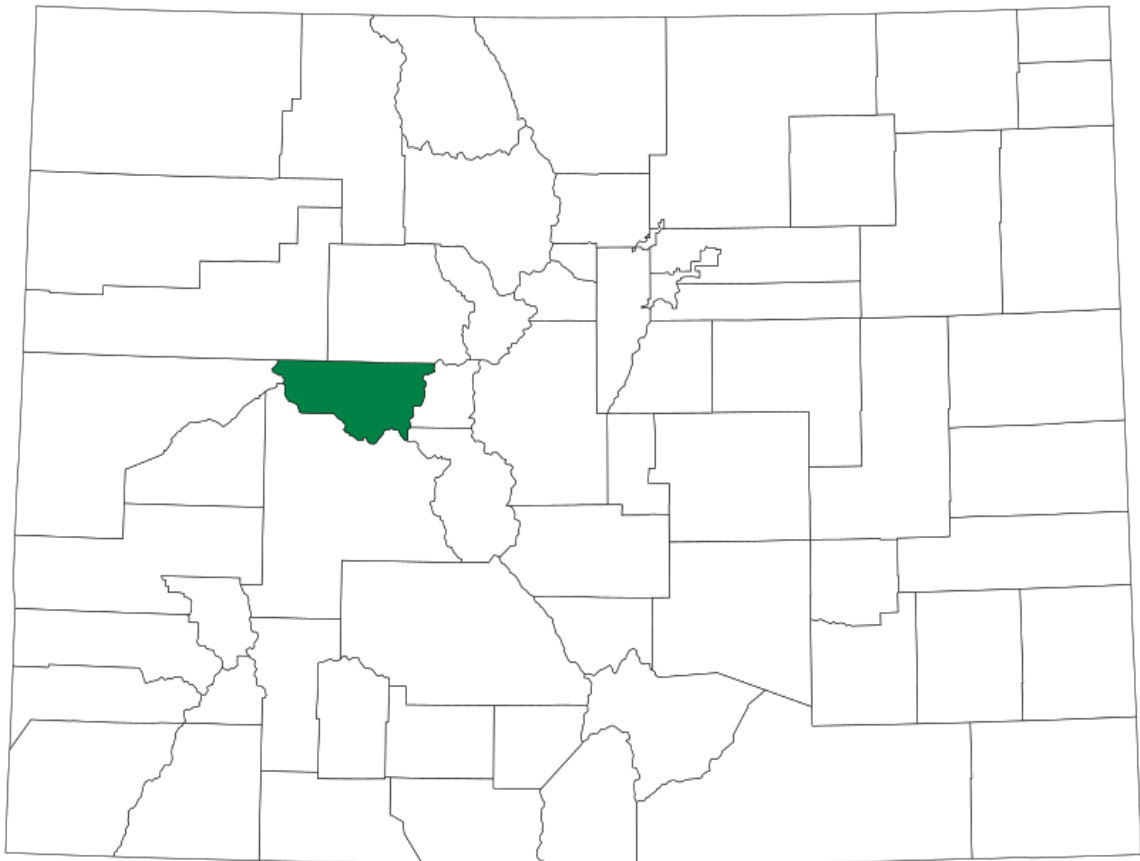


# San Matteo

DATA ANALYTICS

**2025 Property Assessment Study**

**Pitkin County**



September 15, 2025

**Natalie Castle**

Director of Research, Colorado Legislative Council  
Room 029, 200 East Colfax Avenue  
Denver, CO 80203

San Matteo Data Analytics (SMDA) respectfully submits the **Final Report regarding the 2025 Colorado Property Assessment Study for Pitkin County**. This report summarizes the results of both a procedural review and a statistical analysis.

The **procedural review** evaluated local assessment practices, including valuation methods of residential, commercial, agricultural properties, as well as natural resources, personal property, possessory interests, and subdivision discounting. It also examined processes related to the development of economic areas, and sales qualification.

The **statistical analysis** measured compliance with statutory assessment levels for vacant land, residential, and commercial/industrial properties.

We value the opportunity to support the State of Colorado in ensuring fair and consistent property assessments. Please contact us if you have any questions or need additional details regarding these reports.



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# 1. Statistical Overview

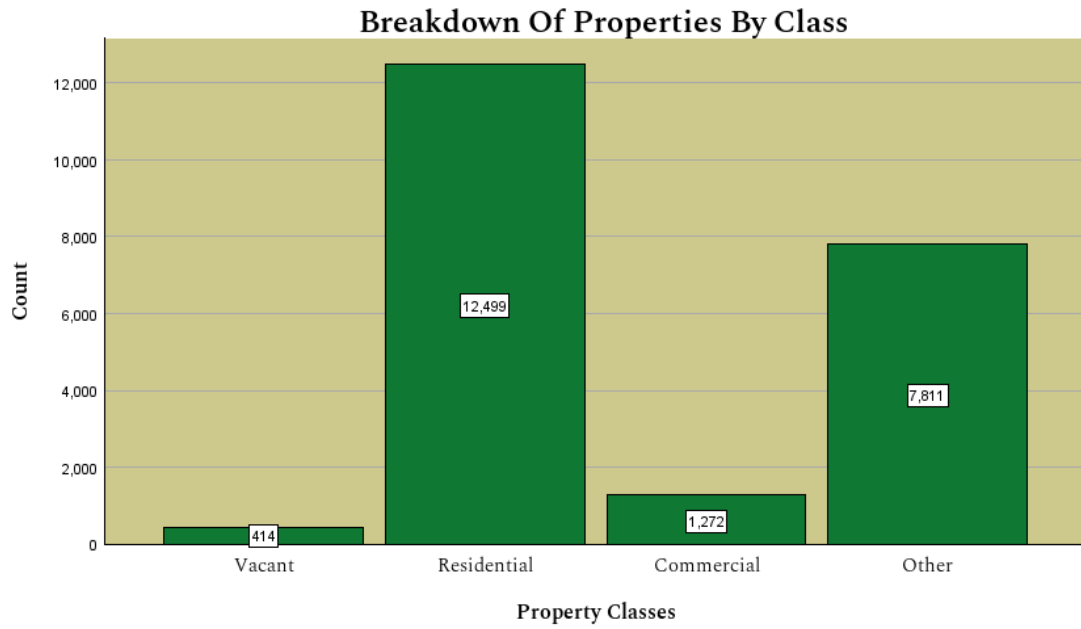
## Compliance and Evaluations

Pitkin County was found to be in compliance.

	Result	Value
<b>Residential</b>		
Median Sales Ratio	Pass	0.99
Coefficient of Dispersion	Pass	7.82%
Time Adjustments	Pass	0.004
Price Related Differential	Sufficient	1.00
Price Related Bias	Sufficient	0.00
Sold/Unsold Similarity	Sufficient	
Qualified Sales > 50%	Yes	

## Property Types

Below is a breakdown of the property types of the 21,996 parcels in Pitkin County.



## 2. Vacant Land

### Overview

The vacant land portion of the analysis was not included in this report because the county did not meet the minimum requirement of 1,200 vacant land parcels. The 2025 Colorado Property Assessment Study specifies that any county with fewer than 1,200 vacant land parcels is exempt from statistical review. Accordingly, vacant land was excluded from analysis for Pitkin County. This exclusion is consistent with the scope of work established in the Request for Proposals and ensures that only those counties meeting the threshold requirement are subject to detailed ratio studies and compliance testing.

### 3. Residential

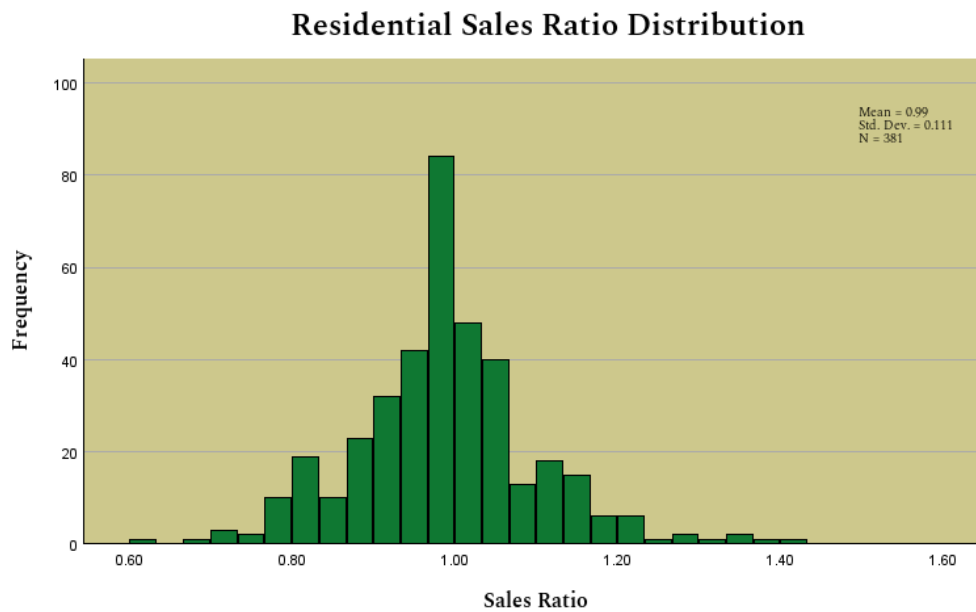
#### Overview

Pitkin County was found to be compliant for Residential properties.

	Result	Value
<b>Residential</b>		
Median Sales Ratio	Pass	0.99
Coefficient of Dispersion	Pass	7.82%
Time Adjustments	Pass	0.004
Price Related Differential	Sufficient	1.00
Price Related Bias	Sufficient	0.00
Sold/Unsold Similarity	Sufficient	
Qualified Sales > 50%	Yes	

## Residential Median Sales Ratio

The median sales ratio (MSR) tests how close the Assessor's valuations (estimates of market value) are to the true market value. The distribution of these sales ratios should be centered around 1.00. The Residential MSR for Pitkin County was calculated to be 0.99, which is within the acceptable statistical range of 0.95 to 1.05 established by the State Board of Equalization (SBOE). We trimmed zero sales during the development of this analysis. The MSR was also calculated for all applicable subclass, neighborhoods, economic areas, size and valuation strata identified by the auditor. See appendix for more details.



