



# BASIC Economic Tools OF RIGHT OF WAY VALUATION

by Max J. Derbes, Jr., SR/WA, MAI, ASA

Available to appraisers of Right of Way are a number of economic principles which, if properly understood, can be of assistance in the mental processes leading to value. Most of these are known to experienced appraisers, although they may not recognize the importance of these "tools" or specifically identify some as part of the process. Following is a list of some of the more significant ones:

- Data Analysis Distillation
- Highest and Best Use Optimum Property Theory
- Theory of Relative Value
- Incentive Pricing Theory
- Overall Standards of Comparison
- Breakdown Method of Sales Analysis
- Diminimus/Equivalency/Maximum

Under ideal circumstances of a sufficiency of relatively similar, recent comparable data, the valuation thought processes do not require many of these economic theories. In reality, many right of way problems lack the luxury of adequate data. A brief discussion of the principle aspects of each "tool" are covered here to more specifically clarify the above methodologies.

## DATA ANALYSIS DISTILLATION

After the identification of the property to be appraised and the right of way project involved comes the collection and analysis of data. In order to properly identify the relevant data, buyer and seller motivation and highest and best use require determination. Resolution of the subject property's highest and best use may need to wait until relevant data is fully analyzed.

Appraisers estimating market value need to focus the search for sales and rental data on the most pertinent. Therefore, the most significant market data will have the most similarity of physical features, buyer and seller motivation, and highest and best use. The thought processes involve recognizing the market of both the subject property and the comparables.

There are many obvious reasons why sales and rentals are not comparable:

- Physical differences indicate the comparable would not act in the same market as the subject property,
- Differences in highest and best use,
- Significant differences in land value-to-building value ratio,

- Questionable sale terms, sale of partial interests, sale of business, leasebacks, sales with large amounts of personal property, and
- Dissimilarity of the parties' motivation.

The buyer motivation can be broadly classified as: 1) Typically owner/occupied for occupancy and use such as single family homes, condominiums, and special-purpose industrial plants; 2) investment properties from small apartments up to multi-story office or hotel properties; and 3) speculative properties such as vacant land and properties in the path of progress.<sup>2</sup> These differences in motivation are basic, although, some appraisers who value large, viable owner/occupied industrial plants with sales of old abandoned plants converted to multi-tenant investments.

Understanding real estate markets involves understanding sub-markets. The physical aspects of different land parcels along a major collector road appear similar; however, small lots may operate in a different sub-market from large land plots which can house big-box retail outlets. In partial taking cases, the significance of sub-markets involves the total before market value and likewise the estimation of the market value of the remainder. In some cases, the before property operates in one sub-market and the remainder after the taking operates in another.

It is not possible to identify sub-markets by classifying highest and best use as industrial or commercial or residential. In each of these broad categories there are many types and sizes, uses and motivations. If a commercial is a strip shopping center, it is not a regional mall. If a manufacturing plant is the highest and best use, warehouses, distribution centers, truck terminals and so forth are also industrial, but not comparable to a manufacturing plant.

In right of way work (particularly cases which may be litigated), it may be advisable for appraisers to make note of sales which appear comparable and indicate in the appraisal report why the sales are not considered comparable. Such sales have been variously identified as "non-comparable" comparables and as "defensive comparables." Inclusion of these sales in the report reveals that the appraiser was aware of the sale and, in advance of litigation, explains why the sales is not relevant.

## HIGHEST AND BEST USE - OPTIMUM PROPERTY THEORY

All three approaches to value - cost, market and income - are directly influenced by the highest and best conclusion of the appraiser. In the distillation process above, highest and best use of the subject property will dictate the selection of the most relevant data. Each parcel of improved land has two highest and best uses: that of the land as if vacant and ready for development and that of the improved property as existing. It is important in partial taking cases to recognize that both the before value and the value of the remainder may have different uses of both vacant land and the improved property. The market value of both the before value and the remainder value should be based upon a consideration of their respective highest and best use.

For each parcel of real estate there is an ideal combination of land and improvements which will accomplish the highest and best use and at the least cost. In the case of vacant land, speculative real estate, this may be to hold for future use.

In some circumstances such as a land parcel located on a strip commercial street, there may be a number of alternate uses such as a small office building, a retail commercial, a service station, a bank, and so forth. No one use is preferential for every parcel of land. The market indicates that all users will pay a similar amount per square foot for the land. For each use, there is an optimal proportion of land and improvements. The ideal mixture at optimal costs produces the optimal least cost and least cost of maintenance. Overadequate



monumental construction may be optimal to establish stability, strength, or reputation of institutions such as banks and even restaurants.

