



2018

DENVER COUNTY PROPERTY ASSESSMENT STUDY



WILDROSE
APPRAISAL INCORPORATED
Audit Division



September 15, 2018

Mr. Mike Mauer
Director of Research
Colorado Legislative Council
Room 029, State Capitol Building
Denver, Colorado 80203

RE: Final Report for the 2018 Colorado Property Assessment Study

Dear Mr. Mauer:

Wildrose Appraisal Inc.-Audit Division is pleased to submit the Final Reports for the 2018 Colorado Property Assessment Study.

These reports are the result of two analyses: A procedural audit and a statistical audit.

The procedural audit examines all classes of property. It specifically looks at how the assessor develops economic areas, confirms and qualifies sales, develops time adjustments and performs periodic physical property inspections. The audit reviews the procedures for determining subdivision absorption and subdivision discounting. Valuation methodology is examined for residential properties and commercial properties. Procedures are reviewed for producing mines, oil and gas leaseholds and lands producing, producing coal mines, producing earth and stone products, severed mineral interests, and non-producing patented mining claims.

Statistical audits are performed on vacant land, residential properties, commercial/industrial properties and agricultural land. A statistical analysis is performed for personal property compliance on the eleven largest counties: Adams, Arapahoe, Boulder, Denver, Douglas, El Paso, Jefferson, Larimer, Mesa, Pueblo and Weld. The remaining counties receive a personal property procedural study.

Wildrose Appraisal Inc. – Audit Division appreciates the opportunity to be of service to the State of Colorado. Please contact us with any questions or concerns.

A handwritten signature in black ink that reads "Harry J. Fuller". The signature is written in a cursive style.

Harry J. Fuller
Project Manager
Wildrose Appraisal Inc. – Audit Division

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INTRODUCTION



Colorado

The State Board of Equalization (SBOE) reviews assessments for conformance to the Constitution. The SBOE will order revaluations for counties whose valuations do not reflect the proper valuation period level of value.

The statutory basis for the audit is found in C.R.S. 39-1-104 (16)(a)(b) and (c).

The legislative council sets forth two criteria that are the focus of the audit group:

To determine whether each county assessor is applying correctly the constitutional and statutory provisions, compliance requirements of the State Board of Equalization, and the manuals published by the State Property Tax Administrator to arrive at the actual value of each class of property.

To determine if each assessor is applying correctly the provisions of law to the actual values when arriving at valuations for assessment of all locally valued properties subject to the property tax.

The property assessment audit conducts a two-part analysis: A procedural analysis and a statistical analysis.

The procedural analysis includes all classes of property and specifically looks at how the assessor develops economic areas, confirms and qualifies sales, and develops time adjustments. The audit also examines the procedures for adequately discovering, classifying and valuing agricultural outbuildings, discovering subdivision build-out and subdivision discounting procedures. Valuation methodology for vacant land, improved residential properties and commercial properties is examined. Procedures for producing mines, oil and gas leaseholds and lands producing, producing coal mines, producing earth and stone products, severed mineral interests and non-producing patented mining claims are also reviewed.

Statistical analysis is performed on vacant land, residential properties, commercial/industrial properties, agricultural land, and personal property. The statistical study results are compared with State Board of Equalization compliance requirements and the manuals published by the State Property Tax Administrator.

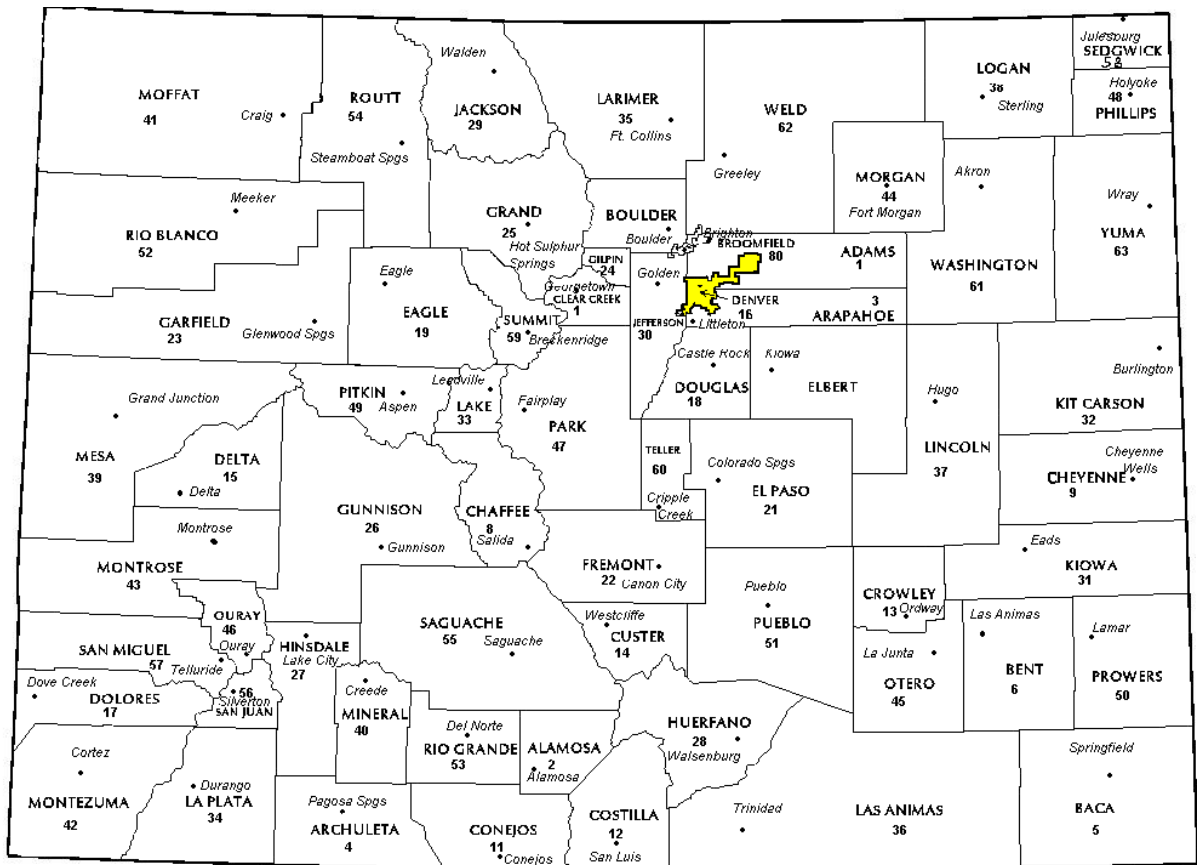
Wildrose Audit has completed the Property Assessment Study for 2018 and is pleased to report its findings for Denver County in the following report.

REGIONAL/HISTORICAL SKETCH OF DENVER COUNTY

Regional Information

Denver County is located in the Front Range region of Colorado. The Colorado Front Range is a colloquial geographic term for the populated areas of the State that are just east of the foothills of the Front Range. It includes

Adams, Arapahoe, Boulder, Broomfield, Denver, Douglas, El Paso, Jefferson, Larimer, Pueblo, and Weld counties.



Historical Information

Denver County had an estimated population of approximately 693,060 people with 4,529.8 people per square mile, according to the U.S. Census Bureau's 2016 estimated census data. This represents a 15.47 percent change from April 1, 2010 to July 1, 2016.

Denver is the capital and the most populous city of the state of Colorado. Denver is a consolidated city-county located in the South Platte River Valley on the High Plains just east of the Front Range of the Rocky Mountains.

Denver City was founded in November 1858 as a mining town during the Pikes Peak Gold Rush in western Kansas Territory. That summer, a group of gold prospectors from Lawrence, Kansas, arrived and established Montana City on the banks of the South Platte River. This was the first settlement in what was later to become the city of Denver. The site faded quickly, however, and was abandoned in favor of Auraria (named after the gold-mining town of Auraria, Georgia) and St. Charles City by the summer of 1859. The Montana City site is now Grant-Frontier Park and includes mining equipment and a log cabin replica.

On November 22, 1858, General William Larimer, a land speculator from eastern Kansas, placed cottonwood logs to stake a claim on the hill overlooking the confluence of the South Platte River and Cherry Creek, across the creek from the existing mining settlement of Auraria. Larimer named the town site Denver City to curry favor with Kansas Territorial Governor James W. Denver. Larimer hoped that the town's name would help make it the county seat of Arapaho County, but ironically Governor Denver had already resigned from office. The location was accessible to existing trails and was across the South Platte River

from the site of seasonal encampments of the Cheyenne and Arapaho. The site of these first towns is now the site of Confluence Park in downtown Denver. Larimer, along with associates in the St. Charles City Land Company, sold parcels in the town to merchants and miners, with the intention of creating a major city that would cater to new emigrants. Denver City was a frontier town, with an economy based on servicing local miners with gambling, saloons, livestock and goods trading. In the early years, land parcels were often traded for grubstakes or gambled away by miners in Auraria.

The Colorado Territory was created on February 28, 1861. Arapahoe County was formed on November 1, 1861 and Denver City was incorporated on November 7, 1861. Denver City served as the Arapahoe County Seat from 1861 until consolidation in 1902. In 1865, Denver City became the Territorial Capital and became the State Capital when Colorado was admitted to the Union.