## Residential Coefficient of Dispersion

The Coefficient of Dispersion (COD) tests for undesirable variance in the valuations. The variance in sales ratios should be as small as possible. The COD for Residential properties in Pitkin County was calculated at 7.82% which is within the acceptable statistical standard of 15.99% or less established by the State Board of Equalization (SBOE). The COD was also calculated for all applicable class, subclass, neighborhoods, economic areas, and valuation strata identified by the auditor. See appendix for more details.

## Residential Market (Time) Adjustments

All previous statistics used the time-adjusted sales price to ensure that the effect of time on sales ratios has been appropriately addressed. There should be a consistent and reasonable time adjustment methodology, not one tailored to improve sales ratios. We examined the sales ratios over the 24 - month period of sales. There does not appear to be a significant effect of time on Pitkin County's Residential sales ratios.



## Residential Price Related Differential

The Price Related Differential (PRD) tests for differences in the valuations of high and low value sold properties. Sales ratios should be consistent across the range of sale prices so the PRD should be very close to 1.00. The PRD for Pitkin County was calculated at 1.00, which is within the acceptable range of 0.98 to 1.03 established by the International Association of Assessing Officers (IAAO). The PRD was also calculated for all applicable class, subclass, neighborhoods, economic areas, size, and valuation strata identified by the auditor. See appendix for more details.



## Residential Price Related Bias

The Price Related Bias (PRB) measures whether assessment levels change systematically with property value. A PRB close to 0.00 indicates that high- and low-value properties are valued consistently, without upward or downward bias in the sales ratios. For Pitkin County, the PRB was calculated at 0.00 which is within the acceptable statistical range of -0.05 to 0.05 established by the International Association of Assessing Officers. The PRB was also analyzed across all applicable categories, including property class, subclass, neighborhood, economic area, size, and valuation strata as identified by the auditor. Additional details are provided in the appendix.

## **Residential Sold/Unsold Comparison**

All previous Residential statistics focus only on the compliance of properties that were sold during the Residential data collection period. In order to ensure that the unsold properties are also being valued consistently we evaluate whether or not they were treated the same as the sold properties.

Our default comparison approach utilizes the Mann-Whitney U test (also known as the Wilcoxon rank-sum test), to analyze two samples of sold and unsold properties. First, we compare the price per square foot, followed by the change in price per square foot from last reappraisal to this one, and finally we compare the change in total value from last reappraisal to this one. If necessary, we will also consider the stratified (economic area, neighborhood, improvement abstract, etc.) medians of the following unitary metrics: price per foot, change in price per foot, and change in value. See appendix for more details.

Our analysis indicates that the Residential sold and unsold properties are treated similarly. See appendix for more details.

## **Residential Sales Qualification**

All the analysis above, notwithstanding the sold/unsold comparison, relies entirely on qualified sales. In order to ensure that this is a complete and unbiased analysis of assessment practices, we will verify that sales are being correctly coded. We have concluded that Residential sales are being coded in an acceptable way.

There were 713 Residential sales. We have confirmed that more than 50% of all sales were qualified.

## 4. Commercial and Industrial

### Overview

Over the two-year base period, there were too few commercial and industrial sales to support a valid statistical analysis. As a result, Pitkin County is excused from this portion of the statistical audit for commercial and industrial properties.

### Recommendations

The county may submit sales information for up to five years.

## 5. Agriculture

### Methodology

SMDA conducted a comprehensive review of county records to evaluate the classification and valuation of agricultural lands. The review included an assessment of major land categories, such as sprinkler irrigated farmland (4107), flood irrigated (4117), dry farmland (4127), meadow hay (4137), grazing areas (4147), orchard land (4157), farm/ranch waste land (4167), and forest land (4177).

Pitkin County applied the following methods to determine agricultural land classification and appropriate valuation methodology:

- Aerial photos are available and used for land classification
- Soil conservation guidelines determine land productivity classes
- Crop rotations are documented using a ten-year average
- Expenses reflect a ten-year average of typical landlord costs
- Ten-year crop yield averages are based on local and supporting data
- Grazing land is classified by its ten-year carrying capacity
- Acreage totals for all classes and subclasses are verified
- A 13% capitalization rate is correctly applied

Additionally, SMDA checked the county records to confirm that the commodity prices and expense data provided by the Property Tax Administrator (PTA) were accurately applied. Guidance from the **Assessor's Reference Library (ARL), Volume 3, Chapter 5** was referenced where appropriate.

### Conclusions

Based on the review and analysis, SMDA considers Pitkin County's appraisal practices for agricultural property acceptable and in alignment with statutory requirements. The directives, commodity pricing, and expense figures issued by the Property Tax Administrator were correctly applied throughout the process. County-reported yields closely matched the figures published by Colorado Agricultural Statistics, and the expenses used were both reasonable and within allowable ranges. Grazing land carrying capacities were properly supported and fell within acceptable limits. Overall, the analysis confirms that the valuation approach is sound, well-documented, and based on reliable data.

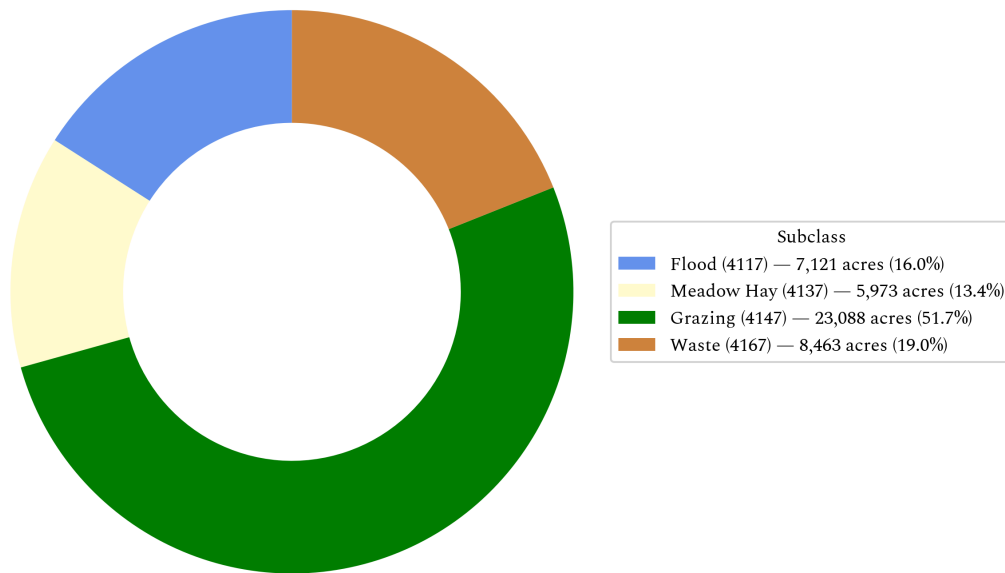
### Recommendations

None

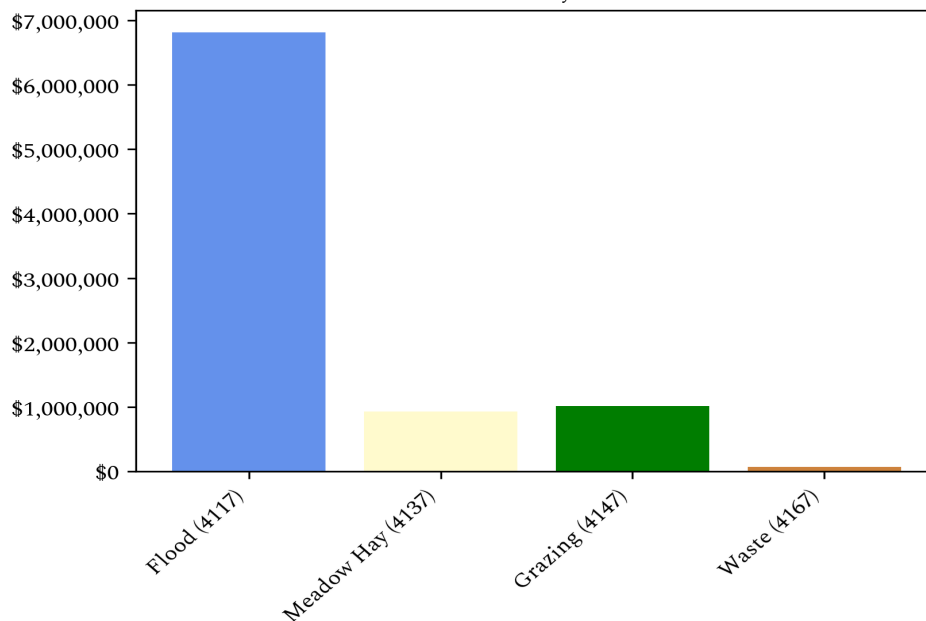
### Agricultural Land Breakdown

Abstract	Class	Acres	Actual Value	Actual Value/Acre	Assessed Value
4117	Flood	7,121	\$6,810,700	\$956.42	\$1,838,900
4137	Meadow Hay	5,973	\$932,400	\$156.10	\$251,750
4147	Grazing	23,088	\$1,014,900	\$43.96	\$274,020
4167	Waste	8,463	\$67,900	\$8.02	\$18,330

Acres by Subclass



Actual Value by Subclass



## 6. Agriculture Non-Integral

### Methodology

SMDA reviewed Pitkin County's processes to determine whether it complied with the guidelines outlined in the **Assessor's Reference Library (ARL), Volume 3, Chapter 5**. The review focused on Pitkin County's approach to identifying land associated with residential improvements on farms and ranches, as well as land beneath residential structures that may not be integral to an agricultural operation under **§39-1-102, C.R.S.**

### For Residential Improvements on a Farm or Ranch

When identifying land under residential structures on a **farm or ranch** that is determined to be not integral to agricultural activity, Pitkin County applied the following discovery methods:

- Questionnaires
- Field Inspections
- In Person Interviews
- Personal Knowledge of Occupants
- Aerial Photography

### For Residential Improvements Not Integral to Agriculture

When identifying land under residential structures that is determined to be **not integral** to agricultural activity, Pitkin County applied the following discovery methods:

- Field Inspections
- Phone Interviews
- In Person Interviews
- Personal Knowledge of Occupants
- Aerial Photography

### Conclusions

Pitkin County followed the procedures set forth by the **Division of Property Taxation** for classifying and valuing land associated with residential improvements, whether or not the property is considered integral to agricultural use.

