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www.stc.mo.gov

February 21, 2019

Mr. Scott Shipman
St. Charles County Assessor
201 N. Second Street, Room 250
St. Charles, MO 63301

Dear Mr. Shipman:

Enclosed you will find copies of the Final Residential *Traditional Sales Study* report which indicates your county to be **in compliance** with State Tax Commission (STC) requirements.

As you will recall, our office had emailed you the *OrigAssdValues_SoldProperties.xls* spreadsheet to review the Tentative Ratio Report information for any errors or omission of data on January 30, 2019. Per our phone conversation on February 19, 2019 you indicated you had no additional information to be considered in the ratio study; consequently, the results have been finalized.

If you have any questions or concerns regarding the final ratio, please contact me before March 21, 2019 at Darrin.Key@stc.mo.gov or 660-909-2411; otherwise, we will conclude your county's 2017 residential study.

Sincerely,

A handwritten signature in cursive script that reads 'Darrin Key'.

Darrin Key
Local Assistance

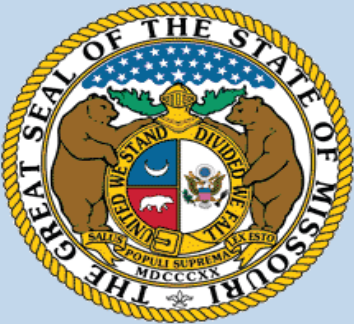
Cc: Dan Roe, Assessment Representative Local Assistance
Jim Kyle, Supervisor Local Assistance

State Tax Commission of Missouri

Residential ◇

(Final Sales Study)

◇ 2017 Reassessment



State Tax Commission of Missouri
301 West High Street
PO Box 146
Jefferson City, MO 65102-0146

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Two ratio study procedures are available for analysis:

1) Traditional Sales Study

A sales study that analyzes assessment levels based on sales stratified by land use, location, and characteristics of property.

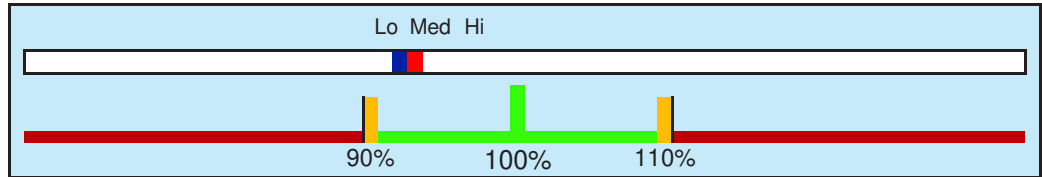
The Decision Model Statistics listed on this page are overall weighted calculations based on the data submitted from the county and, except for Mean Ratio, are weighted by both time and location. Statistics found on the pages stratified for Land Use, Assessed Value, and Year Built are weighted only by time, not location.

2) Random Appraisals

For some jurisdictions, the availability of sales is scarce. In such scenarios, parcels will be randomly appraised. Every parcel will have an equal chance to be selected in the random appraisal study.

<http://www.stc.mo.gov/>

St. Charles County



Decision Model Statistics

@19% @100%

Time and Location Weighted Median Ratio.....	17.58%	92.51%
<i>95% Low Confidence Interval.....</i>	17.53%	92.24%
<i>95% High Confidence Interval.....</i>	17.62%	92.73%
<i>Time, Location Weighted Coefficient of Dispersion (COD)...</i>		7.86%

Additional Statistics

@19% @100%

<i>Mean Ratio.....</i>	17.65%	92.89%
<i>Weighted Mean Ratio.....</i>	17.56%	92.41%
<i>Time, Location Weighted Price Related Differential (PRD)</i>		100.53%

Sample Data

<i>Pre-Trim Sample Size.....</i>	6735
<i>Low Trims.....</i>	51
<i>High Trims.....</i>	50
<i>Post-Trim Sample Size.....</i>	6634
<i>Number of Assessments.....</i>	134164