In 1901 the Colorado General Assembly voted to split Arapahoe County into three parts: a new consolidated City and County of Denver, a new Adams County, and the remainder of the Arapahoe County to be renamed South Arapahoe County. A ruling by the Colorado Supreme Court, subsequent legislation, and a referendum delayed the creation of the City and County of Denver until November 15, 1902.

Denver has hosted the Democratic National Convention twice, during the years of 1908 and again in 2008, taking the opportunity to promote the city's status on the national, political, and socioeconomic stage.

(Wikipedia.org)

RATIO ANALYSIS

Methodology

All significant classes of properties were analyzed. Sales were collected for each property class over the appropriate sale period, which was typically defined as the 18-month period between January 1, 2015 and June 30, 2016. Counties with less than 30 sales typically extended the sale period back up to 5 years prior to June 30, 2016 in 6-month increments. If there were still fewer than 30 sales, supplemental appraisals were performed and treated as proxy sales. Residential sales for all counties using this method totaled at least 30 per county. For commercial sales, the total number analyzed was allowed, in some cases, to fall below 30. There were no sale quantity issues for counties requiring vacant land analysis or condominium analysis. Although it was required that we examine the median and coefficient of dispersion for all counties, we also calculated the weighted mean and price-related differential for each class of property. Counties were not passed or failed by these

latter measures, but were counseled if there were anomalies noted during our analysis. Qualified sales were based on the qualification code used by each county, which were typically coded as either “Q” or “C.” The ratio analysis included all sales. The data was trimmed for counties with obvious outliers using IAAO standards for data analysis. In every case, we examined the loss in data from trimming to ensure that only true outliers were excluded. Any county with a significant portion of sales excluded by this trimming method was examined further. No county was allowed to pass the audit if more than 5% of the sales were “lost” because of trimming. For the largest 11 counties, the residential ratio statistics were broken down by economic area as well.

Conclusions

For this final analysis report, the minimum acceptable statistical standards allowed by the State Board of Equalization are:

ALLOWABLE STANDARDS RATIO GRID		
Property Class	Unweighted Median Ratio	Coefficient of Dispersion
Commercial/Industrial	Between .95-1.05	Less than 20.99
Condominium	Between .95-1.05	Less than 15.99
Single Family	Between .95-1.05	Less than 15.99
Vacant Land	Between .95-1.05	Less than 20.99

The results for Denver County are:

Denver County Ratio Grid					
Property Class	Number of Qualified Sales	Unweighted Median Ratio	Price Related Differential	Coefficient of Dispersion	Time Trend Analysis
Commercial/Industrial	510	0.979	1.034	17.6	Compliant
Condominium	7,124	1.005	1.012	7.2	Compliant
Single Family	15,504	1.015	1.010	7.2	Compliant
Vacant Land	668	0.951	1.091	16.6	Compliant

SINGLE FAMILY Ratio Statistics for currtot / tasp
N = 15,504

Ratio Statistics for CURRTOT / TASP			
Group	Median	Price Related Differential	Coefficient of Dispersion
1	1.009	1.007	.067
10	1.014	1.007	.057
11	1.016	1.018	.103
12	1.017	1.008	.062
13	1.016	1.021	.110
14	1.013	1.013	.095
15	1.011	1.014	.082
16	1.021	1.012	.078
17	1.012	1.022	.088
18	1.011	1.010	.071
19	1.025	1.011	.079
2	1.027	1.011	.084
20	1.021	1.007	.067
21	1.008	1.004	.050
22	1.005	1.003	.045
23	1.025	1.015	.100
24	1.019	1.009	.075
25	1.013	1.008	.068
26	1.015	1.005	.055
27	1.014	1.009	.066
28	1.022	1.006	.062
29	1.011	1.004	.051
3	1.022	1.006	.056
30	1.027	1.011	.079
31	1.010	1.009	.063
32	1.017	1.012	.081
33	1.013	1.010	.076
34	1.017	1.006	.061
4	1.019	1.015	.083
5	1.012	1.014	.094
6	1.006	1.006	.055
7	1.021	1.010	.065
8	1.016	1.009	.073
9	1.014	1.010	.073
Overall	1.015	1.010	.072



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After applying the above described methodologies, it is concluded from the sales ratios that Denver County is in compliance

with SBOE, DPT, and Colorado State Statute valuation guidelines.

Recommendations

None



TIME TRENDING VERIFICATION

Methodology

While we recommend that counties use the inverted ratio regression analysis method to account for market (time) trending, some counties have used other IAAO-approved methods, such as the weighted monthly median approach. We are not auditing the methods used, but rather the results of the methods used. Given this range of methodologies used to account for market trending, we concluded that the best validation method was to examine the sale ratios for each class across the appropriate sale period. To be specific, if a county has considered and adjusted correctly for market trending, then the sale ratios should remain stable (i.e. flat) across the sale period. If a residual market trend is detected, then the county may or may not have addressed market

trending adequately, and a further examination is warranted. This validation method also considers the number of sales and the length of the sale period. Counties with few sales across the sale period were carefully examined to determine if the statistical results were valid.

Conclusions

After verification and analysis, it has been determined that Denver County has complied with the statutory requirements to analyze the effects of time on value in their county. Denver County has also satisfactorily applied the results of their time trending analysis to arrive at the time adjusted sales price (TASP).

Recommendations

None

SOLD / UNSOLD ANALYSIS

Methodology

Denver County was tested for the equal treatment of sold and unsold properties to ensure that “sales chasing” has not occurred. The auditors employed a multi-step process to determine if sold and unsold properties were valued in a consistent manner.

We test the hypothesis that the assessor has valued unsold properties consistent with what is observed with the sold properties based on several units of comparison and tests. The units of comparison include the actual value per square foot and the change in value from the previous base year period to the current base year. The first test compares the actual value per square foot between sold and unsold properties by class. The median and mean value per square foot is compared and tested for any significant difference. This is tested using non-parametric methods, such as the Mann-Whitney test for differences in the distributions or medians between sold and unsold groups. It is also examined graphically and from an appraisal perspective. Data can be stratified based on location and subclass. The second test compares the difference in the median change in value from the previous base year to the current base year between sold and unsold properties by class. The same combination of non-parametric and appraisal testing is used as with the first test. A third test employing a valuation model testing a sold/unsold binary variable while controlling for property attributes such as location, size, age and other attributes. The model determines if the sold/unsold variable is statistically and empirically significant. If all three tests indicate a significant difference between sold and unsold properties for a given class, the Auditor may meet with the county to determine if sale chasing is actually occurring,

or if there are other explanations for the observed difference.

If the unsold properties have a higher median value per square foot than the sold properties, or if the median change in value is greater for the unsold properties than the sold properties, the analysis is stopped and the county is concluded to be in compliance with sold and unsold guidelines. All sold and unsold properties in a given class are first tested, although properties with extreme unit values or percent changes can be trimmed to stabilize the analysis. The median is the primary comparison metric, although the mean can also be used as a comparison metric if the distribution supports that type of measure of central tendency.

The first test (unit value method) is applied to both residential and commercial/industrial sold and unsold properties. The second test is applied to sold and unsold vacant land properties. The second test (change in value method) is also applied to residential or commercial sold and unsold properties if the first test results in a significant difference observed and/or tested between sold and unsold properties. The third test (valuation modeling) is used in instances where the results from the first two tests indicate a significant difference between sold and unsold properties. It can also be used when the number of sold and unsold properties is so large that the non-parametric testing is indicating a false rejection of the hypothesis that there is no difference between the sold and unsold property values.

These tests were supported by both tabular and graphics presentations, along with written documentation explaining the methodology used.

Sold/Unsold Results	
Property Class	Results
Commercial/Industrial	Compliant
Condominium	Compliant
Single Family	Compliant
Vacant Land	Compliant

Conclusions

After applying the above described methodologies, it is concluded that Denver County is reasonably treating its sold and unsold properties in the same manner.

Recommendations

None

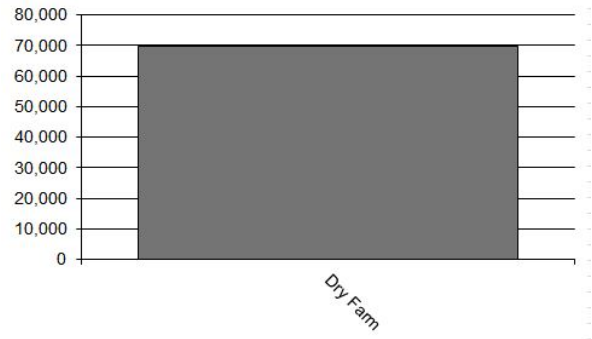
AGRICULTURAL LAND STUDY

Acres By Subclass



Dry Farm
100.00%

Value By Subclass



Agricultural Land

County records were reviewed to determine major land categories such as irrigated farm, dry farm, meadow hay, grazing and other lands. In addition, county records were reviewed in order to determine if: Aerial photographs are available and are being used; soil conservation guidelines have been used to classify lands based on productivity; crop rotations have been documented; typical commodities and yields have been determined; orchard lands have been properly classified and valued; expenses reflect a ten year average and are typical landlord expenses; grazing lands have been properly classified and valued; the number of acres in each class and subclass have been determined; the capitalization rate was properly applied. Also, documentation was required for the valuation methods used and any locally developed yields, carrying capacities, and expenses. Records were also checked to ensure that the commodity prices and expenses, furnished by the Property Tax

Administrator (PTA), were applied properly. (See Assessor Reference Library Volume 3 Chapter 5.)