### Recommendations

None

## 7. Economic Areas

### **Methodology**

Pitkin County submitted written narratives and maps outlining its economic areas. SMDA reviewed these materials for clarity, logical consistency, and alignment between the descriptions and mapped boundaries.

### **Conclusions**

Each area is affected by comparable market conditions, which supports consistent property valuations and helps maintain uniformity in values among properties with similar characteristics within the same geographic region.

### **Recommendations**

None

## 8. Natural Resources

### Earth and Stone

#### Methodology

In accordance with the **Assessor's Reference Library (ARL), Volume 3, Chapter 6: Natural Resource Valuation Procedures**, the county used the **income approach** to determine the value of earth and stone production. Production totals, measured in tons, were multiplied by the economic royalty rate established by the **Division of Property Taxation** to calculate projected income. This income figure was then capitalized using the **Hoskold factor**, which is based on the expected life of the reserves or lease. Since production data is not collected by any state or private agency, the operator is the source for both estimated tonnage and reserve life. Ultimately, valuation depends on two primary variables: the quantity of material and the remaining productive life of the site.

#### Conclusions

The county applied the correct formulas and state guidelines to earth and stone resources.

#### Recommendations

None

## 9. Personal Property

### Methodology

SMDA reviewed Pitkin County's personal property assessment procedures for compliance with the **Assessor's Reference Library (ARL), Volume 5** and the requirements of the **State Board of Equalization (SBOE)**. The SBOE mandates the use of ARL Volume 5, which includes up-to-date discovery processes, classification methods, documentation standards, economic life tables, cost factor tables, depreciation schedules, and level-of-value adjustment tables.

The county provided a current personal property audit plan for the 2025 valuation period along with a list of audited businesses, which matched the plan requirements.

To identify and discover personal property accounts, Pitkin County used several methods:

- Public record documents and MLS listing or sold books
- Chamber of Commerce/Economic Development contacts
- Local publications, personal observation, questionnaires

The county follows all classification, documentation, and valuation procedures recommended by the **Division of Property Taxation (DPT)**, including the prescribed cost factor tables, depreciation schedules, and level-of-value adjustment factors.

Pitkin County also employed a structured audit process using multiple audit triggers to select accounts for review:

- Accounts close to \$56,000 actual value exemption status
- Lowest or highest quartile of value per square foot
- Accounts protested with substantial disagreement
- Non-filing taxpayers
- Businesses with no deletions or additions for 2 or more years
- Same business type or use and accounts with omitted property
- Incomplete or inconsistent declarations accounts with greater than 10% change
- New businesses filing for the first time
- Accounts with obvious discrepancies
- Businesses in selected area

### Conclusions

Pitkin County implemented effective discovery, classification, documentation, valuation, and auditing practices for personal property assessments. The county's procedures align with ARL Volume 5, meet all SBOE requirements, and demonstrate statistical compliance.

### Recommendations

None

# 10. Possessory Interest

## Methodology

SMDA reviewed Pitkin County's discovery and valuation of possessory interest properties to ensure they correctly applied the guidelines outlined in the **Assessor's Reference Library (ARL), Volume 3, Chapter 7**, in accordance with **§39-1-103(17)(a)(II), C.R.S.** Possessory interest refers to a private right to occupy or use government-owned property granted through a lease, license, permit, concession, contract, or other agreement, as defined by the Property Tax Administrator.

SMDA reviewed Pitkin County's assessment procedures for compliance with these guidelines for **agricultural, commercial and ski** possessory interests. The county confirmed the completeness of its discovery process and whether it was confident that all relevant possessory interest properties had been identified and placed on the assessment roll.

## Conclusions

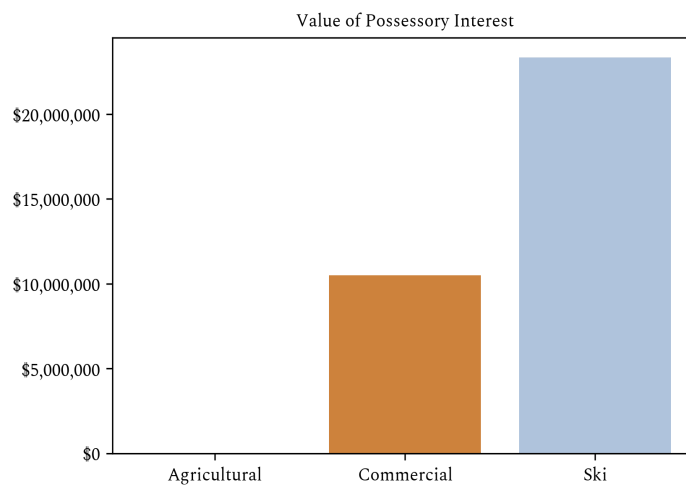
Pitkin County established an effective discovery process to ensure that possessory interest properties were added to the tax roll. The county consistently applied the proper procedures and valuation methods according to State guidelines, resulting in accurate and compliant assessments.

## Recommendations

None

## Possessory Interest Breakdown

Possessory Interest Type	Value
Agricultural	\$1,400
Commercial	\$10,488,200
Ski	\$23,331,100



# 11. Sales Verification

## Methodology

As part of the Property Assessment Study, SMDA conducted an evaluation of Pitkin County's procedures for verifying real estate sales. This review was guided by the relevant provisions of the **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.)*

SMDA examined Pitkin County's sales verification practices for the 2025 valuation period by reviewing a selection of sales from Pitkin County's master sales list. A total of 14 unqualified sales were analyzed. Of these, 13 sales provided clear and supportable reasons for disqualification, while one sale lacked sufficient justification.

Where fewer than **50% of sales** were qualified within a property class, SMDA evaluated the reasons for disqualification within any subclass comprising **20% or more** of the class (by property count or value). When indications arose that sales data might be inadequate, unrepresentative, or incorrectly disqualified, SMDA discussed these cases directly with the assessor. SMDA also reviewed disqualified sales by assigned code to confirm consistent application; additional analysis was performed if SMDA discovered discrepancies.

Because Pitkin County maintained a sufficient percentage of qualified sales, an in-depth subclass analysis was not required.

Pitkin County

## **Conclusions**

Based on SMDA's review, Pitkin County performed adequately in verifying sales and applying statutory requirements.

## **Recommendations**

None

## 12. Subdivision Discounting

### Methodology

SMDA reviewed Pitkin County's subdivision discounting practices to ensure compliance with §39-1-103(14), C.R.S. Pitkin County did not apply subdivision discounting.

