

County: Martin  
Study Type: 2014 - In-Depth

The department approved your preliminary assessment roll for 2014. Roll approval statistical summary reports and graphics for 2014 are attached for additional feedback. As an in-depth review county, individual strata as well as the entire roll must be in substantial compliance with the law. The attached LOA Summary Statistics Report includes the overall level of assessment for your county and the levels of assessment for individual strata.

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**Summary of Information from Post Audit Review (PAR):**

No significant issues were identified.

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**Summary of Information from Recapitulation Report Submittals (DR-489 series, DR-493, Central Assessment, Agricultural Schedule):**

If your county is working on a CAMA conversion project, please contact our Research & Analysis staff if you have questions about recapitulation (DR-489/403) field definitions or data mapping.

Time Trend Factors for 2014 are included in this report. The monthly factors for Improved Residential (Stratum 1) and Vacant Residential Property (Stratum 4) are included if the strata are studied in the county.

If you have any questions about the factors please contact Andrew Collins, Resource Management Process Manager (collinan@dor.state.fl.us).

**Attachments:**

LOA Summary Statistics  
Official Ratio Summary Report  
Statistical Analysis Glossary, Definitions and Interpreting Statistical Analysis Output  
Statistical Analysis Output  
Time Trend Factors

In-Depth Study Results							
Blended In-Depth Review Results							
Stratum	PA Growth	Ratio	Alt Ratio	COD	PRD	Study Type	
1	5.8%	93.8	90.9	8.7	102.7	Time Trended Sales	
2							
3							
4							
5							
6	4.7%	96.3	87.2	7.7	103.3	Untrended Sales	
Overall	5.6%	94.1	90.4				

Previous Year			
Stratum	2013 LOA*	nid	2013 Alt Ratio
1	99.8		
2			
3			
4			
5			
6	95.4		
Overall	99.2		

Level of Assessment - Official Blended Ratio Study  
 Value Group Analysis Excluding Untested Group Totals

STR	GRP	LOW	HIGH	#SAMP	COV	P.A SAMP VAL	DOR SAMP VAL	RATIO	TOT PAR	P.A JUST VAL	RATIO	DOR JUST VAL
1 12m	1	70,420	119,050	621		58,676,550	61,509,159	95.4	12,264	1,148,574,840	95.4	1,203,956,855
1 12m	2	119,060	187,840	715		110,345,460	116,022,090	95.1	12,262	1,879,263,010	95.1	1,976,091,493
1 12m	3	187,850	282,530	726		167,684,350	176,864,905	94.8	12,262	2,822,657,930	94.8	2,977,487,267
1 12m	4	282,560	45,505,370	736		456,730,340	491,297,948	93.0	12,258	8,580,795,020	93.0	9,226,661,311
1	5	4,460	70,410						17,116	762,038,380	untested	
		Stratum	Total:	2,798	12.79	793,436,700	845,694,102		49,046	14,431,290,800		15,384,196,926
		COD: 8.7	PRD:	102.7	95%	Conf Intvl	93.3	94.3	Stratum	Ratio:	93.8	
<b>STR</b>	<b>GRP</b>	<b>LOW</b>	<b>HIGH</b>	<b>#SAMP</b>	<b>COV</b>	<b>P.A SAMP VAL</b>	<b>DOR SAMP VAL</b>	<b>RATIO</b>	<b>TOT PAR</b>	<b>P.A JUST VAL</b>	<b>RATIO</b>	<b>DOR JUST VAL</b>
6 May	1	180,270	302,820	9		2,265,960	2,312,170	98.0	432	101,636,620	98.0	103,710,836
6 May	2	302,980	507,610	7		2,673,080	2,844,950	94.0	432	170,697,640	94.0	181,593,234
6 May	3	509,860	1,112,160	8		5,905,340	5,671,710	104.1	432	320,286,140	104.1	307,671,604
6 May	4	1,112,550	61,953,130	10		37,967,780	39,998,960	94.9	432	1,493,010,458	94.9	1,573,246,004
6	5	2,420	179,540						1,103	109,590,640	untested	
		Stratum	Total:	34	11.74	48,812,160	50,827,790		1,728	2,085,630,858		2,166,221,678
		COD: 7.7	PRD:	103.3	95%	Conf Intvl	90.3	102.3	Stratum	Ratio:	96.3	

Level of Assessment - Official Blended Ratio Study  
 Value Group Analysis Including Untested Group Totals

STR	GRP	LOW	HIGH	#SAMP	COV	P.A SAMP VAL	DOR SAMP VAL	RATIO	TOT PAR	P.A JUST VAL	RATIO	DOR JUST VAL
1 12m	1	70,420	119,050	621		58,676,550	61,509,159	95.4	12,264	1,148,574,840	95.4	1,203,956,855
1 12m	2	119,060	187,840	715		110,345,460	116,022,090	95.1	12,262	1,879,263,010	95.1	1,976,091,493
1 12m	3	187,850	282,530	726		167,684,350	176,864,905	94.8	12,262	2,822,657,930	94.8	2,977,487,267
1 12m	4	282,560	45,505,370	736		456,730,340	491,297,948	93.0	12,258	8,580,795,020	93.0	9,226,661,311
1	5	4,460	70,410						17,116	762,038,380	93.8	812,407,654
		Stratum	Total:	2,798	12.79	793,436,700	845,694,102		66,162	15,193,329,180		16,196,604,580
		COD: 8.7	PRD:	102.7	95%	Conf Intvl	93.3	94.3	Stratum	Ratio:	93.8	
<b>STR</b>	<b>GRP</b>	<b>LOW</b>	<b>HIGH</b>	<b>#SAMP</b>	<b>COV</b>	<b>P.A SAMP VAL</b>	<b>DOR SAMP VAL</b>	<b>RATIO</b>	<b>TOT PAR</b>	<b>P.A JUST VAL</b>	<b>RATIO</b>	<b>DOR JUST VAL</b>
6 May	1	180,270	302,820	9		2,265,960	2,312,170	98.0	432	101,636,620	98.0	103,710,836
6 May	2	302,980	507,610	7		2,673,080	2,844,950	94.0	432	170,697,640	94.0	181,593,234
6 May	3	509,860	1,112,160	8		5,905,340	5,671,710	104.1	432	320,286,140	104.1	307,671,604
6 May	4	1,112,550	61,953,130	10		37,967,780	39,998,960	94.9	432	1,493,010,458	94.9	1,573,246,004
6	5	2,420	179,540						1,103	109,590,640	96.3	113,801,287
		Stratum	Total:	34	11.74	48,812,160	50,827,790		2,831	2,195,221,498		2,280,022,965
		COD: 7.7	PRD:	103.3	95%	Conf Intvl	90.3	102.3	Stratum	Ratio:	96.3	

Level of Assessment - Official Blended Ratio Study  
 County Overall Level of Assessment and Group Level Statistics

Stratum	TOT PAR	P.A.JUST VAL	RATIO	DOR JUST VAL
1	66,162	15,193,329,180	93.8	16,196,604,580
6	2,831	2,195,221,498	96.3	2,280,022,965
Total	68,993	17,388,550,678	94.1	18,476,627,545

Group Level Statistics

Stratum	Group	N	Median	Mean	COD	PRD WgtMean	
1	1	621	95.0	97.4	10.9	102.1	
1	2	715	94.9	96.3	8.3	101.2	
1	3	726	94.6	96.2	7.9	101.4	
1	4	736	94.5	95.8	7.9	103.0	
1	Total	2798	94.7	96.4	8.7	102.7	93.8
6	1	9	96.1	98.2	2.6	100.2	
6	2	7	103.4	99.2	13.2	105.6	
6	3	8	105.5	103.9	6.5	99.8	
6	4	10	97.1	96.5	7.0	101.6	
6	Total	34	99.1	99.2	7.7	103.3	96.0

95% Confidence Intervals

	STRATUM 1		STRATUM 6	
	Lower	Upper	Lower	Upper
MEAN	95.9227	96.8366	95.1497	103.2790
WEIGHTED MEAN	93.0842	94.5573	90.6340	101.4348
MEDIAN	94.3921	95.0243	96.0294	102.9549

## Statistical Analysis Glossary and Definitions

You can use this glossary of terms for assistance in reviewing the attached statistical analysis of the official blended (sales or appraisal) ratio study data set. This glossary lists the terms in the order in which they appear.

1. **Frequencies (Frequency Distribution):** This table shows the number and percentage of observations (sample sales or DOR appraisals) falling in each studied stratum and value group. The percent and valid percent columns should be the same when no missing data are missing.
2. **Histogram:** A bar chart of a continuous variable. The heights of the bars represent the percentage of cases in each interval. The histograms illustrate the distribution of the frequency percentage of the sample ratios in each studied stratum. The distribution includes a normal curve to help evaluate normality of the ratio data. The top right corner of the graph shows the mean, standard deviation, and number of ratios for the overall stratum.
3. **Boxplots:** Boxplots graphically show the distribution of a continuous and discrete variable. The boxes represent the first to third quartile (interquartile range or middle 50%) of the data. The horizontal lines in the boxes represent the medians. The vertical alignment of the medians and their surrounding boxes indicates horizontal equity. The “whiskers” above and below the boxes represent the ratios closest to, but not more than 1.5 box lengths from, the ends of the box. Ratios beyond the “whiskers” are termed “outliers” (represented by circles) and “extremes” (represented by asterisks). You should identify and research outlier and extreme ratios.

The boxplot for each studied stratum uses the ratio as the continuous variable and the following qualitative (discrete) variables: value groups, DOR use codes, market areas, and effective year built (for improved strata).

4. **Scatterplots:** Scatterplots show the relationship between two continuous variables. The independent variable is on the horizontal, or x, axis, and the dependent variable is on the vertical, or y, axis. A horizontal pattern indicates assessment uniformity over the range of the independent variable. An upward or downward sloping pattern may indicate a vertical inequity in assessment levels (progressivity or regressivity).

The scatterplot for each studied stratum uses the ratio for the dependent variable and the DOR Sample Value (adjusted sale prices or adjusted DOR appraisal values) or a value proxy for the independent variable.

## Definitions:

<b>COD:</b>	Abbreviation for coefficient of dispersion; in ratio studies, the average percent deviation from the median ratio; a measure of appraisal uniformity
<b>Continuous variable:</b>	Data that can take any value in a given range; quantitative data based on size or measurement (e.g., sale price, total living area)
<b>Discrete variable:</b>	A variable with specific, pre-defined categories (e.g., use code, market area, neighborhood code)
<b>Frequency:</b>	Number of observations falling within certain various groups, classes, or intervals
<b>Inter-quartile range:</b>	The result of subtracting the first quartile from the third quartile
<b>Mean:</b>	A measure of central tendency; the result of adding values and dividing by the number of values; also known as average or arithmetic mean; may be influenced or skewed by extreme values
<b>Median:</b>	A measure of central tendency; the result of finding the middle number when data is arrayed by size and the number of items are odd or taking the mean of the middle two numbers if the number of items are even; not influenced by extreme values
<b>Normal Distribution:</b>	A symmetrical, bell-shaped distribution of observations or values. Sixty-eight percent of observations occur within one standard deviation of the mean, 95 percent occur within two standard deviations, and 99.7 percent occur within three standard deviations.
<b>Outlier:</b>	Observations that differ significantly from a measure of central tendency and are unusual compared to other observations
<b>PRB:</b>	Abbreviation for price-related bias, a measure of vertical inequity; an index obtained by regressing 1) percentage differences from the median assessment ratio on 2) percentage differences from a proxy of the median value, which is obtained by giving equal weight to assessments and sales prices; coefficients below -0.05 and above 0.05 with a sufficiently high t-value supporting a 95 percent confidence level are considered regressive and progressive, respectively; the dependent variable is $(\text{ratio} - \text{median ratio}) / \text{median ratio}$ ; the independent variable is $\text{LN}(\text{value proxy}) / 0.693$ , where LN means natural log and 0.693 equals the natural log of 2; calculated in Excel by using the linear regression function = LINEST(known_y's, known_x's, const, stats)
<b>PRD:</b>	Abbreviation for price-related differential; the mean divided by the weighted mean; a measure of vertical inequity; values above 1.03 are considered regressive and below 0.98 are considered progressive
<b>Progressivity:</b>	Low-value parcels are under-assessed in comparison to high value parcels.
<b>Quartile:</b>	The values that divide a data set into four equal parts when data is arrayed in ascending order. The second quartile is equal to the median.

