



## Rural Valuation Topic #RVT 12: Proportionality

“Proportionate land analysis, or price ratios, became a necessity with two or more land types were present within properties”<sup>1</sup>. This can be extended with multiple and different buildings compared to competitive properties. The overall price per acre of these types actually is better understood as “blended” prices per acre. Three examples below make the point:

Overall \$/Acre, or Blended \$/Acre												
Land Category	Sale 1				Sale 2				Sale 3			
	Acres	Mix %	Contrib. \$/Acre	Total	Acres	Mix %	Contrib. \$/Acre	Total	Acres	Mix %	Contrib. \$/Acre	Total
Dry Cropland	600	48.4%	\$ 5,000	\$ 3,000,000	300	31.6%	\$ 5,000	\$ 1,500,000	800	58.0%	\$ 5,000	\$ 4,000,000
Pasture	540	43.5%	\$ 1,250	\$ 675,000	640	67.4%	\$ 1,250	\$ 800,000	240	17.4%	\$ 1,250	\$ 300,000
Bottoms/Meadow	100	8.1%	\$ 7,500	\$ 750,000	10	1.1%	\$ 7,500	\$ 75,000	340	24.6%	\$ 7,500	\$ 2,550,000
Buildings				\$ -				\$ 650,000				\$ 400,000
	1,240		\$ 3,569	\$ 4,425,000	950		\$ 3,184	\$ 3,025,000	1,380		\$ 5,254	\$ 7,250,000

The blended \$/acre is shown in color at the bottom for each sale, or \$3,569, \$3,184, and \$5,254/acre. The percentage of each land type is also shown in the corresponding color, i.e., Sale 1 included 48.4% of the total acreage in the “dry cropland” category. Buildings are shown for Sales 2 and 3. One can quickly see the change in the overall price per acre as the percentage of higher priced land and/or buildings within the whole increase, so does the price per acre. In the Sales Comparison Approach, when one begins with the “blended or overall price per acre”, sizable adjustments for land and building mix must be calculated to equalize these sales with the subject with a different mix. Hence, the proportion of 100% land within the whole becomes the key to understanding prices and/or value.

The mathematical processes are intended to equalize the *quantitative differences* in “land and building mix” between the sales and the subject in the sales comparison approach. It should also be noted, adding two or three categories, say Cropland A, B, and C can more definitively address productivity differences; however, the analyst should comment that both quantity and quality are being reflected within a single land-mix adjustment.

Why is “mix” or proportionality so important? The “fish sandwich” may provide a visual for understanding.

- Four (4) folks go to a restaurant, each ordering something different (“catch of the day” [fish], steak, pork, and chicken). The portions are huge and each person takes the remainder home. The next day, the designated “meal preparer” slices each portion

<sup>1</sup> American Society of Farm Managers and Rural Appraisers: *Valuing Rural America*, 2019 Edition, (Denver, ASFMRA, p. 233).

horizontally. However, their carving skills are not precise, and each portion has a **different thickness**.

- Each of the four sandwiches is then presented for lunch with four (4) slices of differing types and thickness --- plus bacon, egg, and parsley added just to help things along. Hence, the “fish sandwich”. Which sandwich would you prefer? The one with the most fish, steak, pork, or chicken?

The “Fish Sandwich”



The sandwich image is reflective of the different layers present in the prior three-sale chart. The point is that each property is a different “sandwich” and it is the appraiser’s responsibility to analyze the market’s response to each COMBINATION. The question is directed to composition and not to the price or value of a single layer. If the individual prices at the restaurant are shown, and then divided by four to find the “sum of the retail” price for the combination, the math is:

	<u>Price</u>	<u>÷ 4 =</u>	
Catch of the day [fish]		\$20.00	\$5.00
Steak	\$32.00	8.00	
Port	\$24.00	6.00	
Chicken	\$16.00	<u>4.00</u>	
Total =		\$23.00	

Would you pay \$23.00 for that type of sandwich? Personally, I ordered the steak and I’d pitch the other three layers or pay a lot less. How does the market react when one of the portions is thicker or much thinner? Is the price proportional? When does the mix become favorable, or non-digestible?

Valuers should not lose sight of the “combination” that is the larger parcel and/or what is valued. The price of a single layer of steak may be reduced, enhanced, or possibly remain neutral when added to one or more additional layers in a mixed sandwich.

In the final analysis, proportionality can be resolved by “ratios” used to allocate mixed sales or separate the blended price per acre into meaningful contributions to the whole.