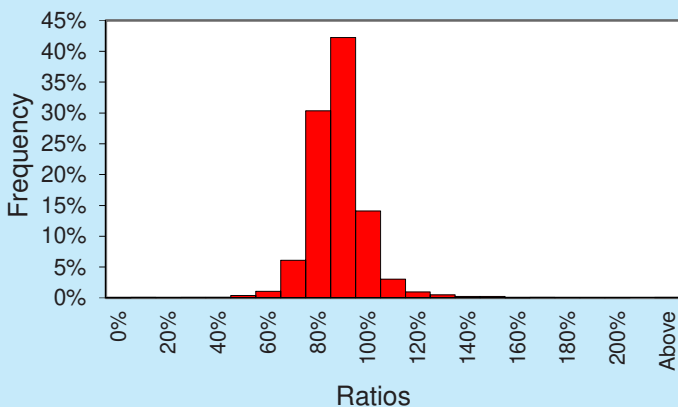
Overall Descriptive Statistics

Page 2 statistics are weighted by time, not location

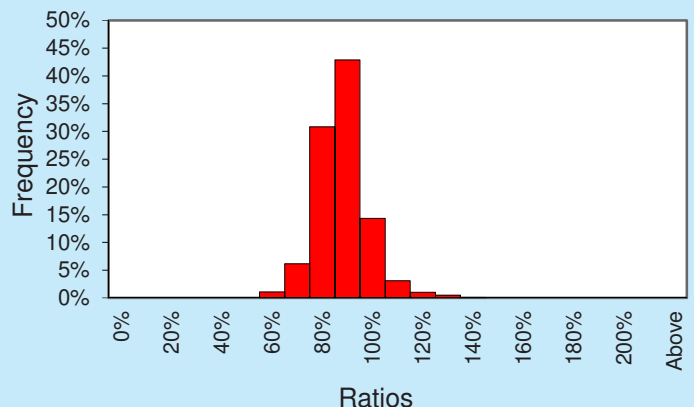
	Pre-Trim	Post-Trim	Description	Required
Sample Size	6,735	6,634	The number of sales from July 2016 to June 2017	Minimum 1342
Median	92.52%	92.52%	The middle ratio when ratios are arranged in ascending order.	90%-110%
95% - Low Ratio	92.26%	92.26%	<i>The range where the population median most likely exists</i>	<i>Overlaps with 90%-110%</i>
95% - High Ratio	92.76%	92.75%		
Weighted Mean	92.34%	92.41%	An average in which ratios are weighted in proportion to their sold amounts.	90%-110%
95% - Low Ratio	91.88%	92.15%	<i>The range where the population weighted mean most likely exists</i>	<i>Overlaps with 90%-110%</i>
95% - High Ratio	92.81%	92.67%		
Mean	93.28%	92.95%	The arithmetic average of ratios	90%-110%
95% - Low Ratio	92.89%	92.71%	<i>The range where the population mean most likely exists</i>	<i>Overlaps with 90%-110%</i>
95% - High Ratio	93.68%	93.19%		
Coefficient of Dispersion	7.96%	7.96%	The average percent deviation from the median ratio	Less than 20%
Price Related Differential	101.02%	100.58%	A gauge of assessment uniformity for high and low valued properties	98%-103%

Following Section 5.2 and Appendix B of the IAAO Standard on Ratio Studies, the STC employs outlier trimming guidelines to detect extreme outliers that might otherwise skew statistical results. The STC uses a uniform trimming process that tends to remove as many high outliers as low outliers, thus keeping the median relatively stable.