### Conclusions

Pitkin County is excused from the procedural review

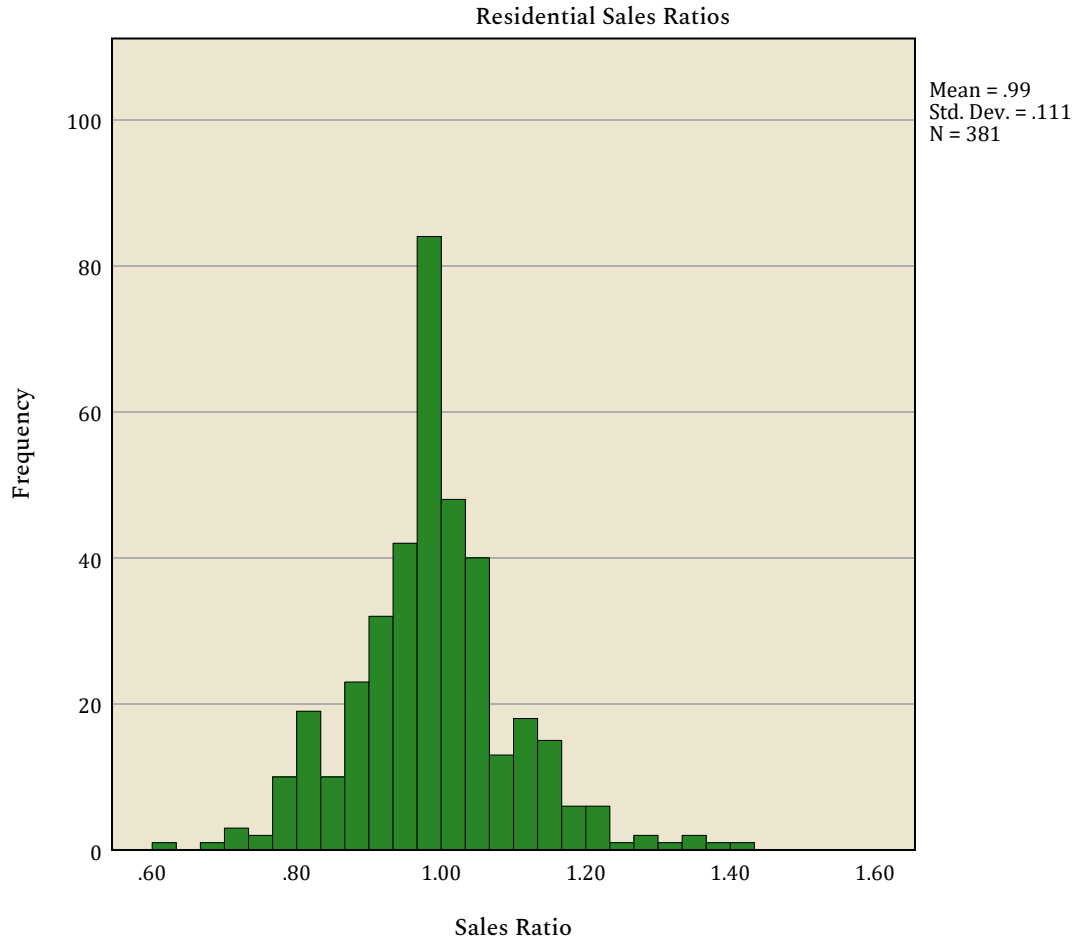
### Recommendations

None

# 13. Appendix

### OVERALL Residential: Sales Ratio Distribution

Graph



**OVERALL Residential: Central Tendencies**

**Ratio Statistics**

Ratio Statistics for Current Total Value /  
Adjusted Sale Price

N	Median	Coefficient of Dispersion
713	.993	.078

**Ratio Statistics**

Ratio Statistics for Current Total  
Value / Adjusted Sale Price

Price Related Bias	Price Related Differential
.002	1.004

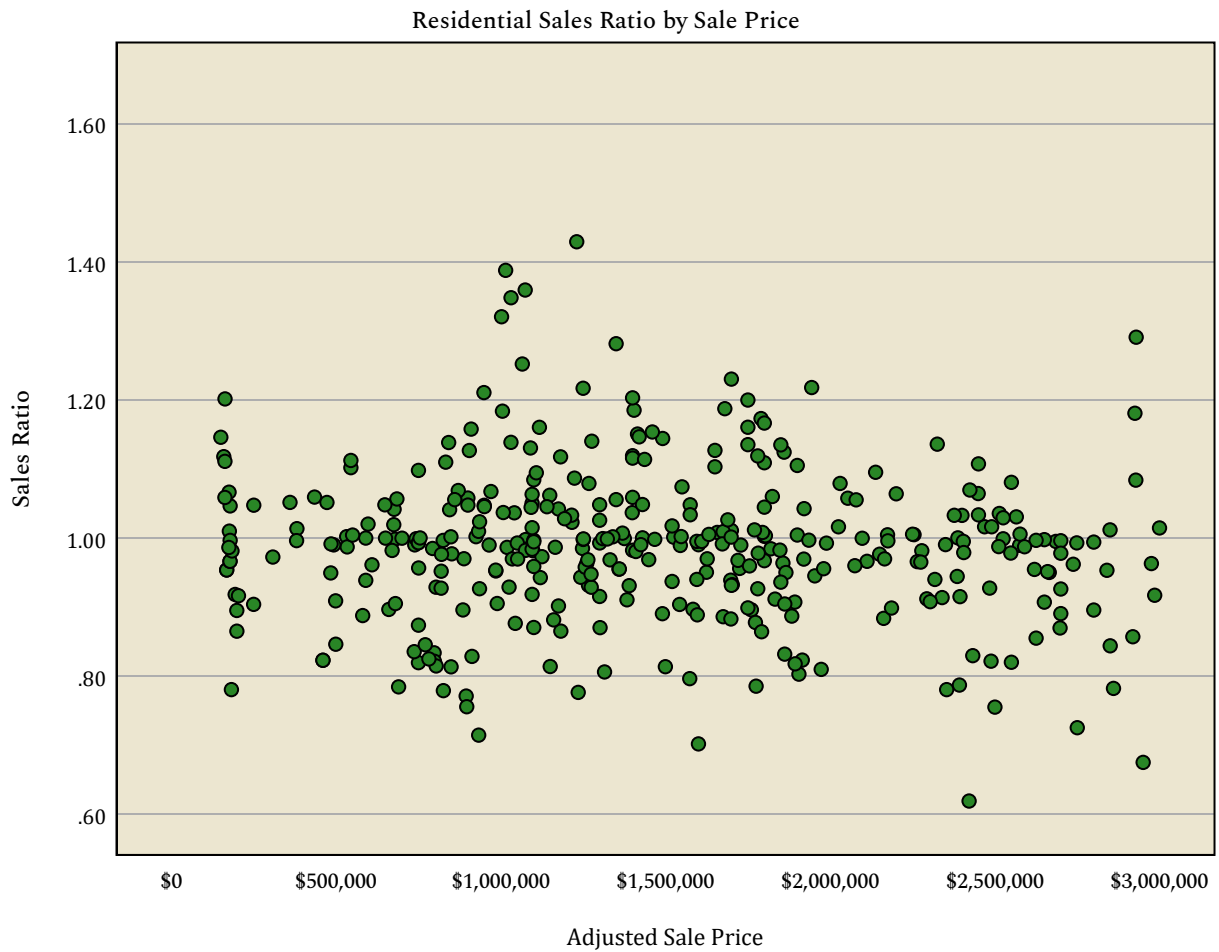
### OVERALL Residential: Sales Price by Sales Ratio

Regression

		Coefficients <sup>a</sup>				
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	.989	.005		192.523	<.001
	Adjusted Sale Price	-4.036E-10	.000	-.026	-.684	.494

a. Dependent Variable: Sales Ratio

Graph



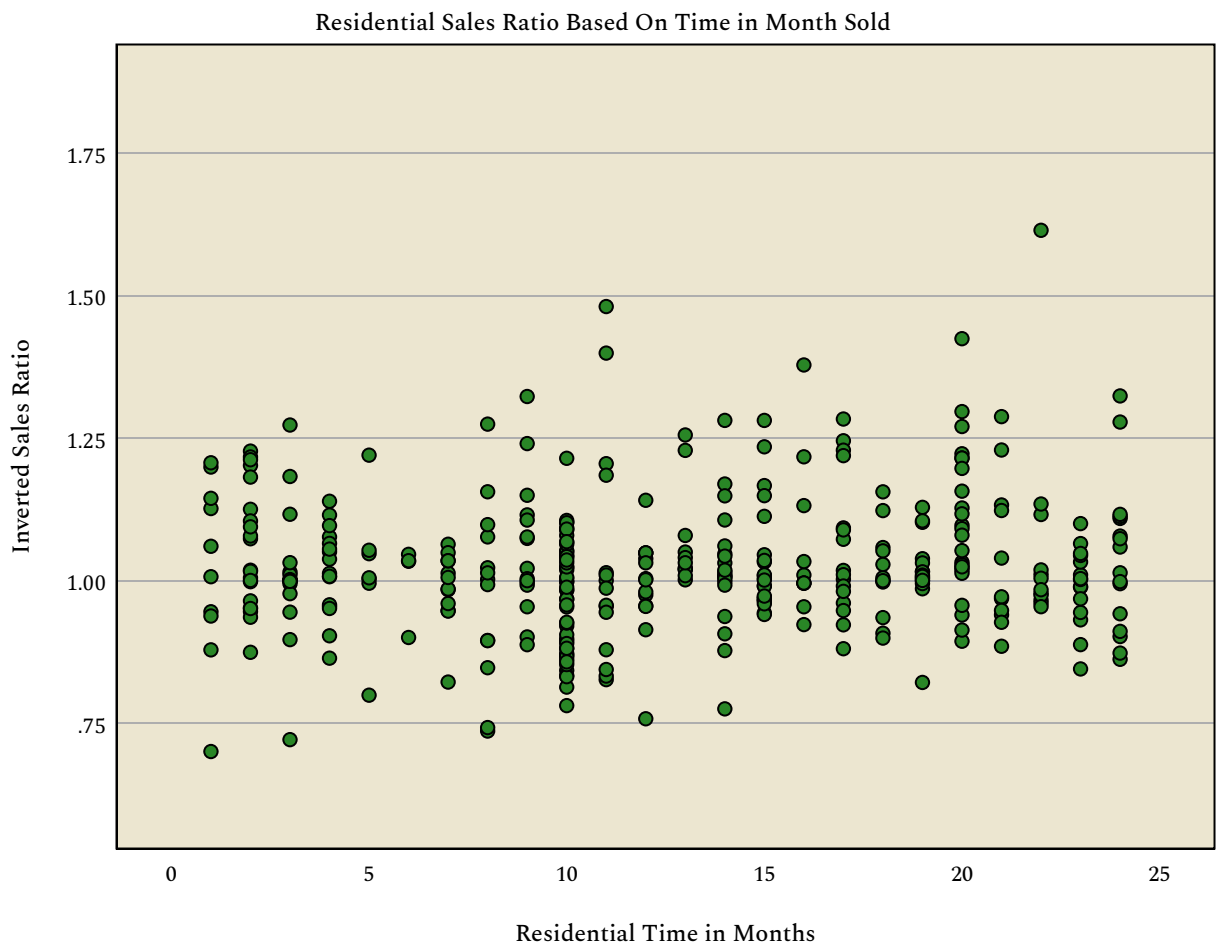
### OVERALL Residential: Months by Inverted Sales Ratio

Regression

		Coefficients <sup>a</sup>				
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.001	.010		98.502	<.001
	Residential Time in Months	.002	.001	.107	2.867	.004

a. Dependent Variable: Inverted Sales Ratio

Graph



**OVERALL Residential: Descriptive Statistics**

**Frequencies**

		Statistics		
		Previous Price Per Foot	Price Per Foot	Difference in Price Per Foot
N	Valid	705	705	705
	Missing	8	8	8
Mean		\$2,105.65	\$2,077.13	1.11
Median		\$1,641.45	\$1,760.86	1.06
Percentiles	2.5	\$412.34	\$507.28	.78
	25	\$1,179.98	\$1,346.81	.97
	50	\$1,641.45	\$1,760.86	1.06
	75	\$2,711.22	\$2,816.16	1.22
	97.5	\$4,732.79	\$4,875.82	1.69

**Frequencies**

		Statistics		
		Previous Total Value	Current Total Value	Difference in Total Value
N	Valid	713	713	712
	Missing	0	0	1
Mean		\$5,008,229.59	\$5,080,218.23	\$202,563.48
Median		\$2,348,800.00	\$2,532,400.00	\$97,300.00
Percentiles	2.5	\$161,600.00	\$186,600.00	-\$2,681,890.00
	25	\$1,144,600.00	\$1,331,700.00	-\$96,925.00
	50	\$2,348,800.00	\$2,532,400.00	\$97,300.00
	75	\$5,661,200.00	\$5,845,350.00	\$384,525.00
	97.5	\$24,742,455.00	\$24,124,555.00	\$3,908,462.50

**OVERALL Residential: Mann-Whitney U-Test (Rank-sum)**

**Nonparametric Tests**

Hypothesis Test Summary

	Null Hypothesis	Test	Sig. <sup>a,b</sup>
1	The distribution of Difference in Total Value is the same across categories of Residential Sold vs Unsold.	Independent-Samples Mann-Whitney U Test	<.001

Hypothesis Test Summary

	Decision
1	Reject the null hypothesis.

