

Collaborative Valuation: When Equipment and Real Estate Intersect

BY PARK R. JOHNSON, MBA, ASA, MRICS

APPRAISERS SHARE VALUES

IT MIGHT BE SAID WITHIN THE VALUATION COMMUNITY what has long been remarked about the English and the Americans: two peoples can be separated by a common language. Indeed all the appraisal disciplines, whether real or personal property or business and intangible asset valuation, share the same pedagogy; yet so often the shared concepts differ in their applications. For example, prevailing accounting rules may apply to certain equipment or business valuations, whereas the real estate appraiser looks to standards of practice. Rules are objective, regardless of outcome, whereas application of standards may vary with the individual, however rigorously applied.

Appraisers share professional values and a work ethic. In the United States, valuers subscribe to the Uniform Standards of Professional Appraisal Practice (USPAP).¹ The purpose of USPAP is to promote and maintain public trust that professional appraisers remain independent, impartial and objective in their respective valuation practices.²

It should also be noted that appraisers, regardless of the asset, deal in “value” as an economic concept, or as USPAP defines it: “the monetary relationship between properties and those who buy, sell or use those properties.”³ The “property” can be real, personal or intangible.

Preparing an appraisal involves research, analysis of all pertinent information and the proper experience, knowledge and judgment to make a reasonable and supportable opinion of value, regardless of asset type.

THE EMERGENCE OF THE EQUIPMENT VALUATION PROFESSION

Machinery and equipment (sometimes referred to as M&E) is a subset of personal property, but is most often

About the Author



Park R. Johnson, MBA, ASA, MRICS, is a principal at Arbor Advisory Group, Inc., a Chicago-based valuation firm specializing in equipment and inventory. Johnson has held leadership positions in the valuation practices of both Big Four and boutique asset-based lending firms. He has an master's degree in business administration from Georgetown University and a bachelor of arts degree from the University of California at Berkeley. Johnson now serves as editor of the MTS Journal, the peer-reviewed publication of the Machinery and Technical Specialties Committee of the American Society of Appraisers.

associated with industrial or purpose-built real estate. In this article, the author will adopt the more encompassing term “equipment” to denote this type of asset valuation. Equipment appraisal has its roots in the valuation of entire industrial plants for rate setting and property taxation. The valuation of individual pieces of equipment has a deeper legacy related to security for collateral lending and insurance purposes. Beginning in the 19th century, regulated utilities needed uniform replacement cost information to set rates of return when setting pricing.

The educational and business experience of appraisers varies with the asset type. While there is overlap, equipment appraisers specializing in whole plant valuations tend to come from an engineering background. Those who specialize in valuing for asset lending have bought and sold equipment, perhaps as auctioneers. Contrast this with real estate appraisers, traditionally schooled in finance, perhaps having worked in banking. Business valuers will be grounded in accounting.

Most of the equipment appraisal literature seems to have

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originated with the practitioners who have an engineering background. The Machinery and Technical Specialties discipline of the American Society of Appraisers (ASA), with nearly 1,200 members, is the best-recognized professional group of equipment appraisers.

The U.S.-based ASA is the largest multiple discipline professional valuation organization. The Royal Institution of Chartered Surveyors (RICS), a London-based international organization, has come to embrace professionals working in all aspects of the real estate industry as well as valuers, regardless of asset type. The MAI-designating Appraisal Institute, in contrast, limits itself to real estate valuers.

Many valuers have worked where asset types intersect. Look no further than financial reporting and property tax appeals. Both require real estate and equipment appraisers, if not business appraisers, to work together on behalf of a common client. Yet while all asset experts nominally use the cost, market and income approaches in valuation, the distinctions are significant, even as they are subtle.

COMPARE AND CONTRAST: PERSPECTIVES ON THE APPROACHES TO VALUE

Whereas real estate appraisers typically apply two, if not all three approaches to value, equipment appraisers may consider all three, but more often rely on only one: the cost approach. Equipment appraisers look to the other approaches for validation and support of the primary approach. The following discusses each of the three approaches to value from both the real estate and equipment perspectives:

The Market Approach – Real estate appraisers go to the market all the time. There is an abundance of data (not all of it good) available in the real estate arena. Equipment appraisers have more problems sourcing data and therefore do not use the market approach as often. Transactional data is at the heart of the market approach, yet availability and quality of this data is significantly different between the two asset classes. Equipment appraisers, when valuing equipment for lending, use the market approach. Most of the equipment sales data available comes from public auctions. These auction results are considered Forced Liquidation Values (FLV), which correspond to quick sales in the real estate industry. The premise of an FLV is acceptable when performing a valuation for lending against equipment. Another reason the market approach is not as frequently used to value equipment is that equipment valued in exchange does not incorporate the costs of installing and putting the

asset in service, which can be several times the base cost of the asset. When valuing equipment in an ongoing operation, it should be valued as operating, which usually means it is installed. The market approach is used in these circumstances carefully, and with adjustments to validate conclusions of value generated by another approach. If the market values are close to those generated by the cost approach, the appraiser then has confidence that the cost approach is correct.

