Rural Valuation Topic #RVT 27: Rural Commercial with Equivalency Ratio Procedure

Commercial Property is defined as, "income-producing property such as office buildings, retail buildings, hotels, banks, restaurants, service outlets, and owner-occupied properties that are capable of become income-producing should the owner decide; usually zoned for business proposes"[1].

Light Industry & Light Manufacturing is defined as, "industries and manufacturers with less extensive physical plant requirements than heavy industry"[2].

Neither definition speaks to low volume rural sales with limited similarity. Sales are generally building-intensive and vary from common square or rectangular "boxes" to vertically integrated components of an agricultural operation or business with special design and/or equipment. Portions of one or more buildings in a rural "compound" may be finished as office space, or to a degree higher than the manufacturing, warehousing or storage space. Thereby, the assignment complexity accelerates.

ASFMRA Recommendation: Considering the limited sales volume available, extended verification and analysis becomes necessary. The process discussed in Advisory Opinion RVA #26 for "rural residential" also provides a procedure to "standardize the data set" to a _common denominator_.

For valuation, the geographical "area" may have to be expanded to identify sufficient sales; possibly to multiple counties or states. Thus, the ability to "standardize" the data for analysis is essential. The ER/EF rural valuation procedures described in earlier Rural Valuation Advisories may provide understanding and the process to address multiple buildings with varying degrees of similarity within the same property.

- If the property is land intensive, the land-mix or ER procedures may have to be employed to account for multiple land components, i.e., mountain rec., meadow, low elevation pasture, etc.) --- all within the unitary whole.
- If the property is building intensive and contains multiple buildings, the same ER procedure can be used to allocate and then compare the improvements via the building-mix calculation.

For rural commercial/light industrial types, complexity typically centers around a single structure with several levels of finish and/or utility as well as multiple buildings located on either small or large tracts. The first step is approximating the land portion from vacant land sales leaving the "cumulative building residual". Sale Q1, shown below, has $250,000 attributable to the land leaving $1.5 million (87.5% of the total price) to the structures. This is an example of a "building intensive" property.

	Sale Q1: Appraiser's Analysis	
	Price =	$ 2,000,000
	Site Contribution =	$ 250,000
	Building Contribution =	$ 1,750,000

The next step allocates $1.75 million building residual to individual structures. There are several options for the 100% "base" needed for the ER/EF (equivalency ratio or factor) computation. In this example, a "unfinished warehouse" was _selected_ as the standard. The process then converts all structures and degrees of finish to the 100% base (unfinished warehouse). The question is how many square feet of finished office within a warehouse

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[1] Appraisal Institute, _The Dictionary of Real Estate Appraisal_, 6th Ed., (Chicago: AI 2015, p. 40)
[2] Ibid, p. 131)

(#3 below) at $40/sf (from sales) equates to the same value as 1 sf of unfinished warehouse at 100%? The mathematical relationship is ~1.25-to-1, or 12% ($40/sf office ÷ $30/sf unfinished warehouse = 1.25 times or 125%) see Lines #1 and #3 line in the example below).

	a)	b) $/Unit Sale Contrib.	Ratio %	c) $/Unit RCN	Ratio %	d) $/Unit Rent/Yr.	Ratio %	e) Reconcile Ratios
	Entire Data Set **Building Inventory**							
1.	Unfinished Warehouse/Lt. Ind. *(no insul./heat)*	$ 30.00	100%	$ 40.00	100%	$ 12.00	100%	100%
2.	Finished Warehouse *(Metal Span)*	$ 50.00	167%	$ 75.00	188%	$ 20.00	167%	170%
3.	Finished Warehouse Office/Lt. Industrial	$ 40.00	133%	$ 50.00	125%	N/A	N/A	130%
4.	Detached Warehouses/Lt. Ind. *(finished)*	$ 25.00	83%	$ 32.50	81%	$ 9.50	79%	80%
5.	Detached Warehouse/Lt. Ind. *(unfishished)*	$ 20.00	67%	$ 27.50	69%	$ 7.50	63%	67%
6.	Detached Storage *(no water or heat)*	$ 12.00	40%	$ 18.50	46%	N/A	N/A	40%

1 *Warehouse: Essentially building shell, overhead and walk-in doors, & concrete pads*

2. *Warehouse: Finished interior walls, heated/insulated/AC, restrooms, exterior concrete pads, 2+ overhead doors*

3. *Warehouse-Office: portion finished as part of building described in #1*

4. *Detached Warehouse (interior walls finished)*

5. *Detached Warehouse (unfinished)*

6. *Detached Storage (unfinished)*

Three (3) market *relationships* were examined (b, c, and d above) for each structure from sales, replacement costs, and rental rates. The "ratio" reconciliation should usually center on allocated sale prices (Column b); however, if a market area lacks one or more of the buildings in the "total data set" (i.e., encompasses all buildings for which an allocation will occur).

> Note: Sales with one or more older buildings (or buildings having functional issues) may not be inventoried or may not contribute to value even though they physically exist.

Sale Q1 (below) was allocated to the "unfinished warehouse" standard or "base" shown at 100% (Line #1) from the ratios reconciled in "e" above.