Conclusions

An analysis of the agricultural land data indicates an acceptable appraisal of this property type. Directives, commodity prices and expenses provided by the PTA were properly applied. County yields compared favorably to those published by Colorado Agricultural Statistics. Expenses used by the county were allowable expenses and were in an acceptable range. Grazing lands carrying capacities were in an acceptable range. The data analyzed resulted in the following ratios:

Denver County Agricultural Land Ratio Grid						
Abstract Code	Land Class	Number Of Acres	County Value Per Acre	County Assessed Total Value	WRA Total Value	Ratio
4127	Dry Farm	1,228	56.91	69,890	69,890	1.00
Total/Avg		1,228	56.91	69,890	69,890	1.00

Recommendations

None

Agricultural Outbuildings

Methodology

Data was collected and reviewed to determine if the guidelines found in the Assessor's Reference Library (ARL) Volume 3, pages 5.74 through 5.77 were being followed.

Property Taxation for the valuation of agricultural outbuildings.

Recommendations

None

Conclusions

Denver County has substantially complied with the procedures provided by the Division of

Agricultural Land Under Improvements

Methodology

Data was collected and reviewed to determine if the guidelines found in the Assessor's Reference Library (ARL) Volume 3, pages 5.19 and 5.20 were being followed.

Conclusions

Denver County has used the following methods to discover land under a residential improvement on a farm or ranch that is determined to be not integral under 39-1-102, C.R.S.:

- Aerial Photography/Pictometry

Denver County has used the following methods to discover the land area under a residential

improvement that is determined to be not integral under 39-1-102, C.R.S.:

- Denver County has no land area under a residential improvement that is determined to be not integral under 39-1-102, C.R.S.

Denver County has substantially complied with the procedures provided by the Division of Property Taxation for the valuation of land under residential improvements that may or may not be integral to an agricultural operation.

Recommendations

None

SALES VERIFICATION

According to Colorado Revised Statutes:

A representative body of sales is required when considering the market approach to appraisal.

(8) In any case in which sales prices of comparable properties within any class or subclass are utilized when considering the market approach to appraisal in the determination of actual value of any taxable property, the following limitations and conditions shall apply:

(a)(I) Use of the market approach shall require a representative body of sales, including sales by a lender or government, sufficient to set a pattern, and appraisals shall reflect due consideration of the degree of comparability of sales, including the extent of similarities and dissimilarities among properties that are compared for assessment purposes. In order to obtain a reasonable sample and to reduce sudden price changes or fluctuations, all sales shall be included in the sample that reasonably reflect a true or typical sales price during the period specified in section 39-1-104 (10.2). Sales of personal property exempt pursuant to the provisions of sections 39-3-102, 39-3-103, and 39-3-119 to 39-3-122 shall not be included in any such sample.

(b) Each such sale included in the sample shall be coded to indicate a typical, negotiated sale, as screened and verified by the assessor. (39-1-103, C.R.S.)

The assessor is required to use sales of real property only in the valuation process.

(8)(f) Such true and typical sales shall include only those sales which have been determined on an individual basis to reflect the selling price of the real property only or which have been adjusted on an individual basis to reflect the selling price of the real property only. (39-1-103, C.R.S.)

Part of the Property Assessment Study is the sales verification analysis. WRA has used the above-cited statutes as a guide in our study of the county's procedures and practices for verifying sales.

WRA reviewed the sales verification procedures in 2018 for Denver County. This study was conducted by checking selected sales from the master sales list for the current valuation period. Specifically WRA selected 60 sales listed as unqualified.

All but one of the sales selected in the sample gave reasons that were clear and supportable. One sale had insufficient reason for disqualification.

For residential, commercial, and vacant land sales with considerations over \$500, the contractor has examined and reported the ratio of qualified sales to total sales by class and performed the following analyses of unqualified sales:

The contractor has examined the manner in which sales have been classified as qualified or unqualified, including a listing of each step in the sales verification process, any adjustment procedures, and the county official responsible for making the final decision on qualification.

The contractor has reviewed with the assessor any analysis indicating that sales data are inadequate, fail to reflect typical properties, or have been disqualified for insufficient cause. In addition, the contractor has reviewed the disqualified sales by assigned code.



If there appears to be any inconsistency in the coding, the contractor has conducted further analysis to determine if the sales included in that code have been assigned appropriately.

Conclusions

Denver County appears to be doing a good job of verifying their sales.

Recommendations

None

ECONOMIC AREA REVIEW AND EVALUATION

Methodology

Denver County has submitted a written narrative describing the economic areas that make up the county's market areas. Denver County has also submitted a map illustrating these areas. Each of these narratives have been read and analyzed for logic and appraisal sensibility. The maps were also compared to the narrative for consistency between the written description and the map.

Conclusions

After review and analysis, it has been determined that Denver County has adequately

identified homogeneous economic areas comprised of smaller neighborhoods. Each economic area defined is equally subject to a set of economic forces that impact the value of the properties within that geographic area and this has been adequately addressed. Each economic area defined adequately delineates an area that will give "similar values for similar properties in similar areas."

Recommendations

None

NATURAL RESOURCES

Denver County is exempt from the Natural Resources Study.

VACANT LAND

Subdivision Discounting

Subdivisions were reviewed in 2018 in Denver County. The review showed that subdivisions were discounted pursuant to the Colorado Revised Statutes in Article 39-1-103 (14) and by applying the recommended methodology in ARL Vol 3, Chap 4. Subdivision Discounting in the intervening year can be accomplished by reducing the absorption period by one year. In instances where the number of sales within an approved plat was less than the absorption rate

per year calculated for the plat, the absorption period was left unchanged.

Conclusions

Denver County has implemented proper procedures to adequately estimate absorption periods, discount rates, and lot values for qualifying subdivisions.

Recommendations

None

POSSESSORY INTEREST PROPERTIES

Possessory Interest

Possessory interest property discovery and valuation is described in the Assessor's Reference Library (ARL) Volume 3 section 7 in accordance with the requirements of Chapter 39-1-103 (17)(a) (II) C.R.S. Possessory Interest is defined by the Property Tax Administrator's Publication ARL Volume 3, Chapter 7: A private property interest in government-owned property or the right to the occupancy and use of any benefit in government-owned property that has been granted under lease, permit, license, concession, contract, or other agreement.

Denver County has been reviewed for their procedures and adherence to guidelines when assessing and valuing agricultural and

commercial possessory interest properties. The county has also been queried as to their confidence that the possessory interest properties have been discovered and placed on the tax rolls.

Conclusions

Denver County has implemented a discovery process to place possessory interest properties on the roll. They have also correctly and consistently applied the correct procedures and valuation methods in the valuation of possessory interest properties.

Recommendations

None

PERSONAL PROPERTY AUDIT

Denver County was studied for its procedural compliance with the personal property assessment outlined in the Assessor's Reference Library (ARL) Volume 5, and in the State Board of Equalization (SBOE) requirements for the assessment of personal property. The SBOE requires that counties use ARL Volume 5, including current discovery, classification, documentation procedures, current economic lives table, cost factor tables, depreciation table, and level of value adjustment factor table.

The personal property audit standards narrative must be in place and current. A listing of businesses that have been audited by the assessor within the twelve-month period reflected in the plan is given to the auditor. The audited businesses must be in conformity with those described in the plan.

Aggregate ratio will be determined solely from the personal property accounts that have been physically inspected. The minimum assessment sample is one percent or ten schedules, whichever is greater, and the maximum assessment audit sample is 100 schedules.

For the counties having over 100,000 population, WRA selected a sample of all personal property schedules to determine whether the assessor is correctly applying the provisions of law and manuals of the Property Tax Administrator in arriving at the assessment levels of such property. This sample was selected from the personal property schedules audited by the assessor. In no event was the sample selected by the contractor less than 30 schedules. The counties to be included in this study are Adams, Arapahoe, Boulder, Denver, Douglas, El Paso, Jefferson, Larimer, Mesa, Pueblo, and Weld. All other counties received a procedural study.

Denver County is compliant with the guidelines set forth in ARL Volume 5 regarding discovery procedures, using the following methods to discover personal property accounts in the county:

- Public Record Documents
- Local Telephone Directories, Newspapers or Other Local Publications
- Personal Observation, Physical Canvassing or Word of Mouth
- Questionnaires, Letters and/or Phone Calls to Buyer, Seller and/or Realtor

The county uses the Division of Property Taxation (DPT) recommended classification and documentation procedures. The DPT's recommended cost factor tables, depreciation tables and level of value adjustment factor tables are also used.

