

# Industrial and Commercial Personal Property Appraisal Procedures

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*The asset-based approach to business valuation often involves the appraisal of an operating company's industrial or commercial tangible personal property. This discussion summarizes what valuation analysts—and the parties who rely on their business valuations—need to know about the industrial or commercial personal property appraisal process as part of the asset-based approach business valuation analysis.*

## INTRODUCTION

The asset-based approach is a generally accepted business valuation approach. Applicable to the going-concern valuation of either operating companies or asset-holding companies, this business valuation approach typically involves the appraisal of the following categories of the subject company assets: working capital assets, owned and leased real estate, tangible personal property, and intangible personal property.

This discussion focuses on the typical procedures related to the appraisal of industrial and commercial personal property. This is the type of tangible personal property (“TPP”) that is typically owned and operated by most operating companies.

This discussion summarizes what the valuation analyst (“analyst”) needs to know about TPP appraisals. These analysts work with—and rely on—TPP appraisers as part of the asset-based approach valuation process. And, this discussion focuses on what the parties who rely on asset-based approach business valuations need to know about industrial and commercial TPP appraisals.

## THE TANGIBLE PERSONAL PROPERTY APPRAISAL REPORT SUMMARY

The *Uniform Standards of Professional Appraisal Practice* (“USPAP”) 2016–2017 edition includes

Standard 8, entitled “Personal Property Appraisal, Reporting.” USPAP Standards Rule 8-1 allows for either oral or written TPP appraisal reports.

USPAP Standards Rule 8-2 allows for two types of written TPP appraisal reports:

1. An appraisal report
2. A restricted appraisal report

Standards Rule 8-2(a) describes the required content of an appraisal report. Standards Rule 8-2(b) describes the required content of a restricted appraisal report.

Exhibit 1 presents an illustrative table of contents (or report outline) for a typical TPP narrative appraisal report. Such an appraisal report may be applicable for asset-based approach business valuation purposes. This table of contents is consistent with the USPAP requirements for an appraisal report—that is, a report prepared in compliance with USPAP Standards Rule 8-2(a).

It is noteworthy that not all of the items in the illustrative table of contents are required for compliance with Standards Rule 8-2(a). For example, USPAP does not require that the TPP appraisal report include photographs.

The table of contents in Exhibit 1 is presented for illustrative purposes only. A TPP appraisal report that includes most of the items included on this table of contents should comply with the USPAP Standards Rule 8-2(a) requirements for an appraisal report.

# TANGIBLE PERSONAL PROPERTY APPRAISAL REPORT CONTENTS

1. Title Page. The title page should clearly identify the TPP appraisal report subject for all report users. The title page should identify the subject TPP, the location of the TPP, the definition of value concluded, and the “as of” valuation date. The title page should identify the name and address of the

TPP appraiser and the name and address of the client.

2. Letter of Transmittal. The letter of transmittal typically includes the following information:
  - a. Date of letter and salutation
  - b. A brief description of the TPP
  - c. Identification of the TPP ownership interest
  - d. Statement that a property inspection and other necessary investigations and analyses were made by the TPP appraiser
  - e. Reference that the transmittal letter is an integral component of an accompanying appraisal report
  - f. Identification of the type of TPP appraisal and the type of TPP appraisal report
  - g. Standard (or definition) of value concluded in the appraisal report
  - h. “As of” date of the appraisal
  - i. Opinion of value
  - j. TPP appraiser’s signature
3. Table of Contents. The table of contents typically lists all of the sections of the TPP appraisal report in the order in which they are presented. If there are major divisions within the report, they may also be presented in the table of contents.
4. Certification. The certification is typically presented as a separate page in the introduction section of the appraisal report. The certification may be presented after the final value conclusion. In any event, the TPP appraiser(s) will sign and date the certification.
 

