
STATE OF INDIANA

DEPARTMENT OF LOCAL GOVERNMENT FINANCE



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TO: Assessing Officials
FROM: Barry Wood, Assessment Division Director
RE: 2019 Ratio Study Guidance
DATE: January 30, 2019

The purpose of this memorandum is to provide guidance to assessing officials regarding changes in the Department of Local Government Finance's ("Department") ratio study review process for the 2019 assessment year. This guidance is similar to prior years; however, there are a few minor changes. Section II describes the 2019 ratio study process in conjunction with the 2019 annual adjustment ("trending") process and the first phase of the cyclical reassessment. Section III details the ratio submission format. This format is described in more detail in the attached 2019 Ratio Study Format document. Section IV describes the Summary Tables.

I. Sales Validation/Use of Sales

Per 50 IAC 27-4-7 (f) – "All sales are candidates for the ratio study unless sufficient and compelling information can be documented to show otherwise." The Department will be scrutinizing the exclusion of sales in the ratio study. Sales excluded from the ratio study will be reviewed, and if compelling documentation for their exclusion is not sufficient, counties will be directed to include the excluded sales and re-submit their ratio study.

II. 2019 Annual Adjustment

As in prior years, the Department requires each county assessor to have an approved ratio study prior to submitting 2019 certified assessed values to the county auditor. Per IC 6-1.1-5-14, the county assessor must deliver the real estate book (i.e., roll 2019 pay 2020 gross assessed values and balance) to the county auditor by July 1, 2019. Per Indiana Code 6-1.1-14-12, each county must submit its ratio study and coefficient of dispersion study to the Department by March 1. Additionally, a county's ratio study will not be reviewed until all datasets are compliant, particularly the Sales Disclosure Data File (50 IAC 27-9-1). The county assessor must forward sales disclosure form data to the Department and the Legislative Services Agency (LSA) by February 1 (IC 6-1.1-5.5-3).

Like prior years, the Department will forward a copy of the approved sales file to the county that will be used in the review of the ratio study. This will continue to facilitate an efficient review and comparison when sales are questioned.

As part of the annual adjustment process, values in the ratio study are set using local market data, such as the sale prices of comparable properties. If necessary, further adjustment based on local market data (“trending”) may be performed to meet ratio study standards. However, the purpose of the 2019 annual adjustment process is to value properties at their market value-in-use, as indicated by compliance with ratio study standards. If this goal is met without trending, no further adjustment is necessary.

New this year: The Department has drafted the attached optional “Narrative” template to be used in the ratio study submission process. It is intended that the use of this “Narrative” template will facilitate the ratio study review process. Please note: For 2019, the use of this template is optional, and not a requirement.

Also new for 2019: New software will be utilized to run the Spearman Rank and Mann-Whitney tests more efficiently. In order for the Ratio Study spreadsheets to be compatible with the software, there are some new formatting requirements:

- 1.** The column headings in the Workbook must appear as they do in the Sample Workbook.
 - i.** Parcel Number
 - ii.** Township Number
 - iii.** Township Name
 - iv.** Neighborhood Code
 - v.** Prior Year Property Class
 - vi.** Current Year Property Class
 - vii.** Taxing District
 - viii.** Prior Year Land AV
 - ix.** Prior Year Improvement AV
 - x.** Prior Year Total AV
 - xi.** Current Year Land AV
 - xii.** Current Year Improvement AV
 - xiii.** Current Year Total AV
 - xiv.** Cyclical Reassessment
- 2.** The tab in the Workbook must be labeled Workbook.

The sale price column in the “Formatted” tab must be labeled “Study Sale Price.”

In order to facilitate the timely review and approval of the ratio study, please indicate an additional contact person that will be available during the review period (a minimum of five days). The contact person does not necessarily need to be the elected assessing official; however, the person should be well-versed in the ratio study process and should be able to respond to any Department requests or questions. Both the elected assessing official and the additional contact person will receive the notifications.