<b>Ratio (A/S):</b>	The assessed value divided by the sale price
<b>Regressivity:</b>	High-value parcels are under-assessed in comparison to low value parcels.
<b>Standard Deviation:</b>	A measure of the dispersion of the data from the mean. When expressed as a percentage, it is known as a coefficient of variation (COV).
<b>Stratum:</b>	A class or type of property separated from other types of property for the purpose of analyses
<b>t-value:</b>	A measure of the significance of a regression variable in explaining differences in the dependent variable; the ratio of the regression coefficient divided by the standard error
<b>Value Group:</b>	Property arrayed and grouped by value, from low to high, for the purpose of analyses
<b>Value Proxy:</b>	Half of the assessed value plus half of the sale price
<b>X-axis:</b>	The horizontal axis on a graph; independent variable (e.g., living area, use code, market area)
<b>Y-axis:</b>	The vertical axis on a graph; dependent variable (e.g., sales ratios)



# How to Read Your Statistical Analysis of Ratio Study Sample – In-Depth Report

## All Studied Strata

Ratio Sample Study

Active_Stratum	N	% of Total N	Sum	% of Total Sum
1. Improved Residential	1267	92.5%	\$213,347,900	48.2%
2. Multi-family	54	3.9%	\$157,052,199	35.4%
6. Improved Commercial and Industrial	49	3.6%	\$72,401,856	16.4%
Total	1370	100.0%	\$442,801,955	100.0%

Total # of sales used in ratio study (all studied strata)

Ratio Sample Study

Active_Stratum	Minimum	Maximum
1. Improved Residential	\$57,164	\$869,908
2. Multi-family	\$103,485	\$28,558,752
6. Improved Commercial and Industrial	\$174,134	\$10,233,470
Total	\$57,164	\$28,558,752

All properties included in sample (all studied strata)

## Ratio Statistics

Ratio Statistics for PA Sample Value/DOR Sample Value

Group	Mean	Median	Weighted Mean	Coefficient of Dispersion
1. Improved Residential	1.022	1.015	1.011	.089
2. Multi-family	.926	.928	1.011	.113
6. Improved Commercial and Industrial	.958	.973	.966	.105
Overall	1.016	1.010	1.003	.092

Begin statistical analysis by studied stratum (frequencies and graphs)

## Stratum 1

Ratio Sample Study

Value_Group	N	% of Total N	Sum	% of Total Sum	Minimum	Maximum
1	448	35.4%	\$40,869,856	19.1%	\$57,164	\$121,266
2	401	31.6%	\$58,862,026	27.6%	\$121,308	\$176,529
3	255	20.1%	\$54,171,087	25.4%	\$177,220	\$262,203
4	163	12.9%	\$59,444,931	27.9%	\$262,892	\$869,908
Total	1267	100.0%	\$213,347,900	100.0%	\$57,164	\$869,908

# How to Read Your Statistical Analysis of Ratio Study Sample – In-Depth Report

## Frequencies

Total # of Stratum 1 sales used in ratio study by UC, EYB, and Market Area

**DOR\_UC** ←

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Single Family	1168	92.2	92.2	92.2
Mobile Home	17	1.3	1.3	93.5
Condominia	82	6.5	6.5	100.0
Total	1267	100.0	100.0	

**EFFECTIVE YEAR BUILT RANGE**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid < 1960	11	.9	.9	.9
1960-69	22	1.7	1.7	2.6
1970-79	128	10.1	10.1	12.7
1980-89	357	28.2	28.2	40.9
1990-99	336	26.5	26.5	67.4
2000-09	371	29.3	29.3	96.7
2010 AND AFTER	42	3.3	3.3	100.0
Total	1267	100.0	100.0	

**Market Area**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	299	23.6	23.6	23.6
2	10	.8	.8	24.4
3	377	29.8	29.8	54.1
4	66	5.2	5.2	59.4
5	141	11.1	11.1	70.5
6	31	2.5	2.4	72.9
7	11	.9	.9	73.8
8	22	1.7	1.7	75.5
9	288	22.7	22.7	98.3
10	22	1.7	1.7	100.0
Total	1267	100.0	100.0	

# How to Read Your Statistical Analysis of Ratio Study Sample – In-Depth Report

## Crosstabs

**SALE MONTH \* SALE\_YR1 Crosstabulation**

Count

		SALE_YR1	
		2011	Total
SALE MONTH	1	71	71
	2	79	79
	3	107	107
	4	87	87
	5	142	142
	6	132	132
	7	149	149
	8	138	138
	9	111	111
	10	76	76
	11	84	84
	12	91	91
Total		1267	1267

Total # of sales used in Stratum 1 by sale month and year

**Measures of Central Tendency** – measures of the average and center of the sample data.

## Ratio Statistics

**Ratio Statistics for PA Sample Value/DOR Sample Value**

Mean	95% Confidence Interval for Mean		Median	95% Confidence Interval for Median		Actual Coverage
	Lower Bound	Upper Bound		Lower Bound	Upper Bound	
1.022	1.016	1.029	1.015	1.008	1.022	95.1%

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.

**Ratio Statistics for PA Sample Value/DOR Sample Value**

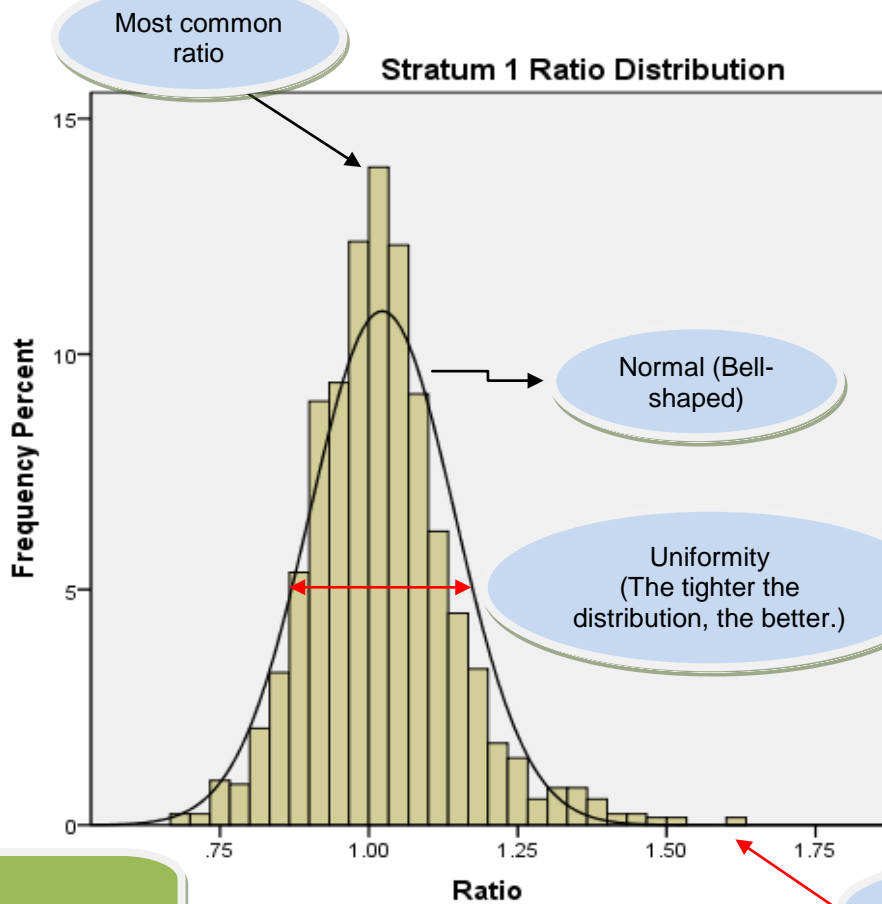
Weighted Mean	95% Confidence Interval for Weighted Mean		Coefficient of Dispersion
	Lower Bound	Upper Bound	
1.011	1.004	1.019	.089

**COD: Avg. % deviation from the median**

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.

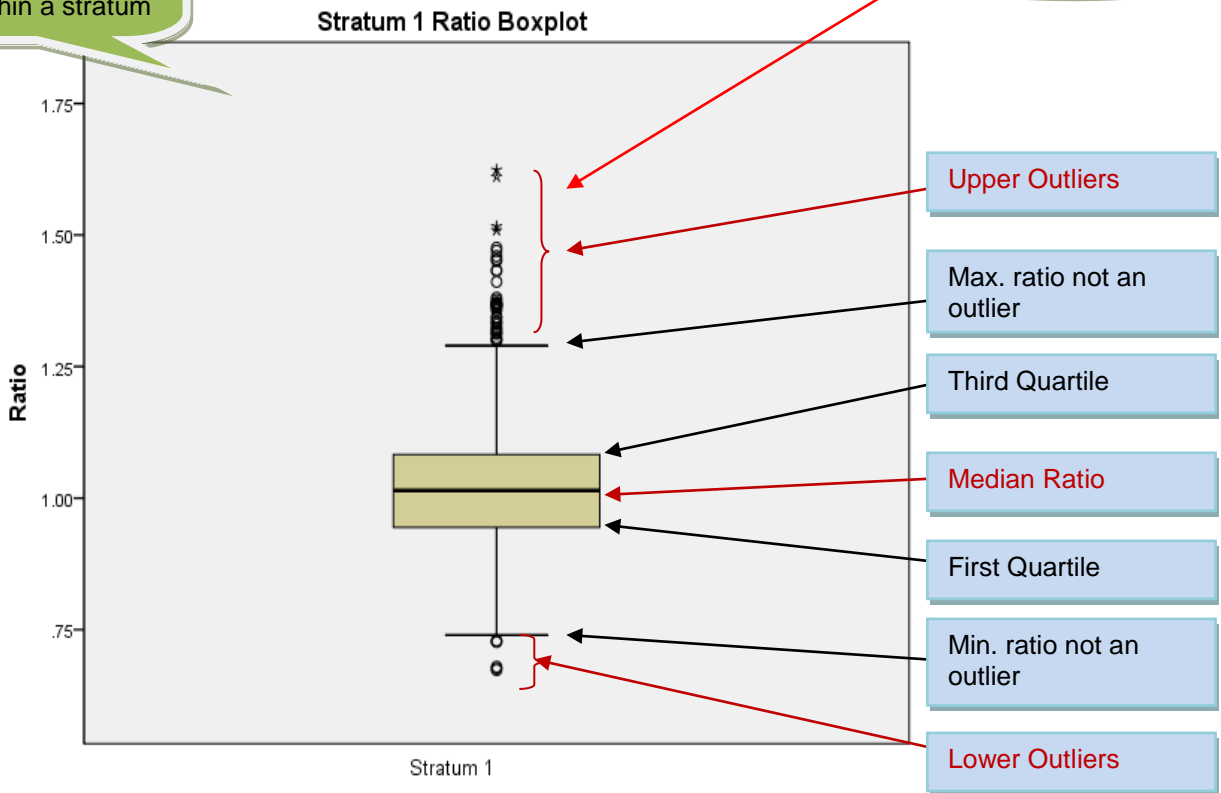
# How to Read Your Statistical Analysis of Ratio Study Sample

**Histogram** showing distribution (uniformity) of ratios within a stratum



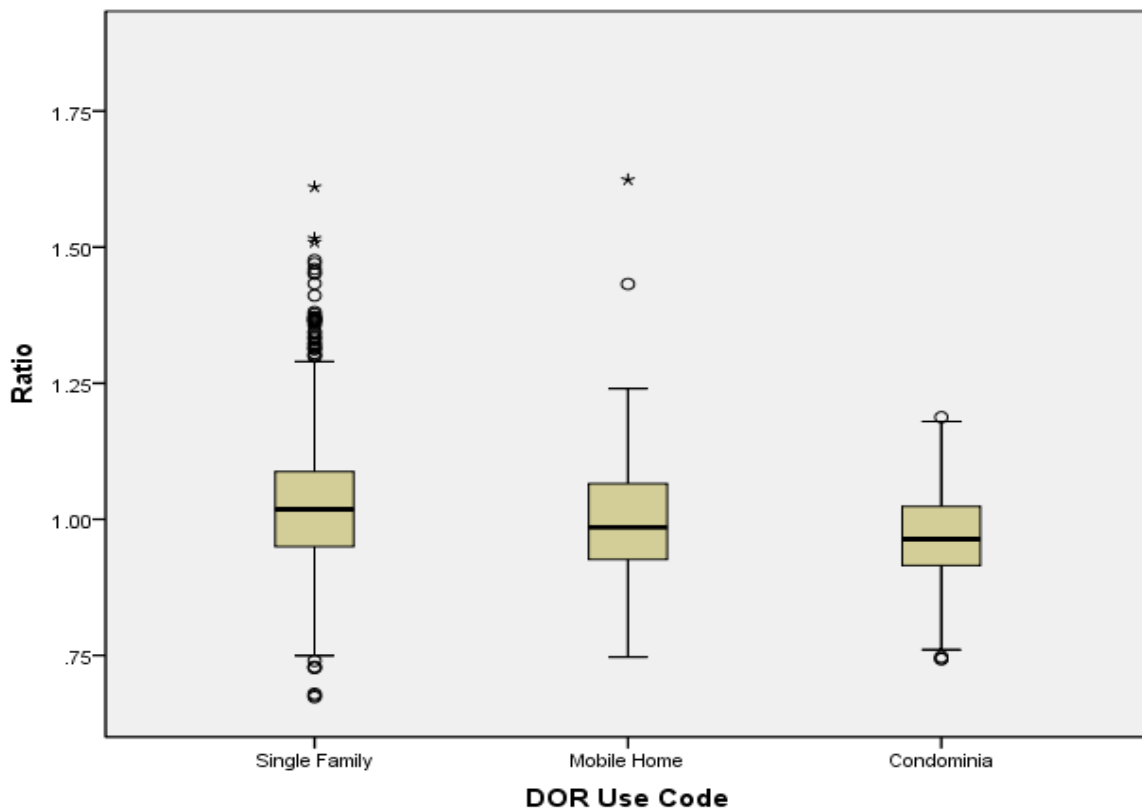
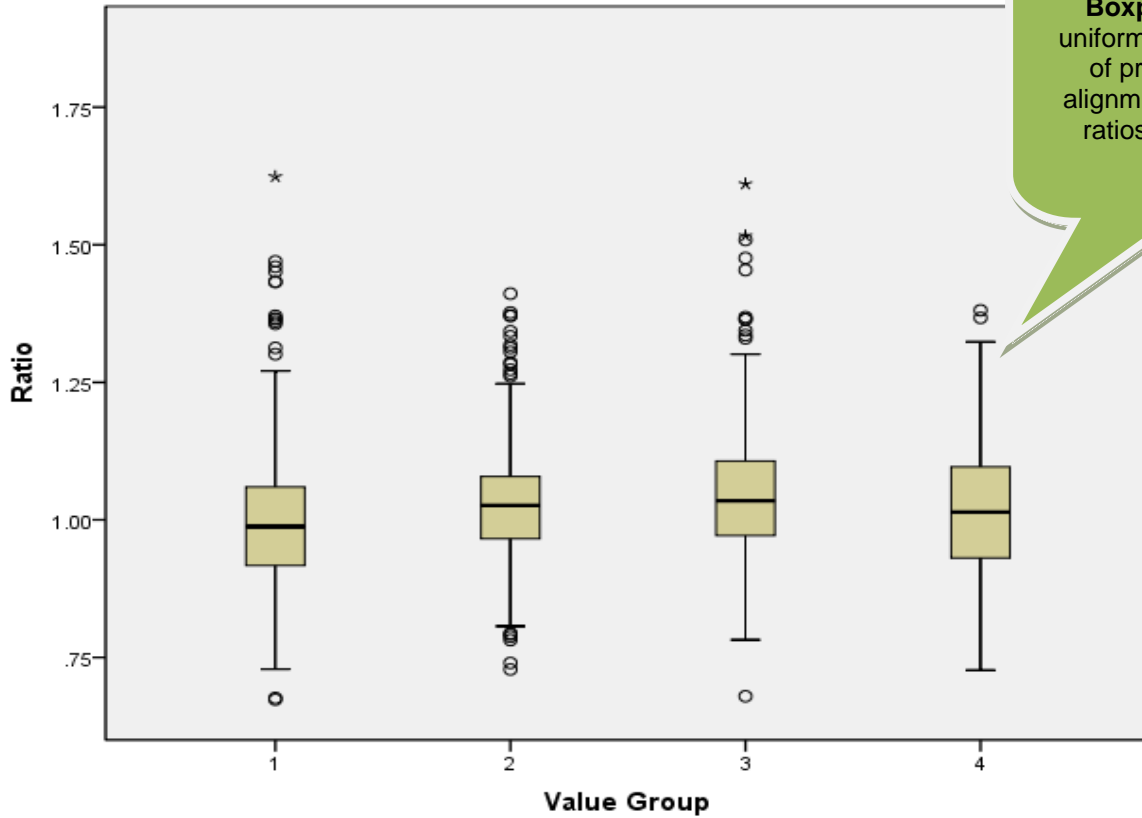
**Boxplot** showing distribution (uniformity) of ratios within a stratum