Denver County submitted their personal property written audit plan and was current for the 2018 valuation period. The number and listing of businesses audited was also submitted and was in conformance with the written audit plan. The following audit triggers were used by the county to select accounts to be audited:

- Accounts with obvious discrepancies
- New businesses filing for the first time
- Accounts with greater than 10% change
- Incomplete or inconsistent declarations
- Accounts with omitted property
- Businesses with no deletions or additions for 2 or more years
- Non-filing Accounts - Best Information Available
- As part of sales tax audit



Denver County's median ratio is 1.00. This is in compliance with the State Board of Equalization (SBOE) compliance requirements which range from .90 to 1.10 with no COD requirements.

Conclusions

Denver County has employed adequate discovery, classification, documentation,

valuation, and auditing procedures for their personal property assessment and is in statistical compliance with SBOE requirements.

Recommendations

None

WILDROSE AUDITOR STAFF

Harry J. Fuller, *Audit Project Manager*

Suzanne Howard, *Audit Administrative Manager*

Steve Kane, *Audit Statistician*

Carl W. Ross, *Agricultural / Natural Resource Analyst*

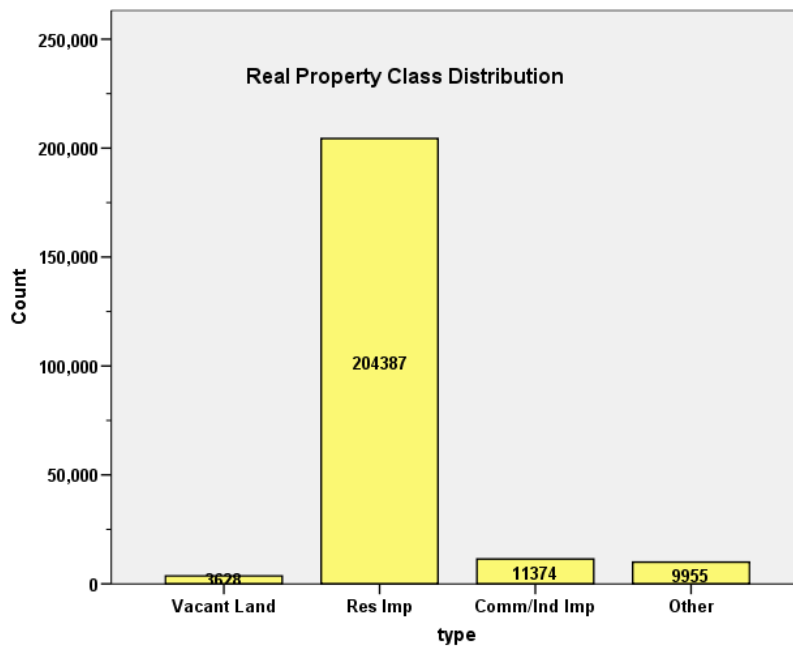
J. Andrew Rodriguez, *Field Analyst*

APPENDICES

STATISTICAL COMPLIANCE REPORT FOR DENVER COUNTY 2018

I. OVERVIEW

Denver County is an urban county located along Colorado’s Front Range. The county has a total of 229,344 real property parcels, according to data submitted by the county assessor’s office in 2018. The following provides a breakdown of property classes for this county:



The vacant land class of properties was dominated by residential land. Residential lots (coded 100 and 200) accounted for 75.3% of all vacant land parcels.

For residential improved properties, single family properties accounted for **65.0%** of all residential properties, while condominiums accounted for **21.6%** of all residential properties. We broke down our residential analysis by both economic area and residential subclass.

Commercial and industrial properties represented a much smaller proportion of property classes in comparison. Commercial/industrial properties accounted for 5.0% of all such properties in this county.

II. DATA FILES

The following sales analyses were based on the requirements of the 2018 Colorado Property Assessment Study. Information was provided by the Denver Assessor’s Office in June 2018. The data included all 5 property record files as specified by the Auditor.

III. RESIDENTIAL SALES RESULTS

There were 27,112 qualified residential sales in the 24 month sale period ending June 30, 2016. We stratified the sales ratio results by residential subclass and economic area, as follows:

**SINGLE FAMILY Ratio Statistics for currtot / tasp
N = 15,504**

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion
1	1.009	1.007	.067
10	1.014	1.007	.057
11	1.016	1.018	.103
12	1.017	1.008	.062
13	1.016	1.021	.110
14	1.013	1.013	.095
15	1.011	1.014	.082
16	1.021	1.012	.078
17	1.012	1.022	.088
18	1.011	1.010	.071
19	1.025	1.011	.079
2	1.027	1.011	.084
20	1.021	1.007	.067
21	1.008	1.004	.050
22	1.005	1.003	.045
23	1.025	1.015	.100
24	1.019	1.009	.075
25	1.013	1.008	.068
26	1.015	1.005	.055
27	1.014	1.009	.066
28	1.022	1.006	.062
29	1.011	1.004	.051
3	1.022	1.006	.056
30	1.027	1.011	.079
31	1.010	1.009	.063
32	1.017	1.012	.081
33	1.013	1.010	.076
34	1.017	1.006	.061
4	1.019	1.015	.083
5	1.012	1.014	.094
6	1.006	1.006	.055
7	1.021	1.010	.065
8	1.016	1.009	.073
9	1.014	1.010	.073
Overall	1.015	1.010	.072

ROWHOUSE/TOWN HOMES Ratio Statistics for currtot / tasp
N = 4,039

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion
51	1.003	1.006	.056
52	1.014	1.014	.099
53	1.005	1.004	.048
54	1.014	1.014	.085
55	1.019	1.011	.073
56	1.005	1.006	.050
57	1.003	1.008	.057
58	1.003	1.007	.051
Overall	1.006	1.012	.063

DUPLEX/TRIPLEX Ratio Statistics for currtot / tasp
N = 214

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion
	1.006	1.018	.100
Overall	1.006	1.018	.100

MULTI-FAM UNITS 4-8 Ratio Statistics for currtot / tasp
N = 78

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion
	1.000	1.010	.077
Overall	1.000	1.010	.077

MULTI-FAM UNITS 9 AND UP Ratio Statistics for currtot / tasp
N = 153

Ratio Statistics for CURRTOT / TASP

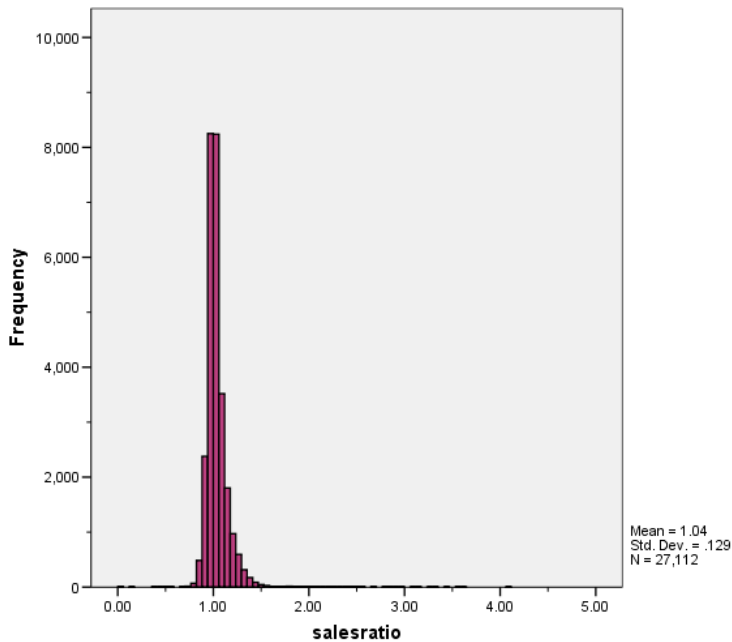
Group	Median	Price Related Differential	Coefficient of Dispersion
	1.000	.980	.108
Overall	1.000	.980	.108

CONDOMINIUM Ratio Statistics for currtot / tasp
N = 7,124

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion
37	1.000	1.001	.049
38	1.008	1.009	.061
39	1.006	1.012	.079
41	1.003	1.011	.084
42	1.008	1.011	.078
43	1.012	1.009	.081
44	1.004	1.009	.065
45	1.005	1.008	.062
46	1.004	1.004	.054
48	1.008	1.017	.108
50	1.003	1.001	.039
Overall	1.005	1.012	.072

The above ratio statistics were in compliance with the standards set forth by the Colorado State Board of Equalization (SBOE) for the overall residential sales. The following graph describes further the sales ratio distribution for these properties:



The above graph indicates that the distribution of the sale ratios was within state mandated limits.

