

**2012 Property Assessment
Performance Audit Results
July 2015**

**Office of Property Valuation
Department of Revenue
501 High Street
Frankfort, Kentucky 40620**

Report on Real Property Assessment Equity and Quality in

Kentucky For the 2012 Assessment Year

Pursuant to KRS 131.140(3) the Department of Revenue is directed to conduct a biennial performance audit of each Property Valuation Administrator's (PVA) Office. The audit procedures include the following:

1. an inspection of the maps and records maintained by the PVA office;
2. appraisals of real property using randomly selected parcels from each real property class;
3. an audit of Motor Vehicle affidavits; and
4. an evaluation of the overall effectiveness of the office.

Audit Procedures

Real Property

The audit procedures are designed to ensure objectivity and impartiality in the review process. Forty real property parcels (twenty Residential, ten Farm and ten Commercial) were selected in each county. Assessment and mapping records were reviewed for each of these selected parcels followed by an independent appraisal on each parcel. The appraisals were completed using the methods and data available to the PVA Office and with the appraisers having no knowledge of the subject property's assessed value. The PVA's assessment for each of these parcels was then compared with the appraised value establishing an assessment/appraisal ratio for each of these parcels.

Two statistical measures, the median ratio and coefficient of dispersion (COD), were calculated based upon the ratios on each of the individual parcels. These statistics provide an indication of assessment quality in each county. The median ratio is a measure of central tendency. It is the middle ratio or value in a set of ratios arrayed in ascending order. The COD is a statistic which measures the variability of individual ratios around the median ratio. The COD is the average absolute deviation of all assessment ratios from the median ratio and is expressed as a percentage. A COD less than 20% indicates that individual assessments are equitable and a COD in excess of 20% indicates problems with assessment equity.

Below is an example of how to calculate these statistics for five properties:

<u>Property</u>	<u>PVA's Assessment</u>	<u>Appraised Value</u>	<u>Assessment/Appraisal Ratio</u>
1	85,000	100,000	85%
2	75,000	75,000	100%
3	22,000	20,000	110%
4	95,000	100,000	95%
5	46,000	50,000	92%

Median Ratio Calculation

The individual ratios are first arrayed in ascending order:

85%
92%
95%
100%
110%

The median ratio is the middle ratio. In the above example, the median ratio is 95%.

Coefficient of Dispersion

The first step in calculating a COD is to find the absolute differences or deviations of each ratio from the median ratio.

<u>Ratio</u>	<u>Median</u>	<u>Absolute Deviation(Difference)</u>
85%	95%	10
92%	95%	3
95%	95%	0
100%	95%	5
110%	95%	<u>15</u>
Total Deviation		33

The formula for the COD is: $\frac{\text{average deviation}}{\text{median}} \times 100$

To arrive at the average deviation, the total deviation must be divided by the number of ratios in the sample. In this example, the total deviation of 33 is divided by 5. The result is an average deviation of 6.6. The information needed to calculate the COD is now available:

$$\text{COD} = 6.6/95 \times 100$$

$$\text{COD} = .0695 \times 100$$

$$\text{COD} = 6.95\%$$

Summary of Audit Results

The performance audit results for the 2012 assessment year indicate that property assessment levels and assessment equity are generally at an acceptable level. A listing of the median ratio and COD for each property class by county is listed below:

2012 Appraisal Summaries

County	Res Median	Res COD	Farm Median	Farm COD	Comm Median	Comm COD
Adair	99.90%	9.51	101.20%	11.99	98.00%	22.89
Allen	86.30%	12.52	73.20%	20.22	88.00%	23.29
Anderson	103.50%	9.21	105.20%	14.76	95.00%	8.86
Ballard	94.80%	4.97	93.60%	5.26	95.00%	8.53
Barren	95.20%	3.67	87.70%	5.95	99.00%	4.53
Bath	94.40%	8.25	95.00%	13.96	103.00%	16.61
Bell	94.60%	6.63	87.50%	18.34	80.00%	23.99
Boone	98.20%	4.21	100.80%	9.00	101.00%	4.60
Bourbon	98.20%	4.29	93.90%	10.17	100.00%	9.44
Boyd	99.10%	3.51	95.70%	8.62	94.00%	3.51
Boyle	98.70%	4.16	98.80%	9.18	100.00%	9.86
Bracken	98.90%	10.15	98.30%	13.12	102.00%	17.97
Breathitt	91.70%	10.42	90.70%	5.06	81.00%	9.07
Breckinridge	95.10%	6.69	96.00%	6.26	97.00%	7.98
Bullitt	99.30%	5.31	95.30%	10.25	96.00%	9.99
Butler	92.00%	11.36	91.40%	11.23	94.00%	17.00
Caldwell	96.10%	4.75	93.30%	5.96	99.00%	8.81
Calloway	95.00%	2.30	97.13%	1.88	95.00%	4.05
Campbell	99.50%	5.27	95.80%	9.58	99.00%	4.54
Carlisle	94.90%	8.30	86.30%	24.32	76.00%	27.75
Carroll	98.40%	4.36	94.80%	2.78	99.00%	3.88
Carter	91.80%	15.03	89.70%	36.13	74.00%	20.44
Casey	91.30%	10.83	87.50%	10.67	96.00%	17.50
Christian	97.60%	3.19	96.90%	7.56	92.00%	8.74
Clark	101.20%	4.12	109.60%	7.88	97.00%	5.71
Clay	82.90%	13.63	84.30%	19.93	93.00%	9.38