**Outliers** (Should be researched)

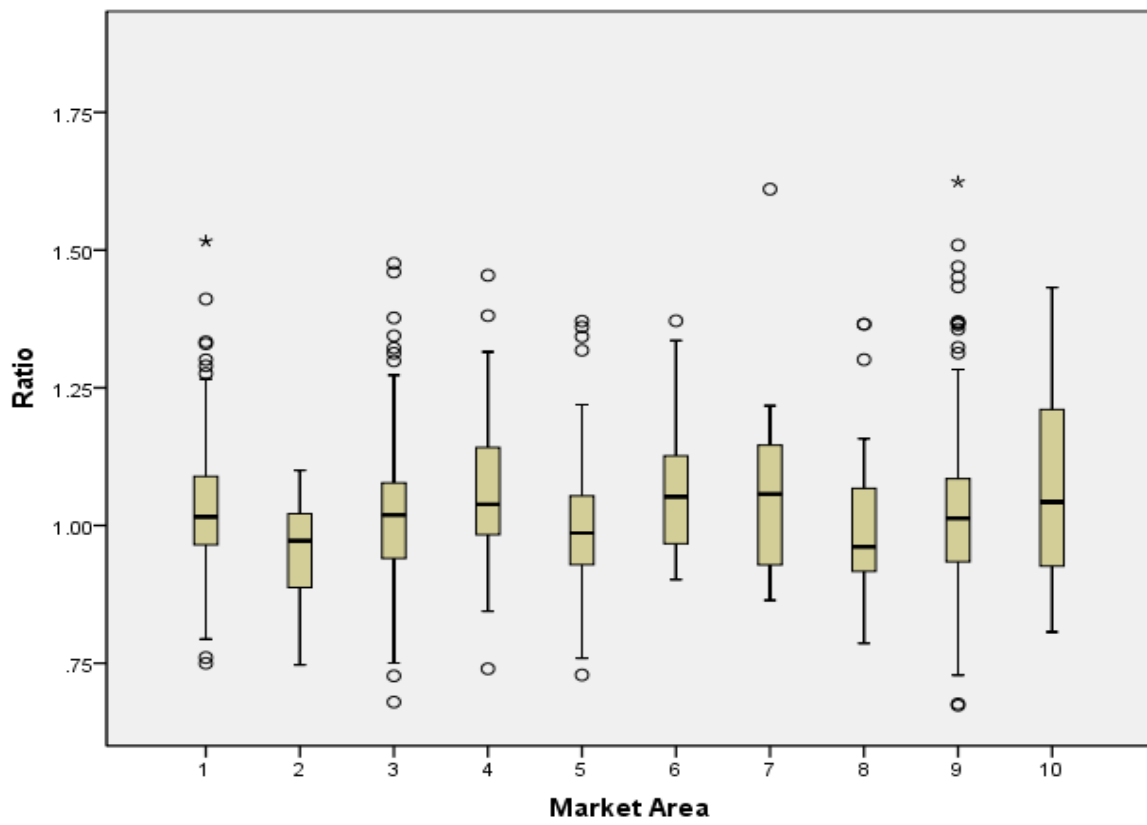
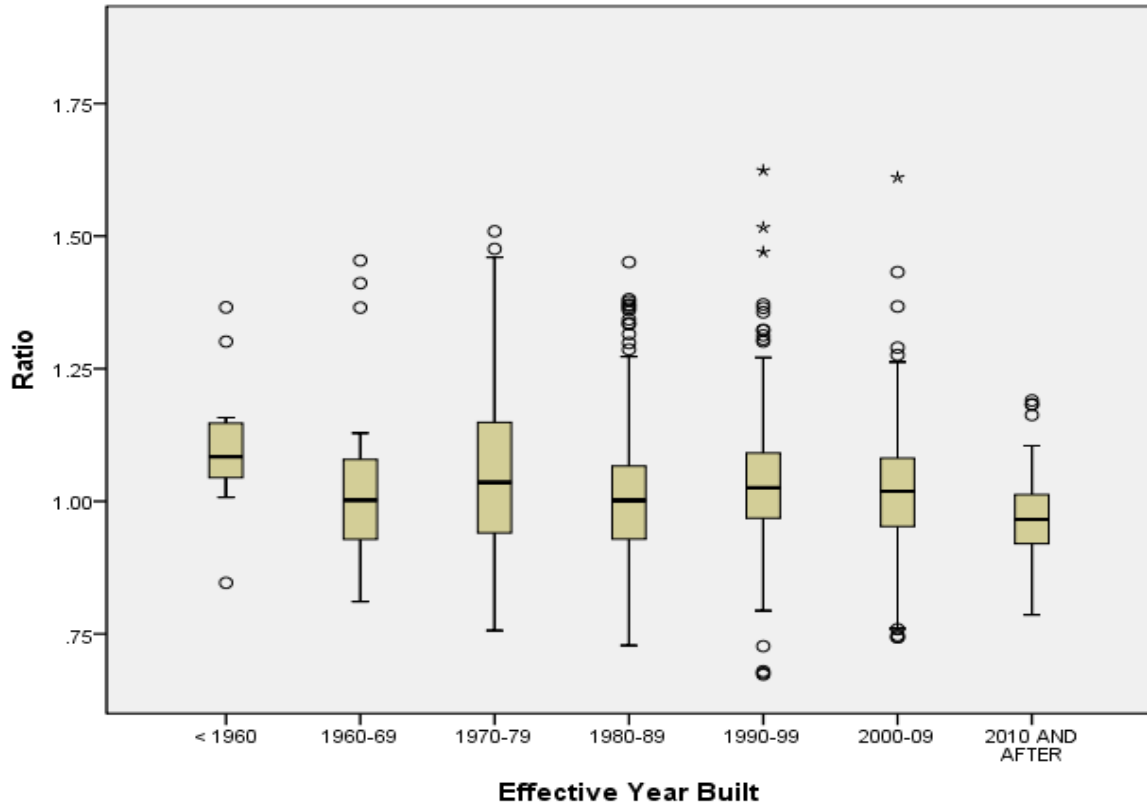


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**Boxplots** also show uniformity among groups of properties. Close alignment of the median ratios indicates good uniformity.



# How to Read Your Statistical Analysis of Ratio Study Sample – In-Depth Report



# How to Read Your Statistical Analysis of Ratio Study Sample – In-Depth Report

## PRD Ratio Statistics

Ratio Statistics for PA Sample

Value/DOR Sample Value

Price-Related Differential	
	1.011

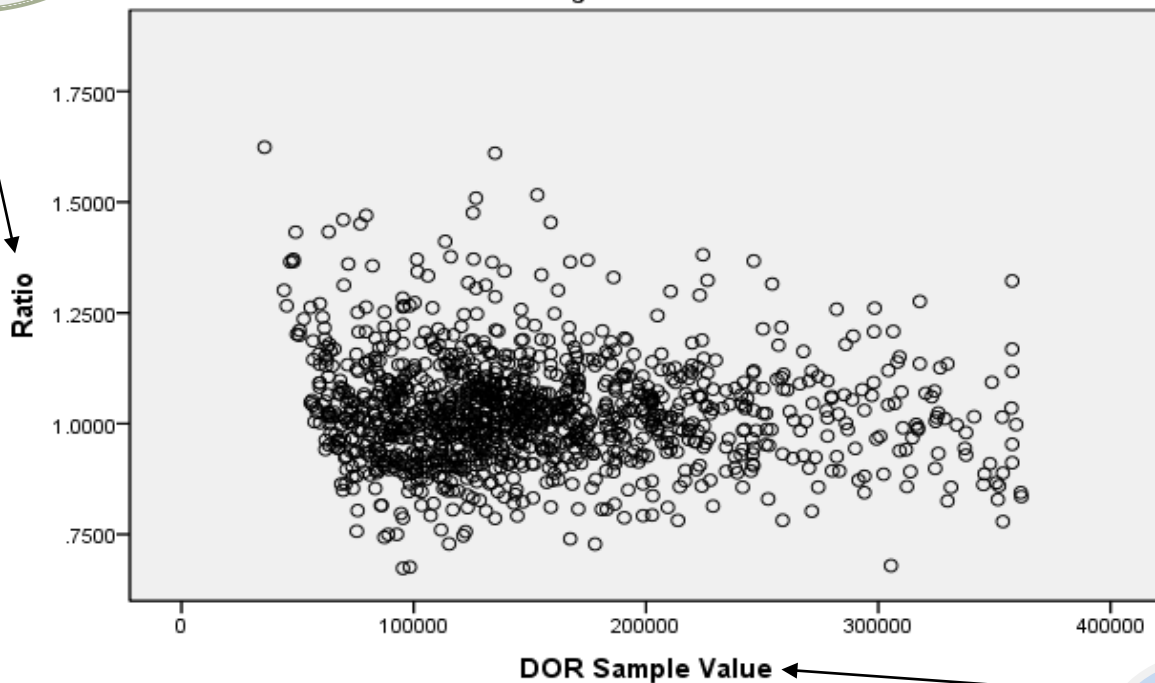
**Price-Related Differential (PRD)** (mean ratio / weighted mean ratio) is a measure of vertical equity (consistency of appraisal levels across the value range)  
<0.98 = Progressivity  
>1.03 = Regressivity

**Scatterplots** show the correlation between the dependent and independent variables. A horizontal pattern indicates equity over the range of the independent variable. An upward or downward pattern indicates inequities.

Dependent Variable

**Stratum 1 Ratio Scatterplot for Price Related Differential**

Excluding Outliers



\* Outliers are removed to sharpen graph view. No analyses are performed on this dataset.

Independent Variable

**Ratio** = PA Sample Value/DOR Sample Value

**DOR Sample Value** = Sale Price x Time Adjustment Factor x % adjustment reported by the PA on the DR-493.

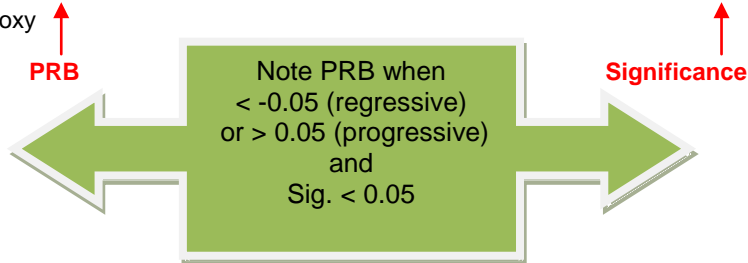
**Price-Related Bias (PRB)\*** provides a gauge of vertical equity obtained by regressing percentage differences from the median assessment ratio on percentage differences from the median value.