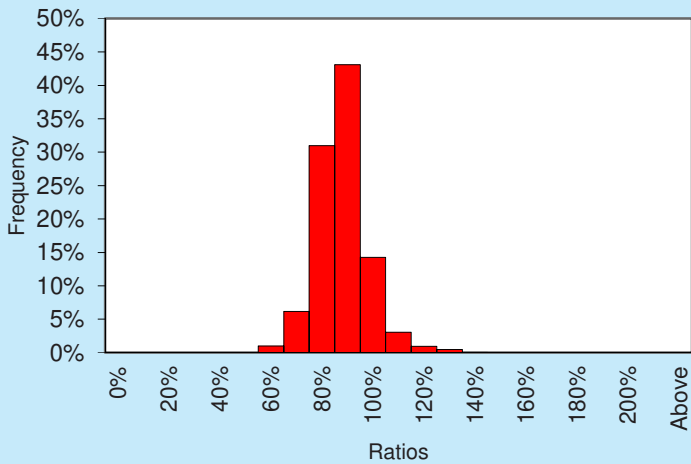
Histogram of Ratios (Prior to Trimming)



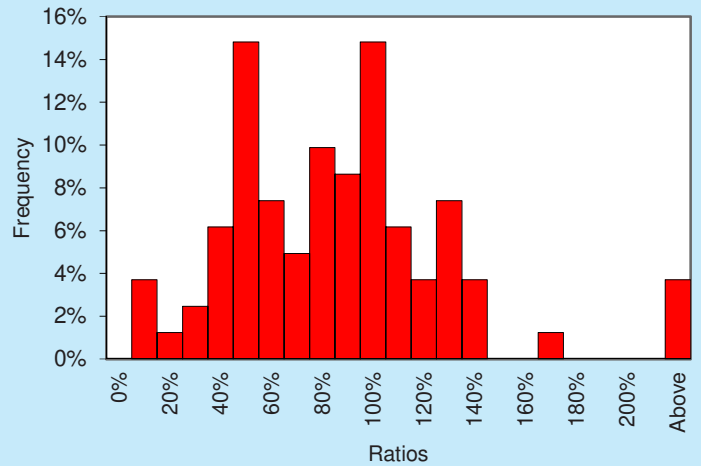
Histogram of Ratios (After Trimming)



Histogram of Ratios (Improved)



Histogram of Ratios (Vacant)



Overall Descriptive Statistics

Page 3 statistics are weighted by time, not location

Post Trim	Improved	Vacant	Description	Required
Sample Size	6,581	81	The number of sales from July 2016 to June 2017	25 minimum
Median	92.51%	89.00%	The middle ratio when ratios are arranged in ascending order.	90%-110%
95% - Low Ratio	92.24%	76.97%	The range where the population median most likely exists	Overlaps with 90%-110%
95% - High Ratio	92.73%	100.00%		
Weighted Mean	92.40%	107.75%	An average in which ratios are weighted in proportion to their sold amounts.	90%-110%
95% - Low Ratio	92.15%	50.18%	The range where the population weighted mean most likely exists	Overlaps with 90%-110%
95% - High Ratio	92.66%	165.32%		
Mean	92.89%	102.62%	The arithmetic average of ratios	90%-110%
95% - Low Ratio	92.66%	79.67%	The range where the population mean most likely exists	Overlaps with 90%-110%
95% - High Ratio	93.13%	125.45%		
Coefficient of Dispersion	7.86%	50.69%	The average percent deviation from the median ratio	Less than 20%
95% - Low Ratio	7.69%	32.79%	The range where the population coefficient of dispersion most likely exists	95% Low Ratio less than 20%
95% - High Ratio	8.03%	80.83%		
Price Related Differential	100.53%	95.24%	A gauge of assessment uniformity for high and low valued properties	98%-103%