Clinton	96.00%	9.88	99.80%	5.46	87.00%	17.35
Crittenden	100.90%	5.71	70.80%	16.48	101.00%	12.15
Cumberland	92.00%	8.22	101.50%	14.33	76.00%	22.68
Daviess	95.30%	4.18	91.60%	6.95	96.00%	5.74
Edmonson	96.90%	3.38	96.50%	8.28	95.00%	6.15
Elliott	92.70%	8.28	94.60%	15.92	88.00%	9.12
Estill	92.00%	9.67	104.80%	18.18	88.30%	20.03
Fayette	103.10%	5.84	104.70%	11.96	102.00%	4.92
Fleming	103.00%	8.79	93.80%	7.48	94.00%	6.55
Floyd	91.90%	5.76	85.90%	9.14	91.00%	4.66
Franklin	99.30%	6.37	101.00%	8.54	99.00%	8.49
Fulton	98.80%	3.27	99.20%	3.66	87.00%	14.51
Gallatin	96.00%	6.10	101.40%	9.43	99.00%	5.88
Garrard	94.50%	5.25	97.10%	8.33	73.10%	25.05
Grant	97.40%	8.03	99.20%	2.75	98.00%	3.21
Graves	97.30%	4.17	90.80%	8.44	94.00%	7.95
Grayson	97.50%	6.95	97.80%	14.96	93.00%	5.48
Green	85.40%	9.24	86.70%	17.99	80.80%	17.66
Greenup	98.30%	5.71	100.00%	8.31	99.00%	9.33
Hancock	99.00%	6.79	92.90%	7.31	95.00%	4.83
Hardin	92.80%	7.48	99.30%	7.58	97.00%	4.20
Harlan	94.20%	5.04	91.80%	10.53	94.00%	4.81
Harrison	95.50%	3.20	100.40%	5.01	97.00%	2.77
Hart	94.40%	5.18	99.60%	3.84	96.00%	4.01
Henderson	92.40%	5.16	98.40%	4.69	97.00%	2.54
Henry	98.60%	9.19	98.30%	18.35	96.00%	9.57
Hickman	97.20%	2.65	78.00%	28.93	90.80%	14.97
Hopkins	99.70%	5.08	101.00%	9.94	95.00%	3.86
Jackson	84.20%	11.14	70.10%	16.05	80.00%	17.98
Jefferson	101.00%	5.04	100.00%	10.22	96.50%	6.08
Jessamine	99.20%	5.22	95.60%	4.23	99.00%	5.77
Johnson	92.10%	6.79	96.70%	7.66	91.00%	6.16
Kenton	99.90%	5.88	99.10%	4.44	101.00%	7.72
Knott	90.70%	7.22	88.50%	4.55	83.00%	6.44
Knox	86.80%	14.11	87.30%	12.59	98.00%	13.99
Larue	99.80%	6.51	97.90%	9.51	92.00%	7.88
Laurel	97.10%	5.68	101.30%	5.54	89.00%	17.83
Lawrence	97.20%	6.79	99.70%	3.87	95.00%	3.94
Lee	92.50%	7.59	82.90%	9.44	82.00%	13.29
Leslie	90.80%	7.04	75.00%	16.06	84.00%	6.53
Letcher	85.60%	13.01	76.00%	6.24	83.00%	23.37
Lewis	101.00%	8.83	102.00%	17.26	97.00%	15.80
Lincoln	93.80%	8.65	85.60%	8.64	81.00%	13.71
Livingston	97.20%	4.67	98.90%	6.14	94.00%	10.22
Logan	97.70%	3.17	98.40%	4.87	89.00%	12.87
Lyon	96.00%	6.22	98.20%	9.39	99.40%	4.96
Madison	85.50%	6.80	91.00%	7.92	75.50%	20.51
Magoffin	92.00%	4.80	85.10%	6.30	93.00%	5.10
Marion	94.30%	7.30	98.60%	5.04	97.00%	22.66
Marshall	95.50%	5.24	85.40%	9.11	95.00%	12.10
Martin	91.80%	9.04	86.20%	10.58	90.00%	17.28
Mason	101.30%	10.72	95.80%	18.08	96.00%	10.46
McCracken	98.20%	4.49	75.20%	15.11	93.00%	5.98