**PRB Regression**

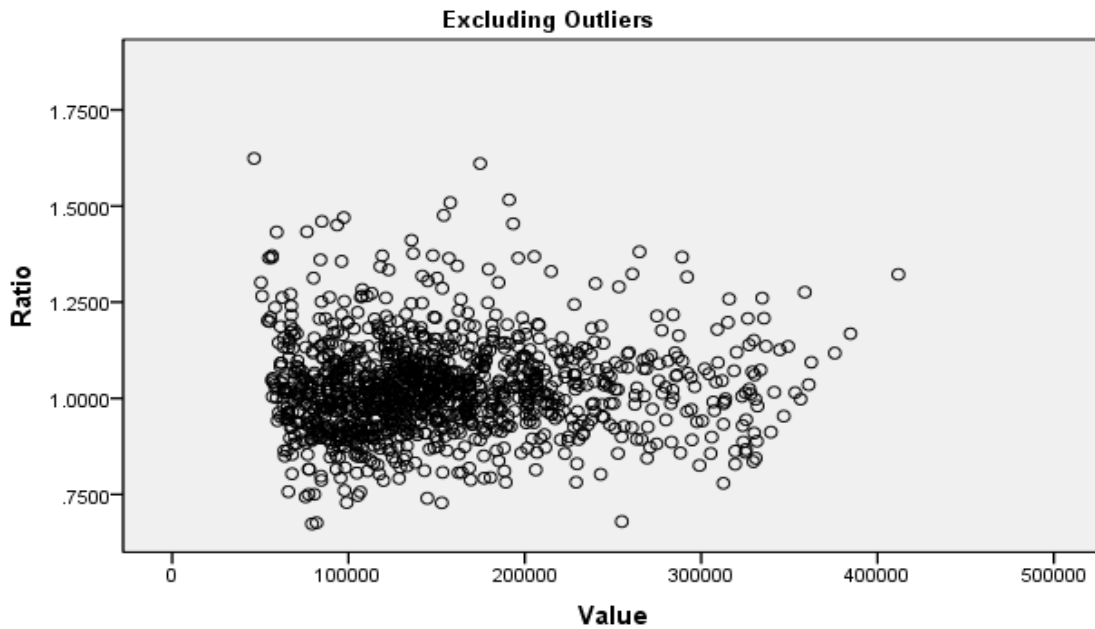
**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.127	.082		1.550	.121
	Value_Proxy	-.007	.005	-.041	-1.461	.144

a. Dependent Variable: Ratio\_Proxy



**Stratum 1 Ratio Scatterplot for Price Related Bias**



The value (independent variable) is weighted to minimize statistical bias that would overstate the degree of regressivity or progressivity.

Value = 0.50 x DOR Sample Value + 0.50 x (PA Sample Value / Median Ratio)

\* Outliers are removed to sharpen graph view. No analyses are performed on this dataset.

**\*For additional information on the PRB, please see IAAO's Fundamentals of Mass Appraisal (2011), Appendix B.**



### Martin Active Strata

Ratio Study Sample

Active Stratum	N	% of Total N	Sum	% of Total Sum
1. Improved Residential	2798	98.8%	\$793,436,700	94.2%
6. Improved Commercial and Industrial	34	1.2%	\$48,812,160	5.8%
Total	2832	100.0%	\$842,248,860	100.0%

Ratio Study Sample

Active Stratum	Minimum	Maximum
1. Improved Residential	\$70,570	\$15,551,440
6. Improved Commercial and Industrial	\$204,060	\$8,692,550
Total	\$70,570	\$15,551,440

### Ratio Statistics

Ratio Statistics for Ratio Study Sample / DOR Sample Value

Group	Mean	Median	Weighted Mean	Coefficient of Dispersion
1. Improved Residential	.964	.947	.938	.087
6. Improved Commercial and Industrial	.992	.991	.960	.077
Overall	.964	.948	.939	.087

Martin (53) County  
2014 In-Depth Study

**Stratum 1**

Ratio Study Sample

Value Group	N	% of Total N	Sum	% of Total Sum	Minimum	Maximum
1	621	22.2%	\$58,676,550	7.4%	\$70,570	\$119,000
2	715	25.6%	\$110,345,460	13.9%	\$119,070	\$187,690
3	726	25.9%	\$167,684,350	21.1%	\$183,740	\$282,470
4	736	26.3%	\$456,730,340	57.6%	\$282,980	\$15,551,440
Total	2798	100.0%	\$793,436,700	100.0%	\$70,570	\$15,551,440

**Frequencies**

**DOR\_UC**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Single Family	2313	82.7	82.7	82.7
Mobile Home	14	.5	.5	83.2
Condominiums	465	16.6	16.6	99.8
Cooperative	6	.2	.2	100.0
Total	2798	100.0	100.0	

**EFFECTIVE YEAR BUILT RANGE**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid < 1960	10	.4	.4	.4
1960-69	22	.8	.8	1.1
1970-79	270	9.6	9.7	10.8
1980-89	767	27.4	27.4	38.2
1990-99	829	29.6	29.6	67.9
2000-09	825	29.5	29.5	97.4
2010 AND AFTER	73	2.6	2.6	100.0
Total	2796	99.9	100.0	
Missing System	2	.1		
Total	2798	100.0		

Martin (53) County  
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**Market Area**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	247	8.8	8.9	8.9
	2	329	11.8	11.8	20.7
	3	313	11.2	11.2	31.9
	4	563	20.1	20.2	52.1
	5	505	18.0	18.1	70.3
	6	210	7.5	7.5	77.8
	7	618	22.1	22.2	100.0
	Total	2785	99.5	100.0	
Missing	System	13	.5		
Total		2798	100.0		

**Crosstabs**

**SALE MONTH \* SALE\_YR1 Crosstabulation**

Count

		SALE_YR1	
		2013	Total
SALE MONTH	1	143	143
	2	160	160
	3	286	286
	4	336	336
	5	290	290
	6	266	266
	7	245	245
	8	248	248
	9	207	207
	10	193	193
	11	196	196
	12	228	228
Total		2798	2798

## Ratio Statistics

**Ratio Statistics for Ratio Study Sample / DOR Sample Value**

Mean	95% Confidence Interval for Mean		Median	95% Confidence Interval for Median		
	Lower Bound	Upper Bound		Lower Bound	Upper Bound	Actual Coverage
.964	.959	.968	.947	.944	.950	95.3%

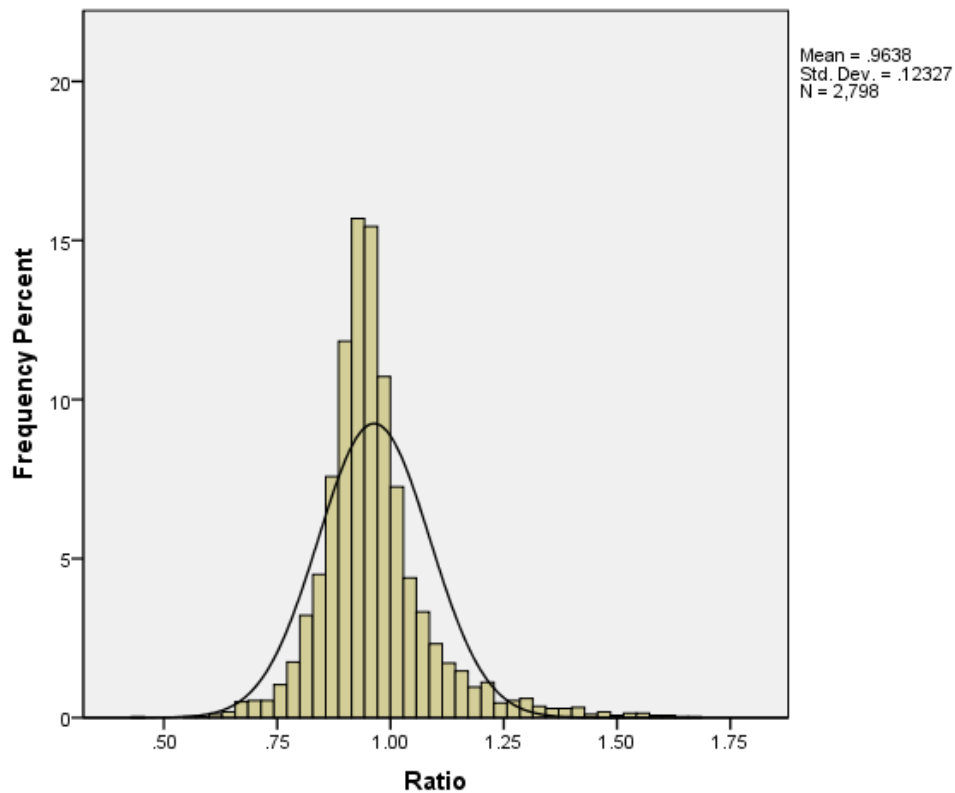
The confidence interval for the median is constructed without any distribution assumptions. The actual coverage level may be greater than the specified level. Other confidence intervals are constructed by assuming a Normal distribution for the ratios.

**Ratio Statistics for Ratio Study Sample / DOR Sample Value**

Weighted Mean	95% Confidence Interval for Weighted Mean		Coefficient of Dispersion
	Lower Bound	Upper Bound	
.938	.931	.946	.087

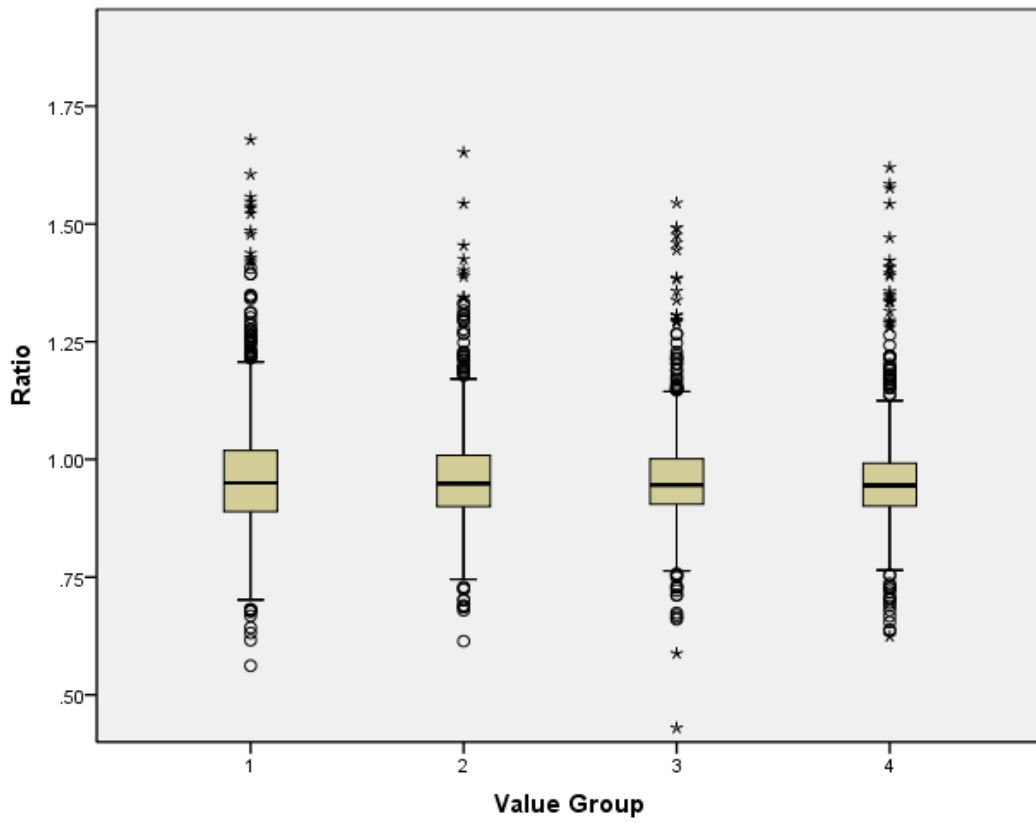
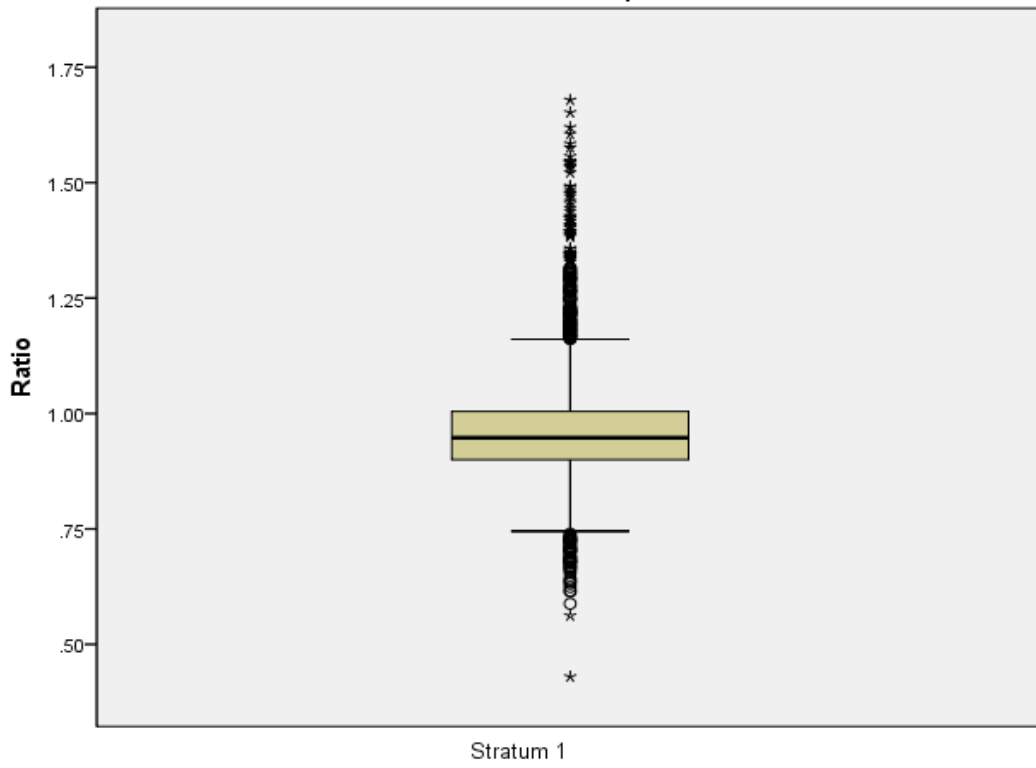
The confidence interval for the median is constructed without any distribution assumptions. The actual coverage level may be greater than the specified level. Other confidence intervals are constructed by assuming a Normal distribution for the ratios.