2017 Reassessment

Sales from July 2016 to June 2017

Assessed Value	190- 26491	26492- 34471	34472- 45476	45477- 677876
Sample Size	1684	1683	1684	1684
High Trims	21	16	10	1
Low Trims	34	2	4	4
Total Trimmed	55	18	14	5
Remaining	1629	1665	1670	1679
Population	32,291	31,128	32,863	37,394
Proportion	24.16%	23.29%	24.58%	27.97%
Post Trim Statistics	190- 26491	26492- 34471	34472- 45476	45477- 677876
Sample Size	1629	1665	1670	1679
Median	90.27%	92.20%	93.35%	93.87%
Low 95% Conf Int	89.68%	91.66%	92.94%	93.39%
High 95% Conf Int	90.68%	92.66%	93.69%	94.41%
Mean	91.15%	92.91%	93.58%	94.02%
Low 95% Conf Int	90.56%	92.45%	93.16%	93.57%
High 95% Conf Int	91.76%	93.37%	93.99%	94.47%
Weighted Mean	89.84%	92.04%	92.83%	93.16%
Low 95% Conf Int	89.31%	91.61%	92.43%	92.65%
High 95% Conf Int	90.36%	92.48%	93.24%	93.67%
Coefficient of Dispersion	9.63%	7.58%	6.89%	7.68%
Low 95% Conf Int	9.18%	7.26%	6.60%	7.37%
High 95% Conf Int	10.12%	7.93%	7.20%	8.00%
Price Related Differential	101.47%	100.94%	100.80%	100.92%

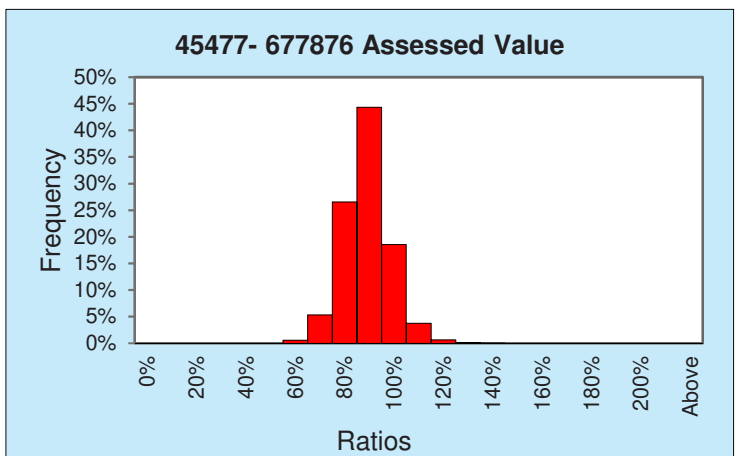
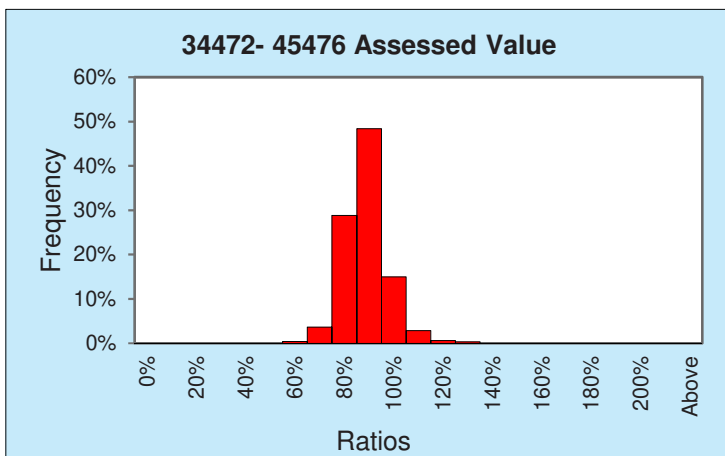
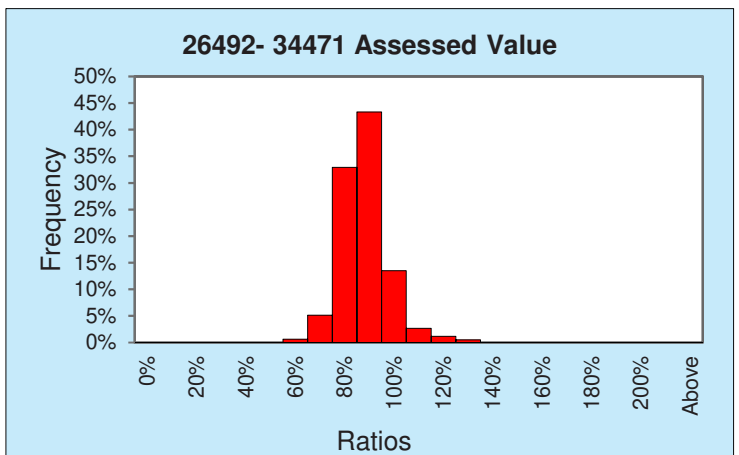
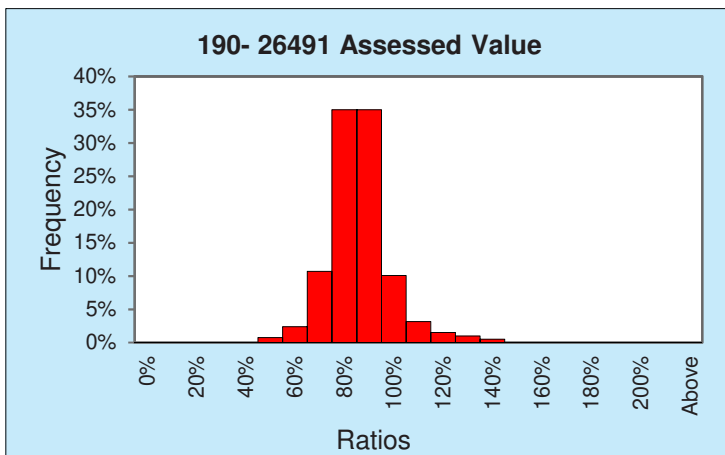
Statistical results for each stratum are provided for informational purposes only. The STC does not employ a sample size estimator for each individual stratum and cannot validate the individual stratum results with statistical certainty. The information is being provided in that it might assist the user in identifying areas for further study and analysis. Readers are cautioned to disregard statistics for individual strata with pre-trim sample sizes of 25 or less.