McCreary	86.00%	11.59	81.60%	19.31	103.00%	20.74
McLean	92.60%	11.63	112.80%	28.17	90.00%	14.94
Meade	98.80%	6.54	95.20%	13.76	93.00%	8.01
Menifee	93.00%	15.00	101.00%	16.30	92.00%	15.40
Mercer	98.50%	2.03	85.30%	12.24	98.00%	18.16
Metcalfe	95.30%	4.02	100.80%	8.07	89.00%	16.79
Monroe	91.70%	10.69	66.20%	9.37	64.00%	25.00
Montgomery	99.20%	4.54	94.10%	3.60	93.00%	3.52
Morgan	94.40%	12.45	98.20%	18.28	86.00%	8.42
Muhlenberg	92.90%	6.22	105.90%	11.87	97.00%	4.18
Nelson	98.20%	2.93	96.20%	11.37	96.00%	4.76
Nicholas	100.70%	8.68	95.00%	12.94	93.00%	13.66
Ohio	97.30%	6.44	108.80%	11.60	92.00%	8.91
Oldham	99.90%	10.34	91.90%	15.20	98.00%	2.42
Owen	96.60%	5.76	96.30%	10.28	101.00%	5.30
Owsley	93.80%	10.51	85.60%	20.67	81.00%	13.87
Pendleton	95.30%	4.26	96.70%	5.19	96.00%	2.92
Perry	94.70%	6.90	95.60%	15.60	78.00%	19.10
Pike	93.40%	3.69	94.00%	15.99	90.00%	8.24
Powell	93.90%	12.62	102.90%	24.18	98.00%	15.86
Pulaski	95.70%	10.57	86.50%	18.68	87.00%	16.39
Robertson	97.20%	10.30	108.60%	11.92	100.00%	12.23
Rockcastle	82.30%	12.57	66.00%	29.99	100.00%	24.43
Rowan	92.10%	5.80	90.40%	6.96	95.00%	8.44
Russell	95.90%	5.61	82.50%	20.02	77.00%	21.31
Scott	97.80%	2.80	100.70%	2.73	103.00%	4.14
Shelby	100.50%	6.57	108.00%	20.93	105.00%	7.57
Simpson	99.10%	3.40	97.20%	3.70	91.00%	10.30
Spencer	94.40%	5.01	92.50%	5.31	90.00%	9.59
Taylor	96.00%	4.48	103.30%	12.89	91.00%	9.10
Todd	98.00%	2.93	98.30%	2.63	98.00%	15.27
Trigg	93.40%	13.76	92.90%	6.94	93.00%	5.53
Trimble	90.80%	8.50	96.50%	7.04	91.00%	3.22
Union	96.10%	8.62	99.40%	6.02	94.00%	3.76
Warren	96.60%	2.29	98.30%	4.76	96.00%	3.34
Washington	89.10%	7.29	80.60%	10.97	94.90%	13.49
Wayne	81.00%	7.42	89.70%	12.61	65.90%	20.97
Webster	96.90%	5.64	95.10%	3.39	94.00%	4.63
Whitley	80.70%	14.16	80.40%	36.63	80.00%	36.12
Wolfe	96.70%	6.96	93.00%	8.25	95.00%	5.36
Woodford	101.20%	4.65	101.40%	5.27	105.00%	7.85

Individual letters have been mailed to each PVA informing him or her of the performance audit appraisal results. For assessment level issues that did not appear severe, the PVA was instructed in writing to take the appropriate steps to correct the problem. Follow up reviews of assessment increases made by the PVA in counties identified as being slightly below 85% indicate that these issues are being addressed in an acceptable manner.

In counties where more serious assessment level problems were indicated, meetings were held with the PVA to discuss the issue and develop an action plan. The progress made in addressing the assessment problems identified was monitored by the Office of Property Valuation's field staff and verified through subsequent assessment/sale ratio studies. Additionally, the next round of performance audits will also serve as a check on the progress made in addressing the assessment issues identified.

It is important to keep in mind that sales of real property are also monitored in each county every year and median ratios and CODs are calculated based upon a comparison of the sales price to the PVA's assessed value of the property that sold. These assessment/sale ratio studies and the performance audits greatly assist both the Department of Revenue and each PVA in their efforts to properly assess all real property.

Motor Vehicle Audit Results

Motor Vehicle changes were selected and printed for each county by the Department for this audit. Affidavits or proof should be kept on hand in the PVA Office for any vehicle changes made in the system. The audit checks to see if the offices are correctly making these changes and filing the affidavits or proof for a period of three years. In most cases, affidavits were kept and filed properly for easy access. In those cases where files were kept, but not in any particular order, it was suggested they begin filing them in a more orderly fashion for future audits.

Mapping Audit Results

PVAs continue to make technological advances in mapping. They are using geographical information systems (GIS) which are supported by training from the Department of Revenue. These GIS programs reduce the time needed for mapping and are of great benefit to PVAs in times of budget constraints and reduced personnel. The programs also allow the PVA offices to work with other local offices that use GIS programs, and the information can be used for economic development purposes or, in the case of a disaster, ownership and parcel information can quickly be given to emergency services. For commercial requests for GIS information, PVA offices can charge a fee for the GIS information provided to vendors.

Another mapping tool used by many PVA Offices is an aerial photography program known as Pictometry. In addition to a standard overhead view, this program provides aerial photographs at an oblique angle, allowing a structure to be viewed from four different sides which helps the PVA office in the inspection of properties.