**Stratum 1 Ratio Distribution**

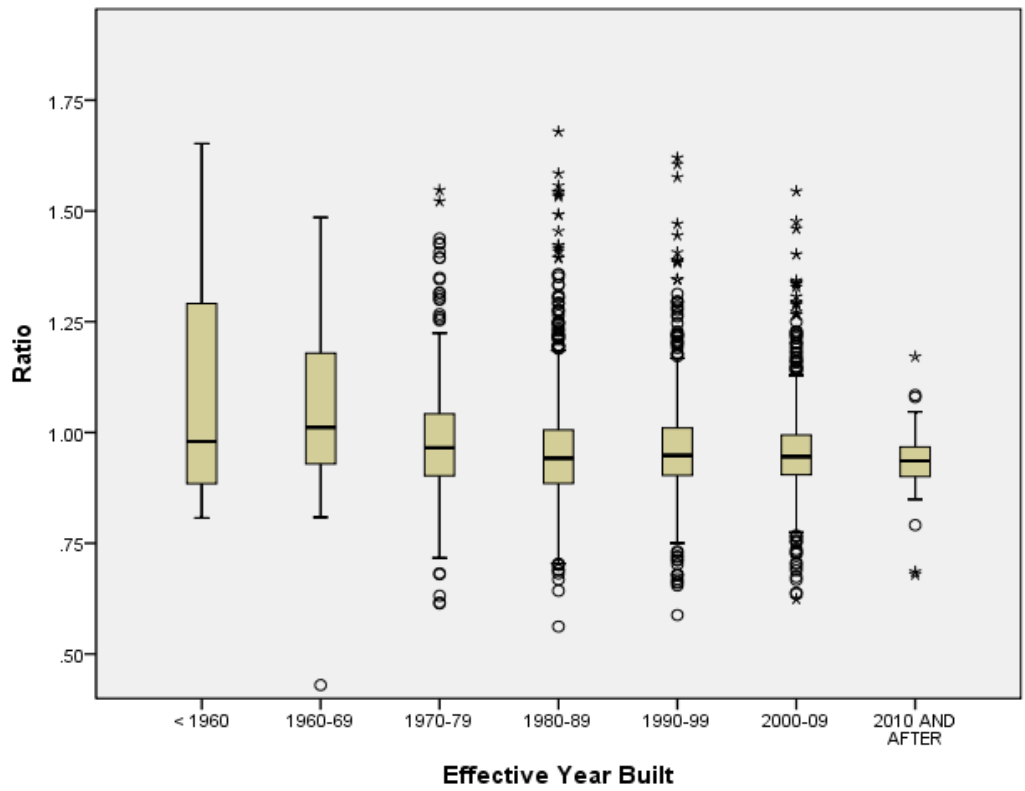
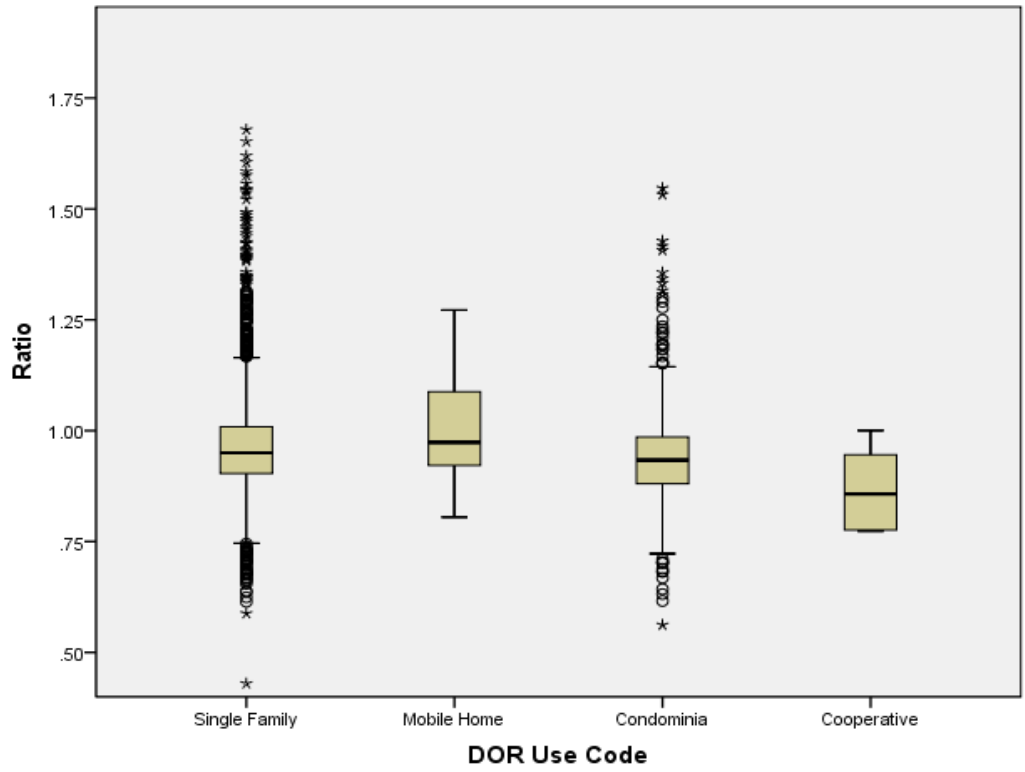


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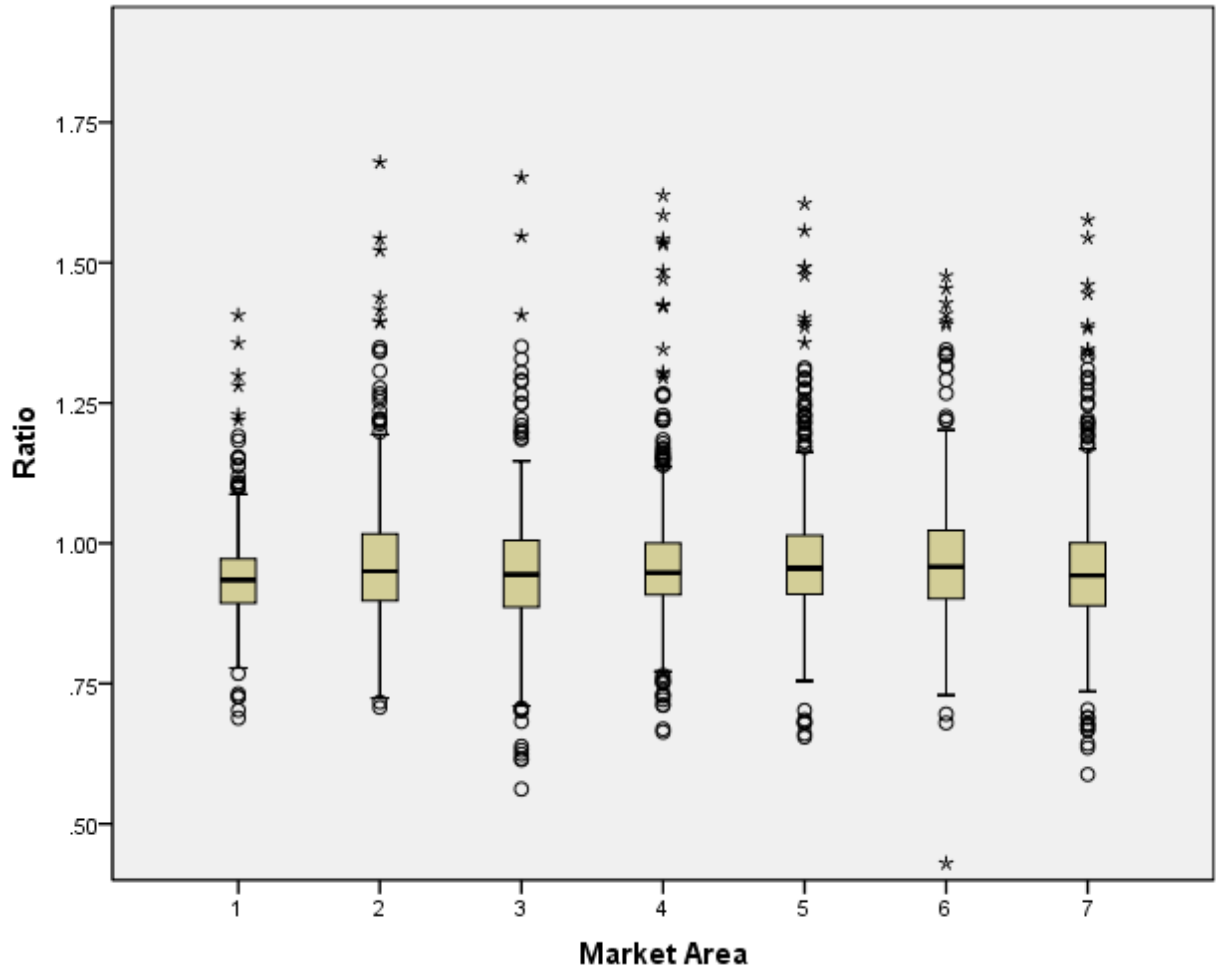
Stratum 1 Ratio Boxplot



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2014 In-Depth Study



### PRD Ratio Statistics

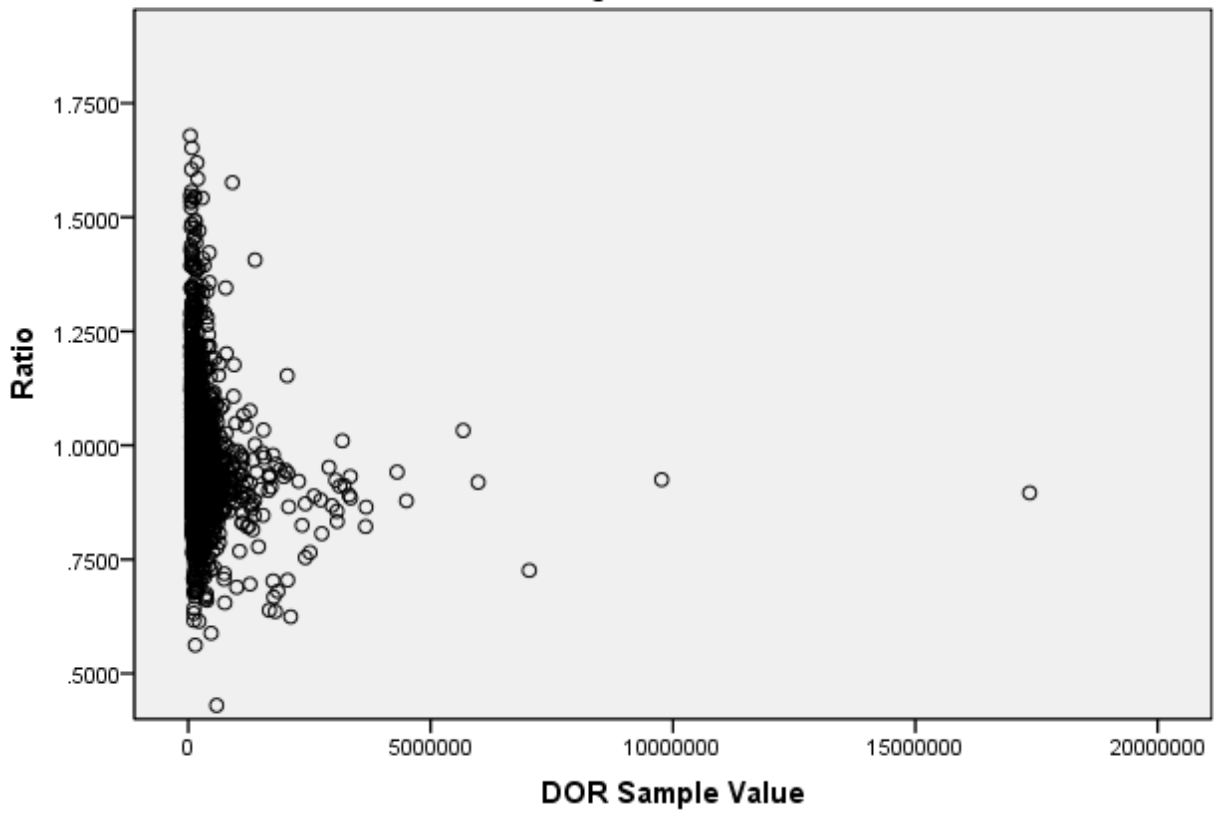
Ratio Statistics for Ratio Study

Sample / DOR Sample Value

Price Related Differential
1.027

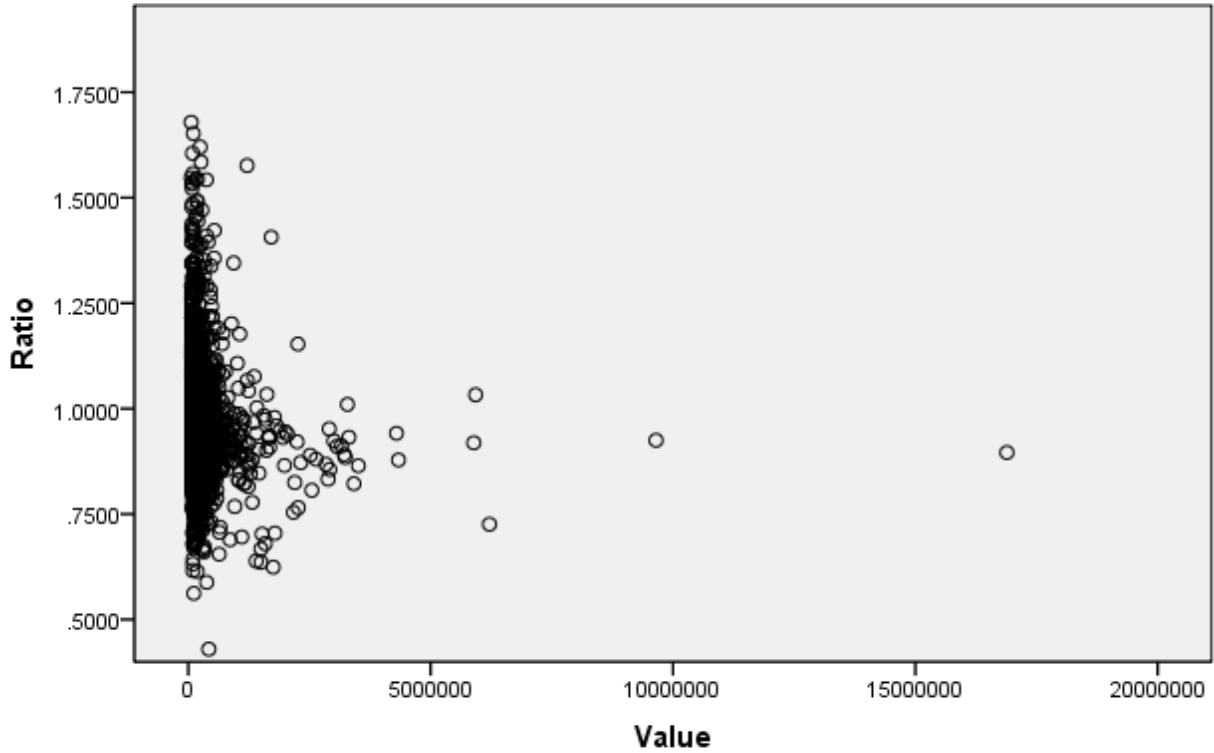
### Stratum 1 Ratio Scatterplot for Price Related Differential