If USPAP compliance is applicable to the TPP appraisal, the certification will indicate whether the appraiser has personally conducted the appraisal in accordance with USPAP. According to USPAP Standards Rule 8-3, each written TPP appraisal report is required to contain a signed certification.
5. Summary of Important Conclusions. The summary of important conclusions page will typically include the following items:
  - a. A brief identification of the TPP
  - b. Typical ages of the TPP

## Exhibit 1 Typical TPP Narrative Appraisal Report Illustrative Table of Contents

Item	Topic
<u>General Introduction</u>	
1.	Title Page
2.	Letter of Transmittal
3.	Table of Contents
4.	Certification
5.	Summary of Important Conclusions
6.	Photographs
7.	The Plant Description
8.	The Plant Layout
9.	The Plant Process
10.	The Plant Product
11.	Type of TPP Appraisal and Type of TPP Appraisal Report
12.	Extraordinary Assumptions and Hypothetical Conditions
13.	General Assumptions and Limiting Conditions
<u>Identification of the TPP Appraisal</u>	
14.	Purpose and Intended User(s) of the Appraisal
15.	Scope of the Work
16.	Definition of Value and Date of Value Opinion
<u>Appraisal Data</u>	
17.	Identification and Description of the TPP
18.	Ownership and History
<u>Analysis of Appraisal Data and Final Value Conclusion</u>	
19.	Highest and Best Use Analysis
20.	Cost Approach
21.	Cost New
22.	Physical Deterioration
23.	Functional Obsolescence
24.	External Obsolescence
25.	Income Capitalization Approach
26.	Sales Comparison Approach
27.	Reconciliation and Final Opinion of Value
28.	Qualifications of the TPP Appraiser
<u>Addenda</u>	

- c. Value indication from the cost approach
  - d. Value indication from the income capitalization approach
  - e. Value indication from the sales comparison approach
  - f. Final opinion of value
6. Photographs. As a general rule, there cannot be too many photographs in a TPP appraisal report. One of the appraiser's responsibilities is to adequately acquaint the appraisal report intended user(s) with the TPP. Photographs help this process.
  7. The Plant Description. This section provides a summary description of the facility in which the TPP is located. This description needs to be adequate to provide the appraisal report intended user(s) with an overview of the location and the condition of the TPP. Where appropriate, this description can include photographs, engineering drawings, plant diagrams and schematics, and so forth.
  8. The Plant Layout. This section provides a summary description of the layout or configuration of the TPP. This description should familiarize the appraisal report intended user(s) with (a) where the major equipment/processes are located within the plant and (b) where the major equipment/processes are located with respect to each other.

Again, this description needs to be enough to provide the appraisal report intended user(s) with an overview of the location and condition of the TPP. When appropriate, this description can include diagrams, schematics, engineering drawings, process/product flow charts, and so forth.

9. The Plant Process. This report section provides a summary description of the processes by which (a) the major property components operate together and (b) the subject product is converted from raw material to finished goods. This description should explain how the major property components are associated with each other, both physically and functionally.

Ideally, this description will allow the appraisal report intended user(s) to mentally "walk through" the plant, following the manufacturing/processing flow, from the raw materials receiving dock to the finished goods shipping dock. Product processing and/or manufacturing flow charts are often

included in this section of the industrial or commercial TPP appraisal report.

10. The Plant Product. This report section provides a summary description of the goods produced by the TPP. The subject to the appraisal is the TPP, not the finished goods inventory.

However, it is usually helpful for the appraisal report intended user(s) to understand the end product produced/manufactured by the TPP. Product photographs, product descriptions, and product listings are often included in this section of the appraisal report.

11. Types of TPP Appraisal and Type of TPP Appraisal Report. USPAP Standards Rule 8-2 defines two alternative types of TPP appraisal reports: (a) appraisal report and (b) restricted appraisal report. The industrial or commercial TPP appraisal report format should be identified.

12. Extraordinary Assumptions and Hypothetical Conditions. Hypothetical conditions or extraordinary assumptions that affect the value conclusion may be an important part of an appraisal report prepared for use as part of an asset-based approach business valuation. Accordingly, such extraordinary assumptions and hypothetical conditions should be clearly stated.

