



## Rural Valuation Topic #RVT 11: Price Ratios & Sale Price Allocation

**Price Ratios** are defined as, “the mathematical relationship between multiple land components”<sup>1</sup>. Those relationships or ratios exist in all markets in the U.S. Whether or not practitioners employ this procedure is a matter of preference; but its consistency enhances the valuer’s ability to quantify elements within the market such as size, location, or other physical, legal and economic amenities or characteristics.

The most reliable rural analytical procedure available for practitioners is price allocation. Allocation relies on percentages or ratios between land categories reflecting market’s demand for different land categories. These “relationships” are quantified via sales, income changes (rent) between the same land categories, and/or productivity differences as part of the “unitary whole”. In the production-ag areas, irrigated and dry cropland may be the primary components while pasture, drainage bottoms and/or meadow may not be factors. For vineyards, orchards, and other edible crops, sales and income may provide the most consistency. The three allocation possibilities are shown below:

Ratio Research & Reconciliation							Market Area Ratio Conclusion
Land Category	Sales	Sale Based Ratios	Rental Income	Rental Based Ratios	Landowner Portion of Productivity	Prod. Based Ratios	
Dry Cropland	\$ 5,000	100%	\$ 200	100%	1.5	100%	100%
Irrigated Cropland	\$ 7,500	150%	\$ 300	150%	5.0	333%	150%
Pasture	\$ 2,500	50%	\$ 80	40%	0.6	40%	50%
Bottoms/Meadow	\$ 6,500	130%	\$ 250	125%	2.0	135%	130%

\* Landowner Share Applied (33% because total production includes machinery, labor, management, etc.)

[NOTE: tons hay per acre at 3 AUMs/ton used for cropland and irrigated to reflect production for same use as pasture & bottoms/meadow. If a "forage equivalent" is not available, sales and income may be the only indices.]

Some rural markets may have markedly different rainfall and productivity or located in transitional areas with other influences. In those cases, there may be several sub-sets within the same category:

<sup>1</sup> American Society of Farm Managers and Rural Appraisers: *Valuing Rural America*, 2019 Edition, (Denver, ASFMRA, p. 238).

Ratio Research & Reconciliation							
<u>Land Category</u>	<u>Sales</u>	<u>Sale Based Ratios</u>	<u>Rental Income</u>	<u>Rental Based Ratios</u>	<u>Landowner Portion of Productivity</u>	<u>Prod. Based Ratios</u>	<u>Market Area Ratio Conclusion</u>
<b>Dry Cropland 1</b>	\$ 5,000	100%	\$ 200	100%	1.49	100%	<b>100%</b>
<b>Dry Cropland 2</b>	\$ 4,000	80%	\$ 175	88%	1.20	80%	<b>80%</b>
<b>Irrigated Cropland</b>	\$ 7,500	150%	\$ 300	150%	4.95	333%	<b>150%</b>
<b>Pasture 1</b>	\$ 2,500	50%	\$ 80	40%	0.60	40%	<b>50%</b>
<b>Pasture 2</b>	\$ 2,000	40%	\$ 65	33%	0.55	37%	<b>40%</b>
<b>Bottoms/Meadow</b>	\$ 6,500	130%	\$ 250	125%	2.00	135%	<b>130%</b>

*\* Landowner Share Applied (33% because total production includes machinery, labor, management, etc.)*

*[NOTE: tons hay per acre at 3 AUMs/ton used for cropland and irrigated to reflect production for same use as pasture & bottoms/meadow. If a "forage equivalent" is not available, sales and income may be the only indices.]*

The ASFMRA began writing and teaching the “ratio” allocation procedure in the early 1980’s. That procedure began with a very elementary allocation, but the larger question is, why was the process undertaken? The reason -- acknowledging the amount or percentage of each land type as part of the “unitary whole” and the size of each “land type or layer(s)” has an impact on adjustments and the valuation of subject properties with different “mixtures” or “layer” sizes. Stated differently, there is a reason why

- a sale with 85% dry cropland and 15% pasture sells with a “blended price per acre” for more than
- a second sale’s blended price per acre with 45% dry cropland and 55% pasture.

If each sale and the subject exist in “market equilibrium”, the answer is easy. But what if that market shows five mixed sales with cropland ranging from \$4,250 to \$6,000/acre? The likely answer is there are other things in the market impacting each individual price allocation or contribution. How do you consistently measure those “impacts”? Thus, the proportionality (see Advisory 12) for each component as part of the “whole” must be analyzed and reflected for a hypothetical subject with 60% cropland and 40% pasture.

Within ASFMRA, the “action” portion in the rural valuation process is known as the “land-mix” calculation. This same general process can also be applied to buildings when the structural contribution becomes a significant component of the total value, i.e., convert multiple structures or degree of finish within the whole to “an equivalent” square-footage value.