Including Outliers





**Stratum 1 Ratio Scatterplot  
for Price Related Bias  
Including Outliers**



Value = 0.50 x DOR Sample Value + 0.50 x (PA Sample Value / Median Ratio)

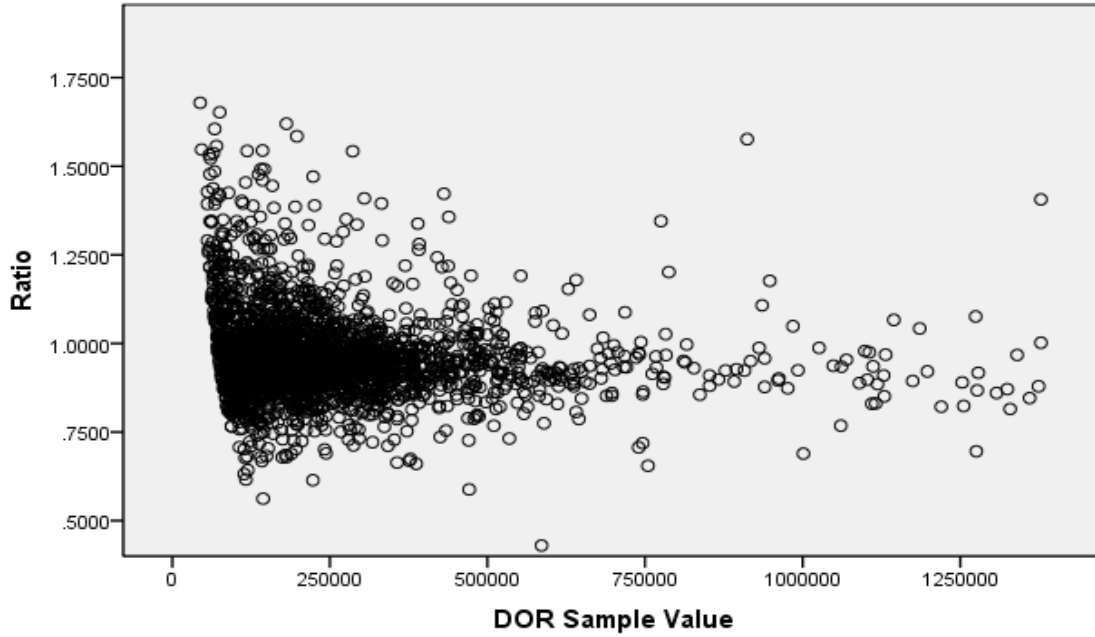
**PRB Regression**

**Coefficients<sup>a</sup>**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	.373	.044		8.464	.000
Value_Proxy	-.020	.002	-.151	-8.082	.000

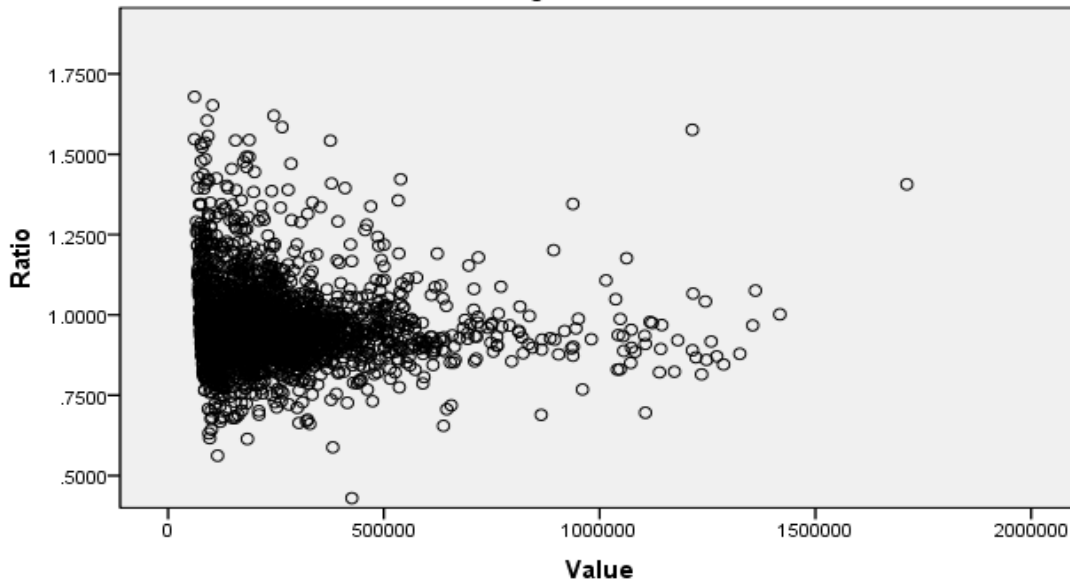
a. Dependent Variable: Ratio Proxy

**Stratum 1 Ratio Scatterplot  
for Price Related Differential  
Excluding Outliers**



\* Outliers are removed to sharpen graph view. No analyses are performed on this dataset.

**Stratum 1 Ratio Scatterplot  
for Price Related Bias  
Excluding Outliers**



$$\text{Value} = 0.50 \times \text{DOR Sample Value} + 0.50 \times (\text{PA Sample Value} / \text{Median Ratio})$$

\* Outliers are removed to sharpen graph view. No analyses are performed on this dataset.

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**Stratum 6**

Ratio Study Sample

Value Group	N	% of Total N	Sum	% of Total Sum	Minimum	Maximum
1	9	26.5%	\$2,265,960	4.6%	\$204,060	\$302,300
2	7	20.6%	\$2,673,080	5.5%	\$319,800	\$493,180
3	8	23.5%	\$5,905,340	12.1%	\$514,110	\$1,034,940
4	10	29.4%	\$37,967,780	77.8%	\$1,140,480	\$8,692,550
Total	34	100.0%	\$48,812,160	100.0%	\$204,060	\$8,692,550

**Frequencies**

**DOR\_UC**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 3	4	11.8	11.8	11.8
11	4	11.8	11.8	23.5
12	5	14.7	14.7	38.2
16	2	5.9	5.9	44.1
17	2	5.9	5.9	50.0
19	4	11.8	11.8	61.8
20	1	2.9	2.9	64.7
23	2	5.9	5.9	70.6
25	1	2.9	2.9	73.5
26	2	5.9	5.9	79.4
27	1	2.9	2.9	82.4
41	1	2.9	2.9	85.3
46	1	2.9	2.9	88.2
48	4	11.8	11.8	100.0
Total	34	100.0	100.0	

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**EFFECTIVE YEAR BUILT RANGE**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1970-79	1	2.9	2.9	2.9
	1980-89	14	41.2	41.2	44.1
	1990-99	7	20.6	20.6	64.7
	2000-09	11	32.4	32.4	97.1
	2010 AND AFTER	1	2.9	2.9	100.0
	Total	34	100.0	100.0	

**Market Area**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2	4	11.8	11.8	11.8
	3	15	44.1	44.1	55.9
	4	2	5.9	5.9	61.8
	5	6	17.6	17.6	79.4
	7	7	20.6	20.6	100.0
	Total	34	100.0	100.0	

**Crosstabs**

**SALE MONTH \* SALE\_YR1 Crosstabulation**

Count

		SALE_YR1	
		2013	Total
SALE MONTH	5	5	5
	6	7	7
	7	3	3
	8	5	5
	9	1	1
	10	2	2
	11	5	5
	12	6	6
Total		34	34

## Ratio Statistics

**Ratio Statistics for Ratio Study Sample / DOR Sample Value**

Mean	95% Confidence Interval for Mean		Median	95% Confidence Interval for Median		Actual Coverage
	Lower Bound	Upper Bound		Lower Bound	Upper Bound	
.992	.951	1.033	.991	.960	1.030	97.6%

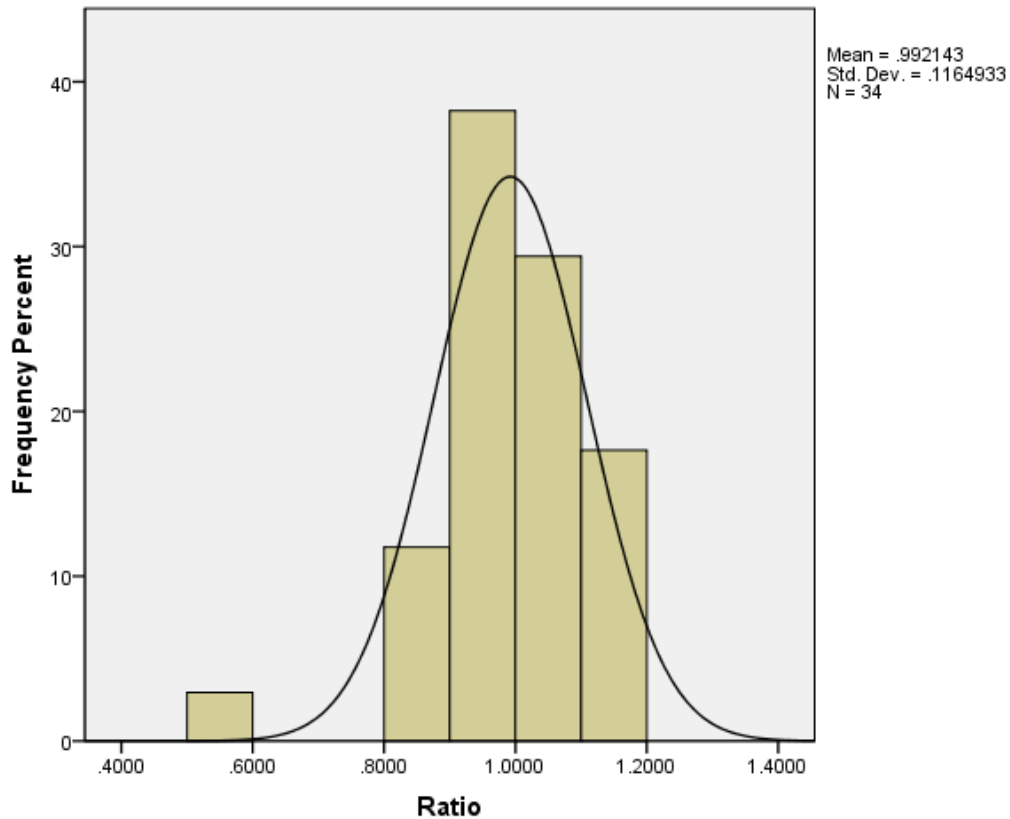
The confidence interval for the median is constructed without any distribution assumptions. The actual coverage level may be greater than the specified level. Other confidence intervals are constructed by assuming a Normal distribution for the ratios.