Sales Ratio Histograms by Stratum

Section 3.3 of the IAAO Standard on Ratio Studies recommends stratification to facilitate a more complete and detailed picture of appraisal performance and to enhance sample representativeness.

The STC defaults to stratification into quartiles whenever there is sufficient information available. Depending on the available data, the STC may range from two to eight stratifications, however the STC will avoid over-stratification.

It should be noted that the lowest value stratification(s) may include vacant land which can skew those results.



2017 Reassessment

Sales from July 2016 to June 2017

Year Built	1794- 1983	1984- 1995	1996- 2003	2004- 2015
Sample Size	1674	1554	1496	1824
High Trims	16	5	0	1
Low Trims	5	6	2	2
Total Trimmed	21	11	2	3
Remaining	1653	1543	1494	1821
Population	39,583	32,741	29,057	26,196
Proportion	31.03%	25.66%	22.78%	20.53%
Post Trim Statistics	1794- 1983	1984- 1995	1996- 2003	2004- 2015
Sample Size	1653	1543	1494	1821
Median	91.52%	92.10%	93.26%	92.70%
Low 95% Conf Int	90.89%	91.44%	92.84%	92.36%
High 95% Conf Int	92.49%	92.60%	93.70%	93.16%
Mean	93.62%	92.42%	93.41%	93.01%
Low 95% Conf Int	92.93%	91.93%	92.99%	92.66%
High 95% Conf Int	94.31%	92.92%	93.83%	93.38%
Weighted Mean	91.73%	91.90%	93.02%	92.99%
Low 95% Conf Int	91.03%	91.36%	92.54%	92.57%
High 95% Conf Int	92.42%	92.44%	93.51%	93.41%
Coefficient of Dispersion	10.98%	8.02%	6.71%	6.47%
Low 95% Conf Int	10.45%	7.68%	6.43%	6.21%
High 95% Conf Int	11.52%	8.40%	7.02%	6.73%
Price Related Differential	102.06%	100.57%	100.42%	100.03%

