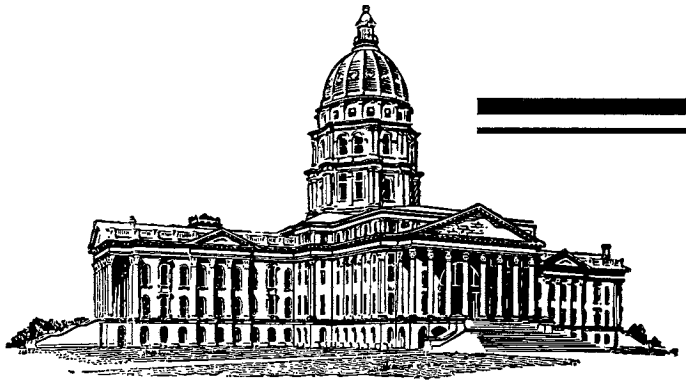

PERFORMANCE AUDIT REPORT

Reviewing the Methodology Used in Conducting and Analyzing the State's Sales-Ratio Study

A Report to the Legislative Post Audit Committee
By the Legislative Division of Post Audit
State of Kansas
March 1997

97-47

Legislative Post Audit Committee

Legislative Division of Post Audit

THE LEGISLATIVE POST Audit Committee and its audit agency, the Legislative Division of Post Audit, are the audit arm of Kansas government. The programs and activities of State government now cost about $8 billion a year. As legislators and administrators try increasingly to allocate tax dollars effectively and make government work more efficiently, they need information to evaluate the work of governmental agencies. The audit work performed by Legislative Post Audit helps provide that information.

We conduct our audit work in accordance with applicable government auditing standards set forth by the U.S. General Accounting Office. These standards pertain to the auditor's professional qualifications, the quality of the audit work, and the characteristics of professional and meaningful reports. The standards also have been endorsed by the American Institute of Certified Public Accountants and adopted by the Legislative Post Audit Committee.

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March 10, 1997

To: Members, Legislative Post Audit Committee

Representative Eugene Shore, Chair
Representative Richard Alldritt
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This report contains the findings and conclusions from our completed performance audit, *Reviewing the Methodology Used in Conducting and Analyzing the State's Sales-Ratio Study*. The audit found that the sales-ratio study's methodology is reasonable and consistent with professional standards.

The report also contains an appendix showing the price-related differential for residential and commercial property in each county. For an individual county, this statistic shows whether lower-value property is relatively more over- or under-appraised than higher-value property.

We would be happy to discuss the findings presented in this report with any legislative committees, individual legislators, or other State officials.

Barbara J. Hinton
Legislative Post Auditor

EXECUTIVE SUMMARY
LEGISLATIVE DIVISION OF POST AUDIT

Question 1: Is the Methodology Used in Conducting The State's Sales-Ratio Study Mathematically Sound?

In most areas, the Division of Property Valuation's handling of the ratio study is reasonable and consistent with professional standards or guidelines. *The basic steps the Division follows for validating sales and calculating various statistics are consistent with practices recommended by the International Association of Assessing Officers (IAAO). The Division's use of sampling for residential sales in 17 counties seems to work well, and is an efficient use of staff resources. The standard for measuring whether a county's homes are appraised at fair market value (an analysis of the "median ratio"), as well as the use of "confidence intervals" for that standard, is consistent with IAAO guidelines.* ..... page 6

In two areas, the Division's methods aren't consistent with professional standards. *In both areas, the Division's methods make it easier for counties to be in compliance with the requirement that property be appraised uniformly and equally at its fair market value. The Division's standard for measuring how uniformly properties are appraised (called the "coefficient of dispersion") is more lenient than professional standards. In Kansas, it's acceptable for individual property appraisal values to differ from their fair market values by up to 20%, on average, compared to the IAAO standard which limits acceptable deviation from fair market value to 10% to 15%, depending on the property. In addition, the Division uses a "confidence interval" to evaluate the uniformity measure (the coefficient of dispersion), while professional standards are silent on this issue.* ..... page 11

Under the court order, the Division is likely to find different counties in compliance than it would based on its normal analysis. *The court order requires the Division to base compliance solely on statistics generated by the ratio study—the median ratio and the coefficient of dispersion. The Division's normal determination of compliance takes into account not only the statistics generated by the ratio study, but also an evaluation of each county's appraisal procedures. Given this difference, the Division could arrive at different conclusions under the court order than it would using its normal procedures. For example, in 1995, the Division found only six counties out of compliance with State law. Under the criteria used in the court order, at least 18 counties would have been out of* compliance. ..... page 12

Conclusion ..... page 13

Question 2: Does the State Use a Reasonable Method For Determining Which Sales of Property To Include or Exclude From the Sales-Ratio Study, and Has That Method Been Applied Appropriately?

The Division of Property Valuation has established reasonable policies for identifying which properties should be included or excluded from the ratio study. *The Division assumes that all properties that sell are valid sales and should be included in the ratio study, unless there's sufficient and compelling information to show otherwise. Kansas' laws and policies for excluding sales seemed reasonable, and take into consideration virtually all the factors the IAAO recommends for determining validity and adjusting sales prices.* ..... page 14

Division staff properly handled 98% of the property sales we reviewed for the 1995 ratio study. *We found only seven instances (2% of our sample of 359 sales) where the decision to include or exclude a sale—or to adjust the sales price—contradicted Division policy. These instances seemed to be the result of intermittent human error, and didn't suggest a pattern of poor decisionmaking. The ratio study has a strong quality control system, which likely helped bring about the low error rate.* ..... page 15

Decisions following informal appeals were logical, and were based on Division policy. *County appraisers can challenge any of the Division's decisions to include, exclude, or adjust property sales for the ratio study by making an informal appeal. We reviewed a sample of 50 appeals, and found that the Division's decisions seemed logical and followed the Division's policies in all cases. Slightly less than half the time Division staff approved the county appraisers' appeal, usually because the appraiser provided new information that wasn't available to Division staff when they made their original decision.* ..... page 17

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Reviewing the Methodology Used in Conducting and Analyzing the State's Sales-Ratio Study

State law requires all taxable property to be appraised uniformly and equally at its fair market value. Fair market value means the amount a well-informed buyer is willing to pay and a well-informed seller is willing to accept for property in an open and competitive market. Uniform and equal valuation also requires the equitable appraisal of property within a classification. The two classes are real property (for example, residential and commercial property) and personal property, such as motor vehicles. County appraisers are responsible for appraising property, and the Department of Revenue's Division of Property Valuation is responsible for supervising the appraisal process.

In 1985, the Legislature ordered Statewide property reappraisal to be completed by January 1989. In September 1991, the Director of Property Valuation declared that only seven counties were in compliance with the appraisal laws. In June 1992, the Attorney General filed a lawsuit in District Court alleging the Secretary of Revenue and the Director of Property Valuation had failed to perform their duties to administer and supervise the Statewide reappraisal program. The resulting court order required the State to comply with the uniform and equal property appraisal requirement by 1998. Failure to comply could result in court-ordered Statewide reappraisal.

One of the ways the State measures compliance with the uniform and equal appraisal requirement is by conducting an annual sales-ratio study that compares the selling price of property to its appraised value. Legislative concerns have been raised about the mathematical soundness of the ratio study, because the court order measures compliance in terms of certain results generated by the study. Legislative concerns also have been raised about whether sales are appropriately included or excluded from the ratio study.

To address these concerns, this audit answers the following questions:

1. **Is the methodology used in conducting the State's sales-ratio study mathematically sound?**

2. **Is the State's method for determining which sales of property to include or exclude from the sales-ratio study reasonable, and has that method been applied appropriately?**

To answer these questions, we reviewed the methodology used in the ratio study; interviewed Division staff, professors on the Division's technical advisory committee, and other statistics specialists; and tested the Division's methodology on a sample basis. We talked with ratio study supervisors from other states, and reviewed the court order under which the Department is currently operating. Finally, we evaluated the Division's policies for including and excluding sales from the ratio study, and reviewed a sample of actual sales to see if these policies were followed. In conducting this audit work, we followed all applicable government auditing standards set forth by the U.S. General Accounting Office.

The audit's findings are presented beginning on page six, after a brief overview of the Kansas Real Estate Ratio Study.

Overview of the Kansas Real Estate Ratio Study

State Law Requires All Property Subject to Taxation To Be Appraised Uniformly and Equally as to Class, And at Its Fair Market Value

Property taxes fund a variety of activities. Nearly half the money is used for unified school districts. Real property taxes also help fund city, county, and township operations. In addition, a small amount of property tax moneys go into State building funds.

In 1995, Kansans paid $1.3 billion in real property taxes. About $1 billion of these property taxes came from levies on urban real estate. The other $300 million came from rural real estate.

Because of the huge sums involved in property taxation, concerns always exist about whether taxpayers are being treated fairly, as required by State law. Uniform and equal valuation means that similar properties (urban residential, rural commercial, and the like) must be appraised at similar values. For example, if 10 similar houses within a county all sell for $30,000, but have appraised values that range from $20,000 to $60,000, those properties haven't been appraised in a uniform and equal manner. In this example, people who own these houses are paying different amounts of county property taxes even though they should be paying the same amount.