**Ratio Statistics for Ratio Study Sample / DOR Sample Value**

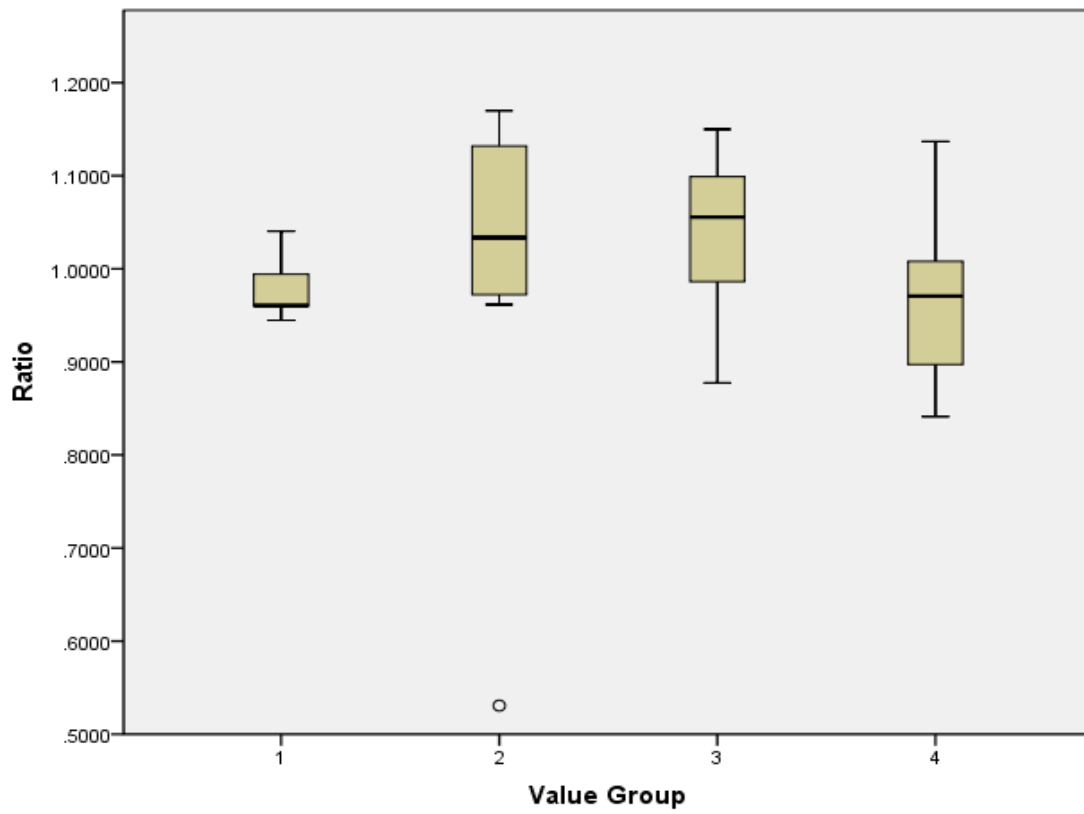
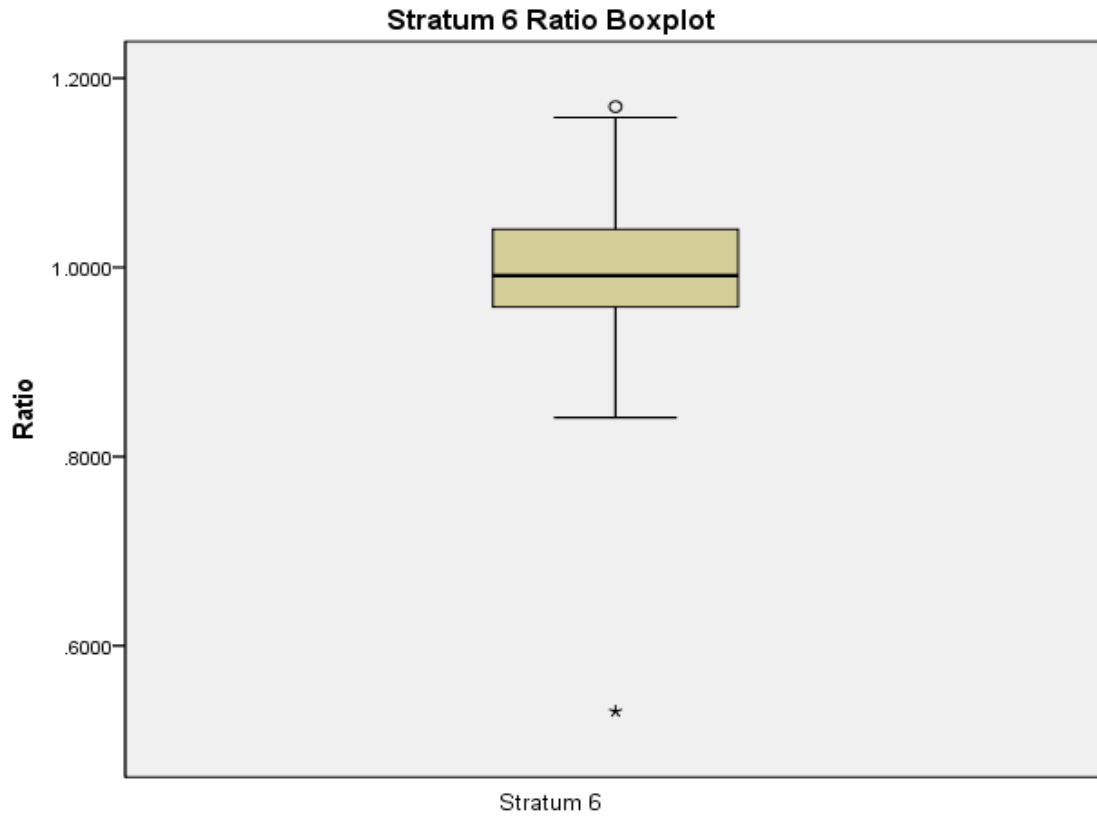
Weighted Mean	95% Confidence Interval for Weighted Mean		Coefficient of Dispersion
	Lower Bound	Upper Bound	
.960	.906	1.014	.077

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.

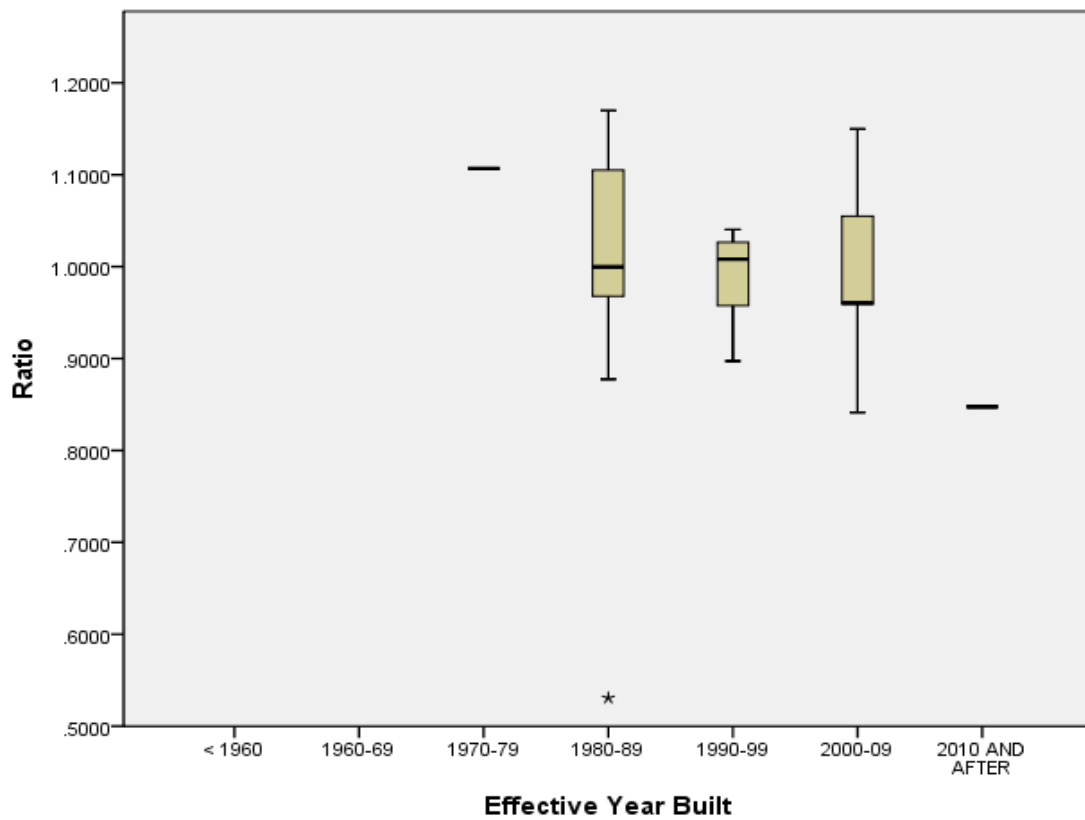
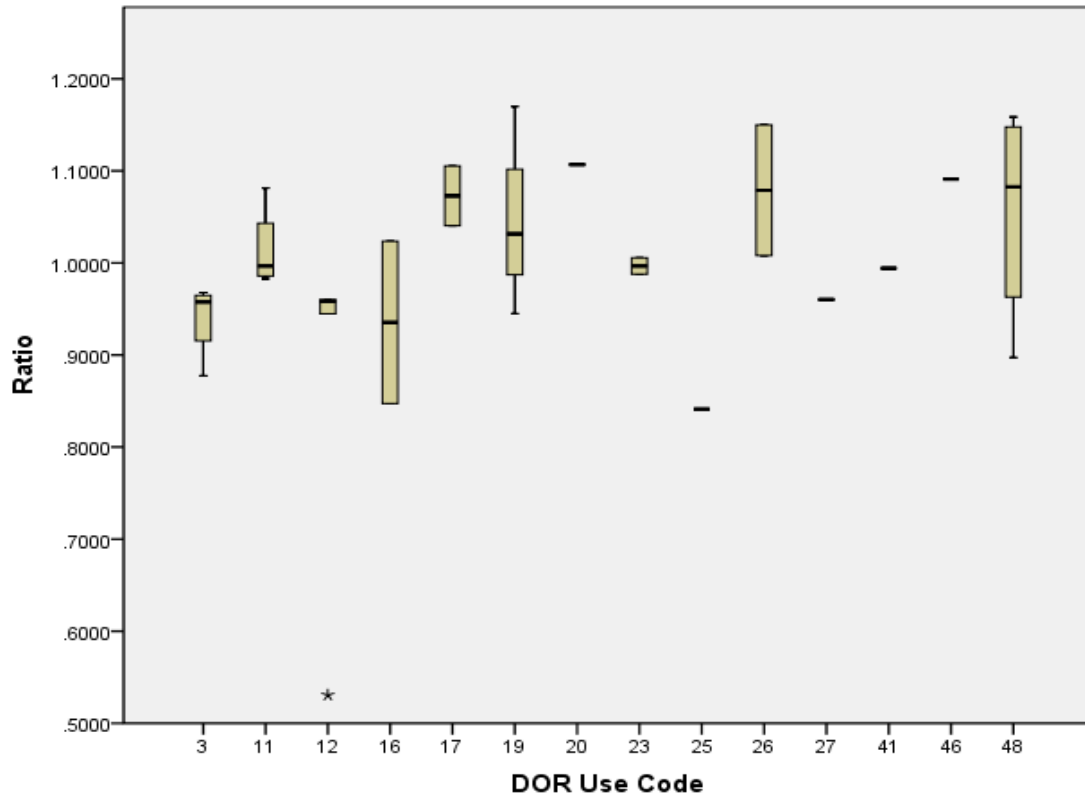
**Stratum 6 Ratio Distribution**



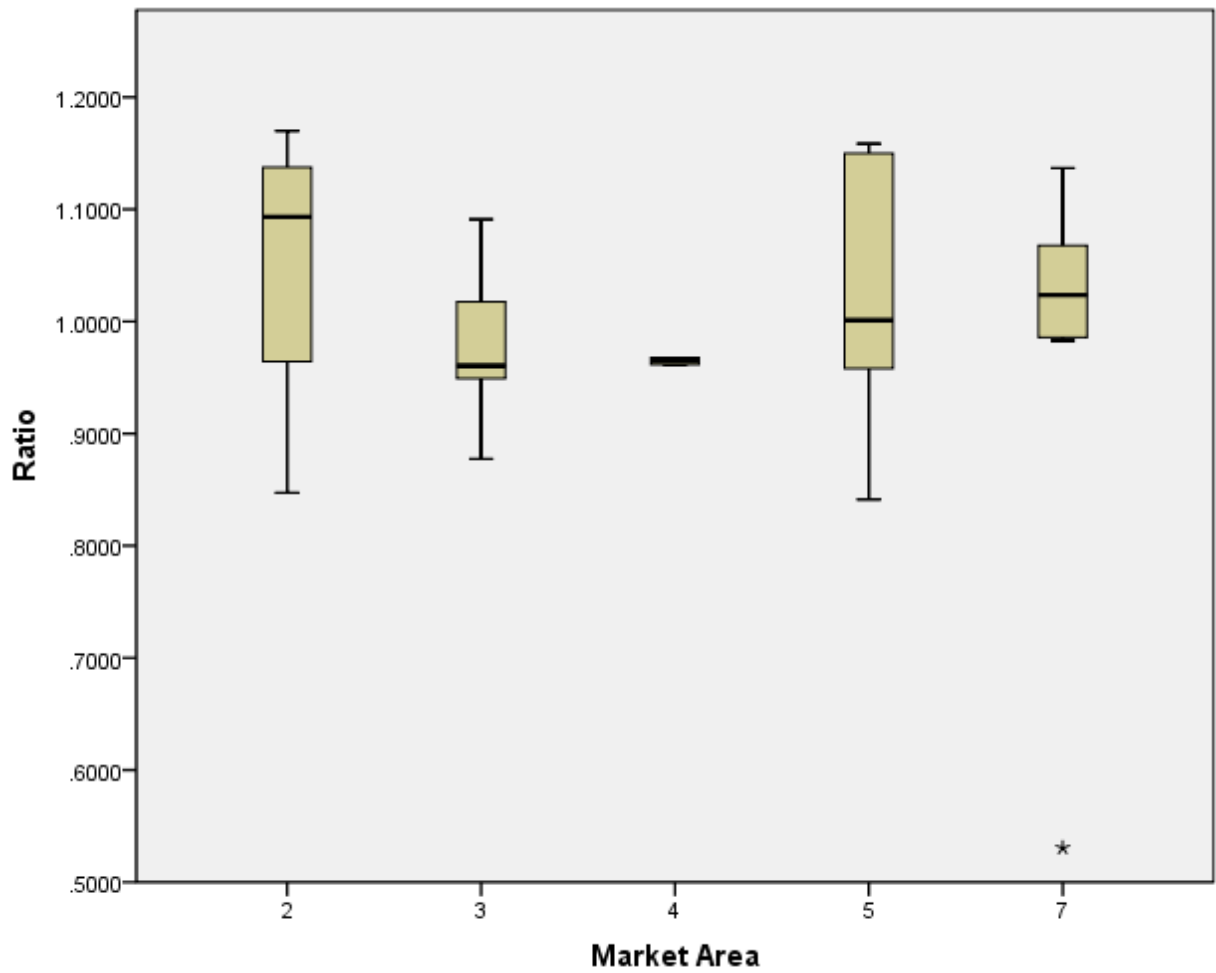
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### PRD Ratio Statistics