When a personal property value conclusion is subject to an extraordinary assumption or hypothetical condition (such as a pending sale agreement, atypical financing, or a known but not-yet-quantified environmental issue), the appraiser should describe the condition in the TPP appraisal report so that its effect on the value conclusion is clear.

13. General Assumptions and Limiting Conditions. These statements are used to help protect the TPP appraiser and to inform the client and other intended users of the report.

The general assumptions and limiting conditions are an important part of the TPP appraisal report. The reported conditions establish the framework for what the appraisal does—and does not—include. Particularly in a bankruptcy-related appraisal, the TPP appraiser may obtain legal advice when preparing the statement of general assumptions and limiting conditions.

14. Purpose and Intended User(s) of the TPP Appraisal. To avoid an unintended (and inappropriate) use of the TPP appraisal report, the intended use and the intended user of the appraisal should be specified in the report.

USPAP defines both the terms “intended use” and “intended user” as follows:

*Intended Use:* the use or uses of an appraiser’s reported appraisal, appraisal review assignment opinions and conclusions, as identified by the appraiser based on communication with the client at the time of the assignment.

*Intended User:* the client and any other party as identified, by name or type, as users of the appraisal, appraisal review report by the appraiser on the basis of communication with the client at the time of the assignment.

15. Scope of the Work. A clear and accurate description of the scope of the TPP appraisal work is useful to all individuals (and particularly to the finder of fact) who may rely on the appraisal. The scope of the work refers to the amount and type of information researched and the analyses performed in the TPP appraisal assignment.

Professional standards impose a responsibility on the personal property appraiser to determine the appropriate scope of work in order to conclude the value opinion and prepare the TPP appraisal report.

16. Definition of Value and Date of Value Opinion. The definition of value (also called the standard of value) is the type of value that is estimated in a TPP appraisal report. The premise of value is the hypothetical set of circumstances under which the parties described in the definition of value come together to consummate a transaction.

In addition to the definition of value, the applicable premise of value should be defined in the appraisal report. The date of the value opinion (also called the effective date of the appraisal) is the “as of” date to which the value opinion applies.

17. Identification and Description of the TPP. This report section provides a detailed description of the industrial or commercial TPP. The TPP may be described by asset type or category, financial accounting account code or category, production pro-

cess (or location within the total manufacturing process), or physical location within the subject facility.

In this section, the appraiser both identifies the specific TPP and describes the condition of the specific TPP. Typically, this appraisal report section will refer to (and be supplemented by) detailed asset listings and/or inventories.

18. Ownership and History. The appraisal report should discuss both the current ownership of the TPP and the history of recent sales of the TPP. Unlike in a real estate appraisal, this discussion is not a USPAP requirement. However, a discussion of the current ownership both documents the appraiser’s due diligence investigation and further describes the TPP for the appraisal report intended user(s).

19. Highest and Best Use Analysis. The analysis of highest and best use is a USPAP requirement for industrial and commercial TPP appraisals. The conclusion of highest and best use often influences the TPP appraiser’s selection of the appropriate premise of value for the appraisal.

In a highest and best use analysis, the appraiser determines the use that fulfills the following four tests. The TPP selected highest and best use should be:

- a. physically possible,
- b. legally permitted,
- c. economically feasible, and
- d. maximally productive.

Each of these four areas of analysis is affected by the others. The amount of income that a particular use could generate is meaningless if legal approval for the use cannot be obtained. Likewise, not every legally permitted use will warrant the expenditure of funds required to bring it about. The appropriate combination of all four factors results in the single use that can be identified as the TPP highest and best use.

20. Cost Approach. The cost approach is a common TPP valuation approach with regard to appraisals performed as a component of an asset-based approach business valuation. Accordingly, the cost approach section of the appraisal report should thoroughly explain the particular cost approach methods and procedures used

in the appraisal. All appraisal terminology should be identified and explained.