Fair market value means the amount a well-informed buyer is willing to pay and a well-informed seller is willing to accept for property in an open and competitive market. Generally, any "arms-length" transaction is considered to be a sale at fair market value. A property's sales price is an important element in establishing fair market value, but it isn't the sole criteria. Determination of fair market value also takes other elements into account, including location, any improvements, and comparisons with values of similar properties.

The real estate ratio study is one tool the Division of Property Valuation uses to determine whether property has been appraised uniformly and equally, and at its fair market value. Whenever a property is sold, the buyer, seller, or their agent must fill out the Kansas Real Estate Sales Validation Questionnaire before the deed can be filed with the county. That questionnaire asks a series of questions about the sale, including the sales price and whether the property was sold in an open market. A copy of the questionnaire is included in Appendix A.

Division staff use the information from those questionnaires and any follow-up information they may obtain to develop a list of properties sold at arms length each calendar year. (This process is discussed more fully in Question 2 of the audit.) These "valid" sales are included in the annual real estate ratio study.

The ratio study, described in K.S.A. 79-1485, provides statistical information about the relationship of the appraised value to the selling price of real estate. It also provides statistical information about how uniformly property has been appraised. These calculations are done by county and by type of property. The accompanying flowchart describes the main steps in conducting the ratio study. More detailed information can be found in Appendix B.

Steps followed by Division Staff to Conduct the Annual Real Estate Ratio Study

Step 1. Decide which real estate sales are "valid" and should be included in the ratio study for each county. For smaller counties, staff members evaluate all sales. For larger counties, they evaluate all commercial sales and a sample of residential sales.	**Purpose of Step:** To ensure that only properties that were arms-length transactions are included in the study.
Step 2. For each property included (by class), compute a "ratio" of the appraised value to the sales price. The perfect ratio would equal 1.0, which means the appraised value was the same as the sale price.	**Purpose of Step:** To see how close the sales price was to the appraised value for each property, by class (a measure of accuracy).
Step 3. Identify and eliminate "outliers" with very high or very low ratios that aren't necessarily representative of how properties in a county are really being appraised.	**Purpose of Step:** To try to ensure that the properties included in the study are as representative as possible.
Step 4. Identify the "median" ratio of appraised values to sales prices for all properties in the study (by class).	**Purpose of Step:** To see, in general, how close sales prices were to appraised values for all properties (by class). This is a measure of the accuracy of the appraisals.
Step 5. Compute a statistic called the "coefficient of dispersion," which involves comparing individual properties' ratios with the "median" ratio.	**Purpose of Step:** To see how far off individual properties' ratios are from the "median" ratio for each county. This is a measure of the uniformity of appraisals.

These are the main steps the Division of Property Valuation follows in conducting the ratio study. As part of the study, the Division also calculates other statistics. The final study presents the statistical information, by county and by property subclassification. The Division Director uses the information from the study to help determine whether counties are complying with the requirements that property be appraised uniformly and equally, and at fair market value.

The Division Director uses the results of the ratio study to assist in determining whether counties are in compliance with the statutory requirement that property be appraised at fair market value. Under the Division's current process for determining compliance, a county has to receive at least 75 out of a possible 100 points to be judged in "substantial" compliance with the requirement that property be valued uniformly and equally. Half the points are awarded based on the statistics from the ratio study. The other half are based on the adequacy of each county's procedures for conducting property appraisals. (Appendix C provides more information about this point system.)

The method for determining whether a county is in substantial compliance has changed over the past few years. As described in the profile box below, some of these changes made it easier for counties to be found in compliance, while others made it more difficult.

Changes in the Way the Division Has Determined Whether Counties Are Complying With Requirements To Appraise Property Uniformly and Equally

Time Period Included in Ratio Study	Primary Method for Determining Compliance	Who Validated Sales	Number of Counties in Compliance
9-1-89 to 8-31-90	Counties had to meet statistical standards specified in State law, and limited legal requirements relating to reappraisal planning	counties	7
9-1-90 to 8-31-91	Same as previous year, except vacant lots and situations where there were fewer than 10 sales weren't included in the study. This change made compliance easier.	counties	91 (a)
9-1-91 to 12-31-92	By PVD policy, compliance was based partly on meeting statistical standards, and partly on the adequacy of the county's appraisal procedures. Also, the standards for one of the statistics was tightened, but confidence intervals were introduced to given the counties some leeway on the statistics. Vacant land was again included in the study. These changes made compliance both easier and harder.	PVD	65 (a)
1-1-93 to 12-31-93	The method has remained essentially the same, except the standard for one statistic was returned to its pre-1992 level. Also, vacant land was removed from the study again. These changes made compliance easier.	PVD	79 (a)
1-1-94 to 12-31-94	Same as the 1993 ratio study	PVD	99 (b)
1-1-95 to 12-31-95	Same as the 1993 ratio study	PVD	99

(a) For these years, five counties were not reviewed for compliance, because they were under orders to freeze their values or to reappraise.
(b) In this year, three counties were not reviewed for compliance because they were under orders to reappraise.

In June 1992, the Attorney General Filed a Lawsuit Against The Department of Revenue Alleging the Property Tax System Didn't Tax Kansans Uniformly and Equally

The foundation of the lawsuit was the 1990 ratio study, which showed only seven counties were in compliance. The suit was heard in Shawnee County District Court.

The Court's initial order was amended in April 1996. It essentially establishes statistical standards counties have to meet to comply with the legal requirement that property be appraised uniformly and equally, and at fair market value. The order also says the determination of whether the statistical standards have been met will be measured by the ratio study only. There is no provision in the order to consider a county's procedures.

The court order gives the Division Director the authority to waive the statistical standards in any county if the standards don't fairly depict whether the subclass of property is valued uniformly and equally. If a county doesn't receive this waiver and doesn't meet the statistical standards, however, the order requires the Director to require the reappraisal or equalization of all or part of the real property in the county, or to assume control of the county appraiser's office until the statistical standards are met.

Is the Methodology Used in Conducting the State's Sales-Ratio Study Mathematically Sound?

We found that the methodology the Division of Property Valuation uses in conducting the ratio study is reasonable, and generally is consistent with professional appraisal guidelines. In addition, in most cases, the Division has adopted the standards established by professional guidelines to measure whether a county is in or out of compliance. However, it has adopted a more lenient standard for assessing the uniformity of residential sales than that recommended by the professional guidelines. We also found that under the court order, the Division is likely to find different counties in compliance than it would based on its normal analysis. These and other findings are discussed in the following sections.

In Most Areas, the Division of Property Valuation's Handling of the Ratio Study Is Reasonable and Consistent With Professional Standards or Guidelines

For the ratio study to be mathematically sound, we would expect the Division to have the following:

- a reasonable process for obtaining information about sales
- a reasonable process for making statistical calculations based on the sales information collected
- a reasonable interpretation of those statistics to determine whether counties are in or out of compliance with the requirement that properties be appraised uniformly and equally, at fair market value

To assess reasonableness, we compared the Division's mathematical processes and standards to the professional standards and guidelines adopted by the International Association of Assessing Officers (IAAO), and reviewed professional textbooks and literature. We also interviewed people with expertise in statistics, ratio studies, or both, including members of the Technical Advisory Committee, which was statutorily established to review the ratio study methodology. The Advisory Committee has three members, including professors from Washburn University, Kansas State University, and Wichita State University. Finally, we reviewed the Division's procedure for sampling residential sales in larger counties and, on a sample basis, tested data used in the 1995 ratio study to see if the Division followed its stated processes in preparing the study.

The table on the next page describes the statistical methods and standards the Division uses in the ratio study, as well as a brief summary of how they compare with professional standards and other states' practices. Our major findings in this area are as follows:

- the basic steps the Division follows in conducting the ratio study generally were consistent with practices recommended by the IAAO. As shown on page three of the Overview, these steps include:
  -validating sales

Kansas's Methods and Standards Compared to Professional Standards and to Other States

What is required of property appraisals?	What statistic is used to see if this requirement has been met?	What is the "perfect score" for this statistic?	What standard has the Division adopted to tell whether a county meets this requirement?	Is Kansas' requirement consistent with industry standards?	Is Kansas' requirement consistent with other states'? (a)	How does the Department decide whether a county meets requirements?
ACCURACY: Property is to be appraised at fair market value	MEDIAN RATIO-- If the ratios of appraised values to selling prices for all individual properties sold in a county were listed from lowest to highest, the middle ratio would be the median	The perfect score is 1.0 (That means that a county's properties "on average" seem to be appraised at 100% of their fair market value.)	The Division looks for a median ratio of between .90 and 1.10 (The county's properties would seem to be appraised at between 90% and 110% of their fair market value.)	The standard used by the Division is the same as that adopted by the International Association of Assessing Officers	Three states have a similar standard. Two have a stricter standard. Three have a more lenient standard, and one state has no pre-set standard.	The Division statistically determines the range of values in which the county's median ratio is likely to fall, and compares this range to the median ratio requirements.
UNIFORMITY AND EQUALITY: All properties should be appraised at the same percentage of fair market value	COEFFICIENT OF DISPERSION-- The average percentage difference between the individual property ratios and the median ratio for the county	The perfect score is 0 (That means that all of a county's individual property ratios are the same)	The Division looks for a coefficient of dispersion of 20 or less (This means that, on average, a county's individual property ratios would be no more than 20% from its median ratio)	The International Association of Assessing Officers has adopted the following standards, which are stricter than Kansas's standard of 20 for residential properties. Single-family- • new 10 • older 15 Income property- • urban 15 • rural 20 Vacant 20 Other varies	One state has the same standard. Three states use the Association's standards (stricter than Kansas). Four states have more lenient standards. One state has no pre-set standard.	The Division statistically determines the range of values in which the county's coefficient of dispersion is likely to fall, and compares this range to the coefficient of dispersion requirements.