RATIO STUDY SUBMISSION BY COUNTY

It is highly recommended that the county conduct an internal ratio study before submitting its ratio study to the Department. If an internal ratio study is completed, please forward a copy to the Department. A narrative detailing the county's annual adjustment process, including information about the county's cyclical reassessment activity, as well as a "Workbook," should be included with the county's ratio study submission (see above for data to be contained in the Workbook). In order to differentiate parcels that were subject to the cyclical reassessment and the annual adjustment, a separate column should be established indicating whether or not a parcel was part of the **first phase** of the cyclical reassessment (i.e., "Y" or "N"). An example of a sample "Workbook," including the additional column, can be found at <https://www.in.gov/dlgf/2519.htm>.

Ratio studies will not be considered timely, nor will they be reviewed until a complete and compliant file is submitted.

The ratio study should be submitted to Barry Wood at Bwood@dlgf.in.gov.

ASSESSMENT DATE AND VALUATION DATE

- The assessment and valuation date are both January 1, 2019. All real property should reflect characteristics as of this date.
- Depreciation should also be applied relative to + and updated on an annual basis. If an adjustment is necessary, and depreciation has not been updated as part of the annual adjustment process, the adjustment factor may need to be revised to take into account increased depreciation from the last physical reassessment. Since normal (physical) depreciation refers to the normal wear and tear of an improvement, generally there would be an increase in depreciation even if the cost changes were insignificant. Even if the sales (market data) indicate there was no additional change within the market, the neighborhood (market) factor adjustment would account for this. Hence, counties should apply depreciation by accounting for the additional age of the improvement.
- Note: Please note, the Location Cost Multipliers (LCM) have been updated for the January 1, 2019 assessment date (<https://www.in.gov/dlgf/files/pdf/181031%20-%20Wood%20Memo%20-%20Updated%20Location%20Cost%20Modifiers%20for%20the%202019%20Annual%20Adjustment.pdf>).

PARCEL CHARACTERISTICS

All properties must be assessed based on their characteristics as of January 1, 2019.

RATIO STUDY REVIEW STANDARDS

The Department will review all ratio studies for the 2019 annual adjustment according to the guidelines set forth in the *2007 IAAO Standard on Ratio Studies*. The 2019 ratio study review process is unchanged from the Department's guidance on sales review and ratio study analysis for 2011 – [http://www.in.gov/dlgf/files/110111 - Wood Memo - 2011 Ratio Study Review Process and Annual Adjustment Guidance.pdf](http://www.in.gov/dlgf/files/110111_-_Wood_Memo_-_2011_Ratio_Study_Review_Process_and_Annual_Adjustment_Guidance.pdf).

Sales Window:

The assessing official must use sales of properties from the period of time from January 1, 2018 to December 31, 2018 for the January 1, 2019 assessment date. A longer time period may be required to produce a representative sample in some counties; however, no more than five years of sales may be used in the ratio study. Older sales must be time-adjusted as appropriate and in accordance with the methods prescribed in the *2007 IAAO Standard on Ratio Studies*.

Multiple Sales Years:

Similar to the 2018 assessment process, counties may use sales older than one year in one township without expanding the sales window for other townships. However, time adjustments for older sales must be performed using all comparable older sales, including those sales whose inclusion in the ratio study is not necessary because of sufficient current sales. This will promote equity among townships with different sales windows without requiring the addition of older sales in townships where they are not needed for assessment purposes.

For example, if Adams Township has sufficient 2018 sales, but Boone Township does not, the sales window is expanded to 2017 sales for Boone Township. The county does not need to expand the sales window to 2017 sales for Adams Township. However, the county should use comparable 2017 and 2018 sales from both Adams and Boone Townships to determine whether a time adjustment is necessary for the 2017 sales used in Boone Township.