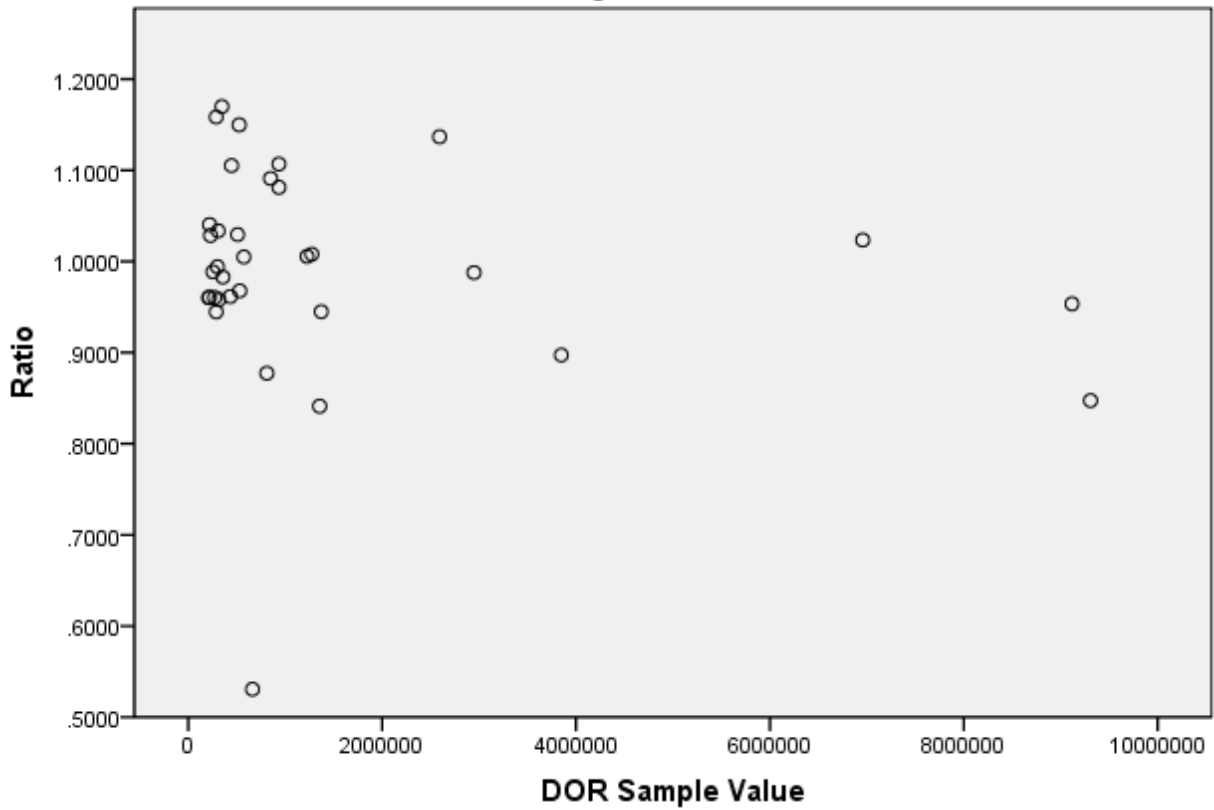
Ratio Statistics for Ratio Study

Sample / DOR Sample Value

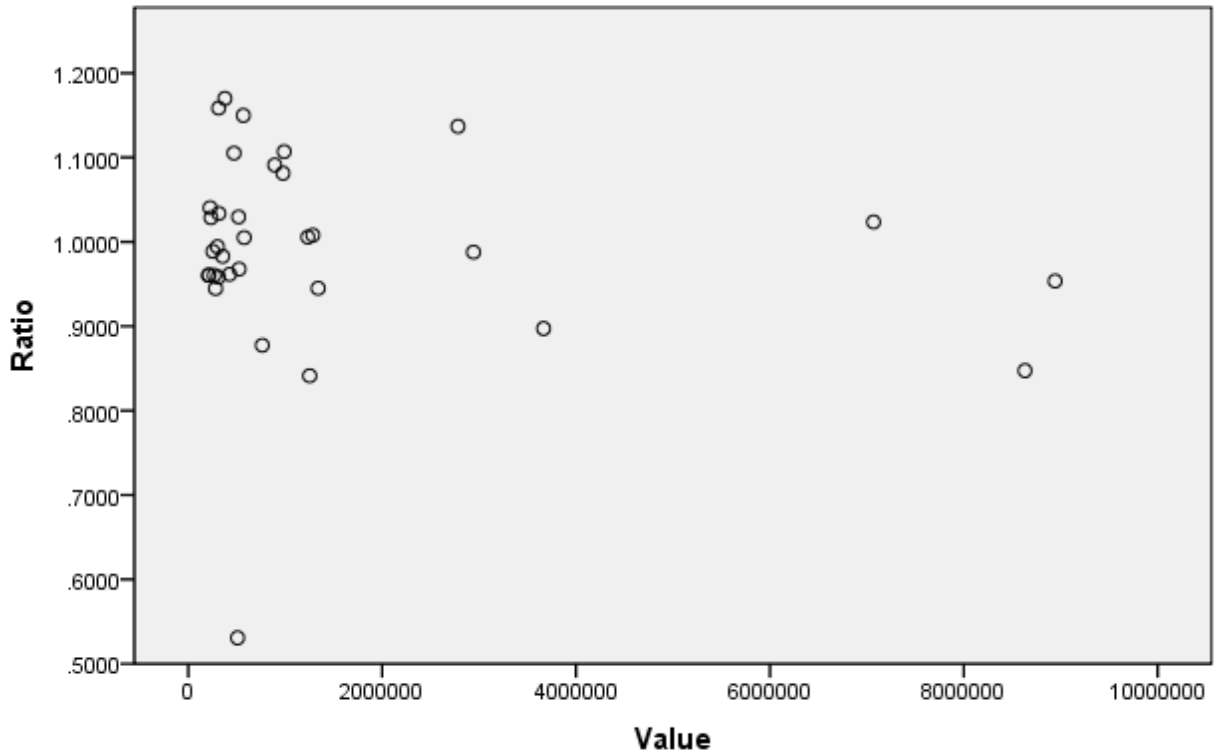
Price Related Differential
1.033

**Stratum 6 Ratio Scatterplot  
for Price Related Differential**

Including Outliers



**Stratum 6 Ratio Scatterplot  
for Price Related Bias  
Including Outliers**



Value = 0.50 x DOR Sample Value + 0.50 x (PA Sample Value / Median Ratio)

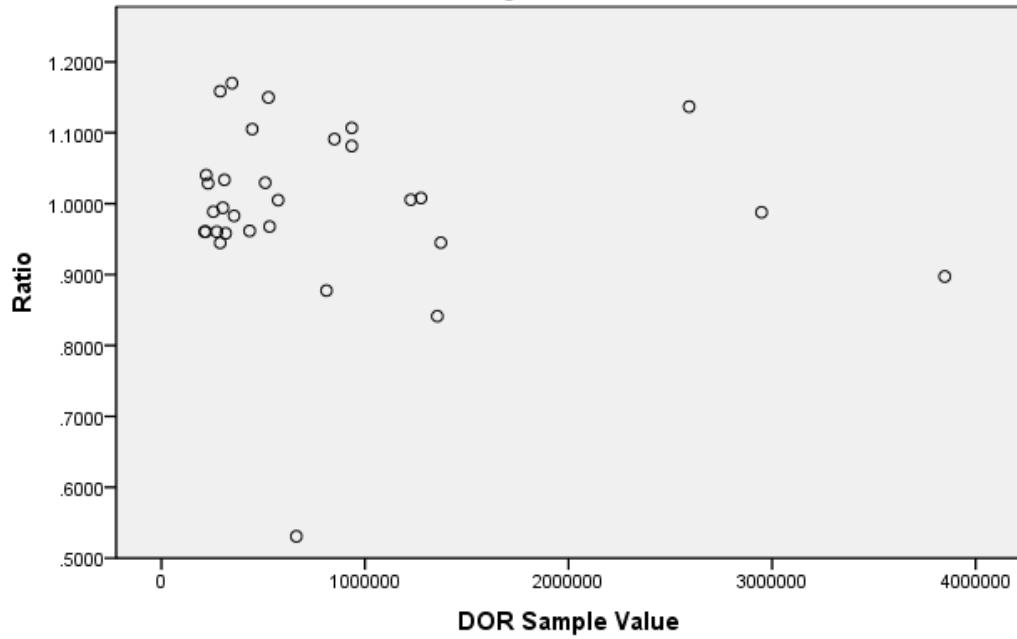
**PRB Regression**

**Coefficients<sup>a</sup>**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	
	B	Std. Error	Beta			
	1	(Constant)	.168			.257
	Value_Proxy	-.009	.013	-.114	-.652	.519

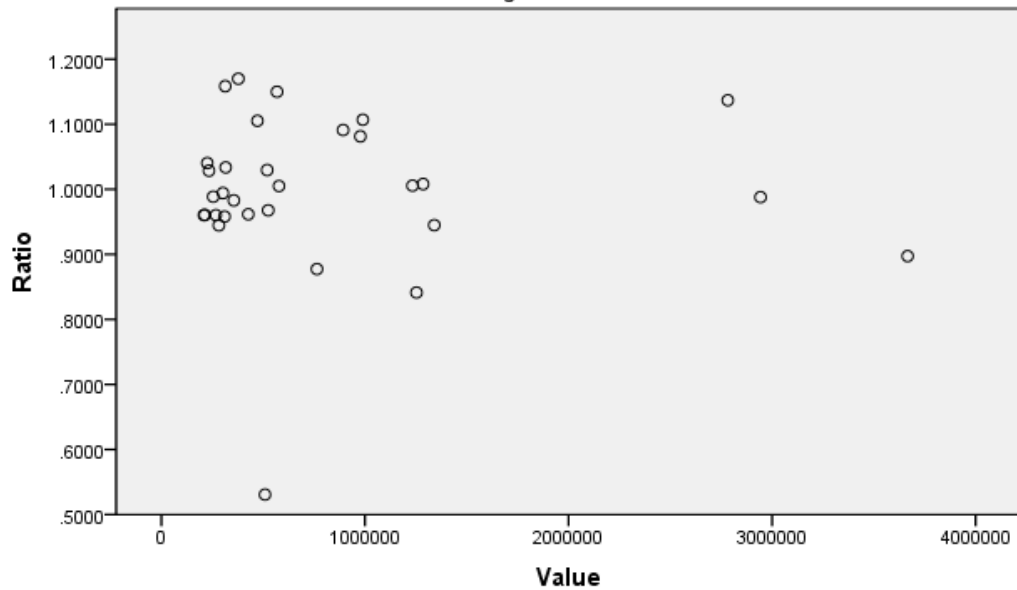
a. Dependent Variable: Ratio Proxy

**Stratum 6 Ratio Scatterplot  
for Price Related Differential**  
Excluding Outliers



\* Outliers are removed to sharpen graph view. No analyses are performed on this dataset.

**Stratum 6 Ratio Scatterplot  
for Price Related Bias**  
Excluding Outliers



$$\text{Value} = 0.50 \times \text{DOR Sample Value} + 0.50 \times (\text{PA Sample Value} / \text{Median Ratio})$$

\* Outliers are removed to sharpen graph view. No analyses are performed on this dataset.

# Time Trend Factors

County	Stratum	Year	Month	Factor
53	1	2011	1	1.115
53	1	2011	2	1.115
53	1	2011	3	1.115
53	1	2011	4	1.115
53	1	2011	5	1.115
53	1	2011	6	1.115
53	1	2011	7	1.115
53	1	2011	8	1.115
53	1	2011	9	1.115
53	1	2011	10	1.115
53	1	2011	11	1.115
53	1	2011	12	1.115
53	1	2012	1	1.115
53	1	2012	2	1.115
53	1	2012	3	1.115
53	1	2012	4	1.115
53	1	2012	5	1.115
53	1	2012	6	1.115
53	1	2012	7	1.115
53	1	2012	8	1.115
53	1	2012	9	1.115
53	1	2012	10	1.115
53	1	2012	11	1.115
53	1	2012	12	1.115
53	1	2013	1	1.115
53	1	2013	2	1.104
53	1	2013	3	1.094
53	1	2013	4	1.084
53	1	2013	5	1.073
53	1	2013	6	1.063
53	1	2013	7	1.053
53	1	2013	8	1.043
53	1	2013	9	1.034
53	1	2013	10	1.024
53	1	2013	11	1.014
53	1	2013	12	1.005
53	4	2011	1	0.937
53	4	2011	2	0.949
53	4	2011	3	0.961
53	4	2011	4	0.973
53	4	2011	5	0.985
53	4	2011	6	0.998
53	4	2011	7	1.011
53	4	2011	8	1.023
53	4	2011	9	1.036
53	4	2011	10	1.049
53	4	2011	11	1.063
53	4	2011	12	1.076
53	4	2012	1	1.090
53	4	2012	2	1.090
53	4	2012	3	1.090
53	4	2012	4	1.090
53	4	2012	5	1.090
53	4	2012	6	1.090
53	4	2012	7	1.090
53	4	2012	8	1.090
53	4	2012	9	1.090
53	4	2012	10	1.090
53	4	2012	11	1.090
53	4	2012	12	1.090
53	4	2013	1	1.090
53	4	2013	2	1.082
53	4	2013	3	1.074
53	4	2013	4	1.066
53	4	2013	5	1.058
53	4	2013	6	1.050
53	4	2013	7	1.042
53	4	2013	8	1.034
53	4	2013	9	1.027
53	4	2013	10	1.019
53	4	2013	11	1.011
53	4	2013	12	1.004