

FINAL RATIO STUDY

What is it and how do I read it?

The Final Ratio Study is required by Arkansas Statute (A.C.A. § 26-26-304) in order to evaluate the accuracy and uniformity of assessments within Arkansas counties to ensure compliance with State standards. The Study uses standard statistical measurements to determine the relationship between the appraised values and actual sale prices (market value). On the appraisal date, January 1st, of the year of reappraisal, these values, appraised and market, should be similar. As time passes between reappraisals the disparity between these values may increase.

The Final Ratio Study report for your county is packed full of information, some of the results are used to determine compliance with State standards, while other results are for informational purposes only. For a better understanding, the results used to determine compliance with State standards have been highlighted in **blue** within the report.

When reading the report it is helpful to understand the statistical measurements used and what each of these measurements actually tell you. In this section we will go over the various statistical measurements:

- **Assessed Value:** In Arkansas properties are assessed at 20% of the appraised value. For example, if a county appraises a property at \$100,000 the assessed value for that property would be \$20,000 ($\$100,000 \times 20\%$). The assessed value multiplied by the local millage rate determines the tax bill for the property.
- **Median Ratio** (also referred to as Ratio, Property Class Ratio, and Total County Ratio within the report): The median ratio measures the accuracy of the assessments and refers to how close the assessments are to the legally required assessment standard. A sales ratio is calculated by dividing the assessed value by the sale price. The median ratio represents the midpoint of the sales ratios when they are arrayed from lowest to highest. In Arkansas the median ratio must be between 18 and 22%. In layman's terms since Arkansas has a 20% assessment level, this means that a median ratio between 18 to 22% equates to the property having an appraised value between 90 and 110% of market value.
 - **Lower & Upper Bound Ratios:** These results are shown throughout the report. This is a statistic measurement used with the 95% confidence level of the median ratio. The median ratio is a single point estimate of the sample, however if you want to be confident at the 95% level than the true median ratio is somewhere between the Lower & Upper Bound Ratios.

- **COD** (abbreviation for the Coefficient of Dispersion): Whereas the median ratio determines the accuracy of the assessments, the COD measures the equity or uniformity of the assessments. The COD measures how closely individual sales ratios are grouped around the median ratio; the smaller the measure of dispersion (COD), the greater the uniformity of the sales ratios. For example, a COD of 14.5 would mean that individual sales ratios differ, on average, by 14.5% from the median ratio. A small COD indicates that the sales ratios are grouped relatively close to the median ratio and the assessment of property is more equitable. A large COD indicates that there is a wide spread in the sales ratios around the median ratio, reflecting a less uniform assessment of property. Uniformity of assessments is important because property taxes are distributed in proportion to assessed value. If there is a low degree of uniformity (high COD), then some properties are paying a higher share of the taxes while properties with similar market values are paying a smaller share. The acceptable level for the COD depends on the type of property considered and the size of the sample. Since smaller counties typically have a fewer number of sales used in the sample, a larger COD is allowed. The COD compliance standards for counties in Arkansas is as follows:
 - Smaller counties (less than 50,000 parcels)
 - Residential property – COD must be 20.0 or less.
 - Commercial property – COD must be 25.0 or less.
 - Vacant land properties – COD must be 25.0 or less.
 - Larger counties (50,000 or more parcels)
 - Residential property – COD must be 15.0 or less.
 - Commercial property – COD must be 20.0 or less.
 - Vacant land property – COD must be 20.0 or less.

- **PRD** (abbreviation for the Price Related Differential): The PRD is a statistic used for measuring the relationship between assessment levels for low value properties and high value properties. A value of 1.00 indicates a uniform relationship between the assessed values and selling prices for low value properties compared to high value properties. An index below 1.00 tends to indicate assessment progressivity, which means that more expensive property has a higher sales ratio than less expensive property. An index above 1.00 tends to indicate assessment regressivity, which means that less expensive property has a higher sales ratio than more expensive property. While the PRD is not a statistical measurement used for compliance in Arkansas, the International Association of Assessing Officers recommends a PRD of between 0.98 and 1.03.

Now that you have an understanding of the various statistical measurements used in the Final Ratio Study report, let's take a look at the different sections of the report and what is included within each section:

- **COUNTY SUMMARY:** This section shows a summary of the Total Assessed Value, Property Class Ratio (median ratio), and Estimated Market Value for each of the different property classifications within the county. This section also shows the Total County Ratio, which must be in compliance with the State standard of between 18 and 22.