As an example of the market approach, the valuation of aircraft is considered. Three comparable sales are located:

1. The first similarly configured plane was sold 12 months prior for \$350,000. It was located close to where the subject aircraft is situated. Its maintenance condition was worse than the subject aircraft and would require a \$25,000 adjustment to make it comparable to the subject aircraft. Indicators are that prices for this type of aircraft increased by five percent in the intervening year.
2. A very similar aircraft of the same vintage was sold in an adjacent country with a reported price of \$750,000. No other details are available.
3. The same model aircraft that is two years newer was sold for \$425,000 on the other side of the country. It was in a similar maintenance condition. An adjustment for the newer aircraft of seven percent is appropriate.

In considering the comparable assets, the foreign transaction is disregarded. Based on the other data, it appears to be an outlier and may include other assets than merely the aircraft. No adjustment is deemed necessary for the location of the third transaction, as the aircraft market is national, and even international in scope. The remaining data is evaluated as shown in Figure 1.

	Transaction #1	Transaction #3
Selling Price	\$350,000	\$425,000
Maintenance Adjustment Factor (1.05)	17,500	
Age Adjustment Factor (.93)		(27,750)
Adjusted Amount	367,500	395,250
Maintenance Adjustment	25,000	
Final Adjusted Amount	\$393,500	\$395,250

Source: Park Johnson

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In this case, the rounded conclusion of value might be \$395,000, or if the rounding convention were greater, \$400,000. Of note, aircraft are assets that are transacted frequently and sales data about them is relatively publicly available.

The Income Approach – This approach also is commonly used by real estate appraisers and is less commonly used by equipment appraisers. Equipment appraisers do not use it as frequently because it is difficult to attribute income to a specific piece of equipment. Equipment also usually generates income in conjunction with other assets, such as real property and intangible assets. The income approach is used to value equipment in the lease arena and in the case of unitary facilities such as chemical plants and refineries. Even in these cases, other approaches to value are used as well.

As an example of the income approach, consider a group of equipment assets with a specifically identifiable and attributable stream of income of \$100,000 per year for the next five years and a future value at the end of the period of \$75,000. The required rate of return of this category of assets is seven percent. The date of valuation is day one of year one. The valuation might look as shown in Figure 2:

Figure 2

	Year 1	Year 2	Year 3	Year 4	Year 5
Income Stream	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000
Future Asset Value					75,000
Present Value Factor	.9346	.8734	.8163	.7629	.7130
Value	93,460	87,340	81,630	76,290	124,775
Sum of Values	463,495				
Value Conclusion	\$465,000				

Source: Park Johnson

As one can imagine, there are a number of assumptions in this analysis, which may or may not be determinable. This example is based upon the assumption that all cash proceeds are received on the final day of the year. Another way to look at this would be that the income is received equally over the year and the proceeds from the sale of the equipment are received at the end of the year. This would result in a slightly higher conclusion of value.

The Cost Approach – The reason that equipment appraisers apply the cost approach differently than do real estate appraisers is because of the number of equipment assets. If one disregards valuation for lending, the cost

approach, incorporating all forms of obsolescence, is the most commonly used approach to value equipment. In the cost approach, real estate appraisers will start with building dimensions, building class and quality of construction. They will then refer to a replacement cost source such as Marshall Valuation Service, RSMMeans or Gardiner & Theobald. An equipment appraiser will start with a fixed asset ledger containing historical costs and will apply a trend factor to bring these entries to a current reproduction costs (the indirect cost approach). If the number of equipment assets to be valued were ten, or even 20, an appraiser could contact a vendor and try to determine the selling price of the current version of a piece of equipment. However, asset listings can range from the tens to the hundreds of thousands of assets. The number of assets precludes individual research on each asset. Additionally, replacement cost data for machines are not published and are frequently regarded as a trade secret because some clients get better prices than others; therefore, vendors are frequently unwilling to share this data.

Trending a historical cost renders a Reproduction Cost New, which is defined as “the current cost of producing

a new replica of a property with the same, or closely similar materials, as of a specific date”⁴ as opposed to a Replacement Cost New, which is defined as “the current cost of a similar new property having the nearest equivalent utility as the property being appraised as of a specific date.”⁵ It is possible, perhaps even common, for a replacement cost to be less than a reproduction costs because of technological advancements. If this is the case, adjustments may be appropriate to bring the reproduction cost to replacement cost.