	Data Set: Total Building Inventory	Ratios	Gross SF	$/Gross SF	Subtotal			Equivalent Bldg. Sq.Ft. @ 100%
1	Unfinished Warehouse/Lt. Ind. *(no insul./heat)*	**100%**	10,000	32.18	$ 321,809			10,000
2	Finished Warehouse *(Metal Span)*	170%	20,000	54.71	$ 1,094,152			34,000
3	Finished Warehouse Office/Lt. Industrial	130%	1,800	41.84	$ 75,303			2,340
4	Detached Warehouses/Lt. Ind. *(finished)*	80%		25.74	$ -			-
5	Detached Warehouse/Lt. Ind. *(unfishished)*	67%	12,000	21.56	$ 258,735			8,040
6	Detached Storage *(no water or heat)*	40%		12.87	$ -			-
			43,800	$ 39.95	$ 1,750,000	$	32.18	54,380
						ER Factor =		124.16%

Blended Bldg. Overall $/sf
($1,750,000 ÷ 43,800) $/sf @ 100% *($1,750,000 ÷ 54,380)*

Solve Algebraically for "X" *(100% Bldg $/sf)*	*(10,000 X 1x) + (20,000 X 1.7x) + (1,800 X 1.3x) + (0 X 0.8x) + (12,000 X 0.67x) + (0 X 0.4x)*
x =	*$1,750,000 ÷ 54,380 = $32.18 per sq. ft. for the 100% building equivalent*

Total Bldg. Contribution: $1,750,000 ÷ $32.18/sf = 54,382 equivalent square feet at 100%

÷   43,800   Gross (actual) square footage

=   124.16% EF (equivalency factor)

(NOTE: the last column (orange) shows 12,056 due to Excel rounding in the computations)

The total set of sale buildings contribute $1.75 million or $39.95/sf (gross $/sf (green)). This is a *"blended" $/sf* *consisting of several structures* some structures above the $32.18/sf unfinished warehouse "base" and some below. All buildings standardized through the allocation ratios to the square-footage equivalent (orange). This sale building-mix has 54,380 "effective square feet" due to the level of finish and/or quality. The ER or EF (equivalency factor) is 124.16% (54,380 sf equivalent ÷ 43,800 sf gross = 124.16%). The percentage is greater than 100% since nearly half of the square footage is "finished warehouse" while the 100% standard is "unfinished" warehouse.

Initial data standardization may take some time. Once completed, the quantification (paired sales analysis) of any element is visual and easy to understand. The allocated 100% $/sf standard is shown in green. Two gray sales have superior condition; thus, a -$5/sf (minus) adjustment was visually shown.

Subject's Valuation *(mixed sales)*		Sale Q1	Sale Q2	Sale Q3	Sale Q4	Sale Q5	Sale Q6
Date	Subject	Current	Current	Current	Current	Current	Current
Price		$ 1,875,000	$ 2,450,000	$ 4,225,000	$ 3,600,000	$ 2,800,000	$ 2,200,000
Land Contribution *(from sales)*	???	$ 275,000	$ 175,000	$ 350,000	$ 300,000	$ 175,000	$ 200,000
Building Contribtion		$ 1,600,000	$ 2,275,000	$ 3,875,000	$ 3,300,000	$ 2,625,000	$ 2,000,000
Equivalent Sq. Ft. @ 100%	20,502	54,380	60,050	122,500	98,900	71,600	61,800
Gross Bldg. Sq. Ft. *(only Q1 allocated above)*	18,360	43,800	54,815	116,202	82,191	60,580	56,781
Bldg. ER *(Equiv. Rating)*	111.67%	124.16%	109.55%	105.42%	120.33%	118.19%	108.84%
Building Allocated 100% Price *($/sf)*	???	$ 32.18	$ 37.89	$ 31.63	$ 33.37	$ 36.66	$ 32.36

Higher prices for Sales Q2 & Q5 (boxes) are due to superior condition; paired to the remaining sales similar to subject's conditoin (Sales Q1, Q3, Q4, and Q6) shows ~$5/sf difference

Pairing for Condition *(Adjustment)*		$ -	$ (5.00)	$ -	$ -	$ (5.00)	$ -
Condition Adjust'd Equiv. 100% Price		$ 32.18	$ 32.89	$ 31.63	$ 33.37	$ 31.66	$ 32.36

Valuation: Subject's Bldg. *(Eqiv. Sq. Ft.)*	20,502	x	$ 32.50	
Bldg. ER *(Equiv. Rating)*		x	111.67%	=	$ 744,052

(NOTE: Subject's Bldgs can be allocated using Bldg Ratios & inserted individually: example below)

Subject's Land Contribution *(from sales used in allocation)*	$ 300,000
Total Value Opinion $	1,044,052
Rounded; *to $1,000* $	1,044,000

After the pairing results are applied, the ***subject valuation*** can be completed swiftly. $32.50/sf was multiplied by the subject's ER of 111.67% (equates to $36.29/sf) for the 100% portion. When multiplied by subject's 20,502 sf effective size the subject building contribution is $744,052. The land ($300,000) is then added to provide the Total Value Opinion of $1,044,052 (rounded to $1,044,000).

Note: this does NOT violate the "summation" rule within USPAP or UASFLA because the appraiser is working from sale allocation and "contribution". The subject's allocated price is shown as:

Land Contribution			*$ 300,000*
Building Contribution			*$744,052*
Unfinished Warehouse (3,400 sf)	*@ $36.29 =*	*$223,709*	
Finished Warehouse-Metal Span (6,600 sf)	*@ $61.70 =*	*813,486*	
Fin. Warehouse Office/Lt. Ind. (840 sf)	*@ $47.18 =*	*73,214*	
Detached Warehouse/Lt. Ind.-Finished (00 sf)	*@ $29.03 =*	*167,781*	
Detached Warehouse/Lt. Ind.-Un-Finish (6,600 sf)	*@ $24.32 =*	*14,033*	
Detached Storage (920 sf)	*@ $14.52 =*	*8,135*	
Total Bldg. Contribution =		*$744,052*	*1,044,000 rounded*

NOTE: The allocated $/sf equates exactly to the ratios shown on the prior page.