Residential Market Trend Analysis

We next analyzed the residential dataset using the 24-month sale period for any residual market trending and broken down by subclass and economic area, as follows:

SINGLE FAMILY ANALYSIS Coefficients^a

ECONAREA	Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
1	1	(Constant)	.981	.006		154.615	.000
		SalePeriod	.005	.000	.355	10.028	.000
10	1	(Constant)	1.011	.009		113.877	.000
		SalePeriod	.002	.001	.162	3.292	.001
11	1	(Constant)	.984	.011		85.772	.000
		SalePeriod	.007	.001	.324	7.728	.000
12	1	(Constant)	1.013	.010		96.847	.000
		SalePeriod	.002	.001	.134	2.474	.014
13	1	(Constant)	1.043	.027		38.738	.000
		SalePeriod	.004	.002	.087	1.936	.053
14	1	(Constant)	1.043	.021		48.900	.000
		SalePeriod	.002	.002	.079	1.531	.127
15	1	(Constant)	1.044	.018		59.206	.000
		SalePeriod	8.108E-6	.001	.000	.006	.995
16	1	(Constant)	.972	.008		115.488	.000
		SalePeriod	.008	.001	.476	11.889	.000
17	1	(Constant)	1.038	.028		37.254	.000
		SalePeriod	.002	.002	.043	.818	.414
18	1	(Constant)	1.034	.020		51.296	.000
		SalePeriod	.001	.002	.025	.382	.703
19	1	(Constant)	1.019	.010		97.323	.000
		SalePeriod	.004	.001	.184	4.532	.000
2	1	(Constant)	.965	.008		124.933	.000
		SalePeriod	.009	.001	.530	14.828	.000
20	1	(Constant)	1.001	.013		76.110	.000
		SalePeriod	.004	.001	.233	4.171	.000
21	1	(Constant)	1.002	.007		138.436	.000
		SalePeriod	.003	.001	.285	4.457	.000
22	1	(Constant)	.990	.003		309.593	.000
		SalePeriod	.002	.000	.230	8.582	.000
23	1	(Constant)	.972	.009		107.253	.000
		SalePeriod	.008	.001	.386	11.336	.000
24	1	(Constant)	.983	.007		134.930	.000
		SalePeriod	.005	.001	.349	9.426	.000
25	1	(Constant)	.996	.008		117.643	.000
		SalePeriod	.003	.001	.263	5.435	.000
26	1	(Constant)	.980	.010		99.367	.000

		SalePeriod	.005	.001	.327	6.408	.000
27	1	(Constant)	1.023	.016		64.091	.000
		SalePeriod	.002	.001	.075	1.449	.148
28	1	(Constant)	1.011	.010		105.594	.000
		SalePeriod	.003	.001	.204	3.660	.000
29	1	(Constant)	1.007	.008		132.481	.000
		SalePeriod	.002	.001	.162	2.849	.005
3	1	(Constant)	.999	.007		142.072	.000
		SalePeriod	.004	.001	.329	7.366	.000
30	1	(Constant)	.976	.009		105.927	.000
		SalePeriod	.007	.001	.435	9.931	.000
31	1	(Constant)	1.013	.013		76.111	.000
		SalePeriod	.002	.001	.115	1.740	.083
32	1	(Constant)	1.004	.009		109.946	.000
		SalePeriod	.004	.001	.200	5.344	.000
33	1	(Constant)	.982	.014		68.380	.000
		SalePeriod	.005	.001	.339	5.090	.000
34	1	(Constant)	1.010	.016		61.328	.000
		SalePeriod	.003	.001	.167	2.460	.015
4	1	(Constant)	1.060	.019		56.433	.000
		SalePeriod	.000	.001	.012	.230	.818
5	1	(Constant)	.979	.024		40.719	.000
		SalePeriod	.007	.002	.311	3.703	.000
6	1	(Constant)	.986	.004		251.972	.000
		SalePeriod	.003	.000	.291	10.749	.000
7	1	(Constant)	1.005	.009		109.573	.000
		SalePeriod	.003	.001	.233	5.081	.000
8	1	(Constant)	1.019	.013		77.557	.000
		SalePeriod	.002	.001	.098	2.174	.030
9	1	(Constant)	1.048	.018		57.286	.000
		SalePeriod	.000	.001	.010	.174	.862

a. Dependent Variable: salesratio

ROWHOUSE/TOWN HOME ANALYSIS
Coefficients^a

ECONAREA	Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
51	1	(Constant)	1.000	.008		132.490	.000
		SalePeriod	.001	.001	.107	2.045	.042
52	1	(Constant)	.989	.017		58.694	.000
		SalePeriod	.007	.001	.235	4.779	.000
53	1	(Constant)	.989	.005		204.734	.000
		SalePeriod	.003	.000	.277	7.466	.000
54	1	(Constant)	.975	.011		91.879	.000
		SalePeriod	.007	.001	.373	8.814	.000
55	1	(Constant)	.992	.009		104.788	.000
		SalePeriod	.004	.001	.294	6.429	.000
56	1	(Constant)	.998	.007		151.838	.000
		SalePeriod	.002	.000	.193	4.569	.000
57	1	(Constant)	1.020	.010		97.528	.000
		SalePeriod	.000	.001	.016	.390	.697
58	1	(Constant)	.989	.008		118.244	.000
		SalePeriod	.003	.001	.180	4.413	.000

a. Dependent Variable: salesratio

DUPLEX/TRIPLEX ANALYSIS

Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	.954	.018		52.757	.000
	SalePeriod	.006	.001	.285	4.723	.000

a. Dependent Variable: salesratio

MULTI-FAM UNITS 4-8 ANALYSIS
Coefficients^a

Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	.955	.020		47.818	.000
	SalePeriod	.006	.002	.380	3.585	.001

a. Dependent Variable: salesratio

MULTI-FAM UNITS 9 AND UP ANALYSIS
Coefficients^a

Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	.973	.030		32.621	.000
	SalePeriod	.004	.002	.160	1.990	.048

a. Dependent Variable: salesratio

CONDOMINIUM ANALYSIS
Coefficients^a

ECONAREA	Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
37	1	(Constant)	.989	.008		131.385	.000
		SalePeriod	.001	.001	.098	2.056	.040
38	1	(Constant)	.999	.008		129.982	.000
		SalePeriod	.002	.001	.160	3.671	.000
39	1	(Constant)	.982	.010		100.508	.000
		SalePeriod	.004	.001	.266	5.981	.000
41	1	(Constant)	.970	.007		137.562	.000
		SalePeriod	.006	.001	.342	11.353	.000
42	1	(Constant)	.972	.007		141.129	.000
		SalePeriod	.006	.001	.375	11.598	.000
43	1	(Constant)	.963	.008		127.127	.000
		SalePeriod	.006	.001	.335	11.301	.000
44	1	(Constant)	.982	.006		153.029	.000
		SalePeriod	.004	.000	.259	7.706	.000
45	1	(Constant)	1.003	.006		157.530	.000
		SalePeriod	.002	.000	.135	3.986	.000
46	1	(Constant)	1.002	.006		163.095	.000
		SalePeriod	.001	.000	.093	2.465	.014
48	1	(Constant)	.979	.014		71.498	.000
		SalePeriod	.005	.001	.236	4.710	.000
50	1	(Constant)	.993	.009		110.360	.000
		SalePeriod	.002	.001	.199	2.322	.022

a. Dependent Variable: salesratio

The above indicates that market trending was insignificant from either a statistical or a relative magnitude perspective for each subclass and economic area. Based on this analysis, we concluded that Denver County adequately addressed market trending.

Sold/Unsold Analysis

In terms of the valuation consistency between sold and unsold residential properties, we compared the median and mean change in actual value for taxable years 2016 and 2018 between sold and unsold groups. The data was analyzed by subclass, as follows:

Report

DIFF	ABSTRIMP	sold	N	Median	Mean
1112	UNSOLD		114,635	1.26	1.30
	SOLD		14,227	1.27	1.31
1114	UNSOLD		14,212	1.21	1.22
	SOLD		3,637	1.20	1.24
1115	UNSOLD		3,094	1.44	1.46
	SOLD		194	1.42	1.45
1120	UNSOLD		824	1.41	1.44
	SOLD		76	1.40	1.44
1125	UNSOLD		1,345	1.32	1.33
	SOLD		138	1.34	1.34
1130	UNSOLD		36,299	1.30	1.31
	SOLD		6,565	1.32	1.35

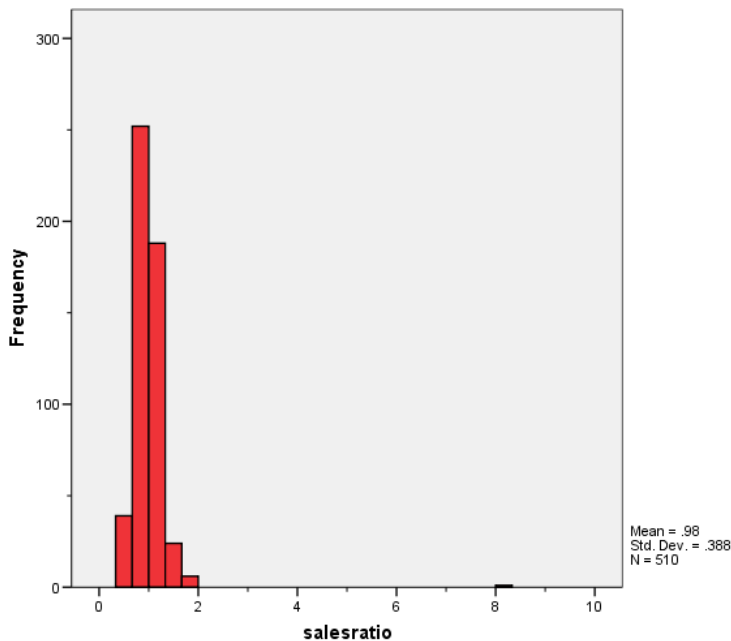
The above results indicate that sold and unsold residential properties were valued in a consistent manner.

