market participant buyer/new

owner of the subject company will maintain the same depreciation policies and practices as the current business owner/operator.

The cost approach valuation is one relatively small component of the asset-based approach valuation of all of the company financial, tangible, and intangible assets. Accordingly, changing cost approach depreciation rate and lives typically do not have a material impact on the overall unit value.

In a unit valuation, the analyst may use the company's current RULs, depreciation lives, and depreciation rates—particularly in an OCLD method analysis. To the extent that there is additional depreciation that is not recognized in the OCLD measurement, that value impact will be recognized in the unit valuation analysis of functional obsolescence and economic obsolescence. If the analyst uses the RCNLD method or the RPCNLD method in the unit valuation, the analyst will typically select depreciation lives and rates that reflect the physical, functional, or economic RULs of the subject operating assets.

In the summation valuation, the analyst will estimate an RUL and a depreciation life and rate for each category of subject property. These estimates may not be the same as the depreciation policies and practices that the company uses for functional accounting purposes. The summation analysis depreciation lives and rates are based on the analyst's best estimate of the subject property physical, functional, or economic RUL.

**Difference twelve.** There are different measurements of obsolescence in the cost approach analyses included in a business valuation, unit valuation, and summation valuation. In a business valuation, the obsolescence should relate to—and should be measured at—the overall business enterprise level. That is, the obsolescence should relate to the entire taxpayer company business entity.

In the income approach, the obsolescence is accounted for implicitly in both the enterprise income projection and the cost of equity capital component of the WACC. In the market approach, the obsolescence is accounted for implicitly both in the enterprise income included in the multiplication process and in the selected pricing multiple. In the asset-based approach, the obsolescence is accounted for explicitly in the cost approach values of both the taxpayer's tangible assets and the taxpayer's intangible assets.

In the business valuation asset-based approach, obsolescence is often measured by the

income shortfall method. This analysis compares the entity's actual return on assets to the entity's required return on assets. The calculation of the return on assets should include a fair rate of return on all of the business entity's asset categories. These business entity asset categories include working capital (financial assets, real estate and tangible personal property, and intangible assets).

In a summation valuation, the obsolescence should relate to—and should be measured at—the taxpayer unit of operating assets level. That is, the obsolescence should relate to the taxpayer unit of tangible assets and intangible assets in place as of the valuation date.

In the income approach, the obsolescence is accounted for implicitly both in the unit operating income and the unit discount/capitalization rate. In the market approach, the obsolescence is accounted for implicitly both in the unit operating income and in the selected public company/transaction pricing multiples. In the cost approach, the obsolescence is accounted for explicitly in the unit principle valuation of the tangible assets and identifiable intangible assets.

In the unit valuation cost approach, obsolescence is often measured by the income shortfall method. This analysis compares the unit's actual return on assets to the unit's required return on assets. The calculation of the return on assets should include a fair return on all of the unit's real estate, tangible personal property, and identifiable intangible assets.

In a summation valuation, the obsolescence should relate to—and should be measured at—the specific real estate and tangible personal property level. In the income approach, the obsolescence is accounted for implicitly both in the specific property rental income subject to capitalization and in the specific property yield/capitalization rate. In the sales comparison approach, the obsolescence is accounted for implicitly both in the specific property rental income subject to the multiplication process and in the selected transaction-derived pricing multiple. In the cost approach, the obsolescence is accounted for explicitly in the summation principle valuation of the individual real estate and tangible personal property.

In the summation valuation cost approach, the obsolescence should be specific to the individual property. This obsolescence may be measured by reference to the income shortfall method (in addition to other methods).

In the income shortfall method, the analyst compares the property's actual return on investment to a market-derived return on investment. Both the actual and the market-derived returns on investment should relate specifically to the subject property category.

**Difference thirteen.** The valuation synthesis and conclusion (or valuation reconciliation process) is different for a business valuation, a unit valuation, and a summation valuation. There are two principal procedures in the valuation synthesis and conclusion (VSC) process.

First, the analyst considers the value indications from each valuation approach and method performed. The analyst considers if all of the value indications are internally inconsistent. In particular, the analyst looks for—and attempts to explain—any aberrational value indications between the valuation approaches and methods.