INDIVIDUAL PROPERTY RATIOS-
A ratio is calculated for each individual property in the study. This ratio is calculated by dividing that property's appraised value by its sales price. For example, a home that is appraised at $52,000, but sold for $50,000, would have a ratio of 1.04. That means it is appraised at 104% of its market value. On the other hand, if that home had sold for $54,000, its ratio would be .96, because it would have been appraised at only 96% of its market value.

(a) more complete information about the other states we contacted can be found in Appendix E.

-calculating appraisal/sales ratios for each property included in the study
-eliminating individual "outliers" (ratios that are unusually large or small)
-computing a median ratio for each county, for each classification of property
-using the individual and median ratios to compute a coefficient of dispersion for each county, for each classification of property

The Division calculates a number of other statistics as well. One of these, the price-related differential, was mentioned as a concern in a 1993 audit of the Division, and is addressed more fully in Appendix D.

- the Division follows its stated policies. We tested the raw data from a sample of five counties to see whether, using the Division's stated procedures, we would arrive at the same numbers for median ratio and coefficient of dispersion as it did. Our results indicated that the Division follows its stated procedures when preparing data for the ratio study.

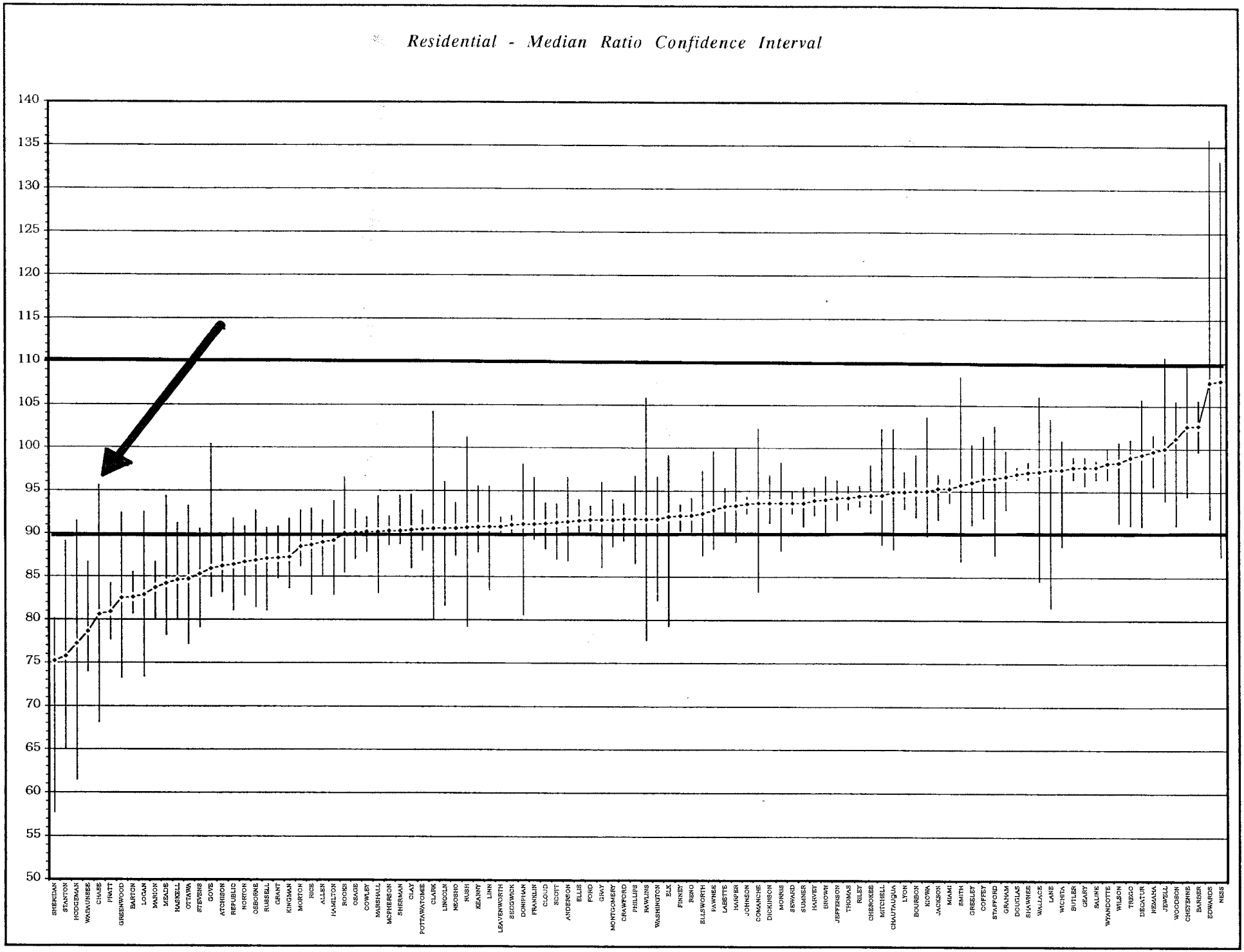
- sampling procedures for residential sales in applicable counties work well and are an efficient use of the Division's time. By statute, the Division can sample residential sales in counties that have at least 15,000 parcels, rather than assess the validity of each residential sale. The State now has 17 such counties. The sampling process appears to ensure that the Division will end up with a sample of about 400 sold properties that closely represents the characteristics of the existing housing stock in the county. In 1995, Johnson and Sedgwick Counties each had more than 7,500 residential property sales, so the Division saved a considerable amount of time by sampling in these counties.

- the standard for measuring whether a county's homes are appraised at fair market value is consistent with IAAO professional appraisal standards. Because it isn't reasonable to expect that appraisals will match sales prices exactly, State law has set a standard for how much counties' median ratios can deviate from "perfection" before the scores indicate a problem.

  Kansas' standard allows a median ratio of between .90 and 1.10, which is identical to the standard suggested by the IAAO.

- the Division's use of "confidence intervals" for the median ratio is consistent with IAAO recommendations. The ratio study looks only at homes that have sold in a given year, but it is used to make a judgment about the accuracy of the appraisals of all homes in a county. While samples such as this frequently are used to make estimates about what is happening in a larger group, there is always the possibility that a given sample doesn't truly represent the group.

  Because of this possibility, the IAAO recommends using confidence intervals for evaluating measures such as the median ratio. The graphic on the facing page shows confidence intervals established for residential sales in each county for the median ratio in 1995. To understand how confidence intervals work, look at Chase County (5th from the left on the graphic). The calculated median ratio is 80.6, which doesn't meet the standard. However, based on the confidence interval, the Division is 95% confident that the true median ratio for Chase County is somewhere between 68.1 and 95.6, which means the County might meet the standard.


Residential - Median Ratio Confidence Interval
140
135
130
125
120
115
110
105
100
95
90
85
80
75
70
65
60
55
50
SHERIDAN
STANTON
HODGEMAN
WABAUNSEE
CHASE
PRATT
GREENWOOD
BARTON
LOGAN
MARION
MEADE
HASKELL
OTTAWA
STEVENS
GOVE
ATCHISON
REPUBLIC
NORTON
OSBORNE
RUSSELL
GRANT
KINGMAN
MORTON
RICE
ALLEN
HAMILTON
ROOKS
OSAGE
COWLEY
MARSHALL
MCPHERSON
SHERMAN
CLAY
POTTAWATOMIE
CLARK
LINCOLN
MCPHERSON
RUSH
KEARNY
LINN
LEAVENWORTH
SEDGWICK
DONIPHAN
FRANKLIN
CLOUD
SCOTT
ANDERSON
ELLIS
FORD
GRAY
MONTGOMERY
CRAWFORD
PHILLIPS
RAWLINS
WASHINGTON
ELK
FINNEY
RENO
ELLSWORTH
PAWNEE
LABETTE
HARPER
JOHNSON
COMANCHE
DICKINSON
MORRIS
SEWARD
SUMNER
HARVEY
BROWN
JEFFERSON
THOMAS
RILEY
CHEROKEE
MITCHELL
CHAUTAUQUA
LYON
BOURBON
KIOWA
JACKSON
MIAMI
SMITH
GREELEY
COFFEY
STAFFORD
GRAHAM
DOUGLAS
SHAWNEE
WALLACE
LANE
WICHITA
BUTLER
GEARY
SALINE
WYANDOTTE
WILSON
TREGO
DECATUR
NEMAHA
JEWELL
WOODSON
CHEYENNE
BARBER
EDWARDS
NESS

What Does It All Mean, And Why Does It Matter?

The Division of Property Valuation performs a number of calculations to help determine whether counties are appraising properties uniformly and equally, and whether properties are appraised at or near their fair market values. The calculations involved in the court order and discussed in the report relate to ratios of appraised values to sales prices (which measures how close appraisals are to fair market value), and a statistic called the "coefficient of dispersion" (which measures whether individual ratios are clustered around the median ratio). The following example can help illustrate what these calculations tell you, and how they interrelate.