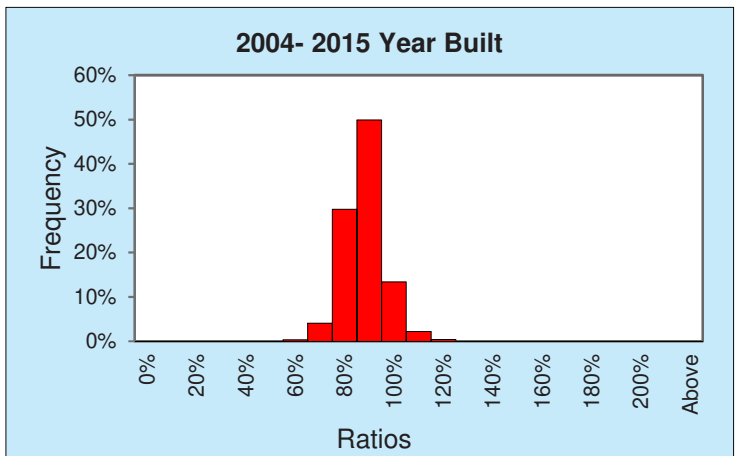
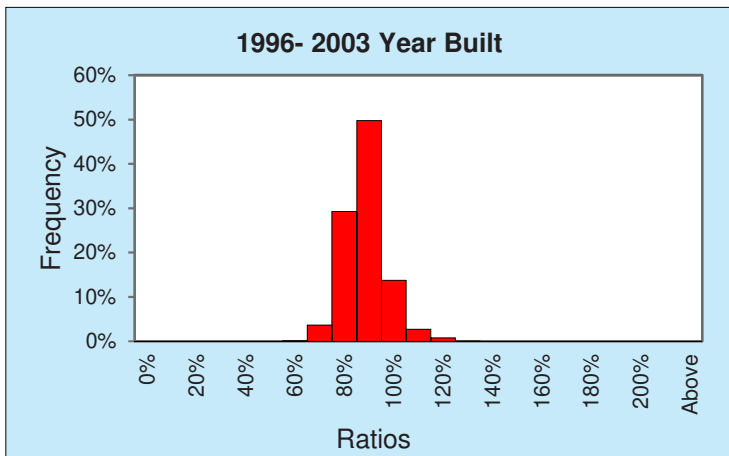
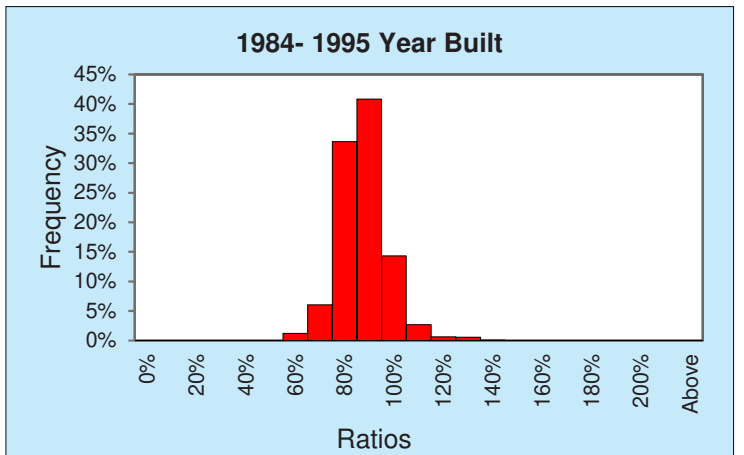
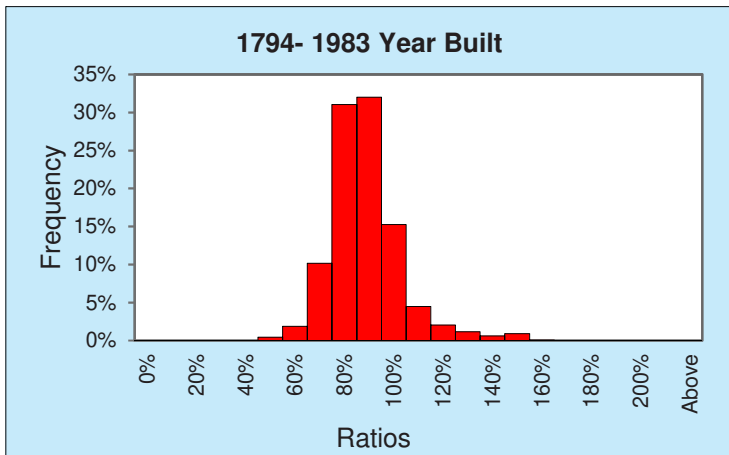
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2017 Reassessment