- a. The significance level is .050.
- b. Asymptotic significance is displayed.

**Independent-Samples Mann-Whitney U Test**

**Difference in Total Value across Residential Sold vs Unsold**

Independent-Samples Mann-Whitney U Test Summary

Total N	11189
Mann-Whitney U	2886276.000
Wilcoxon W	58997397.000
Test Statistic	2886276.000
Standard Error	76728.484
Standardized Test Statistic	-3.525
Asymptotic Sig.(2-sided test)	<.001

**Nonparametric Tests**

**OVERALL Residential: Mann-Whitney U-Test (Rank-sum)**

Hypothesis Test Summary

	Null Hypothesis	Test	Sig. <sup>a,b</sup>
1	The distribution of Price Per Foot is the same across categories of Residential Sold vs Unsold.	Independent-Samples Mann-Whitney U Test	<.001

Hypothesis Test Summary

	Decision
1	Reject the null hypothesis.

- a. The significance level is .050.
- b. Asymptotic significance is displayed.

**Independent-Samples Mann-Whitney U Test**

**Price Per Foot across Residential Sold vs Unsold**

Independent-Samples Mann-Whitney U Test Summary

Total N	11195
Mann-Whitney U	2857374.500
Wilcoxon W	58894365.500
Test Statistic	2857374.500
Standard Error	77555.971
Standardized Test Statistic	-4.720
Asymptotic Sig.(2-sided test)	<.001

**Nonparametric Tests**

**OVERALL Residential: Mann-Whitney U-Test (Rank-sum)**

Hypothesis Test Summary

	Null Hypothesis	Test	Sig. <sup>a,b</sup>
1	The distribution of Difference in Price Per Foot is the same across categories of Residential Sold vs Unsold.	Independent-Samples Mann-Whitney U Test	.090

Hypothesis Test Summary

	Decision
1	Retain the null hypothesis.

- a. The significance level is .050.
- b. Asymptotic significance is displayed.

**Independent-Samples Mann-Whitney U Test**

**Difference in Price Per Foot across Residential Sold vs Unsold**

Independent-Samples Mann-Whitney U Test Summary

Total N	11195
Mann-Whitney U	2964567.000
Wilcoxon W	59277145.000
Test Statistic	2964567.000
Standard Error	75975.463
Standardized Test Statistic	-1.696
Asymptotic Sig.(2-sided test)	.090

**OVERALL Residential: Unit Value Comparison**

**Summarize**

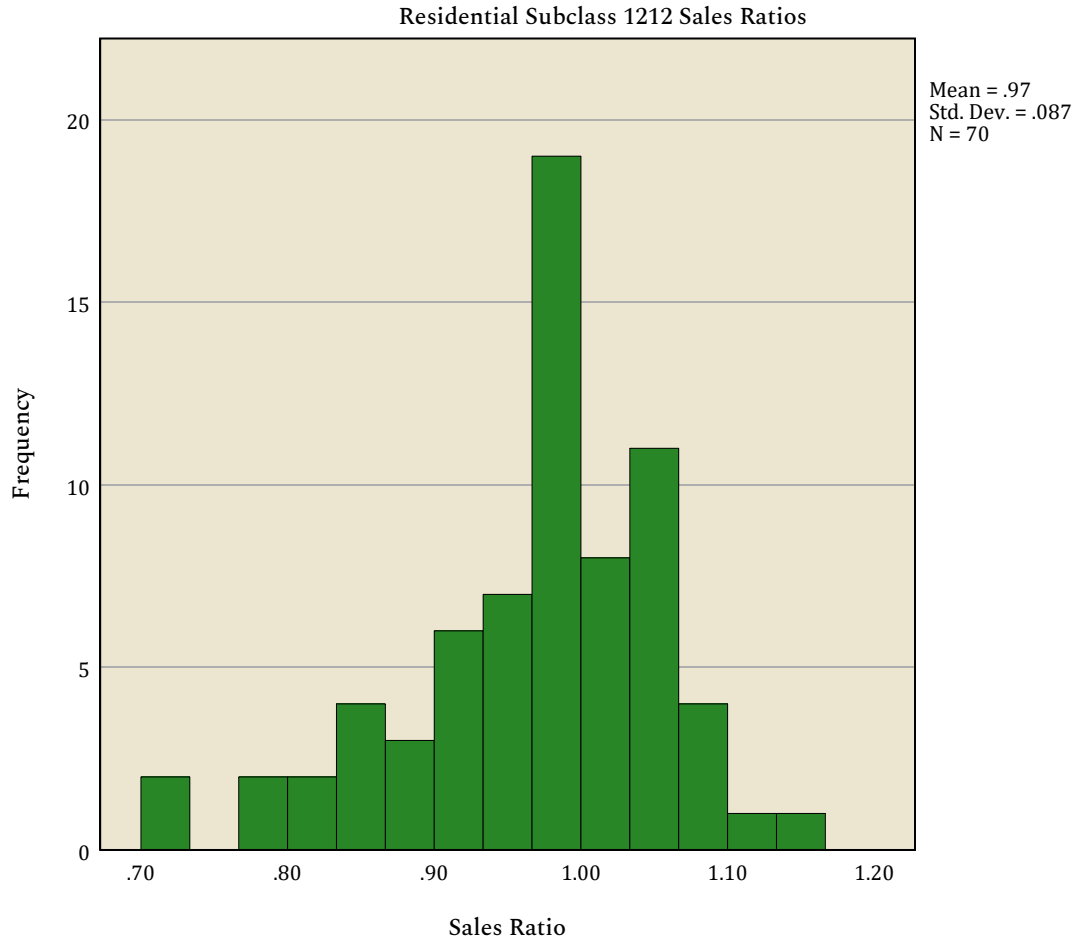
Sold vs Unsold

Difference in Price Per Foot

Residential Sold vs Unsold	N	Median	Mean
SOLD	625	1.04	1.08
UNSOLD	11160	1.03	1.04
Total	11785	1.03	1.04

### Residential Subclass 1212: Sales Ratio Distribution

Graph



**Residential Subclass 1212: Central Tendencies**

**Ratio Statistics**

Ratio Statistics for Current Total Value /  
Adjusted Sale Price

N	Median	Coefficient of Dispersion
246	.994	.075

**Ratio Statistics**

Ratio Statistics for Current Total  
Value / Adjusted Sale Price

Price Related Bias	Price Related Differential
.006	1.001

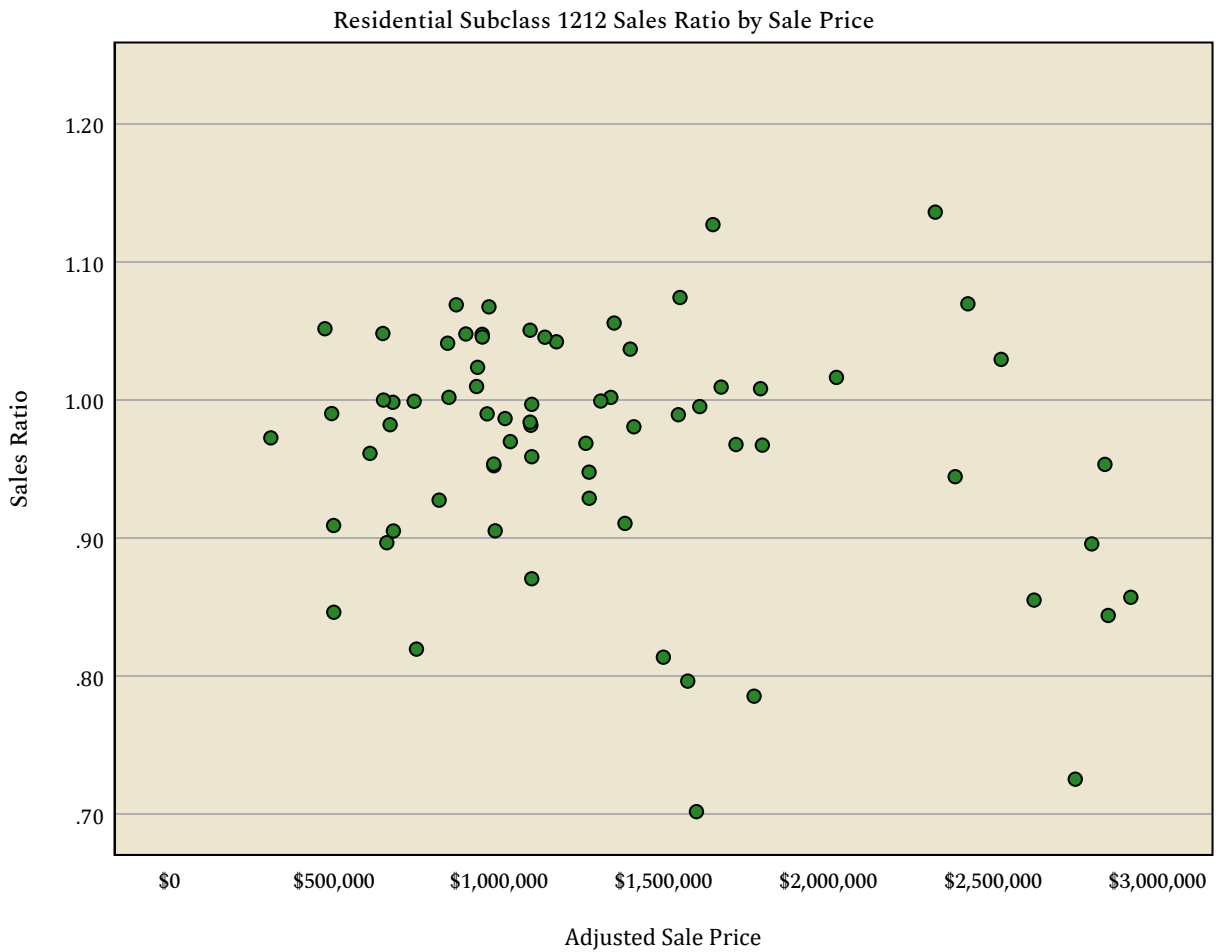
### Residential Subclass 1212: Sales Price by Sales Ratio