Assume two counties each have seven valid residential property sales during a given year, with the following appraised values and sales prices:

County A

Appraised Value	Sales Price	Ratio (appraised value ÷ sales price)
$ 85,000	$ 125,000	.68
72,000	101,408	.71
46,000	58,974	.78
50,000	50,000	1.00
28,000	26,923	1.04
49,000	40,164	1.22
15,000	11,538	1.30

County B

Appraised Value	Sales Price	Ratio (appraised value ÷ sales price)
$ 85,000	$ 117,892	.72
72,000	96,644	.75
46,000	61,333	.75
50,000	66,667	.75
28,000	35,897	.78
49,000	62,420	.79
15,000	18,987	.79

In county A, the "median" ratio (or mid-point) is 1.00. (A median ratio of 1.00 means the appraised value was 100% of the sales price.) Half the properties in county A have a ratio below 1.00 and half have a ratio above 1.00. In county B, the median ratio is .75. Half the properties in the county have ratios below .75, and half have ratios above .75. Based on this statistic, properties in county A generally appear to be appraised closer to their fair market value than those in county B.

A further review also shows that the appraiser in county A is not appraising properties in that county very uniformly or equally: many homes were appraised either far above or below their sales prices and the county's median ratio. On the other hand, the appraiser in county B is appraising properties more uniformly, even though the properties generally are being appraised at less than their sales prices.

In county A, the ratios are spread out. Most are way below or way above the median ratio. In this county, the coefficient of dispersion, which measures how spread out the ratios are, would be a relatively high 20.0. Within the county, some people would be paying more than their fair share of taxes, while others would be paying less than their fair share.

In county B, the ratios cluster pretty close to the median. In this county, the coefficient of dispersion would be 2.7, which is very low. In this county, properties are being appraised uniformly. Thus, within the county, people all are paying their fair share of taxes, even though their properties tend to be appraised at less than their fair market values.

One other point can be made from this example. The overall level of appraisal is higher in county A than in county B. That is, properties in county A generally have higher ratios than properties in county B. This would suggest that, for those taxes that are levied on a Statewide basis, taxpayers in county A are paying a higher share of taxes than taxpayers in county B. This type of situation results in unequal treatment of taxpayers among counties.

In Two Areas, the Division's Methods or Interpretation Aren't Consistent with Professional Standards

In both areas, the Division's methods make it easier for counties to be in compliance.

The Division's standard for measuring how uniformly properties are appraised is more lenient than professional standards. Professional standards for the uniformity measure (coefficient of dispersion) for residential property range from 10 to 15, depending on the age of the neighborhood. The Division has set 20 as the standard for Kansas residential properties. (Up to 1991, the standard was set at 20 by Kansas statute. When the statute was repealed, Division officials lowered the standard to 15, but told us they increased it back to 20 to make it equal to the standard set by the judge in the court order.) Essentially, this means that in Kansas it is acceptable for individual property appraisal values to differ from their fair market values by up to 20%, on average, compared to the IAAO standard which limits acceptable deviation from fair market value to 15%. Of the eight other states we contacted that had standards for this measure, three used a standard of 15, and five used a standard of 20 or higher.

The example below shows what a sample of acceptable ratios would look like when the maximum coefficient of dispersion is set at 20 (County A) and when it is set at 15 (County (B).

County A			County B		
Appraised Value	Sales Price	Ratio (appraised value/ sales price)	Appraised Value	Sales Price	Ratio (appraised value/ sales price)
$ 85,000	$ 125,000	.68	$ 85,000	$ 119,718	.71
72,000	101,408	.71	72,000	99,310	.73
46,000	58,974	.78	46,000	57,500	.80
50,000	50,000	1.00	50,000	50,000	1.00
28,000	26,923	1.04	28,000	27,451	1.02
49,000	40,164	1.22	49,000	44,344	1.11
15,000	11,538	1.30	15,000	13,043	1.15

In this example, County A has a "coefficient of dispersion" of 20. This is the largest amount of dispersion allowed by Kansas standards. In contrast, County B has a "coefficient of dispersion" of 14.9. This is just under the maximum amount of dispersion allowed by IAAO standards.

If you look at the differences between the two counties, you can see that the ratios in County B are closer to that county's median ratio than is the case for County A. Thus, properties in County B are appraised more uniformly—on average, their appraised values are closer to their sales prices than is true for County A.

The decision to deviate from professional standards has a large effect on the number of counties in compliance. In 1995, only four counties were out of compli-

ance with the standard for the residential uniformity measure used by the Division. If the Division had followed the recommended professional standard, 38 counties would have been out of compliance.

The Division uses a "confidence interval" to evaluate the uniformity measure, while professional standards are silent on this issue. As has been discussed earlier, the use of confidence intervals makes it much easier for counties to come into compliance. Division officials told us the IAAO plans to consider the use of confidence intervals for the uniformity measure in the near future. None of the other states we contacted use confidence intervals around the uniformity measure.

In 1995, the use of a confidence interval for the uniformity measure resulted in only four counties being out of compliance for residential property sales, and 18 counties being out of compliance for commercial property sales. If the Division hadn't used the confidence interval, 24 counties would have been out of compliance for residential property sales, and 53 would have been out of compliance for commercial property sales.

The Division's Use of Sales-Ratio Statistical Results Gives the Benefit of The Doubt to the Appraisers

In interpreting the statistical results from its sales-ratio study, the Divison has taken the viewpoint that the appraisers should be treated as "innocent until proven guilty." That means the Division wants to be very confident that it's not making a mistake before it concludes a county doesn't meet the statistical requirements. The Division doesn't require the same degree of confidence that it's not making a mistake before it concludes a county does meet the statistical requirements.

Division officials pointed out that mistakenly concluding that a county doesn't meet the requirements could cost the appraiser his or her job when a new appraiser might not be able to do any better, and could result in the significant additional cost of reappraisal. While the impact of mistakenly concluding that a county does meet the requirements could result in inequitable taxes, individual taxpayers have the opportunity to review their appraisal values and appeal those values if they wish.

Under the Court Order, the Division Is Likely to Find Different Counties In Compliance Than It Would Based on Its Normal Analysis

The court has ordered the Division to rely solely on certain statistics generated by the ratio study to measure each county's compliance, and to meet the standard for all of those statistics. Those statistics are the median ratio for both residential and commercial property and the coefficient of dispersion for both property groups. If a county doesn't meet the requirement for any one of these four measures, the Division is to find the county out of compliance.

In contrast, the Division's normal determination of compliance with State law isn't limited to the statistical results. Rather, it takes into account both the statistics generated by the ratio study and an evaluation of each county's appraisal procedures. To be considered in compliance, a county must achieve 75% of its possible evaluation points. (Appendix C describes this process more fully.) Further, in some cases, the Division may consider one or more of the statistical results to be inconclusive. When that happens, the Division doesn't use the inconclusive results, and places greater weight on the other statistical results and the procedural evaluation.

Given this difference, the Division could arrive at different conclusions under the court order than it would using its normal procedures. For example, in 1995, the Division found only six counties out of compliance with State law, even though 18 counties didn't meet the median ratio requirement for commercial property. Under the court order, all 18 of those counties would have been out of compliance with this requirement.

Conclusion

Ensuring that all properties in Kansas are appraised equally and uniformly, and at their fair market values, is a difficult task. The Division of Property Valuation has done a good job of developing a ratio study to provide it with the basic information it needs to tell how well county appraisers are appraising properties.

Evaluating property appraisal is not an exact science, however. The statistics used to determine compliance, including the median ratio and the coefficient of dispersion, won't always show the true situation in a county. That's particularly true in situations where there are only a limited number of sales each year. What this means is that counties may seem to be in compliance in one year and out of compliance the next, with no real change in how well properties were appraised.

To compensate for this imprecision in the statistics, the Division won't say a county is out of statistical compliance unless it can be confident that the county really is out of compliance. In all cases, the Division looks at counties' appraisal procedures to increase its confidence that a county is in compliance with legal requirements. The court order, on the other hand, bases compliance solely on the ratio study's statistical results.

Does the State Use a Reasonable Method for Determining Which Sales of Property To Include or Exclude from the Sales-Ratio Study, And Has that Method Been Applied Appropriately?

The Division's policies for including and excluding properties from the ratio study closely follow the standards established by the International Association of Assessing Officers. The Division's field appraisers did a good job of following these policies—only 2% of the 359 sales of properties we reviewed were wrongly included or excluded from the study. Our review of 50 property sales that county appraisers had informally appealed showed that Division staff who handled these appeals followed appropriate policies and made logical decisions in each case. Slightly more than half the time they upheld the decisions of the Division's field staff; the rest of the time they agreed with the county appraisers. These and other findings are discussed in more detail in the sections that follow.

The Division of Property Valuation Has Established Reasonable Policies for Identifying Which Properties Should Be Included or Excluded from the Ratio Study

Kansas law requires the Division to collect information about properties that sell each year, so that its staff can determine whether all these properties should be included in the ratio study. As described in the Overview, such information is reported on the Kansas Real Estate Sales Validation Questionnaire, which the buyer, the seller, or an agent acting on behalf of the buyer or seller must complete before the deed can be filed with the county.