Second, the analyst assesses the various valuation analyses and assigns a weighting (implicitly or explicitly) to the value indications in order to reach a final value conclusion. The assessment process considers both:

1. The quality and quantity of the availability for each analysis.
2. The analyst's level of confidence in each valuation analysis and in each value indication.

In a business valuation, the analyst assigns the most weight to the valuation approaches and methods that market participants primarily rely on in their transactional analyses. The analyst will consider the size and type of the taxpayer company, the taxpayer industry dynamics, the quantity and quality of public company and M&A transactional data, and the purpose and objective of the valuation.

In a unit valuation, the analyst will consider the composition of the bundle of operating assets included in the taxpayer unit. The analyst will consider the size of the subject unit, the industry that the unit operates in (i.e., the valuation approaches relied on by the market participants in that industry), the quality and quantity of available empirical data, and the purpose and objective of the unit valuation.

In the summation valuation, the analyst will consider the specific real estate and personal property subject to appraisal. The analyst will weigh the valuation approaches—and the value indications—so as to emulate how market participants would analyze and transact that particular bundle of real and personal property.

**Difference fourteen.** In the VSC process, the analyst will specifically recognize the different bundles of ownership rights included in a business valuation, or unit valuation, and a summation valuation. The analyst will assign a weighting to the valuation approaches and value indications that best reflects the three fundamentally different bundles of assets included in these three fundamentally different types of analyses.

The subjects of the business valuation are the debt and equity securities of the company. The analyst typically assigns the most weight to the valuation approaches and methods that directly conclude the value of the taxpayer debt and equity securities. In particular, the analyst considers how market participants would price the purchase or sale of an ownership interest bundle of debt instruments and equity instruments.

These ownership interests include the income that will be generated by:

1. All of the working capital, tangible assets, intangible assets, and other/investment assets in place.
2. The company's net asset investment attributes.
3. The present value of future income from future tangible and intangible assets.

The subjects of a unit valuation are the operating assets of the taxpayer company that are in place as of the valuation date. The bundle of operating assets includes all of the working capital/financial assets, real estate and tangible personal property, and intangible assets that are operated by the going-concern company. However, it is noteworthy that not all of these unit principle bundle of assets may be subject to property tax in a particular taxing jurisdiction. The analyst will give more weight to the valuation approaches and methods that directly value the intended bundle of operating assets.

Also, the analyst will give less weight to the valuation approaches and methods that:

1. Include extraneous ownership interests and investment attributes.
2. Exclude asset categories intended to be included in the subject bundle of assets.

The subjects of a summation valuation are specifically identified bundles of real estate and tangible personal property. The analyst considers how market participants would price the purchase or sale of that particular bundle of assets. Further, the analyst would assign the most weight to valuation approaches and methods that directly value the subject (and only the

subject) identified real estate and tangible personal property.

## Conclusion

Particularly within the context of industrial and commercial ad valorem property taxation, tax counsel, property owners, and analysts sometimes confuse business valuations, unit valuations, and summation valuations. This confusion often occurs in industries where the industrial or commercial taxpayer properties are valued by reference to the unit principle (or utility principle) of property tax valuation. Examples of such taxpayer industries include transportation, communications, pipelines, oil and gas, energy, mining and extraction, water and waste water, and many others.

However, tax counsel (and taxpayers and analysts) should understand that there are different—but generally accepted—valuation ap-

proaches and methods that apply in business valuations, unit valuations, and summation valuations. Also, tax counsel (and taxpayers and analysts) should understand that there are analytical differences in the application of these three fundamentally different types of valuation analyses. The most important difference (that is both conceptual and practical) is that the three different types of valuations analyze and appraise three fundamentally different taxpayer company bundles of ownership interests.

This discussion described some of the ways to reconcile these three different taxpayer company bundles of ownership interests. Tax counsel (and taxpayers and analysts) involved in industrial and commercial property valuations for ad valorem tax purposes should be aware of these differences between business enterprise valuations, unit principle valuations, and summation principle valuations. ■