An example of valuation using the cost approach reviews a five-year-old asset that cost \$500,000 when new, with

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an expected useful life of 15 years and no value at the end of that period. Inflation on this type of asset has averaged three percent since it was built. No functional or economic obsolescence exists. The valuation might look as shown in Figure 3.

<i>Figure 3</i>		
Cost	\$500,000	
Trend Factor	1.15	$1+(.03*5)$
Reproduction Cost	\$575,000	
Percent Good	.667	$(1-(5/15))$
Unrounded Conclusion	\$383,333	
Rounded Conclusion of Value	\$385,000	
Source: Park Johnson		

With due consideration of asset categories that have different lives, inflationary effects and disposal values at the ends of lives, this method of valuation can be used to value many thousands of assets.

OPPORTUNITIES FOR COLLABORATION

Despite the fact that real estate and equipment appraisers approach valuation differently, there are areas in which they value assets for the same purpose. They frequently work together on appraisals for financial reporting—purchase price allocation [Accounting Standards Codification {ASC} 805] and impairment [ASC 350 and ASC 360]—and appraisals for property tax appeals. Using an example of an integrated paper mill, there will be a building and there will be a paper machine. One of these assets is real estate and one is equipment. There will also be a steam boiler, which will provide steam used in production. It may also provide steam used for heat. There will be large built-in tanks with a mixer at the bottom. There will be overhead cranes and crane-ways. Inside the building there will be holes in the floors, walls and ceilings through which materials will be transported. Purely from an appropriate division of assets, it is helpful for the equipment and real estate appraisers to work together. If the sale involves some distress, as many do because the use of paper is declining, then additional functional and economic obsolescence needs to be considered. In the case of an appraisal for a purchase price allocation, a key client deliverable is a fixed asset ledger populated with fair value entries that enable the client to start depreciating assets as of the acquisition date. As equipment appraisers already use the fixed asset register as a key source document in

their valuation, they will usually incorporate the real estate appraiser's values into their work as opposed to the other way around. There are opportunities for the two appraisers to work together to ensure that all relevant assets are captured and none are duplicated.

The two appraisers can work together to ensure that:

All real estate-related assets are appropriately classified as real estate for valuation purposes. While the fixed asset entries are not used by the real estate appraiser in conducting the valuation, the historical and depreciated costs are used by the client in evaluating the concluded values. Appropriately matching the numbers makes for a more relevant comparison.

The asset entries on the ledger match up to the assets that should be there. Fully depreciated assets frequently are not removed from the asset ledger (ghost assets) when they are disposed of as they no longer affect the financial statements. If these assets that have been disposed of are left on the asset register during the appraisal, they may lead to an inaccurate comparison of value to cost (real estate) or the valuation of an asset that does not exist (equipment). Cleaning up the asset register (removing ghost assets) can provide a better resource to the client and lead to a more meaningful appraisal.

The asset entries on the asset ledger match up to the items included in the valuation source used. If the cost source, or the market comparable data, or the income stream used for comparative purposes does not include an asset that is included in your appraisal, that asset must be considered separately, perhaps by the equipment appraiser.

In an appraisal for impairment testing under ASC 350 or ASC 360, goodwill and long-lived depreciable (amortizable) assets are tested for impairment annually (goodwill) or when an event occurs that leads management to believe that the asset is impaired (goodwill and long-lived assets). Other than the regularly scheduled annual test of goodwill, events that lead to an impairment test usually involve the deteriorating financial results of a business or a business-reporting unit. This type of analysis usually means that a third type of appraiser is involved—a business valuation specialist. They like to say they are in the valuation business as opposed to the appraisal business. This appraiser will perform a valuation of the business or business-reporting unit, the intangible assets, and will provide assistance in performing a cash flow analysis on long-lived assets.

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Real estate appraisers are familiar with using an income approach to value assets and frequently source their discount or cap rates from the real estate market.

Equipment appraisers, on average, are less experienced in using an income approach because it is less frequently used in equipment valuation. Even within the infrequent occasions they use the income approach, they rarely capitalize a stream of income. The shorter life span of equipment precludes this. They use a discrete period discounted cash flow analysis. In an impairment analysis, the cost of capital risks associated with the equipment are closer to those of the business as a whole than they are to an independent lease market. Therefore, the discount rate used in an income approach used for equipment in an impairment analysis frequently comes from the business valuation appraiser. Real estate and equipment appraisers have an opportunity to work together to understand how their discount rates coincide and differ, and why they do so.

Another area in which real estate and equipment appraisers can work together is in property tax appeals. To be frank, appraisers are not engaged because a client agrees with an assessment. Clients hire appraisers in the hope that their conclusion of value will be lower than that of the assessor. Equipment is usually only a material component of certain types of property, such as special purpose industrial property, chemical plants and refineries.