Sales from July 2016 to June 2017

School District	R-2	R-3	R-4	R-5	R-6	All Others
Sample Size	1850	2003	1791	222	776	93
High Trims	15	8	6	2	8	1
Low Trims	6	9	9	4	0	2
Total Trimmed	21	17	15	6	8	3
Remaining	1829	1986	1776	216	768	90
Population	38880	42298	28469	4545	15672	4300
Proportion	28.98%	31.53%	21.22%	3.39%	11.68%	3.21%

Post Trim Statistics	R-2	R-3	R-4	R-5	R-6	All Others	Overall Weighted
Sample Size	1829	1986	1776	216	768	90	6652
Median	92.51%	92.95%	91.71%	94.45%	93.14%	94.43%	92.51%
Low 95% Conf Int	91.94%	92.40%	91.23%	92.97%	92.11%	82.17%	92.24%
High 95% Conf Int	92.97%	93.34%	92.14%	95.59%	94.20%	100.12%	92.73%
Mean	92.62%	93.18%	91.87%	94.92%	95.12%	94.67%	
Low 95% Conf Int	91.80%	92.29%	90.97%	92.90%	93.07%	63.24%	
High 95% Conf Int	92.63%	93.24%	91.98%	95.56%	94.96%	144.53%	
Weighted Mean	92.22%	92.76%	91.47%	94.23%	94.01%	103.88%	
Low 95% Conf Int	91.94%	92.40%	91.23%	92.97%	92.11%	82.17%	
High 95% Conf Int	92.97%	93.34%	92.14%	95.59%	94.20%	100.12%	
Coefficient of Dispersion	7.20%	7.72%	7.42%	7.68%	10.94%	37.07%	7.86%
Low 95% Conf Int	6.93%	7.44%	7.12%	6.85%	10.22%	27.08%	7.61%
High 95% Conf Int	7.50%	8.04%	7.74%	8.71%	11.72%	55.08%	8.11%
Price Related Differential	100.43%	100.45%	100.43%	100.74%	101.18%	91.13%	100.53%

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Sales Ratio Histograms by Stratum

Section 3.3 of the IAAO Standard on Ratio Studies recommends stratification to facilitate a more complete and detailed picture of appraisal performance and to enhance sample representativeness.

The default location variable is School District. County assessors can request a different variable other than School District prior to statistical analysis provided it would result in better representation of property characteristics and market tendencies.

When the overall descriptive statistics are out of compliance with STC requirements, weighted statistics are calculated using the proportions of the number of properties in the county amongst each school district strata. When the overall descriptive statistics are out of compliance, school districts with insufficient sales are combined. If the combined sales in locations with insufficient sales are equal to or greater than 25% of the residential population, then the Progressive Hybrid study is performed. If the combined sales in locations with insufficient sales are less than 25% of the residential population, then the Traditional Sales Study is performed, but with the results weighted by location.