Generally, a questionnaire is completed for all properties that sell, although Kansas law identifies 15 types of transfers of title that are exempt because they would never be included in the ratio study. These include such things as the sale of cemetery lots, gifts or donations of real estate, and repossessions of real property.

The questionnaire asks a series of questions Division staff use to determine whether each property sold at "arm's length," and should be included in the study. Based on the answers to some questions, Division staff may call the buyer or seller to obtain follow-up information or explanations.

Division staff then classify each property that sold as "valid," meaning it was sold at fair market value, or "invalid", meaning there is a compelling reason to think it wasn't. (The term "unvalidated" also is used in the 17 counties where only a sample of residential property sales is reviewed. It refers to property sales that weren't included in the sample, and so weren't judged to be either valid or invalid.) Only "valid" property sales are included in the study.

The Division's guidelines for determining whether properties are "valid" closely follow professional standards. The Division assumes that all properties that sell are valid and should be included in the sales-ratio study, unless there's sufficient and compelling information to show otherwise. The Division has an extensive, clearly written manual for its field staff that explains how to evaluate the variety of circumstances that can surround different types of property sales.

We compared the Division's policies and Kansas law to the International Association of Assessing Officers' standards for assessing the validity of property sales. Kansas' policies and laws take into consideration virtually all the factors the Association recommends for determining validity. Further, the reasons spelled out in the Division's policy manual as to why its staff would conclude a property sale was "invalid," or why the price a property sold for should be adjusted, seemed reasonable to us.

The profile at right gives examples of some property sales we reviewed during the audit that were judged to be invalid, and thus were excluded from the ratio study. In addition, the box on page 16 gives a Statewide picture of the number and reasons why property sales were excluded from the 1995 ratio study.

Division Staff Properly Included or Excluded 98% of the Property Sales We Reviewed for the 1995 Ratio Study

We looked at a random sample of 359 sales from nine counties, and evaluated the Division's decision to include or exclude each of these sales from the 1995 sales-ratio study, or to adjust the sale price before including a sale.

Overall, Division staff did a good job of following validation policies. We found only seven instances (2% of the sample) where the decision to include or exclude the property sale—or to adjust the sales price—contradicted Division policy.

These seven property sales, which are described on page 17, seemed to be the result of intermittent human error—they occurred in five different counties—and didn't suggest a pattern of poor decision making.

The Property Valuation Division Doesn't Include Questionable Property Sales in the Sales-Ratio Study

To determine which properties to include in the sales-ratio study, the Division's field appraisers review all or a sample of the properties that sold within a county. The Property Valuation Division has written policies and procedures outlining how county and State personnel should decide whether a property was sold on the open market. If it was, that property sale is considered to be valid, and it should be included in the sales-ratio study. However, many properties aren't sold through open-market transactions, and are considered to be invalid. The following examples highlight some of the property sales that the Division's staff decided were invalid during 1995:

- A home in an urban area was sold by mentally disabled people who weren't knowledgeable about the real estate market. Appraisers thought the sellers didn't obtain a fair market price for the property.
- Commercial property that sold in an urban area also included some personal property. The appraisers couldn't verify the value of the personal property, which was listed as 45% of the total sales price.
- A person offered to buy his neighbor's house, and the neighbor sold the property without advertising it on the open market.
- A new commercial property built in a rural area was sold through an exchange of properties, and wasn't offered for sale on the open market.
- A commercial property was sold in an urban area. The appraisers called the buyer and the seller to verify the details of the sale. One individual said the sale involved land only, but the other said the sale involved land and the business on it. The appraisers couldn't verify who was right.
- A commercial property in an urban area was given for free to the seller's brother, who owned the adjoining property.

Reasons Why Properties Were Excluded from the 1995 Sales Ratio Study

County appraisers and staff from the State's Property Valuation Division evaluate each property sale that's reported to decide whether it should be included in the sales-ratio study. In 1995, county and State personnel decided that more than 19,000 of the nearly 47,000 properties considered for the study (41%) were invalid. Their reasons are outlined below.

Total Property Sales Considered for Inclusion in the Study	**46,867**
Total Valid Sales	**27,446**
% of Total Sales Considered That Were Valid	**59%**
Total Invalid Sales	**19,421**
% of Total Sales Considered That Were Invalid	**41%**

Reasons why properties that sold were considered to be invalid:

- •Not an Open Market Sale — 7,961
  These are sales that weren't advertised on the open market, or were offered to only one buyer. In these sales, the property often isn't sold at fair market value.
- •Property Split — 4,407
  These sales occurred when only a portion of an appraised property was sold. An appraisal is valid only for the entire property, not just a portion of it.
- •Property Sold Under Suspect Conditions — 4,092
  These properties were sold under conditions that made it difficult to decide whether the sales were valid. For example, a sale including personal property that can't be verified is considered suspect, and may not be validated.
- •Property Changed Since Appraisal — 1,989
  These sales involved property that had been changed since its last appraisal. Examples include new construction on the property, and remodeling of existing structures. For these properties, the existing appraisal is invalid, so it's hard to tell if the property sold at fair market value.
- •Property was a Discounted Vacant Lot — 573
  Appraisals on these properties are always less than market value, so such property sales are invalid.
- •Property Sold by a Governmental Entity — 307
  These sales were made by a governmental organization, which often sells property for less than market value.
- •Appraiser Judgment Required on Property — 92
  Although the available factual evidence suggests these sales are valid, the county appraiser has reason to believe they are not.

In addition, some properties that sold were never considered for the sales-ratio study. The table below outlines why certain property sales were disregarded, and the number of each during 1995.

Total Property Sales Not Considered for the Ratio Study	**36,101**

- •Residential Sales Not Included in Samples — 22,947
  In all, 17 of the State's counties evaluated only a sample of the residential property sales that occurred within their borders.
- •Multiple Sales — 8,548
  These sales involved more than one parcel of property that were sold for one price. In these cases, only the "parent" parcel counted as a sale, and the others weren't considered.
- •Sales From Previous Years — 4,606
  These sales occurred in previous years but weren't reported until 1995. Except in special circumstances, only those property sales that occurred in 1995 were considered for the sales-ratio study.

- One property was sold through a private listing, and wasn't advertised on the open market. Division staff incorrectly concluded this property sale was valid when it wasn't.
- One property actually was traded or exchanged, rather than sold. Division staff said this property sale was valid when it should have been invalid.
- Two properties that were sold included the sale of personal property. Division policies require staff to contact both the buyer and the seller to verify how much personal property is included in a sale, if its reported value is between 6% and 25% of the total sales price. If the two parties don't agree, the sale is supposed to be invalidated. For these two properties, even though staff obtained verification from only one party, the sales were validated.
- The documentation for the sale of one property suggested the sale might not be valid. Division staff coded it as suspect, and called the seller to learn more about the conditions of the sale. According to Division policies, staff should make three telephone calls at different times of the day on different days. However, staff made all three calls on the same day. When they couldn't reach the seller, they classified the sale as invalid, rather than making more effort to gather information and decide if the sale actually was valid.
- The sale of one property was listed as a deed transfer rather than an actual sale, but also was reportedly listed on the open market. Division staff validated this sale without following up to see whether it was an actual sale.
- One sale originally was considered to be invalid, but during review staff decided it actually was valid. Because of a clerical error, the change wasn't entered into the computer system.

One reason for the relative lack of errors may be the Division's quality control system. As noted earlier, each field appraiser receives a detailed manual with guidance and examples for deciding whether a property sale is valid. In addition, supervisors routinely review a sample of the decisions made by field appraisers each month, and can review all of a field appraiser's work if they find many problems.

Finally, when information is entered in the computer, a series of edits cross-check individual pieces of information from the questionnaire against the final decision about whether the property sale was valid or invalid to look for logical inconsistencies. Less tangible, but equally important, is that staff in charge of the ratio study appear to place strong emphasis on quality, and require organized and convincing documentation from field staff.

Decisions Following Informal Appeals Were Logical, And Were Based on Division Policy

Twice a year, Division staff send county appraisers a list showing each property that reportedly was sold in the county, and the Division's decision to include, exclude, or adjust that property sale for the ratio study. County appraisers can challenge any of these decisions in what is called an "informal appeal."

In these cases, counties may send the Division additional information they have about the property sale, or they may simply ask the Division to review the basis for its original decision. Staff in Topeka who handle the sales-ratio study, process the appeals and decide whether to change or uphold the field appraisers' validations.

County appraisers who aren't satisfied with a decision can appeal further. They can ask Division management staff to review the appeal, they can file a formal appeal with the Board of Tax Appeals, and they can appeal the Board's decision to

district court. However, most cases are handled as informal appeals. In 1995, only two counties appealed validation issues to the Board.

We reviewed a sample of 50 informal appeals that had been filed by county appraisers across the State. In all cases, the Division's decisions seemed logical and followed the Division's policies.