Sales Chasing:

Appendix D of the *2007 IAAO Standard on Ratio Studies* ("Appendix D") lists four methods that oversight agencies may use to detect sales chasing. Of these, the Department primarily uses the Mann-Whitney test outlined in D.1: Comparison of Average Value Changes. In *Mass Appraisal of Real Property*, Robert Gloude mans notes that:

When calculating average value changes, new parcels, and parcels that have undergone a change in use or physical change (such as additions or renovations) should be excluded.
(pp. 311 – 312)

Because 2018 marked the first phase of the cyclical reassessment, it may be difficult to discern between changes attributable to the reassessment process and changes attributable to sales chasing (hence the need for the additional column in the Workbook to designate whether a parcel was reassessed in the first phase of the cyclical reassessment). The Mann-Whitney test will be

utilized for the 2019 annual adjustment process for detecting sales chasing. However, parcels that were part of the first phase of the cyclical reassessment (as identified in the Workbook) will be excluded from the test. Additionally, the Department may use other methods described in Appendix D to detect sales chasing.

Number of Sales Used:

The IAAO states:

“There is a general relationship between statistical reliability and the number of observations in a sample. The larger the sample size, the greater the reliability.”

In the 2011 (*sic* 2012) Real Property Manual – Chapter 2, page 6 states:

For purposes of this section, a “representative number” shall mean a number that is no less than three percent (3%) of the total number of parcels within the neighborhood established under the section headed neighborhood.”

However, this particular chapter deals with land valuation, and mentions the use of 18 months of sales rather than the old ratio study standard of 14 months when the assessment date was March 1. Although one sale in a neighborhood may represent 3% of the total number of parcels in a neighborhood, a sample size of one is not great enough to warrant a trend. The reliability of the trending factor based on one sale is very low, and could potentially result in losing an appeal. Assessing officials should not use one sale to trend a neighborhood. Alternatively, prior year sales could be used (if time adjusted), or neighborhoods could be combined to ensure a representative number of sales are used.

III. Ratio Study Format

The ratio study format is fully described in the attached example. The format itself is unchanged from 2018.

As in prior years, ratio studies must be submitted in a spreadsheet compatible with Microsoft Excel 2013. The spreadsheet must contain one tab with ratio study data for each of the following types of property:

- Industrial Vacant
- Industrial Improved
- Commercial Vacant
- Commercial Improved
- Residential Vacant
- Residential Improved

In addition, the study should contain a *Summary* tab detailing the number of sales used and ratio statistics in each section of the ratio study.

For the 2019 annual adjustment, all ratio studies submitted to the Department must also include two additional tabs. The first tab is called “Formatted”. This tab must contain the ratio study data located in the other six tabs in a format readable by the SPSS software program. This formatting can be done in Excel or another program. Note: The SPSS software program is not needed to produce the formatting.

Because of the way the SPSS software reads the data, only one parcel from a multi-parcel sale can be included in the “Formatted” tab. To fix this, the ratio study should also include a second tab called “MultiParcelSales”. This tab will list all the data for each parcel in each multi-parcel sale included in the “Formatted” tab.

Adding these tabs will make the review process more efficient and should result in a faster approval time. In 2018, the average approval time for a ratio study (after data compliancy and a complete file was submitted) was 7.07 days. While calculating ratio statistics by hand is time-consuming, a software program like SPSS can perform these calculations very quickly. Listing multi-parcel sales in a separate tab will also make it easier to reconcile the sales used in the ratio study with the sales disclosure data reviewed by the Data Division.

The ratio study format is described in detail in the attached document.

IV. Summary Tables

As part of the ratio study review process, the Department reviews the assessed value change by class of property and township, and on an overall (county) basis. In those situations where the assessed value either increases or decreases by more than ten percent (10%) from the previous year, the Department will request an explanation for the variance. In an effort to provide as much information as possible about the assessed values in each county, the Department expects to post the Summary Tables and the explanations for the variances on its website.

Questions about this memorandum may be directed to Barry Wood, Assessment Division Director, at bwood@dlgf.in.gov or (317) 232-3762, or Deliverance Bougie, Senior Statistician/Application System Analyst, at dbougie@dlgf.in.gov or (317) 234-5861.