When appraising an older improved parcel, the difference between what is there and the optimum property helps establish the relative value of the subject property. Part of the effect of age, wear and tear, and even obsolescence, diminish the value in comparison with the optimum property. The effect of the taking on the remainders in partial taking cases also relates to the difference between the optimum property and the remainder property.

### THEORY OF RELATIVE VALUE

All lands which compete in the market have a relative value to each other. Lands which have a slightly different highest and best use relate in value also. There is even a relative value to lands in a given locale which are worth more or less than the property being appraised. Obviously, it is easier to relate values of more similar properties than those in remote locations or of vastly different uses. Right of way appraisers should be particularly cognizant of the relative nature of values and the fact that the most similar properties will have the closest relationship.

All historic depreciation theories relate to the theory of relative value. Since the value of all improved properties lies at some point between zero and cost new, there is an identifiable relationship among all similar properties in the same market environment. When considerable physical difference exist among comparable improvement properties in an active market, the appropriate point on the value range can at times be identified more readily by the use of the cost approach than by direct sales comparison approach.

Relative values play a significant part in cases involving a whole series of somewhat similar properties in a right of way project. Insofar as practical, the appraiser needs to establish the value of each parcel taken as that parcel's value relates to all the others.

### INCENTIVE PRICING THEORY

In real estate economics, older, less functional properties must be priced at levels that allow them to compete with new, optimal properties and with more desirable older properties. The incentive pricing of older properties reduces the buyer's original investment outlays. This reduces carrying costs and compensates the buyer for the higher maintenance and operating expenses of the real estate. The incentive pricing theory can be illustrated by a thermometer originally developed by Donald Treadwell, Sr. of Michigan.<sup>3</sup>

For example, assume that a single family house would rent for \$1,000 per month before any announcement or construction of the project. After the reduction of the front set-back from 30 feet to 15 feet, how much would the rent need to be reduced to attract renters. This is measured by the amount of incentive rent. Would the typical renter pay \$800 per month? Or \$700? Or what?

Incentive pricing relates to sale price also. If the house would sell for \$150,000 before the taking, what will the price need to be to attract buyers. If the only change is 15 feet of setback, could a typical buyer be attracted to the house with the price of \$140,000? Or, \$135,000? Or what? Incentive pricing is a reasonable tool to employ, especially in partial taking cases.

### OVERALL STANDARDS OF COMPARISON<sup>4</sup>

Appraisers should think in terms of units of measure or standards when comparing unimproved land. The price per front foot of land is typically not accurate except when the depths are proximate for both the comparable and the subject. The use of land area standards such as per square foot or per acre apply in all other cases. Area standards are particularly significant when there exists a significant amount of data.

Standards of measure are useful in illustrating relative value. Differences among the various comparables can be observed with the use of standards; however, appraisers should be cautious about adjusting sales when using the standard. For example, if \$10,000 worth of fill is need on the subject property as compared with the comparable, the unit price of \$6.00 per square foot of the comparable should not be adjusted down 10% (i.e. \$0.60 per square foot) if the \$10,000 amounts to but \$0.25 per square foot for subject's 40,000 square feet. The per standard adjustment should logically relate to the appropriate gross dollar adjustment.

## VALUE THERMOMETER

REPRODUCTION  
COST NEW

EXCESS  
CONSTRUCTION  
COST

REPLACEMENT COST  
NEW (MAY BE A  
DIFFERENT PHYSICAL  
PLANT DUE TO TECHNOLOGY

AGE AND CONDITION  
DETERIORATION

CURABLE AND  
INCURABLE  
FUNCTIONAL  
OBsolescence

MARKET OR  
EXTERNAL  
OBsolescence

MARKET  
VALUE

The "Value Thermometer" composed by Donald Treadwell, Sr., SIOR, MAI, first appeared on Page 503 of the *Industrial Real Estate* (1984) publication of the Society of Industrial Realtors. It is copied with the permission of the Society of Industrial and Office Realtors of the National Association of Realtors.



For improved property, there are two overall standards: price per square foot overall including land, minor improvements, and yard improvements; and price per square foot net of the major improvement. In the former case, the square footage of the major improvements of the comparable is divided into its total sales price. In the latter case, the breakdown method of sales analysis (explained below) is used.