**Regression**

		Coefficients <sup>a</sup>				
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	.989	.009		109.836	<.001
	Adjusted Sale Price	-7.890E-11	.000	-.007	-.117	.907

a. Dependent Variable: Sales Ratio

**Graph**



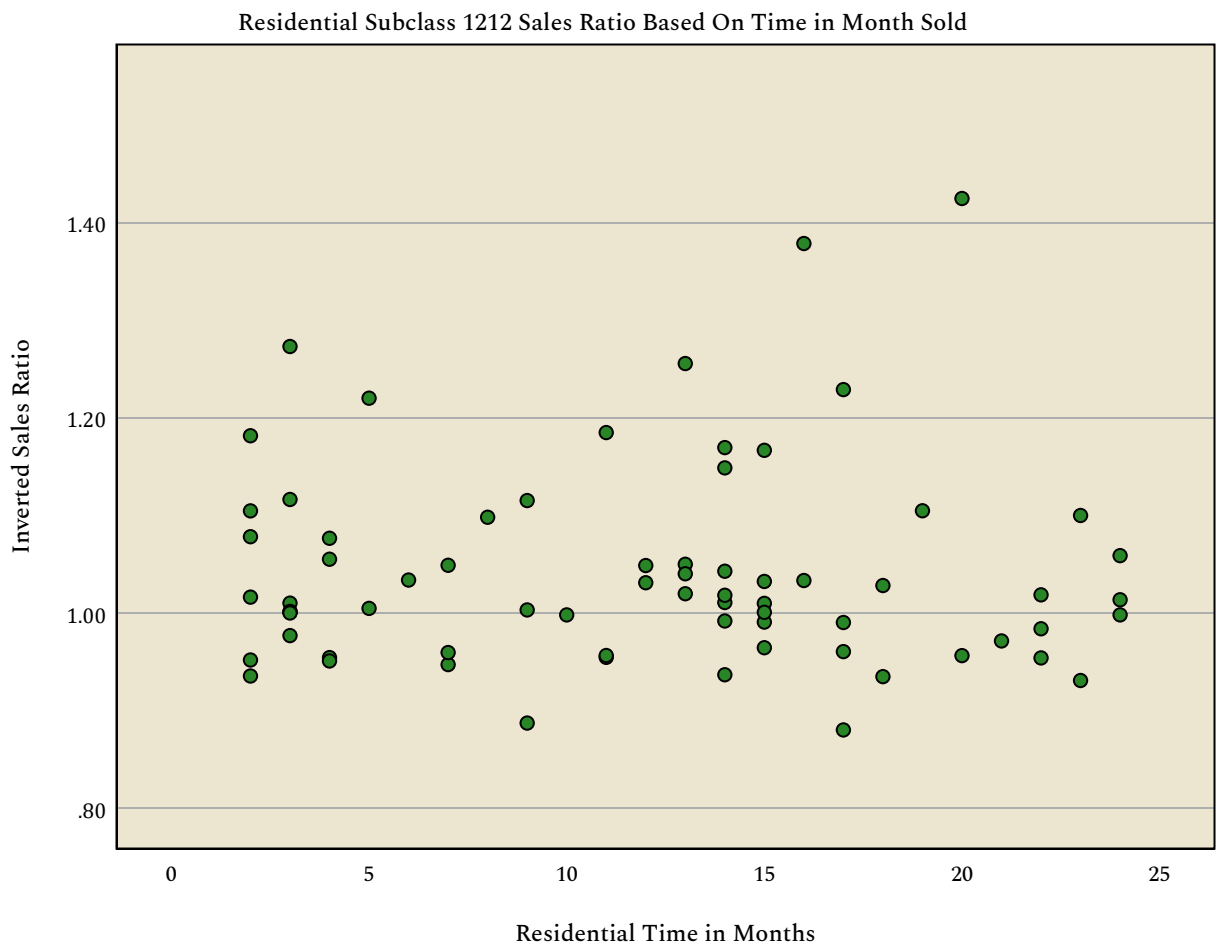
### Residential Subclass 1212: Months by Inverted Sales Ratio

Regression

		Coefficients <sup>a</sup>				
		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
Model		B	Std. Error	Beta		
1	(Constant)	1.018	.016		64.639	<.001
	Residential Time in Months	.000	.001	.021	.326	.745

a. Dependent Variable: Inverted Sales Ratio

Graph



**Residential Subclass 1212: Descriptive Statistics**

**Frequencies**

		Statistics		
		Previous Price Per Foot	Price Per Foot	Difference in Price Per Foot
N	Valid	246	246	246
	Missing	0	0	0
Mean		\$2,349.21	\$2,036.29	1.08
Median		\$1,668.93	\$1,651.95	1.03
Percentiles	2.5	\$342.12	\$398.65	.73
	25	\$777.50	\$893.03	.92
	50	\$1,668.93	\$1,651.95	1.03
	75	\$2,734.61	\$2,892.72	1.15
	97.5	\$5,194.88	\$4,936.66	1.97

**Frequencies**

		Statistics		
		Previous Total Value	Current Total Value	Difference in Total Value
N	Valid	246	246	245
	Missing	0	0	1
Mean		\$9,243,206.91	\$9,047,336.18	\$182,502.45
Median		\$6,154,900.00	\$6,058,100.00	\$65,000.00
Percentiles	2.5	\$404,365.00	\$586,437.50	-\$4,002,675.00
	25	\$1,823,875.00	\$2,197,975.00	-\$492,450.00
	50	\$6,154,900.00	\$6,058,100.00	\$65,000.00
	75	\$12,612,850.00	\$12,735,025.00	\$466,550.00
	97.5	\$35,467,575.00	\$32,892,960.00	\$5,864,120.00

**Residential Subclass 1212: Mann-Whitney U-Test (Rank-sum)**

**Nonparametric Tests**

Hypothesis Test Summary

	Null Hypothesis	Test	Sig. <sup>a,b</sup>
1	The distribution of Difference in Total Value is the same across categories of Residential Sold vs Unsold.	Independent-Samples Mann-Whitney U Test	.899

Hypothesis Test Summary

	Decision
1	Retain the null hypothesis.

- a. The significance level is .050.
- b. Asymptotic significance is displayed.

**Independent-Samples Mann-Whitney U Test**

**Difference in Total Value across Residential Sold vs Unsold**

Independent-Samples Mann-Whitney U Test Summary

Total N	5076
Mann-Whitney U	534538.000
Wilcoxon W	12332191.000
Test Statistic	534538.000
Standard Error	21213.827
Standardized Test Statistic	.127
Asymptotic Sig.(2-sided test)	.899

**Nonparametric Tests**

**Residential Subclass 1212: Mann-Whitney U-Test (Rank-sum)**

Hypothesis Test Summary

	Null Hypothesis	Test	Sig. <sup>a,b</sup>
1	The distribution of Price Per Foot is the same across categories of Residential Sold vs Unsold.	Independent-Samples Mann-Whitney U Test	.143

Hypothesis Test Summary

	Decision
1	Retain the null hypothesis.

- a. The significance level is .050.
- b. Asymptotic significance is displayed.

**Independent-Samples Mann-Whitney U Test**

**Price Per Foot across Residential Sold vs Unsold**

Independent-Samples Mann-Whitney U Test Summary

Total N	5077
Mann-Whitney U	523379.000
Wilcoxon W	12277355.000
Test Statistic	523379.000
Standard Error	21674.783
Standardized Test Statistic	-1.463
Asymptotic Sig.(2-sided test)	.143

**Nonparametric Tests**

**Residential Subclass 1212: Mann-Whitney U-Test (Rank-sum)**

Hypothesis Test Summary

	Null Hypothesis	Test	Sig. <sup>a,b</sup>
1	The distribution of Difference in Price Per Foot is the same across categories of Residential Sold vs Unsold.	Independent-Samples Mann-Whitney U Test	.305

Hypothesis Test Summary

	Decision
1	Retain the null hypothesis.

- a. The significance level is .050.
- b. Asymptotic significance is displayed.

**Independent-Samples Mann-Whitney U Test**

**Difference in Price Per Foot across Residential Sold vs Unsold**

Independent-Samples Mann-Whitney U Test Summary

Total N	5077
Mann-Whitney U	527630.000
Wilcoxon W	12383645.000
Test Statistic	527630.000
Standard Error	20701.759
Standardized Test Statistic	1.027
Asymptotic Sig.(2-sided test)	.305

## Residential Subclass 1212: Unit Comparison Method

### Summarize

Sold vs Unsold Percent Change for Subclass 1212

#### Difference in Price Per Foot

Residential Sold vs Unsold	N	Median	Mean
SOLD	234	1.02	1.08
UNSOLD	5111	1.03	1.04
Total	5345	1.03	1.04

### Summarize

Sold vs Unsold Percent Change for Subclass 1212 by Economic Area

#### Difference in Price Per Foot

Economic Area	Residential Sold vs Unsold	N	Median	Mean
	UNSOLD	19	.88	.94
	Total	19	.88	.94
1011	SOLD	25	.94	.95
	UNSOLD	487	.95	.97
	Total	512	.95	.97
1021	SOLD	30	1.07	1.11
	UNSOLD	472	1.06	1.09
	Total	502	1.06	1.09
1031	SOLD	10	1.04	1.05
	UNSOLD	652	1.06	1.09
	Total	662	1.06	1.09
1041	SOLD	5	.88	1.00
	UNSOLD	223	1.01	1.04
	Total	228	1.00	1.03
1051	SOLD	10	.96	1.10
	UNSOLD	208	1.06	1.08
	Total	218	1.06	1.08
1061	SOLD	5	.95	.99
	UNSOLD	132	.97	1.00
	Total	137	.97	1.00