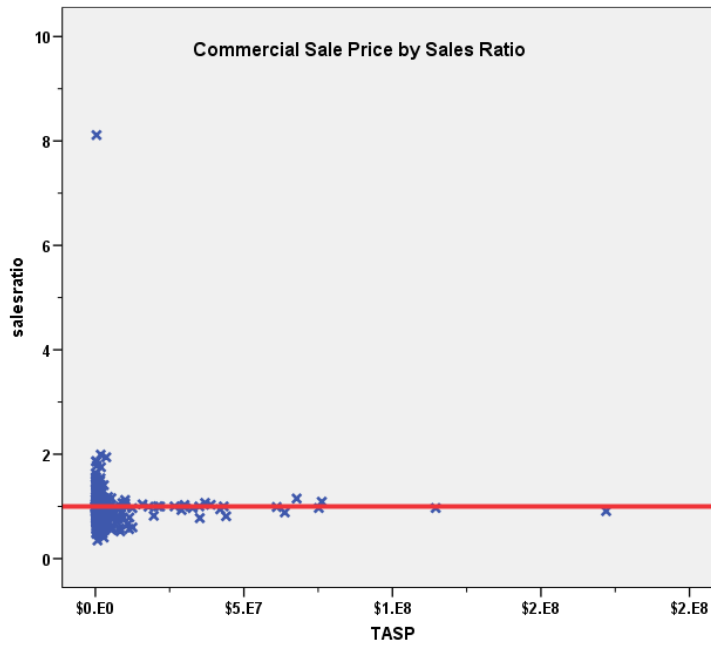
IV. COMMERCIAL/INDUSTRIAL SALE RESULTS

There were 510 qualified commercial/industrial sales in the 24 month sale period ending June 30, 2016. We performed the following sales ratio analysis, as follows:

Median	0.979
Price Related Differential	1.034
Coefficient of Dispersion	17.6

The above table indicates that the Denver County commercial/industrial sale ratios were in compliance with the SBOE standards. The following histogram and scatter plot describe the sales ratio distribution further:





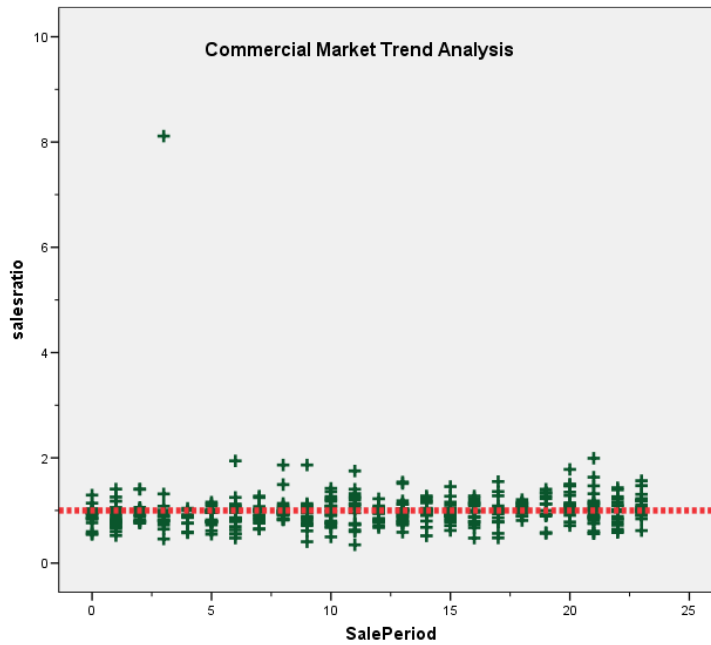
Commercial/Industrial Market Trend Analysis

The 510 commercial/industrial sales were analyzed, examining the sale ratios across the 24 month sale period with the following results:

Coefficients^a

Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	.936	.034		27.830	.000
	SalePeriod	.004	.002	.075	1.694	.091

a. Dependent Variable: salesratio



There was no statistically significant trend; therefore, we concluded that the assessor has adequately considered market trending adjustments as part of the commercial/industrial valuation.

Sold/Unsold Analysis

We compared the 2018 median value per square foot between sold and unsold commercial/industrial properties overall and by subclass, as follows:

Report

VALSF

VALSF	N	Median	Mean
UNSOLD	8,554	\$157.45	\$192.82
SOLD	509	\$144.45	\$174.23

Report

VALSF	ABSTRIMP	sold	N	Median	Mean
2112	UNSOLD		1576	\$176.53	\$202.00
	SOLD		80	\$177.61	\$197.03
2120	UNSOLD		1439	\$195.22	\$211.30
	SOLD		130	\$198.08	\$205.48
2125	UNSOLD		147	\$141.51	\$177.21
	SOLD		7	\$233.56	\$192.62
2130	UNSOLD		1475	\$221.49	\$275.23
	SOLD		59	\$191.37	\$240.12
2135	UNSOLD		2112	\$85.37	\$96.55
	SOLD		143	\$86.29	\$91.22
2140	UNSOLD		433	\$205.88	\$255.54
	SOLD		6	\$221.64	\$228.11
2230	UNSOLD		928	\$240.00	\$242.31
	SOLD		61	\$205.04	\$218.65
3115	UNSOLD		272	\$82.82	\$98.82
	SOLD		13	\$86.48	\$87.76

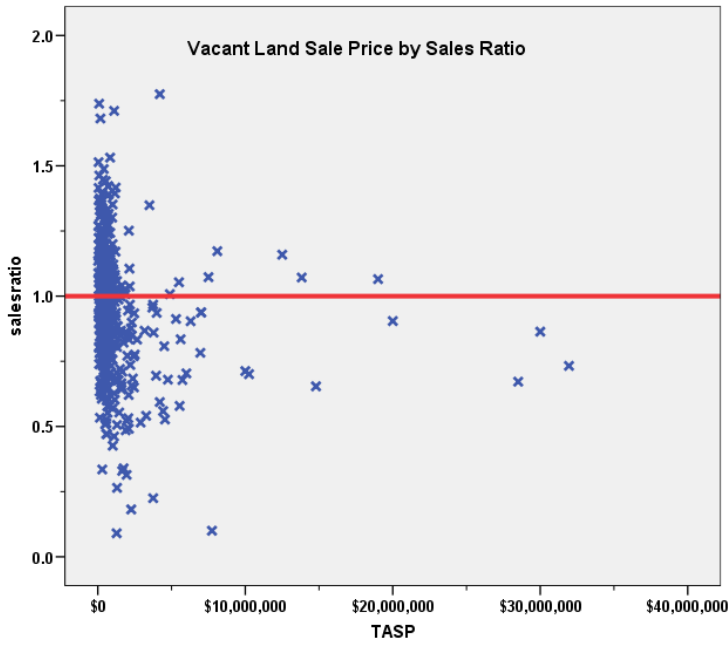
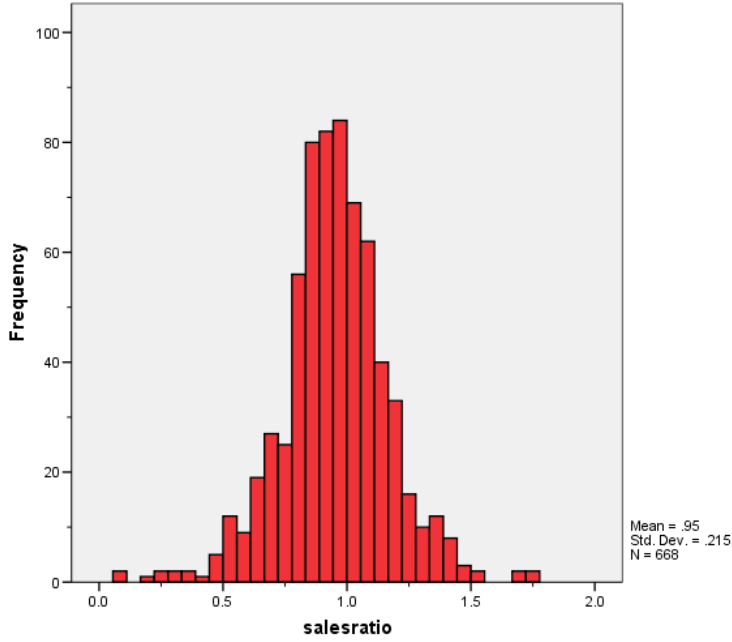
The above results indicated that sold and unsold commercial/industrial properties were valued consistently.

V. VACANT LAND SALE RESULTS

There were 668 qualified vacant land sales in the 24 month sale period ending June 30, 2016. The following sales ratio analysis was performed:

Median	0.951
Price Related Differential	1.091
Coefficient of Dispersion	16.6

The above ratio statistics were in compliance overall with the standards set forth by the Colorado State Board of Equalization (SBOE) for the overall vacant land sales. The following graphs describe further the sales ratio distribution for all of these properties:



The above histogram indicates that the distribution of the vacant land sale ratios was within state mandated limits. No sales were trimmed.