In 23 (46%) of the cases we reviewed, the Division's sales-ratio study staff approved the county appraisers' appeal. In most of the successful appeals, the county appraiser provided new information that wasn't available to the Division field appraiser who made the original determination. Several examples of how this can happen are listed below:

- One county appealed the State's decision to validate a property sale because significant improvements had been made to the house after it had been appraised, but before it was sold. This information should have been included on the real estate questionnaire, but wasn't. Division officials approved the appeal because the improvements significantly increased the value of the house after it was appraised.
- A motel sold for significantly more than the appraised value. There was no indication on the real estate questionnaire or in the interview Division field staff conducted as to why the sales price was so high. Based on the available information, the Division validated the sale. In investigating this property sale, however, the county appraiser's office interviewed the director of the organization that bought the motel. The appraiser discovered that the motel was bought as a homeless shelter by a non-profit organization because it was near the organization's office, and it fit the organization's needs. Division officials investigated further, and found that the property also had not been on the open market.

Based on our reviews, we found that only four of the 23 successful appeals involved cases where the Division's field staff failed to follow the Division's policies in determining whether the sales were valid. (The appeal sample has a higher concentration of "errors" by field staff than we found in the random sample of 359 sales, because errors are likely to be appealed.)

Conclusion

The results of the ratio study can be significantly affected by the sales that are included in the study. With so much riding on the results of the study, decisions about which sales to include are very important to county appraisers. In the past this has caused problems. When the counties did the study, Division officials were concerned that counties inappropriately excluded sales that made them look bad. When the Division first took over the study, appraisers were concerned that the Division inappropriately included sales that didn't reflect fair market values. The only solution to such a situation is to have clear-cut policies specifying which sales to include and exclude, and to apply those policies consistently. It appears that the Division has accomplished that. The Division has a policy of including all sales unless they are proven invalid. Further, it has developed a list of policies for determining validity based on industry standards, and it appears to apply those policies objectively.

APPENDIX A

KANSAS REAL ESTATE SALES VALIDATION QUESTIONNAIRE

FOR COUNTY USE ONLY: DEED BOOK _____ PAGE _____	COV # _ _ _ _ _ _	CO. NO.	MAP	SEC	SHEET	QTR.	BLOCK	PARCEL	OWN
		___	___	___	___	___	___	___.___	___

RECORDING DATE ___/___/___	TYPE OF INSTRUMENT _____ SPLIT ☐ CR _____ RA _____ DE _____ MULTI ☐	MO YR TY	AMOUNT	S V
		___ ___ ___	_____	___ ___

SELLER (Grantor)
NAME _____

MAILING _____

CITY/ST/ZIP _____

DAYTIME PHONE NO. (___) _____

BUYER (Grantee)
NAME _____

MAILING _____

CITY/ST/ZIP _____

DAYTIME PHONE NO. (___) _____

BRIEF LEGAL DESCRIPTION

_____

_____

_____

_____

Property /Situs Address: _____
Name and Mailing Address for Tax Statements

_____

_____

_____

In reference to the sale of the property listed above, please answer the questions below. **(Read instructions on back of form.)**

1. CHECK ANY FACTORS THAT APPLY TO THIS SALE:
   - ☐ Sale beween immediate family members: SPECIFY THE RELATIONSHIP _____
   - ☐ Sale involved corporate affiliates belonging to the same parent company
   - ☐ Auction Sale
   - ☐ Forced, or distressed, sale in a bankruptcy settlement
   - ☐ Sale by judicial order (by a guardian, executor, conservator, administrator, or trustee of an estate)
   - ☐ Sale involved a government agency or public utility
   - ☐ Buyer (new owner) is a religious, charitable, or benevolent organization, school or educational association
   - ☐ Buyer (new owner) is a financial institution, insurance company, pension fund, or mortgage corporation
   - ☐ Sale was a foreclosure of a mortgage or forfeiture of a contract for deed (land contract)
   - ☐ Sale of only a partial interest in the real estate
   - ☐ Sale involved a trade or exchange of properties
   - ☐ **NONE OF THE ABOVE**

2. USE OF PROPERTY AT THE TIME OF SALE:
   - ☐ Single Family Residence
   - ☐ Farm/Ranch With Residence
   - ☐ Condominium Unit
   - ☐ Vacant Land
   - ☐ Other: (Specify) _____
   - ☐ Agricultural Land
   - Mineral Rights Included? ☐ Yes / ☐ No
   - ☐ Apartment Building
   - ☐ Commercial/Industrial Bldg.

3. WAS THE PROPERTY SUBJECT TO AN EXISTING LEASE AT THE TIME OF SALE? ☐ YES / ☐ NO

4. DID THE SALE PRICE INCLUDE AN EXISTING (GOING CONCERN) BUSINESS ENTERPRISE? ☐ YES / ☐ NO

5. WAS ANY PERSONAL PROPERTY (SUCH AS FURNITURE, EQUIPMENT, MACHINERY, LIVESTOCK, CROPS, BUSINESS FRANCHISE OR INVENTORY, ETC.) INCLUDED IN THE SALE PRICE? ☐ YES / ☐ NO
   If yes, please describe _____
   _____
   Estimated value of all personal property items included in the sale price $_____
   If **Mobile Home** Year _____ Model _____

6. ARE YOU AWARE OF ANY CHANGES IN THE PROPERTY SINCE JAN. 1? ☐ YES / ☐ NO
   ☐ Demolition ☐ New Construction ☐ Remodeling ☐ Additions
   Date Completed _____

7. WERE ANY DELINQUENT REAL ESTATE TAXES ASSUMED BY THE PURCHASER? ☐ YES / ☐ NO $ _____

8. METHOD OF FINANCING (check all that apply):
   - ☐ New loan(s) from a Financial Institution
   - ☐ Seller Financing ☐ Assumption of Existing Loan(s)
   - ☐ All Cash ☐ Trade of Property ☐ Not Applicable

9. WAS THE PROPERTY MADE AVAILABLE TO ANYONE OTHER THAN THE PURCHASER? ☐ YES / ☐ NO If not, explain __
   _____

10. DOES THE BUYER HOLD TITLE TO ANY ADJOINING PROPERTY? ☐ YES / ☐ NO

11. ARE THERE ANY FACTS WHICH WOULD CAUSE THIS SALE TO BE A NON-ARMS LENGTH / NON-MARKET VALUE TRANSACTION? **(PLEASE SEE #11 INSTRUCTION)** ☐ YES / ☐ NO
    _____
    _____

12. **TOTAL SALE PRICE $**_____
    CLOSING DATE _____/_____/_____

13. I CERTIFY THAT THE ADDRESS TO WHICH TAX STATEMENTS FOR THE PROPERTY ARE TO BE SENT IS CORRECT.
    I ALSO CERTIFY I HAVE READ ITEM NO. 13 ON THE REVERSE SIDE AND HEREBY CERTIFY THE ACCURACY OF THE INFORMATION AND THAT I AM AWARE OF THE PENALTY PROVISIONS OF K.S.A. 79-1437g.

    PRINT NAME _____

    SIGNATURE _____
    GRANTOR (SELLER) ☐ GRANTEE(BUYER) ☐

PV-RE-21 **Please place form on a hard surface and use ball point pen when completing.**

APPENDIX B

Steps Taken To Conduct the Kansas Real Estate Ratio Study

Validate sales

Calculate appraisal/sales ratio for all valid sales or for a representative sample of all valid sales (ratio should be 1.0). See examples showing calculations of ratios in the box at right.

Trim outlier ratios (to reduce influence of unusual sales):

Determine the median ratio. The median ratio is the middle ratio in an array of values, listed in ascending order. In the example at right, after the trimming has been done, the median ratio of the remaining seven ratios is 96.4. (a)

Calculate the coeffient of dispersion (a measure of appraisal uniformity). (a) Add the absolute difference between each ratio and the median ratio,and divide by number of ratios. Divide this result by the median ratio and multiply by 100. Using the example at right:

Median ratio	ratio	difference
96.4	68.1	28.3
96.4	79.8	16.6
96.4	89.0	7.4
96.4	96.4	0.0
96.4	100.5	4.1
96.4	101.2	4.8
96.4	101.7	5.3

Sum of differences 66.5 = 9.5
No. of observations 7

9.5 divided by the median ratio=
9.5/96.4 = .099 * 100 = 9.9

Calculate the price-related differential.
Divide the mean ratio by the weighted mean ratio. Using the example at right:
Mean ratio: 90.96
Weighted mean ratio: (sum of appraisal values divided by the sum of sales prices): 656,400/701,588 = 93.6
Price-related differential = .97

Example of how outlier ratios are trimmed:

1. Array the ratios from low to high

appraised value	sale price	ratio (as a %)
98,000	143,906	68.1
76,000	95,238	79.8
115,000	129,213	89.0
50,900	52,801	96.4
42,000	41,791	100.5
48,500	47,925	101.2
105,400	103,638	101.7
120,600	87,076	138.5

2. Locate the ratio that is at the 25th percentile:

   No. of ratios divided by 4: 8/4=Ratio #2

   (If 25th percentile falls between two ratios, calculate the distance between them and add portion of that distance to the value of the lower ratio In this example, if there were 9 ratios, the ratio in the 25th percentile would be 9/4, or 2.25. The ratio at the 25th percentile would be found one-fourth of the distance between ratio #2 and ratio #3.)

3. Locate the ratio that is at the 75th percentile:

   (No. of ratios divided by 4)*3: (8/4)*3=Ratio#6.

   (If 75th percentile falls between two ratios, calculate the distance between them and add portion of that distance to the value of the lower ratio In this example, if there were 9 ratios, the ratio in the 75th percentile would be (9/4)*3, or 6.75. The ratio at the 75th percentile would be found three-fourths of the distance between ratio #6 and ratio #7.)