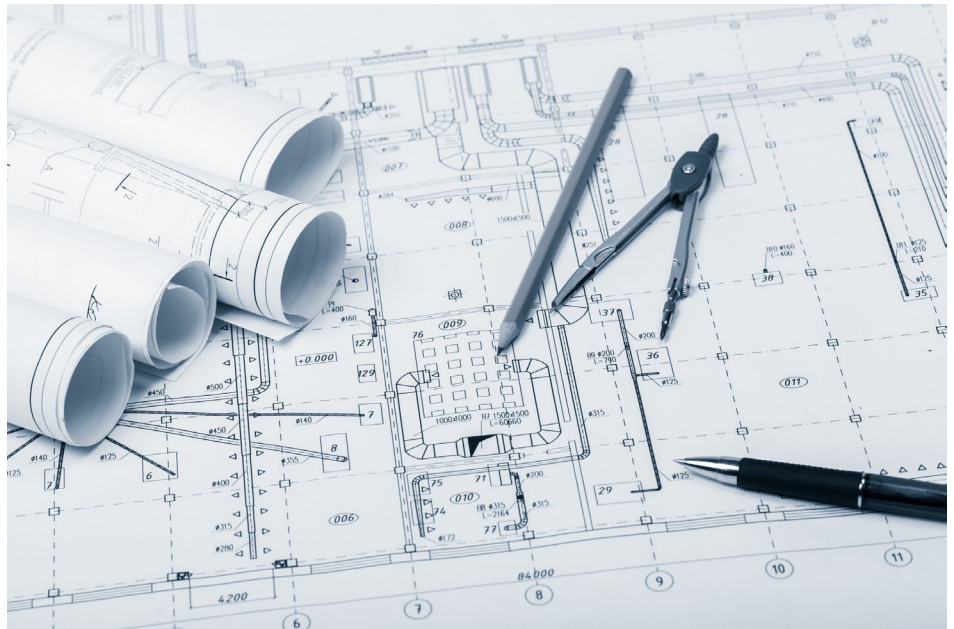
For example, the TPP appraiser should not assume that the appraisal report intended user(s) understands the subtle (but important) differences between (a) reproduction cost new less depreciation and (b) replacement cost new less depreciation. In particular, it will confuse any appraisal report intended user(s) if these two terms are used interchangeably in the appraisal report or if these two terms are both abbreviated as RCNLD in the appraisal report.

In its simplest form, the cost approach estimates the current cost (as if new) of the TPP less all forms of depreciation. In the cost approach, the appraiser identifies the TPP, develops a current replacement cost new estimate, and subtracts all depreciation that makes the TPP less desirable to own than if it were new.

The appraisal report should clarify the cost measure used as the starting point in the cost approach analysis: (a) replacement cost new, (b) reproduction cost new, or (c) some other defined measure of cost.

21. Cost New. *Valuing Machinery and Equipment* explains the terms “replacement cost new” and “reproduction cost new” as follows:

It is essential that the appraiser understand the difference between replacement cost new and reproduction cost new. Replacement cost is the current cost of a similar new property having the nearest equivalent utility as the property being appraised, whereas reproduction cost is the current cost of reproducing a new replica of the property being appraised using the same, or closely similar, materials. In using the cost approach, the appraiser is comparing the subject property to the property that could actually replace it. The replacement property would be the most economical



new property that could replace the service provided by the subject.<sup>1</sup>

A cost approach analysis starts with either the replacement cost new or the reproduction cost new of the TPP and then deducts for the loss in value caused by physical deterioration, functional obsolescence, and economic obsolescence. The economic foundation for the cost approach is the principle of substitution: A prudent buyer will not pay for a property more than the cost of acquiring a substitute property of equivalent utility. The principle can be applied either to an individual asset or to an entire facility full of TPP.

The TPP appraisal report should clearly identify:

- the measure (or type) of cost new estimated,
- the method used to estimate cost new, and
- the data sources used to estimate cost new.

*Valuing Machinery and Equipment* describes the alternative methods for estimating cost new as follows:

There are several methods of determining the current cost new of a property. The major ones are the detail method, trending, cost to capacity, and other engineering methods.