Most assessors will use or mandate the use for self-reporting of some form of indirect cost approach based on Marshall Valuation Service (MVS) for equipment valuation. In a valuation performed for property tax appeals, functional and economic obsolescence not contemplated in MVS depreciation are examined and applied if present. While functional obsolescence in real estate may be manifest in rooms that are too small or high bays that are too low, and economic obsolescence may be manifest in the form of changing zoning, the two forms of obsolescence are measured differently for equipment. Functional and economic obsolescence for equipment in a plant as a whole is measured by output or economic benefit provided. For purpose-built facilities, this type of analysis would be appropriate for the real estate appraiser as well.

If the equipment is producing less than it was designed for, functional obsolescence may exist. If the demand for a product is such that a facility is operating under capacity or cannot operate at a capacity that is high

enough to satisfy demand, then functional or economic obsolescence may exist. While it is possible for real estate and equipment appraisers to perform valuations for assessment appeals without speaking to each other, they may not be doing the client any good. Both reports will be going to the same assessor's office. The assessor can use difference in observed condition or assumptions in one report to attack the other. Obsolescence need not be the same in both reports, but both appraisers should understand how their assumptions on obsolescence are the same and different from those used by the other appraiser and why.

Property tax appraisals are done in a framework where the rules can be different in each jurisdiction. Laws are established by states. Rules are set by state and local assessing bodies. Courts affirm, interpret or overturn laws and rules. Local practices dictate what has become acceptable without challenge. The facts dictate that it is important for an appraiser to be intimately familiar with state/jurisdictional statutes, assessing policy and guidelines, and court rulings. Appraisals have been rejected for not complying with these items.

Not all states assess ad valorem taxes on equipment, however, those that do not sometimes classify items that are treated as equipment for appraisal purposes as real property for taxation. It is useful for a real estate appraiser to have someone who is experienced in valuing that type of equipment be available to help him or her when needed.

There are many types of property and valuation engagements in which real estate and equipment appraisers will not overlap. There are a few, such as valuation for financial reporting and property tax appeals, that probably will overlap because both asset categories are present and both reports will be reviewed by an external party comparing the assumptions used. While financial reporting and property tax appraisals are used as examples of cooperation between appraisers of different asset categories because the cooperation is common and well documented, opportunities to cooperate in other cases, such as litigation and feasibility studies, exist as well. Both real estate and equipment appraisers can benefit from working together. While the approaches they use to value the assets are the same, the methodologies they use to implement the approaches are different. Both sides can benefit from the fact that they look at things differently. There also can be an overlap of assets, which might be omitted or double counted if the two appraisers do not work together. In time of distress (impairment

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and property tax appeals), measurement of obsolescence should be made with an understanding of what the other appraiser thinks and is going to use in his or her analysis. If possible, the two appraisers should try to get to know each other prior to specific engagements. Client work is always performed under deadline pressure, leaving less time to constructively learn how the other appraiser works. When talking of how appraisers of different disciplines describe what they do, one might refer to the analogy of the three blind men describing an elephant. Each one felt a different part of the animal and described *only* what he felt. In order to work together, everyone needs to be able to describe the entire elephant.

POSTSCRIPT: RESOURCES AVAILABLE TO EQUIPMENT APPRAISERS

Most used equipment sales are private transactions whose prices are difficult to obtain, therefore it is difficult to obtain market data. A number of organizations have undertaken to compile transactional data for sale. These include: DataRef, HeliValue\$, Green Guide®, NADA guides. These sources differ in price, premise of value, how current the data are and where the transactions are located. Some Internet marketplaces such as Ritchie Bros. and eBay provide transaction information without charge. Some equipment resellers are willing to provide a quote for an item. These are good sources, but are by no means

comprehensive. Primary sources for pricing are dealers who buy and sell specific types of equipment. Because they are in the market regularly, they have a good knowledge of current values. Many of these dealers are also appraisers and therefore may be reluctant to give pricing data to someone they view as a competitive resource. The trick is to make friends and get them to share. It can be said that knowledge of a local market is a critical real estate appraisal skill. Knowledge of where to get data for specific types of equipment is a critical equipment appraisal skill. ■

ENDNOTES

1. Outside of the United States there are other appraisal standards. Some countries require adherence to USPAP. Some countries publish their own standards and some require adherence to international valuation standards. All of these standards have similar goals. They use varying languages and approaches to achieve them.
2. Uniform Standards of Professional Appraisal Practice (USPAP), The Appraisal Foundation, 2014-2015 Edition, p. U-5, lines 148-149.
3. *Ibid.*, p. U-4, line 141.
4. *Valuing Machinery and Equipment: The Fundamentals of Appraising Machinery and Technical Assets*, the Machinery and Technical Specialties Committee of the American Society of Appraisers, 2nd Edition, p. 585.
5. *Ibid.*, p. 585.