4. Calculate the distance between these two quartiles by subtracting: 101.2-79.8=21.4

   The upper trim point is calculated as follows:
   (21.4 x 1.5)+ 101.2 = 133.3

   The lower trim point is calculated as follows:
   79.8 - (21.4 x 1.5) = 47.7

In this example, the highest ratio would be trimmed, and only 7 ratios would be included in the ratio study.

(a) because these "point estimates" are simply estimates of the true value of the statistic, the Department establishes confidence intervals around each measure to take into account the fact that the ratio study information came from a sample of parcels in a county, namely those parcels that sold in a particular year

APPENDIX C

Point System Used by the Division to Determine Compliance

•Sales Ratio Study	
Accuracy Measure-Median Ratio	25 Points
Uniformity Measure-COD	25 Points
•Appraisal Procedures	36 Points

This is an evaluation of the procedures used by a county in developing good appraisals, such as its plan to maintain its appraisal system, and the methods it uses to establish property values. In reviewing methods, PVD does such things as verify that the county has developed good approaches to establishing commercial and residential property values, and evaluates the tools the county has developed to help establish those values.

•Agricultural Use Valuation	2 Points
•Mapping of Property Ownership	2 Points
•Constitutional and Statutory Compliance	10 Points

This section deals with how well a county meets deadlines and maintains data.

Total	100 Points

APPENDIX D

1995 Price-Related Differentials and Confidence Intervals

Price-related differential (PRD) is a statistical measure designed to measure systematic differences in the appraisal of low-value and high-value properties. When low-value properties are appraised at greater percentages of market value than high-value properties, the appraisal system is called "regressive". When high-value properties are appraised at greater percentages of market value than low-value properties, the appraisal system is called "progressive".

The Division calculates price-related differential for each county for residential and commercial sales, but doesn't use this information in determining compliance. A 1993 audit by the Division of Post Audit recommended that the Division of Property Valuation begin to incorporate the PRD or a similar measure into its determinations of compliance. To-date this hasn't been done.

Although a thorough review of regressivity and progressivity was outside the scope of this audit, legislators expressed an interest in seeing basic, readily available information about price-related differential in Kansas. That information is presented in this appendix.

The International Association of Assessing Officers (IAAO) recommends that price-related differentials range between .98 and 1.03. In Kansas, the State median PRD for residential sales in 1995 was 1.02, and the State median PRD for commercial sales in 1995 was 1.04.

The tables in this appendix show the PRD and confidence intervals for each county for residential and commercial sales. Based on confidence intervals, commercial sales in 15 counties were above 1.03, which means these counties may have problems with regressivity, as were commercial sales in 11 counties. No counties appeared to have problems with progressivity.

Price Related Differentials and Confidence Intervals for Residential Properties, 1995

County	Price Related Differential	Confidence Interval
Allen	1.04	1.02-1.07
Anderson	1.01	0.99-1.04
Atchison	1.03	1.00-1.05
Barber	**1.09**	**1.04-1.16**
Barton	1.02	1.01-1.04
Bourbon	1.02	1.00-1.03
Brown	1.02	1.00-1.04
Butler	1.01	1.01-1.02
Chase	1.05	0.98-1.14
Chautauqua	**1.13**	**1.08-1.20**
Cherokee	1.03	1.01-1.05
Cheyenne	1.00	0.97-1.05
Clark	0.99	0.92-1.05
Clay	1.03	1.00-1.05
Cloud	1.00	0.98-1.03
Coffey	1.02	0.99-1.06
Comanche	1.02	0.97-1.08
Cowley	1.02	1.01-1.03
Crawford	1.01	0.99-1.02
Decatur	1.02	0.99-1.07
Dickinson	1.06	1.03-1.11
Doniphan	1.01	0.97-1.05
Douglas	1.00	1.00-1.01
Edwards	**1.16**	**1.08-1.27**
Elk	1.04	0.98-1.10
Ellis	1.01	1.00-1.02
Ellsworth	1.06	1.03-1.10
Finney	1.00	1.00-1.01
Ford	1.00	1.00-1.01
Franklin	1.02	1.00-1.04
Geary	1.01	1.00-1.01
Gove	1.05	1.00-1.12
Graham	0.99	0.98-1.01
Grant	1.00	0.98-1.01
Gray	1.03	0.99-1.08
Greeley	1.02	0.99-1.06
Greenwood	**1.13**	**1.06-1.22**
Hamilton	1.00	0.96-1.03
Harper	1.07	1.03-1.12
Harvey	1.01	1.00-1.01
Haskell	1.02	1.00-1.05
Hodgeman	0.91	0.85-1.03
Jackson	1.00	0.99-1.01
Jefferson	1.01	1.00-1.03
Jewell	**1.22**	**1.09-1.44**
Johnson	1.00	0.99-1.00
Kearny	1.02	1.01-1.04
Kingman	1.05	1.02-1.09
Kiowa	1.04	1.01-1.09
Labette	**1.08**	**1.05-1.11**
Lane	1.02	0.98-1.08
Leavenworth	1.02	1.01-1.03
Lincoln	1.04	0.99-1.09
Linn	1.04	1.01-1.08
Logan	0.98	0.93-1.03
Lyon	1.01	1.00-1.02
Marion	0.98	0.96-1.01
Marshall	1.05	1.01-1.10
McPherson	1.01	1.00-1.01
Meade	1.06	1.02-1.11
Miami	1.00	0.99-1.01
Mitchell	1.05	1.01-1.09
Montgomery	1.03	1.01-1.05
Morris	1.07	1.03-1.11
Morton	1.03	0.99-1.07
Nemaha	1.06	1.03-1.08
Neosho	1.06	1.03-1.08
Ness	**1.16**	**1.07-1.30**
Norton	1.06	1.03-1.11
Osage	1.02	1.00-1.04
Osborne	1.01	0.95-1.06
Ottawa	1.03	0.99-1.06
Pawnee	1.07	1.03-1.12
Phillips	**1.09**	**1.06-1.13**
Pottawatomie	1.00	0.99-1.02
Pratt	1.00	0.98-1.03
Rawlins	**1.12**	**1.04-1.21**
Reno	1.03	1.02-1.05
Republic	**1.09**	**1.04-1.16**
Rice	**1.08**	**1.05-1.11**
Riley	1.01	1.01-1.02
Rooks	**1.11**	**1.07-1.21**
Rush	**1.12**	**1.06-1.23**
Russell	1.06	1.03-1.11
Saline	1.00	1.00-1.01
Scott	1.02	1.00-1.04
Sedgwick	1.02	1.02-1.05
Seward	1.00	1.00-1.01
Shawnee	1.01	1.00-1.01
Sheridan	1.07	0.98-1.16
Sherman	1.03	1.00-1.06
Smith	1.06	0.99-1.15
Stafford	1.08	1.03-1.13
Stanton	1.01	0.96-1.08
Stevens	1.02	0.99-1.04
Sumner	1.02	1.01-1.04
Thomas	1.00	0.99-1.01
Trego	**1.07**	**1.04-1.10**
Wabaunsee	1.02	0.99-1.06
Wallace	0.99	0.93-1.11
Washington	1.07	1.02-1.16
Wichita	1.01	0.98-1.05
Wilson	1.05	1.02-1.08
Woodson	1.07	1.02-1.13
Wyandotte	**1.05**	**1.04-1.07**
State Median	***1.02***	

Price Related Differentials and Confidence Intervals for Commercial Properties, 1995

County	Price Related Differential	Confidence Interval
Allen	1.08	0.96-1.22
Anderson	**1.72**	**1.11-2.74**
Atchison	**1.17**	**1.05-1.34**
Barber	1.05	0.95-1.26
Barton	1.01	0.92-1.20
Bourbon	1.13	0.94-1.43
Brown	0.99	0.94-1.04
Butler	1.00	0.83-1.17
Chase	1.21	1.03-1.68
Chautauqua	1.05	0.87-1.28
Cherokee	1.04	0.95-1.16
Cheyenne	0.97	0.93-1.02
Clark	0.97	0.95-1.03
Clay	1.14	1.00-1.38
Cloud	1.25	1.01-1.64
Coffey	1.04	0.95-1.22
Comanche	1.10	1.01-1.21
Cowley	0.94	0.86-1.04
Crawford	1.02	0.85-1.30
Decatur	1.14	1.00-1.28
Dickinson	1.11	0.92-1.35
Doniphan	1.03	0.95-1.14
Douglas	0.99	0.94-1.04
Edwards	1.16	1.03-1.48
Elk	1.10	0.93-1.32
Ellis	1.03	0.99-1.08
Ellsworth	1.03	0.88-1.21
Finney	1.11	1.01-1.40
Ford	0.88	0.80-1.15
Franklin	0.87	0.81-1.03
Geary	**1.16**	**1.07-1.26**
Gove	1.01	0.96-1.06
Graham	1.02	0.99-1.08
Grant	1.01	0.99-1.03
Gray	1.01	0.95-1.15
Greeley	1.07	0.99-1.30
Greenwood	**2.00**	**1.54-2.67**
Hamilton	1.02	0.98-1.06
Harper	1.02	0.96-1.13
Harvey	1.03	0.90-1.15
Haskell	**1.22**	**1.09-1.46**
Hodgeman	1.03	0.92-1.11
Jackson	0.97	0.94-1.01
Jefferson	1.07	1.01-1.19
Jewell	0.91	0.84-1.21
Johnson	1.02	0.97-1.06
Kearny	0.98	0.96-1.04
Kingman	1.03	1.00-1.06
Kiowa	1.03	1.00-1.08
Labette	1.02	0.94-1.10
Lane	1.11	0.99-1.30
Leavenworth	1.02	0.92-1.19
Lincoln	**1.29**	**1.05-1.75**