**Residential Subclass 1212: Unit Comparison Method**

Sold vs Unsold Percent Change for Subclass 1212 by Economic Area

Difference in Price Per Foot

Economic Area	Residential Sold vs Unsold	N	Median	Mean
1071	SOLD	52	.98	1.00
	UNSOLD	900	.98	1.00
	Total	952	.98	1.00
1081	SOLD	16	1.03	1.05
	UNSOLD	235	1.06	1.09
	Total	251	1.05	1.09
1082	SOLD	16	1.09	1.12
	UNSOLD	301	1.06	1.08
	Total	317	1.06	1.08
1091	SOLD	15	1.06	1.14
	UNSOLD	300	1.05	1.06
	Total	315	1.05	1.06
1101	UNSOLD	73	.98	.99
	Total	73	.98	.99
1111	SOLD	23	1.07	1.11
	UNSOLD	414	.99	1.01
	Total	437	.99	1.02
1121	SOLD	5	.81	1.03
	UNSOLD	233	1.04	1.02
	Total	238	1.04	1.02
1141	SOLD	3	.94	.86
	UNSOLD	125	.85	.89
	Total	128	.85	.89
3011	UNSOLD	6	1.02	1.04
	Total	6	1.02	1.04
3031	UNSOLD	6	.90	.90
	Total	6	.90	.90
3071	UNSOLD	1	.92	.92
	Total	1	.92	.92
3081	UNSOLD	5	1.01	1.02
	Total	5	1.01	1.02

**Residential Subclass 1212: Unit Comparison Method**

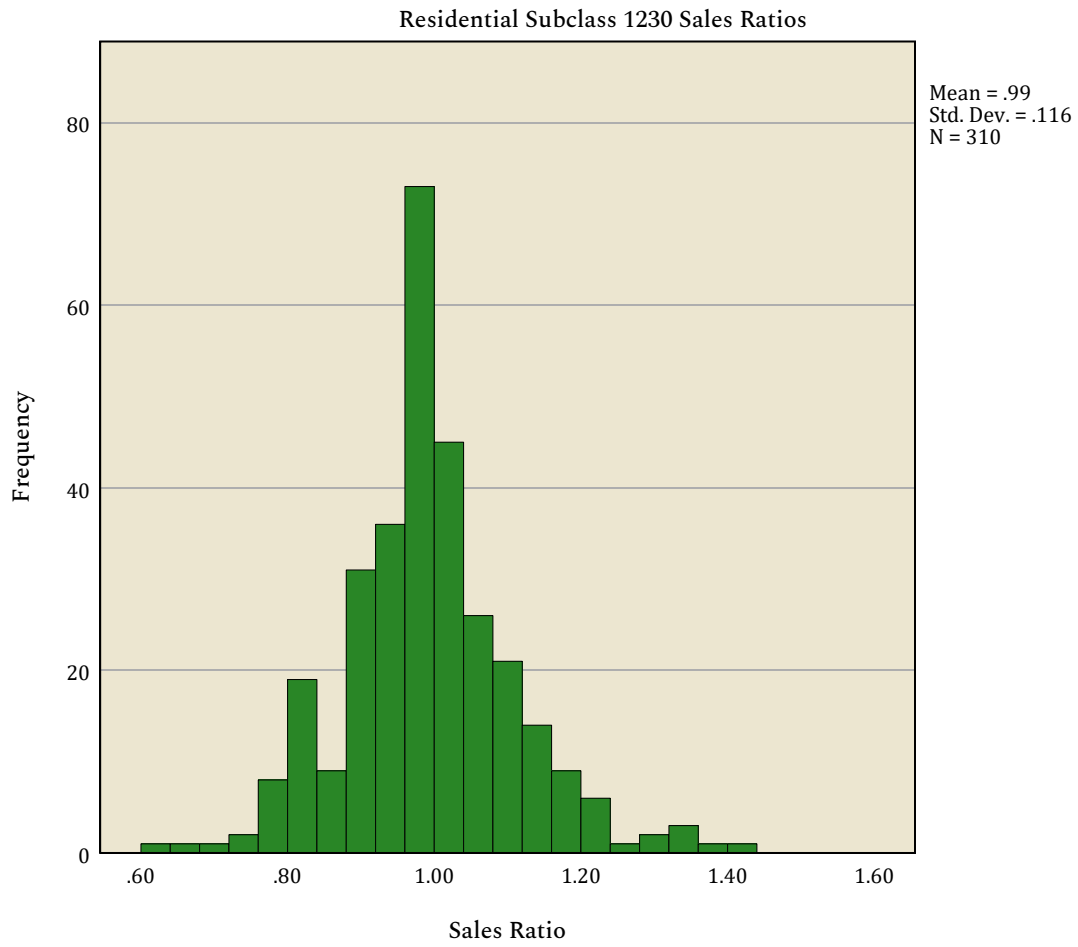
Sold vs Unsold Percent Change for Subclass 1212 by Economic Area

Difference in Price Per Foot

Economic Area	Residential Sold vs Unsold	N	Median	Mean
3101	UNSOLD	1	.96	.96
	Total	1	.96	.96
3111	UNSOLD	7	1.06	1.05
	Total	7	1.06	1.05
4011	UNSOLD	7	.95	.93
	Total	7	.95	.93
4081	SOLD	1	1.09	1.09
	UNSOLD	9	1.08	1.08
	Total	10	1.08	1.08
5011	SOLD	4	1.20	1.19
	UNSOLD	88	1.06	1.14
	Total	92	1.06	1.14
5081	UNSOLD	1	.52	.52
	Total	1	.52	.52
5082	SOLD	5	1.50	1.82
	UNSOLD	69	.92	.86
	Total	74	1.02	.92
5122	SOLD	8	1.39	1.45
	UNSOLD	127	1.23	1.21
	Total	135	1.23	1.23
6011	SOLD	1	.07	.07
	UNSOLD	2	1.17	1.17
	Total	3	1.00	.80
6081	UNSOLD	2	.98	.98
	Total	2	.98	.98
6141	UNSOLD	6	.94	.95
	Total	6	.94	.95
Total	SOLD	234	1.02	1.08
	UNSOLD	5111	1.03	1.04
	Total	5345	1.03	1.04

### Residential Subclass 1230: Sales Ratio Distribution

Graph



**Residential Subclass 1230: Central Tendencies**

**Ratio Statistics**

Ratio Statistics for Current Total Value /  
Adjusted Sale Price

N	Median	Coefficient of Dispersion
444	.993	.081

**Ratio Statistics**

Ratio Statistics for Current Total  
Value / Adjusted Sale Price

Price Related Bias	Price Related Differential
-.001	1.010

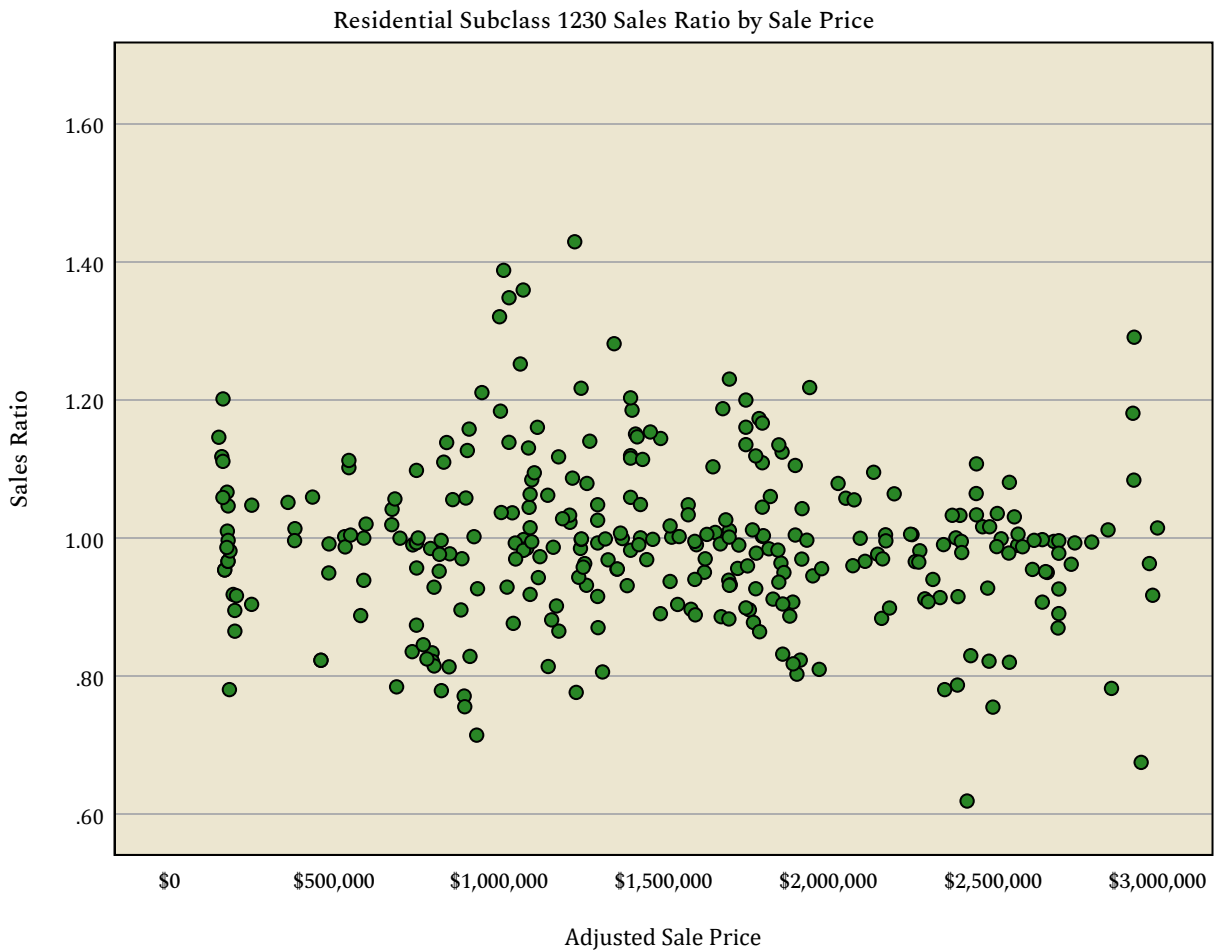
### Residential Subclass 1230: Sales Price by Sales Ratio