There is no need to use the breakdown method of sales analysis when the percentage of value of the land, minor improvements and yard improvements of the comparable and the subject property are somewhat similar. Overall standards are useful in the selection of comparable data when there exists a significant amount of such data.

It may be possible to use overall standards as a comparative method by making adjustments for differences in land, minor building and yard improvement values. To illustrate, assume that the comparable's land value is \$200,000 in excess of subject's land value. It may be possible to adjust the comparable's sale price down \$200,000 and use the resultant square foot overall price as adjusted:

**Actual:** \$1,800,000 price for 50,000 square foot building = \$36/Per S.F.

**Adjustment:** \$1,800,000 minus \$200,000 = \$1,600,000

**Standard:** \$1,600,000 divided by 50,000 SF = \$32.00/Per S.F. Overall

#### BREAKDOWN METHOD OF SALES ANALYSIS

In this system, the total price paid for an improved property is allocated to the various components of the physical property as follows:

**Land:** The estimate market value of the land is estimated based upon comparable sales. Usually, the market value of the land as if theoretically vacant and available for development is used; however, for under-utilized land, the market value of the land for the existing use may be more relevant.

**Minor Building Improvements:** Residences may have carports or garages and other minor building improvements such as a garden storage shed or a swimming pool. Industrial properties often have smaller buildings. The market value contribution of these minor building improvements need to be estimated based upon cost less accrued depreciation or on sales experience. Age and function are significant in the value of these.

**Yard Improvements:** Most improved real estate has yard improvements such as drives, parking areas, fences, landscaping, and so forth. An allocation of a portion of the purchase price should be estimated based upon either cost less depreciation or sales experience. The older the improvements, the less they contribute.

**Major Improvement(s):** The estimated price per square foot for the major improvement(s) is the residual of the purchase price after deducting from the total price paid, the estimated allocation of the price estimated for the above three categories.

The methodology of the breakdown method of comparable sales analysis "prices" the least valuable physical property which results in an indicated market value per square foot of the major building. The residual value for the main building will be slightly distorted by errors in the estimation of the contributory value of the land and minor improvements; however, the error will not be significant if similar errors are consistently applied to all the comparables.

Since most right of way valuation demands pin point estimates, the appraiser is responsible to determine where on the range of values reasonable truth lies.

Once the value per square foot of the comparable's major building is calculated, the building can be compared with the subject property's building and adjustments plus or minus per square foot for the differences can be measured. Once all of the comparables sales have been likewise studied, the eventual resolve of the probably per square foot value of the subject's major building can be estimated. To derive the indicated value of the subject property, the "build-back" process involves the indicated value of the improvement plus the land value of subject property is estimated from the market and an estimate of the contributory value of the minor building improvements and the yard improvements.

The breakdown method of comparable sales analysis works when there are a few sales of similar properties with

variations of percentage of value contribution of the main building, land value, minor buildings and yard improvements. Adjustments for these differences can be logically made once the important sales evidence of the value of the main building has been derived. This is an economic tool of great importance if approached logically and objectively.

#### DIMINIMUS/EQUIVALENCY/MAXIMUM

From the beginning of the process of estimating just compensation for a right of way all the way to the final report, the data found and analyzed tends to indicate ranges of value for the total property value before the taking, for the part taken, and for any diminution in value to the remainder. Such data tends to indicate a range of value. It identifies the diminimus or lower limit of value. Mainly, the data should also indicate an equivalency. Furthermore, the data indicates a maximum. Since most right of way valuation demands pin point estimates, the appraiser is responsible to determine where on the range of values reasonable truth lies.

Such a decision should not, in any way, relate to averages. Value decisions should be based upon logic and objective, studied judgement. The "tool": appraisers have is to recognize the validity of ranges of value and the logic and reasonableness of final determinations. Understanding the motivations and propensities of buyers and sellers in the particular sub-market in which the property operates gives meaning to the term "market value."

1. Many of the ideas in this article were included in the publication of the Society of Industrial Realtors, *Industrial Real Estate*, 1984, Chapter 12, pages 497-529. This chapter was composed by Max J. Derbes, Jr.
2. Max J. Derbes, Jr., "Use, Development, or Speculation of Real Estate", *The Appraisal Journal*, April 1964, pages 219-228.
3. *Industrial Real Estate*, Ibid, pages 501-503.
4. *Industrial Real Estate*, Ibid, page 508.