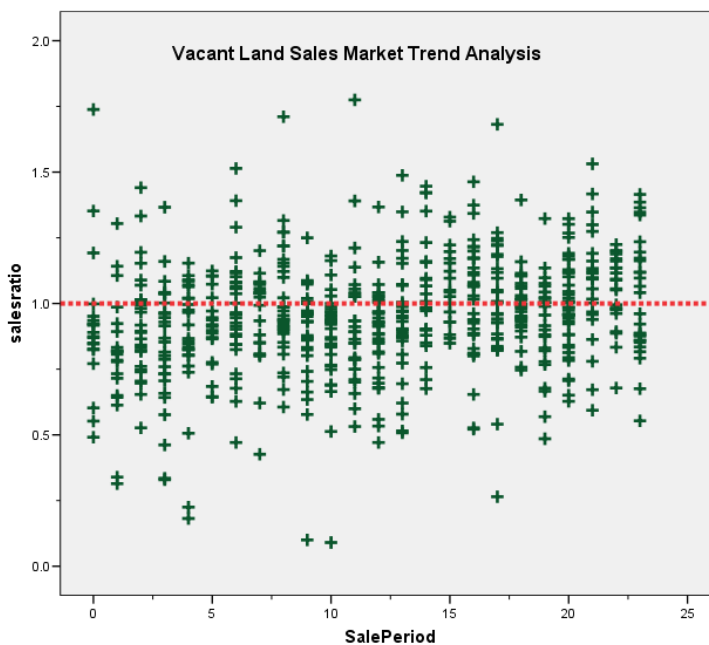
Vacant Land Market Trend Analysis

We next analyzed the vacant land dataset using the 24-month sale period, with the following results:

Coefficients^a

Model		Unstandardized Coefficients		Standardized	t	Sig.
		B	Std. Error	Coefficients Beta		
1	(Constant)	.867	.017		52.311	.000
	SalePeriod	.007	.001	.220	5.826	.000

a. Dependent Variable: salesratio



While there was a statistically significant trend, the magnitude of the trend was not significant. We concluded that the assessor has adequately considered market trending adjustments as part of the vacant land valuation.

Sold/Unsold Analysis

In terms of the valuation consistency between sold and unsold vacant land properties, we compared the median change in actual value for 2016 and 2018 between each group. We stratified the vacant land properties by subdivisions with at least 8 sales and found overall consistency. The following results present the overall comparison results:

Report

DIFF				
NBHD	sold	N	Median	Mean
235	UNSOLD	25	1.27	1.58
	SOLD	11	1.41	2.62
242	UNSOLD	7	1.22	1.27
	SOLD	7	1.20	1.24
247	UNSOLD	31	1.43	1.41
	SOLD	18	1.40	1.45
250	UNSOLD	32	1.53	1.42
	SOLD	20	1.58	1.51
265	UNSOLD	27	2.00	3.36
	SOLD	9	2.25	2.25
Total	UNSOLD	415	1.45	2.09
	SOLD	96	1.41	1.72

The same pattern was found when subdivisions with at least three sales were also analyzed. Overall, we concluded that the county assessor valued sold and unsold vacant land properties consistently.

V. CONCLUSIONS

Based on this 2018 audit statistical analysis, residential, commercial, and vacant land properties were found to be in compliance with state guidelines.

STATISTICAL ABSTRACT

Residential

Ratio Statistics for CURRTOT / TASP

Mean	95% Confidence Interval for Mean		Median	95% Confidence Interval for Median			Actual Coverage	Weighted Mean	95% Confidence Interval for Weighted Mean		Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Mean Centered
	Lower Bound	Upper Bound		Lower Bound	Upper Bound	Lower Bound			Upper Bound				
1.037	1.036	1.039	1.011	1.010	1.011	95.0%	1.030	1.025	1.034	1.007	.071	12.4%	

The confidence interval for the median is constructed without any distribution assumptions. The actual coverage level may be greater than the specified level. Other confidence intervals are constructed by assuming a Normal distribution for the ratios.

Commercial Land

Ratio Statistics for CURRTOT / TASP

Mean	95% Confidence Interval for Mean		Median	95% Confidence Interval for Median			Actual Coverage	Weighted Mean	95% Confidence Interval for Weighted Mean		Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Mean Centered
	Lower Bound	Upper Bound		Lower Bound	Upper Bound	Lower Bound			Upper Bound				
.985	.951	1.018	.979	.969	.995	95.4%	.953	.926	.979	1.034	.176	39.4%	

The confidence interval for the median is constructed without any distribution assumptions. The actual coverage level may be greater than the specified level. Other confidence intervals are constructed by assuming a Normal distribution for the ratios.

Vacant Land

Ratio Statistics for CURRLND / TASP

Mean	95% Confidence Interval for Mean		Median	95% Confidence Interval for Median			Actual Coverage	Weighted Mean	95% Confidence Interval for Weighted Mean		Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Mean Centered
	Lower Bound	Upper Bound		Lower Bound	Upper Bound	Lower Bound			Upper Bound				
.951	.935	.967	.951	.934	.962	95.2%	.872	.832	.911	1.091	.166	22.6%	

The confidence interval for the median is constructed without any distribution assumptions. The actual coverage level may be greater than the specified level. Other confidence intervals are constructed by assuming a Normal distribution for the ratios.



Residential Median Ratio Stratification

Sale Price

Case Processing Summary

		Count	Percent
SPRec	\$25K to \$50K	3	0.0%
	\$50K to \$100K	364	1.3%
	\$100K to \$150K	1139	4.2%
	\$150K to \$200K	2120	7.8%
	\$200K to \$300K	6483	23.9%
	\$300K to \$500K	9686	35.7%
	\$500K to \$750K	4779	17.6%
	\$750K to \$1,000K	1391	5.1%
	Over \$1,000K	1147	4.2%
Overall		27112	100.0%
Excluded		0	
Total		27112	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
\$25K to \$50K	1.404	1.016	.107	22.3%
\$50K to \$100K	1.052	1.003	.116	16.0%
\$100K to \$150K	1.042	1.001	.106	15.2%
\$150K to \$200K	1.042	1.000	.107	15.7%
\$200K to \$300K	1.016	1.001	.073	10.7%
\$300K to \$500K	1.010	1.001	.066	14.4%
\$500K to \$750K	1.002	1.000	.052	9.5%
\$750K to \$1,000K	1.000	1.000	.059	12.5%
Over \$1,000K	1.000	.981	.060	10.0%
Overall	1.011	1.007	.071	13.0%

Subclass

Case Processing Summary

		Count	Percent
ABSTRIMP	100	7	0.0%
	101	1	0.0%
	200	2	0.0%
	1112	15489	57.1%
	1114	4047	14.9%
	1115	208	0.8%
	1120	78	0.3%
	1125	153	0.6%
	1130	7124	26.3%
	2125	1	0.0%
	9259	2	0.0%
Overall		27112	100.0%
Excluded		0	
Total		27112	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
100	.712	.909	.290	41.6%
101	.567	1.000	.000	.
200	.899	.999	.026	3.7%
1112	1.015	1.010	.072	13.9%
1114	1.006	1.012	.063	11.8%
1115	1.006	1.018	.100	15.8%
1120	1.000	1.010	.077	10.6%
1125	1.000	.980	.108	19.1%
1130	1.005	1.012	.072	11.2%
2125	1.027	1.000	.000	.
9259	.959	1.002	.042	5.9%
Overall	1.011	1.007	.071	13.0%

Improvement Age

Case Processing Summary

		Count	Percent
AgeRec	Over 100	22699	83.7%
	75 to 100	1004	3.7%
	50 to 75	1685	6.2%
	25 to 50	1008	3.7%
	5 to 25	391	1.4%
	5 or Newer	325	1.2%
Overall		27112	100.0%
Excluded		0	
Total		27112	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
Over 100	1.010	1.011	.070	12.6%
75 to 100	1.015	1.014	.072	11.2%
50 to 75	1.015	1.020	.078	12.6%
25 to 50	1.017	1.019	.087	17.6%
5 to 25	1.012	1.001	.096	23.8%
5 or Newer	1.003	.959	.063	15.7%
Overall	1.011	1.007	.071	13.0%

Improvement Size

Case Processing Summary

		Count	Percent
ImpSFRec	LE 500 sf	268	1.0%
	500 to 1,000 sf	7730	28.5%
	1,000 to 1,500 sf	9007	33.2%
	1,500 to 2,000 sf	4880	18.0%
	2,000 to 3,000 sf	3865	14.3%
	3,000 sf or Higher	1362	5.0%
Overall		27112	100.0%
Excluded		0	
Total		27112	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
LE 500 sf	.995	1.048	.109	21.0%
500 to 1,000 sf	1.012	1.011	.076	11.4%
1,000 to 1,500 sf	1.012	1.010	.069	10.9%
1,500 to 2,000 sf	1.009	1.008	.061	9.9%
2,000 to 3,000 sf	1.009	1.011	.070	16.1%
3,000 sf or Higher	1.009	1.015	.094	25.9%
Overall	1.011	1.007	.071	13.0%

Improvement Condition

Case Processing Summary

		Count	Percent
QUALITY		21	0.1%
	A	773	2.9%
	B	7467	27.5%
	C	18500	68.2%
	C-	7	0.0%
	C+	1	0.0%
	D	281	1.0%
	X	62	0.2%
Overall		27112	100.0%
Excluded		0	
Total		27112	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
	.567	.855	.637	72.9%
A	1.011	1.005	.096	26.0%
B	1.005	1.005	.061	14.4%
C	1.014	1.013	.074	11.3%
C-	1.155	1.039	.136	22.4%
C+	.925	1.000	.000	.
D	1.008	.997	.093	13.4%
X	1.000	1.005	.045	7.2%
Overall	1.011	1.007	.071	13.0%