**Regression**

		Coefficients <sup>a</sup>				
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	.998	.008		127.005	<.001
	Adjusted Sale Price	-3.920E-9	.000	-.088	-1.863	.063

a. Dependent Variable: Sales Ratio

**Graph**



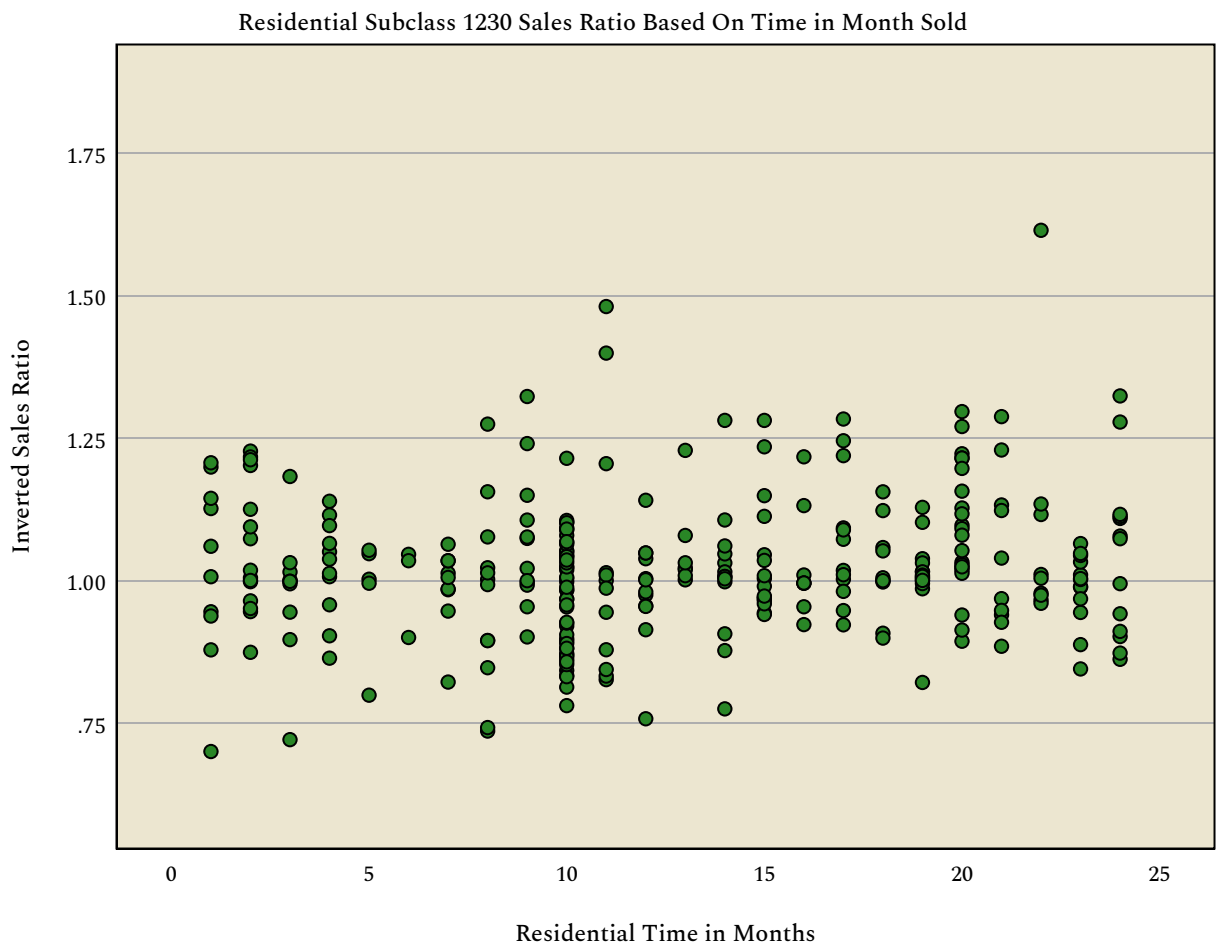
### Residential Subclass 1230: Months by Inverted Sales Ratio

**Regression**

		Coefficients <sup>a</sup>				
		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
Model		B	Std. Error	Beta		
1	(Constant)	.990	.013		73.626	<.001
	Residential Time in Months	.003	.001	.149	3.158	.002

a. Dependent Variable: Inverted Sales Ratio

**Graph**



**Residential Subclass 1230: Descriptive Statistics**

**Frequencies**

		Statistics		
		Previous Price Per Foot	Price Per Foot	Difference in Price Per Foot
N	Valid	436	436	436
	Missing	8	8	8
Mean		\$1,941.45	\$2,065.95	1.13
Median		\$1,562.85	\$1,757.58	1.10
Percentiles	2.5	\$474.95	\$584.66	.79
	25	\$1,228.11	\$1,466.68	.99
	50	\$1,562.85	\$1,757.58	1.10
	75	\$2,542.42	\$2,707.20	1.25
	97.5	\$4,348.20	\$4,226.97	1.61

**Frequencies**

		Statistics		
		Previous Total Value	Current Total Value	Difference in Total Value
N	Valid	444	444	444
	Missing	0	0	0
Mean		\$2,430,850.90	\$2,616,698.42	\$185,847.52
Median		\$1,635,550.00	\$1,909,600.00	\$102,750.00
Percentiles	2.5	\$147,900.00	\$177,700.00	-\$919,287.50
	25	\$1,082,800.00	\$1,205,600.00	-\$26,900.00
	50	\$1,635,550.00	\$1,909,600.00	\$102,750.00
	75	\$3,426,800.00	\$3,365,575.00	\$349,725.00
	97.5	\$7,758,275.00	\$8,944,412.50	\$2,130,525.00

**Residential Subclass 1230: Mann-Whitney U-Test (Rank-sum)**

**Nonparametric Tests**

Hypothesis Test Summary

	Null Hypothesis	Test	Sig. <sup>a,b</sup>
1	The distribution of Difference in Total Value is the same across categories of Residential Sold vs Unsold.	Independent-Samples Mann-Whitney U Test	<.001

Hypothesis Test Summary

	Decision
1	Reject the null hypothesis.

- a. The significance level is .050.
- b. Asymptotic significance is displayed.

**Independent-Samples Mann-Whitney U Test**

**Difference in Total Value across Residential Sold vs Unsold**

Independent-Samples Mann-Whitney U Test Summary

Total N	5570
Mann-Whitney U	808687.500
Wilcoxon W	14414623.500
Test Statistic	808687.500
Standard Error	29278.191
Standardized Test Statistic	-3.912
Asymptotic Sig.(2-sided test)	<.001

**Nonparametric Tests**

**Residential Subclass 1230: Mann-Whitney U-Test (Rank-sum)**

Hypothesis Test Summary

	Null Hypothesis	Test	Sig. <sup>a,b</sup>
1	The distribution of Price Per Foot is the same across categories of Residential Sold vs Unsold.	Independent-Samples Mann-Whitney U Test	<.001

Hypothesis Test Summary

	Decision
1	Reject the null hypothesis.

- a. The significance level is .050.
- b. Asymptotic significance is displayed.

**Independent-Samples Mann-Whitney U Test**

**Price Per Foot across Residential Sold vs Unsold**

Independent-Samples Mann-Whitney U Test Summary

Total N	5575
Mann-Whitney U	796511.000
Wilcoxon W	14392016.000
Test Statistic	796511.000
Standard Error	29573.893
Standardized Test Statistic	-4.890
Asymptotic Sig.(2-sided test)	<.001

**Nonparametric Tests**

**Residential Subclass 1230: Mann-Whitney U-Test (Rank-sum)**

Hypothesis Test Summary

	Null Hypothesis	Test	Sig. <sup>a,b</sup>
1	The distribution of Difference in Price Per Foot is the same across categories of Residential Sold vs Unsold.	Independent-Samples Mann-Whitney U Test	.031

Hypothesis Test Summary

	Decision
1	Reject the null hypothesis.

- a. The significance level is .050.
- b. Asymptotic significance is displayed.

**Independent-Samples Mann-Whitney U Test**

**Difference in Price Per Foot across Residential Sold vs Unsold**

Independent-Samples Mann-Whitney U Test Summary

Total N	5575
Mann-Whitney U	856067.500
Wilcoxon W	14498543.500
Test Statistic	856067.500
Standard Error	29228.072
Standardized Test Statistic	-2.162
Asymptotic Sig.(2-sided test)	.031

### Residential Subclass 1230: Unit Comparison Method

**Summarize**

Sold vs Unsold Percent Change for Subclass 1230

Difference in Price Per Foot

Residential Sold vs Unsold	N	Median	Mean
SOLD	368	1.05	1.09
UNSOLD	5501	1.04	1.04
Total	5869	1.04	1.04

**Summarize**

Sold vs Unsold Percent Change for Subclass 1230 by Economic Area

Difference in Price Per Foot

Economic Area	Residential Sold vs Unsold	N	Median	Mean
	SOLD	368	1.05	1.09
	UNSOLD	5501	1.04	1.04
	Total	5869	1.04	1.04
Total	SOLD	368	1.05	1.09
	UNSOLD	5501	1.04	1.04
	Total	5869	1.04	1.04

**Final Analysis: OVERALL Statistical Abstract.**

**Ratio Statistics**

Ratio Statistics for Current Total Value / Adjusted Sale Price

Group	N	Mean	95% Confidence Interval for Mean		Median
			Lower Bound	Upper Bound	
Vacant Land	30	.982	.946	1.018	1.000
Residential	713	.987	.979	.995	.993
Commercial/Industrial	27	.970	.932	1.007	.977
Overall	770	.986	.979	.994	.993

Ratio Statistics for Current Total Value / Adjusted Sale Price

Group	95% Confidence Interval for Median			Weighted Mean	95% Confidence Interval for ...
	Lower Bound	Upper Bound	Actual Coverage		Lower Bound
Vacant Land	.947	1.000	95.7%	.969	.926
Residential	.990	.996	95.7%	.983	.973
Commercial/Industrial	.937	1.000	98.1%	.970	.936
Overall	.990	.996	95.3%	.983	.973

Ratio Statistics for Current Total Value / Adjusted Sale Price

Group	95% Confidence Interval for ...	Price Related Differential	Coefficient of Dispersion
	Upper Bound		
Vacant Land	1.011	1.014	.068
Residential	.994	1.004	.078
Commercial/Industrial	1.004	1.000	.066
Overall	.993	1.003	.078

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.