The detail method, also known as the summation method, requires

that a current new cost be assigned to each individual component of an asset or property. The property is itemized or “detailed” so that the sum of the components reflects the cost new of the whole.

All normal or typical direct and indirect costs should be included. Direct costs are those material, labor, and related expenditures normally and directly incurred in the purchase and installation of an asset, or group of assets, into functional use. . . .

Indirect costs are those expenditures that are normally required to purchase and install a property but which are not usually included in the vendor invoice.<sup>2</sup>

Trending is a method of estimating a property’s reproduction cost new (not replacement cost new) in which an index or trend factor is applied to the property’s historical cost to convert the known cost into an indication of current cost. Simply put, trending reflects the movement of price over time.

As used in this book, historical cost is the cost of a property when it was first placed into service by its first owner. This is to be distinguished from original cost, which is the actual cost of a property when acquired by its present owner, who may not be the first owner and who may have purchased at a price greater or less than the historical cost. Original cost may be the used cost of the property, whereas historical cost can never be a used cost. Obviously historical cost and original cost may be the same.<sup>3</sup>

A third method of estimating cost new is commonly referred to as cost to capacity method. This methodology assumes that not all costs vary with size in a straight line.<sup>4</sup>

Several other engineering methods may be used to estimate the cost of entire facilities or components of facilities; most of these methods are best used in chemical or petrochemical processing industries.<sup>5</sup>

As mentioned above, there are several methods for estimating the new cost of TPP. The common methods include the detail method, trending, cost to capacity, and other engineering methods. Of these four methods, the detail method and the trending method are commonly used in appraisals performed as part of an asset-based approach analysis.

The detail method, also known as the summation method, allows for a new cost to be assigned to each individual component of a property. The TPP is itemized or “detailed” so that the sum of the components reflects the cost new of the whole.

The trending method estimates the TPP reproduction cost new (not replacement cost new). In the trending method, an index or trend factor is applied to the TPP historical cost in order to convert (a) the known historical cost into an estimation of (b) the reproduction cost new.

22. Physical Deterioration. *Valuing Machinery and Equipment* describes the types or causes of TPP depreciation as follows:

The three types or causes of appraisal depreciation traditionally recognized by appraisers are physical deterioration, functional obsolescence and economic obsolescence. The traditional definitions of these terms are as follows:

Physical deterioration is a form of depreciation where loss in value or usefulness of a property is due to the using up or expiration of its useful life caused by wear and tear, deterioration, exposure to various elements, physical stresses and similar factors.

Functional obsolescence is a form of depreciation in which the loss in value or usefulness of a property is caused by inefficiencies or inadequacies of the property itself, when compared to a more efficient or less costly replacement property that new technology has developed. Symptoms suggesting the presence of functional obsolescence are excess operating cost, excess construction (excess capital cost), over capacity, inadequacy,

lack of utility, or similar conditions.

Economic obsolescence (sometimes called “external obsolescence”) is a form of depreciation where the loss in value of a property is caused by factors external to the property. These may include such things as the economics of the industry; availability of financing; loss of material and/or labor sources; passage of new legislation; changes in ordinances; increased cost of raw materials, labor, or utilities (without an offsetting increase in product price); reduced demand for the product; increased competition; inflation or high interest rates; or similar factors.<sup>6</sup>

The particular method used to estimate physical deterioration should be identified and defined. The specific procedures used by the TPP appraiser within the identified method should be explained. In addition, all significant data sources should be identified.