Improvement Quality

Case Processing Summary

CONDITION	Count	Percent
	20	0.1%
0	2	0.0%
1	6	0.0%
2	3	0.0%
3	424	1.6%
4	6	0.0%
AV	20688	76.3%
EX	14	0.1%
GD	5325	19.6%
VG	624	2.3%
Overall	27112	100.0%
Excluded	0	
Total	27112	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
	.495	.857	.740	82.4%
0	.902	.921	.088	12.5%
1	1.040	1.014	.049	6.6%
2	1.010	.963	.120	19.1%
3	1.003	.978	.098	16.2%
4	.994	1.572	.152	24.6%
AV	1.009	1.011	.069	12.5%
EX	.980	1.034	.083	15.9%
GD	1.017	1.008	.076	13.8%
VG	1.007	1.007	.068	15.2%
Overall	1.011	1.007	.071	13.0%

Commercial Median Ratio Stratification

Sale Price

Case Processing Summary

		Count	Percent
SPRec	\$25K to \$50K	2	0.4%
	\$50K to \$100K	2	0.4%
	\$100K to \$150K	11	2.2%
	\$150K to \$200K	19	3.7%
	\$200K to \$300K	24	4.7%
	\$300K to \$500K	66	12.9%
	\$500K to \$750K	81	15.9%
	\$750K to \$1,000K	64	12.5%
	Over \$1,000K	241	47.3%
Overall		510	100.0%
Excluded		0	
Total		510	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
\$25K to \$50K	.957	1.005	.045	6.3%
\$50K to \$100K	1.051	.987	.078	11.0%
\$100K to \$150K	1.048	1.003	.275	38.3%
\$150K to \$200K	1.017	1.003	.096	16.4%
\$200K to \$300K	.991	1.004	.155	22.1%
\$300K to \$500K	1.007	1.002	.308	91.7%
\$500K to \$750K	.970	1.001	.170	22.4%
\$750K to \$1,000K	.960	1.001	.127	16.6%
Over \$1,000K	.971	1.000	.157	22.5%
Overall	.979	1.034	.176	39.6%

Subclass

Case Processing Summary

	Count	Percent
ABSTRIMP 200	1	0.2%
1112	2	0.4%
1130	2	0.4%
2112	80	15.7%
2115	1	0.2%
2120	130	25.5%
2125	7	1.4%
2130	59	11.6%
2135	143	28.0%
2140	6	1.2%
2150	2	0.4%
2230	61	12.0%
3115	13	2.5%
9139	2	0.4%
9159	1	0.2%
Overall	510	100.0%
Excluded	0	
Total	510	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
200	.348	1.000	.000	.
1112	1.000	1.018	.118	16.7%
1130	1.283	1.001	.150	21.2%
2112	.965	1.087	.166	21.8%
2115	.781	1.000	.000	.
2120	1.000	1.060	.145	21.3%
2125	.943	1.109	.109	17.6%
2130	.964	1.083	.211	26.6%
2135	.978	1.083	.225	66.3%
2140	1.061	1.023	.064	7.6%
2150	1.003	.989	.098	13.8%
2230	.977	1.002	.114	19.3%
3115	.867	1.151	.166	21.9%
9139	.959	.990	.078	11.1%
9159	.954	1.000	.000	.
Overall	.979	1.034	.176	39.6%

Improvement Age

Case Processing Summary

		Count	Percent
AgeRec	Over 100	26	5.1%
	75 to 100	39	7.6%
	50 to 75	149	29.2%
	25 to 50	211	41.4%
	5 to 25	76	14.9%
	5 or Newer	9	1.8%
Overall		510	100.0%
Excluded		0	
Total		510	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
Over 100	.925	1.060	.188	25.2%
75 to 100	1.000	.985	.116	16.3%
50 to 75	.975	1.029	.155	21.8%
25 to 50	.995	1.045	.160	23.2%
5 to 25	.960	1.010	.176	25.4%
5 or Newer	.961	1.520	1.076	265.3%
Overall	.979	1.034	.176	39.6%

Improvement Size

Case Processing Summary

		Count	Percent
ImpSFRec	LE 500 sf	7	1.4%
	500 to 1,000 sf	14	2.7%
	1,000 to 1,500 sf	41	8.0%
	1,500 to 2,000 sf	41	8.0%
	2,000 to 3,000 sf	47	9.2%
	3,000 sf or Higher	360	70.6%
Overall		510	100.0%
Excluded		0	
Total		510	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
LE 500 sf	.969	1.318	.147	27.7%
500 to 1,000 sf	.825	1.027	.215	31.8%
1,000 to 1,500 sf	.977	1.056	.179	25.5%
1,500 to 2,000 sf	.949	1.096	.187	25.1%
2,000 to 3,000 sf	.968	1.051	.160	25.8%
3,000 sf or Higher	.989	1.046	.174	43.9%
Overall	.979	1.034	.176	39.6%

Improvement Quality

Case Processing Summary

	Count	Percent
QUALITY	1	0.2%
A	13	2.5%
A-	1	0.2%
B	88	17.3%
B-	6	1.2%
B+	7	1.4%
C	373	73.1%
C-	1	0.2%
C+	14	2.7%
D	1	0.2%
X	3	0.6%
X+	2	0.4%
Overall	510	100.0%
Excluded	0	
Total	510	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
	.348	1.000	.000	.
A	.963	1.027	.108	15.8%
A-	1.001	1.000	.000	.
B	.989	1.038	.144	20.3%
B-	.986	1.065	.090	13.6%
B+	1.000	1.131	.190	37.0%
C	.977	1.029	.188	44.7%
C-	1.036	1.000	.000	.
C+	1.063	1.047	.117	15.1%
D	.953	1.000	.000	.
X	.843	1.011	.198	36.4%
X+	.941	1.015	.031	4.3%
Overall	.979	1.034	.176	39.6%

Improvement Condition

Case Processing Summary

	Count	Percent
CONDITION	1	0.2%
3	505	99.0%
AV	3	0.6%
GD	1	0.2%
Overall	510	100.0%
Excluded	0	
Total	510	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
	.348	1.000	.000	.
3	.978	1.033	.175	39.7%
AV	1.091	1.017	.072	13.7%
GD	1.475	1.000	.000	.
Overall	.979	1.034	.176	39.6%

Vacant Land Median Ratio Stratification

Sale Price

Case Processing Summary

	Count	Percent
SPRec		
LT \$25K	1	0.1%
\$25K to \$50K	4	0.6%
\$50K to \$100K	23	3.4%
\$100K to \$150K	18	2.7%
\$150K to \$200K	17	2.5%
\$200K to \$300K	85	12.7%
\$300K to \$500K	211	31.6%
\$500K to \$750K	128	19.2%
\$750K to \$1,000K	55	8.2%
Over \$1,000K	126	18.9%
Overall	668	100.0%
Excluded	0	
Total	668	

Ratio Statistics for CURRLND / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
LT \$25K	1.135	1.000	.000	.
\$25K to \$50K	1.342	.997	.107	13.9%
\$50K to \$100K	1.071	1.002	.161	21.6%
\$100K to \$150K	.927	.999	.221	27.9%
\$150K to \$200K	.999	1.004	.147	23.6%
\$200K to \$300K	1.001	1.001	.146	18.6%
\$300K to \$500K	.958	1.004	.118	15.6%
\$500K to \$750K	.930	.997	.163	21.5%
\$750K to \$1,000K	.974	1.000	.147	19.2%
Over \$1,000K	.849	.997	.236	32.4%
Overall	.951	1.091	.166	22.6%

Subclass

Case Processing Summary

	Count	Percent
ABSTRLND	100	106
	101	12
	200	61
	300	10
	510	2
	520	2
	530	1
	1112	252
	1114	122
	1115	10
	1120	3
	1125	12
	1130	1
	2112	6
	2115	1
	2120	8
	2125	1
	2130	44
	2135	6
	2140	6
	2150	2
Overall	668	100.0%
Excluded	0	
Total	668	

Ratio Statistics for CURRLND / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
100	.928	1.109	.190	25.5%
101	.977	1.013	.092	13.4%
200	.912	1.141	.183	24.1%
300	.946	1.155	.302	36.9%
510	.504	1.520	.821	116.1%
520	.831	1.050	.164	23.2%
530	.877	1.000	.000	.
1112	.998	1.017	.134	17.6%
1114	.930	1.071	.139	18.9%
1115	.824	1.140	.212	32.3%
1120	.881	.955	.171	25.7%
1125	.851	.974	.263	41.3%
1130	.904	1.000	.000	.
2112	.997	1.044	.070	8.2%
2115	1.173	1.000	.000	.
2120	.891	1.107	.142	20.1%
2125	.515	1.000	.000	.
2130	.903	1.037	.194	26.2%
2135	.966	1.331	.516	63.6%
2140	.908	.881	.225	25.1%
2150	.968	1.041	.107	15.2%
Overall	.951	1.091	.166	22.6%