- **OVERALL RATIO STUDY:** This section shows the Count (# of sales), Median Ratio (same as the Property Class Ratio shown in the County Summary), Lower & Upper Bound Ratios, COD, and PRD for each property classification. Compliance with the COD is only required on Residential Improved, Commercial Improved, and Vacant Land property classes.

- **RATIO STUDY BREAKDOWN BY MARKET AREA:** Per Arkansas Assessment Coordination Department Rules counties must identify the major geographic divisions, termed “market areas”, within the county based on value patterns and economic diversity. Some smaller or economically homogeneous counties may have only a single market area. This section of the report shows the Count (# of sales), Median Ratio, Lower & Upper Bound Ratios, COD, and PRD for Residential Improved and Vacant Land property classifications within each Market Area. Counties must be in compliance with the State standards for the Median Ratio and COD within each Market Area for Residential Improved and Vacant Land properties.
- **RATIO STUDY BREAKDOWN BY CITY:** This section shows the Count (# of sales) and Ratio (median ratio) for the Residential Improved, Vacant Land, Commercial/Industrial Improved, Agriculture, and Business Personal Property classifications for each city within the county. This section is for informational purposes only and is provided as useful indications but should not be considered statistically reliable. Compliance with State standards is not required at this level of analysis.
- **RATIO STUDY BREAKDOWN BY SCHOOL DISTRICT:** This section shows the Count (# of sales) and Ratio (median ratio) for the Residential Improved, Vacant Land, Commercial/Industrial Improved, Agriculture, and Business Personal Property classifications for each school district within the county. This section is for informational purposes only and is provided as useful indications but should not be considered statistically reliable. Compliance with State standards is not required at this level of analysis.
- **RATIO STUDY BREAKDOWN BY DWELLING GRADE:** This section shows the Count (# of sales), Median Ratio, Lower & Upper Bound Ratios, COD, and PRD for the different Residential Dwelling Quality Grades within the county. This section is for informational purposes only and is provided as useful indications but should not be considered statistically reliable. Compliance with State standards is not required at this level of analysis.
- **RATIO STUDY BREAKDOWN BY VACANT LAND CLASSIFICATION:** This section shows the Count (# of sales), Median Ratio, Lower & Upper Bound Ratios, COD, and PRD for the three different market value vacant land classifications (Residential, Commercial, and Industrial) within the county. This section is for informational purposes only and is provided as useful indications but should not be considered statistically reliable. Compliance with State standards is not required at this level of analysis.
- **RATIO STUDY BREAKDOWN BY COMMERCIAL OCCUPANCY:** There are many different commercial occupancy types (i.e. apartment, motel, retail store, etc.) within each county. The various commercial occupancies have been aggregated into six major groups, a description of each group is listed in the report below the section. This section shows the Count (# of sales), Median Ratio, Lower & Upper Bound Ratios, COD, and PRD for the six major commercial occupancy groups within the county. This section is for informational purposes only and is provided as useful indications but should not be considered statistically reliable. Compliance with State standards is not required at this level of analysis.
- **OTHER REAL ESTATE ANALYSIS:** This section shows three items used in the ratio study analysis. The total count of different property types within the county, not all types listed are used in the study. The different types of deeds (ownership transfer documents, i.e. sales) used in the ratio study analysis. The codes used by the county in the sales validation analysis.

- **REAL ESTATE NEIGHBORHOODS & MARKET AREAS:** This section shows the following items for each of the following property classifications (Residential Improved, Vacant Land, and Commercial Improved): total number of parcels, total number of sold parcels, number of neighborhoods, average number of parcels and sales in each neighborhood, number of market areas, average number of parcels and sales in each market area.
- **SOLD vs UNSOLD ANALYSIS:** An important objective of the ratio study is to determine appraisal performance for the entire population of properties. As long as both sold and unsold properties are appraised in the same manner, statistics calculated in the ratio study can be used to infer appraisal performance for unsold properties. Oversight agencies must be vigilant in guarding against the unprofessional practice known as “sales chasing” in which values for sold properties are set near the sale price, while values for unsold properties are set at other, usually lesser amounts. This analysis is performed by comparing the percent change in value of the sold properties to the percent change in value of the unsold properties, if the percent change in values are similar between the two groups then it is safe to assume that the unprofessional practice of “sales chasing” is not being used. Counties must be in compliance by passing the Sold vs Unsold Analysis, more compliance details on this analysis can be found in the report below the section.