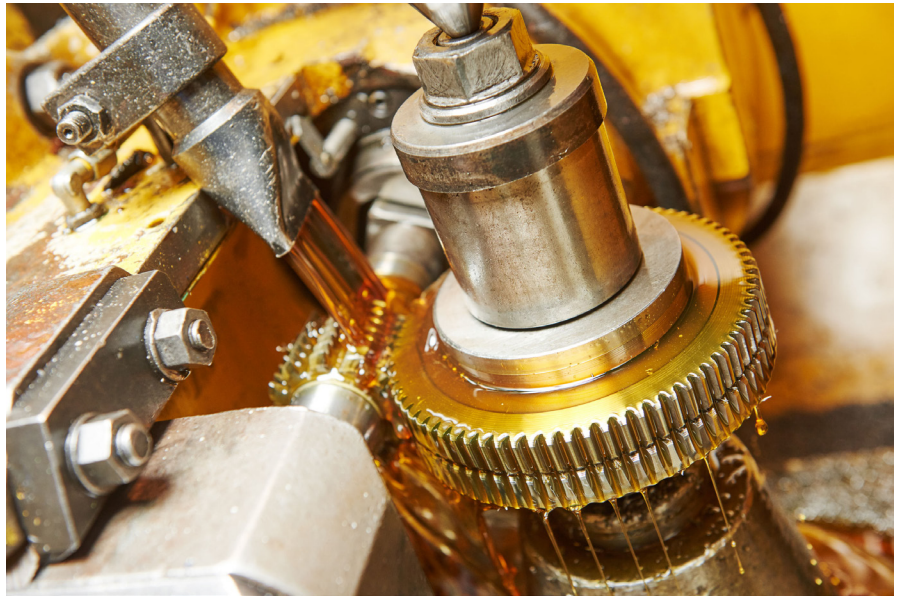
The three common methods for measuring personal property physical deterioration are (a) the physical observation method, (b) the age/life method, and (c) the direct dollar measurement method.

The appraisal report should adequately describe the method that was used and how it was used in the personal property appraisal. All appraisal terminology should be identified and defined. This recommendation is particularly relevant to the age/life method, which involves numerous nonintuitive “age” and “life” measures.

*Valuing Machinery and Equipment* presents the following summary description of these three common methods of estimating TPP physical deterioration:

Three methods of measuring physical deterioration that were discussed are observation, formula/ratio and direct dollar measurement.

In the observation method, the appraiser makes a compar-



ison based on the experience gained by looking at similar properties and comparing them to new properties.

In one variation of the formula/ratio method, physical deterioration is estimated based on a property’s use. Use is a good indicator of physical deterioration when the requisite production statistics can be obtained.

The age/life variation of the formula/ratio method uses the ratio of a property’s “age” to its “life” to measure physical deterioration. Although this is straight-line depreciation, it should not be confused with accounting depreciation because the appraiser uses valuation rather than accounting concepts of age and life.<sup>7</sup>

23. Functional Obsolescence. The industrial or commercial TPP appraisal report should:

- a. describe the concept of functional obsolescence,
- b. explain the method(s) used to identify and quantify functional obsolescence, and
- c. describe the data sources used in the functional obsolescence analysis.

*Valuing Machinery and Equipment* offers the following definitions of functional obsolescence (and of the related value decrement, technology obsolescence):

The next step in implementing the cost approach is to consider functional obsolescence. Functional obsolescence has been previously defined as the loss in value or usefulness of property caused by inefficiencies or inadequacies of the property itself, when compared to a more efficient or less costly replacement property that new technology has developed. Symptoms suggesting the presence of functional obsolescence are excess operating (i.e., manufacturing) cost, excess construction (excess capital) cost, over-capacity, inadequacy, lack of utility or similar conditions.

Some appraisers draw a distinction between functional obsolescence and technological obsolescence. They define functional obsolescence as a loss in value resulting from differences in capability between a new machine and the appraised machine, and technological obsolescence as a loss in value resulting from the difference between design and materials of construction used in present-day machines compared with those used in the machine being appraised. There is a legitimate difference of opinion as to how appraisers apply the concepts to measure the functional and technological aspects affecting value. Regardless of the terms used, the important thing is for the appraiser to measure the various factors that contribute to functional obsolescence.<sup>8</sup>

Two methods that are commonly used to quantify TPP functional obsolescence are as follows:

- a. Analysis of excess capital costs
- b. Analysis of excess operating costs

*Valuing Machinery and Equipment* explains common instances of functional obsolescence. If applicable to the TPP, these instances should be noted in the TPP appraisal report:

Functional obsolescence, particularly operating obsolescence, is typically found in the following situations:

- a. plants involved in the process industries;
- b. plants involved in industries that either use assets or manufacture products with a high degree of technology;
- c. older plants that have increased in size over time;
- d. plants in which there are a number of identical units;
- e. plants involved in industries that handle large volumes of material; and
- f. plants with areas of inactive machinery.<sup>9</sup>

24. External Obsolescence. Particularly in a TPP appraisal performed as part of an asset-based approach analysis, the TPP appraiser should describe:

- a. the factors considered in identifying external obsolescence,
- b. the methods used to quantify external obsolescence, and
- c. the specific data sources relied on in the external obsolescence analysis.

Many TPP appraisers distinguish between two forms of external obsolescence: (a) economic obsolescence (when the subject TPP does not generate adequate income to provide a fair rate of return to the property owner) and (b) locational obsolescence (when the obsolescence is a result of the location of the subject TPP).

Locational obsolescence affects real estate more often than it affects TPP. If applicable, the TPP appraisal report should distinguish between these two forms of external obsolescence.

25. Income Capitalization Approach. The income approach is particularly applicable to the valuation of TPP that is leased. This is because such TPP generates property-specific rental income. Examples of such property include commercial aircraft, railroad locomotives and rolling stock, over-the-road tractor/trailers, and so forth. When estimating value by the income approach, the TPP appraiser converts the property's expected rental income or cash flow into a present value.



There are two categories of income capitalization methods: (a) direct capitalization and (b) yield capitalization.

Direct capitalization methods rely on direct capitalization rates typically extracted from comparable sales. Additionally, yield capitalization methods rely on yield capitalization rates that are typically derived as the internal rate of return required by the typical investor. Since TPP has a limited life, yield capitalization is more commonly used than direct capitalization in TPP appraisals.

Value estimates may be calculated by applying an appropriate multiplier or capitalization rate to the TPP expected income or cash flow. The term “direct capitalization” is sometime used to refer to the procedure of extracting income multipliers or capitalization rates from comparable sales. Capitalization rates and income multipliers derived from comparable sales do not explicitly address profitability. Rather, they are simply observed ratios of income to value. Nonetheless, such market-derived capitalization rates can provide reliable estimates of value if:

- a. the expected cash flow is a representative income projection and
- b. the income multiplier or capitalization rate is derived from comparable sales with the same potential for future income.

The most common direct capitalization multiplier used for TPP is the gross income multiplier (“GIM”). The GIM is derived by:

- a. extracting GIMs from comparable TPP sales;
- b. comparing the comparable TPP attributes (physical, functional, and financial) to the subject TPP; and
- c. selecting an appropriate multiplier.

When either calculating value or extracting multipliers, the appraiser should ensure that the income (however measured) is calculated on the same basis.

Personal property value is commonly estimated by dividing the one period net operating income (“NOI”) by a capitalization rate. That rate is estimated by:

- a. extracting overall rates from comparable TPP sales;
- b. comparing the comparable TPP attributes (physical, functional, and financial) to the subject TPP; and

- c. selecting an appropriate capitalization rate.

Values are often estimated by projecting cash flow over a typical holding period and discounting the cash flow to a present value estimate using a discount rate. This valuation method is called yield capitalization (or a discounted cash flow analysis). The discount rate directly addresses the expected profitability of the subject personal property. The cash flow components typically projected in a TPP appraisal are NOI and the net proceeds from the property resale. The discount rate is also called the yield capitalization rate.

26. Sales Comparison Approach. The comparability of the selected sale transactions may be a controversial aspect of the sales comparison approach analysis. Therefore, market sale transactions data may be confirmed by the TPP appraiser or by a reliable delegate. This confirmation process may include inquiries into the circumstances causing the sale or affecting the transaction price.

Transactions selected for the sales comparison approach analysis may be adjusted, if necessary, to compensate for the effect of economic forces that influenced the TPP market during the time interval elapsed between the date of the comparable sale and the appraisal date. Market prices move upward or downward with changes in supply and demand, variations in business cycles, and changes in the value of money.

Another issue is the appraiser’s adjustments to the comparable sales to account for differences between the comparable properties and the subject TPP. Any adjustments related to differences due to variations in age, features, and quality of the comparable TPP versus the subject TPP should be identified and quantified in the appraisal report.

Market comparisons are based on an overall judgment as to the percentage value adjustment called for in order to make each sale comparable with the TPP. The overall percentage applied to each property in turn is justified by the appraiser’s explanation that the TPP is superior, inferior, or the same in relation to its type, fire, features, age, and condition. By adjusting the comparable sale prices upward or downward in accordance with the characteristics of the TPP, a market value estimate is derived.

The sales comparison approach is well adapted to situations where there are an adequate number of similar properties that have recently sold. When using these sales, the TPP appraiser should try to verify each sale in order to confirm the relationship of the parties, date of sale, and any financing terms. In analyzing comparable sales, it may be necessary to adjust a price if prices have changed between the time the comparable TPP sold and the subject appraisal date. Also, an adjustment is typically required if a comparable sale property's price was influenced by financing terms.

The cash equivalency method is often used to adjust for this price influence. The purpose of this adjustment is to reveal the price that a comparable TPP would have brought without the influence of atypical financing.

27. Reconciliation and Final Opinion of Value. The final procedure is the reconciliation of the various value indications into a final opinion of value. For TPP appraisals performed for many purposes, it is reasonable to conclude a range of values as the final value opinion.

For TPP appraisals that will be used in an asset-based approach analysis, however, it is more common to conclude a point estimate as the final value opinion. The nature of the reconciliation procedure depends on:

- a. the purpose and objective of the TPP appraisal,
- b. the individual valuation approaches and methods used, and
- c. the TPP appraiser's estimate of the reliability of each value indications derived.

When all three property valuation approaches are used, the TPP appraiser typically considers the relative dependability and applicability of each approach given (a) the TPP type and (b) the quantity and quality of data used.

In the reconciliation section of the appraisal report, the appraiser may (a) explain variations among the value indications of the different approaches used and (b) account for differences among the value conclusions derived.

28. Qualifications of the TPP Appraiser. The statement of the qualifications should describe the TPP appraiser's education and

training, experience and expertise, and professional credentials and designations. For appraisals used within an asset-based approach analysis, this statement should emphasize the appraiser's experience in conducting appraisals of similar industrial and commercial TPP.

29. Addenda. This section of the TPP appraisal report may include all exhibits, diagrams, schematics, flow charts, photographs, financial statements, legal documents, and other supplemental data not included in the narrative section of the report.

It is a good idea to include a table of contents at the beginning of the addendum. This table of contents should list the contents of the TPP appraisal report addendum.

## SUMMARY AND CONCLUSION

The asset-based approach is a generally accepted business valuation approach. The asset-based approach analysis of an operating company often includes the appraisals of the following asset categories: working capital assets, owned and leased real estate, tangible personal property, and intangible personal property.

This discussion focused on the appraisal of industrial or commercial TPP—as part of the asset-based approach to business valuation.

This discussion summarizes what analysts need to know about the industrial and commercial TPP appraisal process. And, this discussion summarizes what parties who rely on an asset-based approach business valuation need to know about the industrial and commercial TPP appraisal process.

### Notes:

1. *Valuing Machinery and Equipment*, 3d ed. (Washington, D.C.: American Society of Appraisers, 2011), 39.
2. *Ibid.*, 43.
3. *Ibid.*, 50.
4. *Ibid.*, 51.
5. *Ibid.*, 55.
6. *Ibid.*, 56.
7. *Ibid.*, 59.
8. *Ibid.*, 70.
9. *Ibid.*, 72.

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