County	Price Related Differential	Confidence Interval
Linn	1.04	0.96-1.16
Logan	1.03	0.91-1.15
Lyon	1.06	0.95-1.21
Marion	1.02	0.91-1.19
Marshall	1.13	1.01-1.40
McPherson	1.08	0.99-1.22
Meade	1.13	1.02-1.30
Miami	0.98	0.95-1.03
Mitchell	1.07	0.95-1.23
Montgomery	1.12	0.98-1.25
Morris	**1.51**	**1.14-2.11**
Morton	1.03	0.96-1.10
Nemaha	1.00	0.94-1.10
Neosho	1.13	0.98-1.53
Ness	0.97	0.85-1.09
Norton	1.15	1.02-1.44
Osage	1.04	0.94-1.16
Osborne	1.06	0.91-1.24
Ottawa	1.07	1.02-1.19
Pawnee	1.15	1.00-1.41
Phillips	1.04	0.90-1.23
Pottawatomie	0.93	0.87-1.11
Pratt	1.03	0.99-1.07
Rawlins	0.95	0.88-1.03
Reno	0.95	0.84-1.06
Republic	1.26	0.89-1.83
Rice	**1.20**	**1.08-1.33**
Riley	0.99	0.97-1.01
Rooks	1.22	1.01-1.88
Rush	0.98	0.86-1.15
Russell	0.94	0.85-1.09
Saline	0.97	0.87-1.09
Scott	0.98	0.93-1.08
Sedgwick	**1.14**	**1.07-1.27**
Seward	**1.18**	**1.05-1.36**
Shawnee	1.08	0.98-1.31
Sheridan	0.96	0.82-1.21
Sherman	0.92	0.86-1.07
Smith	1.07	0.98-1.41
Stafford	1.02	0.94-1.10
Stanton	1.02	0.99-1.05
Stevens	1.02	0.92-1.11
Sumner	1.03	0.96-1.13
Thomas	1.08	0.97-1.26
Trego	1.07	0.94-1.27
Wabaunsee	1.59	0.95-2.74
Wallace	1.03	0.95-1.12
Washington	1.13	1.03-1.28
Wichita	1.02	0.94-1.08
Wilson	1.08	1.01-1.25
Woodson	1.14	1.02-1.30
Wyandotte	**1.18**	**1.06-1.33**
State Median	***1.04***	

APPENDIX E

Comparison of Selected Features of the Real Estate Ratio Study in Kansas With Ratio Studies in Other States

We reviewed a 1994 national survey of real estate ratio studies, and contacted the 10 states that reported using confidence intervals in assessing compliance with state property appraisal requirements. Because Delaware didn't have a statewide property appraisal function--all appraisal activities were handled by counties--we didn't include it in our comparisons. Comparative information from the other nine states is presented in this appendix.

State	Median ratio standard	Is compliance on the median ratio required	Does the state use confidence intervals for the median ratio	Does calculated median ratio have to meet standard?	Penalty for non-compliance	Coefficient of Dispersion standard
Alaska	≥ .85	Yes. State has oversight respon. for the 25 of 150 jurisdictions that levy a property tax	No. County does the ratio study and gives results to state. State is trying to figure out ways to make study more meaningful.	Yes, but in some cases too few sales to make statistics reliable; can bring in additional years' data	May require county to raise assessment levels after conferring with assessor. County has 1 yr. to clear up problem, or state will take county to court.	residential ≤15 commercial ≤20
Arizona	residential range .74-.90 commercial range .73-.89	Yes. State does studies four times each year	Yes	Yes.	State will issue orders to require correction. Actions range from working with the appraiser up to a full reappraisal.	residential ≤20 vacant, commercial ≤25
Florida	≥ .90	Yes.	Yes, to provide additional info	Yes	County gets a letter from the state requiring them to redo their appraisals. If they don't, state will reject the tax roll.	residential ≤20 other ≤25
Idaho	.90 to 1.10	Yes	Yes	No. Idaho presumes the statistic is in compliance unless proven it is not	If county not in compliance, Bd. of Equalization corrects, or state will make adjustments	residential ≤15 vacant, commercial ≤20
Kansas	.90 to 1.10	Yes	Yes	No. If confidence interval brackets the standard, county not determined to be out of compliance	State will work with the county, it may take over appraisal activities within a county, or it can order reappraisal.	≤20
Kentucky	.90 to 1.10 or .95 to 1.05 depending on alternative used	Yes	In past, required that the confidence interval included 100%. Confidence intervals no longer used because they don't work well for small counties	Yes	Requires county appraiser to do some work to improve. May include doing more appraisals, could order reappraisal.	1997: ≤25 1998: ≤20
Minnesota	.90 to 1.05	Yes	No. Considered, but don't because sample sizes too small for some classifications. Uses trend analyses.	Yes	State can force local jurisdiction to raise or lower value. Board of Equalization usually does something if county out of compliance.	residential ≤15 commercial ≤20
Mississippi	residential: .80 to 1.20 other: .75 to 1.25 are moving to .90 to 1.10	Yes	The confidence interval is the "margin of error" allowed. Confidence levels are used to obtain sample sizes for appraisal ratio studies	Yes	Counties have 2 years to get into compliance. In 2nd yr, standard is tightened. If county not in compliance in 2nd year, state imposes severe financial penalties.	≤25
Oregon	.95 to 1.05	Yes	No, but are considering to verify county compliance	Yes	State will issue order and county has to do a trending process or reappraisal	Loose standard of ≤20, depending on area being examined
Texas	no pre-set range	Yes (for school districts)	Yes. State does confidence interval around total property value and school district's value has to be within that range	School district's value has to be within calculated range	Funding decisions are triggered	None. COD calculated for informational purposes - no standard exists

Is compliance on the coefficient of dispersion required	Does the state use confidence intervals for coefficient of dispersion	Does calculated coefficient of dispersion have to meet standard?	Penalty for non-compliance	Price-Related Differential standard	Is compliance on the Price-Related Differential Req'd	How else is compliance assessed
Yes. State has oversight respon. for the 25 of 150 jurisdictions that levy a property tax	No	Yes	County has 1 yr. to clear up problem, or state will take county to court.	.98 - 1.03	No, although state will do an audit if statistic is below .80 or above 1.15	Visit subdivisions, talk with assessors about their problems.
No. State law allows for compliance decisions based on the COD, but this has never been done	No	NA	Work with appraisers to get them to tighten up appraisals	NA	NA	For commercial, state has to do supplemental appraisals, consider specific factors in area.
Yes	No	Yes	State confers with county or issues admin. order. County has 1 year to come into compliance. After that, tax roll can be rejected.	.90 - 1.10	Yes	State reviews procedures although compliance first based on statistics. If ok, county mostly left alone.
No. COD used for informational purposes only	No	NA	NA	.98 - 1.03	No	Review records to ensure reappraisals done every 5 yrs, as required.
Yes	Yes	No. If confidence interval brackets the standard, county not determined to be out of compliance	State will work with the county, it may take over appraisal activities w/in a county, or it can order reappraisal.	.98 - 1.03	No	State reviews county appraisal procedures.
Yes	No	Yes	State works with county, identifies outliers, reviews whether appraisers making progress	NA	NA	State reviews appraiser activities: has tax roll gone up, is appraiser going into areas that need work, are procedures good
No. COD used for informational purposes only	No	NA	State hasn't used COD in assessing penalties, but is considering	.98 - 1.03	No	Work with local staff, compile, verify sales data
Yes	No	Yes	Counties have 2 yrs to get into compliance. In 2nd yr, standard tightened. If county out of compliance in 2nd year, state imposes severe financial penalties.	.92 - 1.08	Yes	State moving away from ratio studies. Ultimate goal is to do audits and appraisal ratio studies. Said focus on ratio studies a mistake: with wide ranges, counties think all's ok when it's not.
No. Information on COD used as an indicator of what's happening in a county	No, but may in future as additional info.	NA	NA	None. Statistic is used for informational purposes - no standard exists	NA	Reviews procedures, checks to ensure procedures being used. Does trends in areas no being physically reappraised.
No. COD used for informational purposes only	No	NA	NA	None. Statistic calculated for informational purposes - no standard exists	NA	NA

APPENDIX F

Agency Response

On February 24th we provided copies of the draft audit report to the Department of Revenue. Its response is included as this appendix. As a result of the Department's response, we made minor corrections and clarifications to the audit.

STATE OF KANSAS
Bill Graves, Governor

DEPARTMENT OF REVENUE
John D. LaFaver, Secretary

Mark S. Beck, Director
Kansas Department of Revenue
915 SW Harrison St.
Topeka, KS 66612-1585

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Division of Property Valuation

March 7, 1997

Ms. Barbara Hinton
Legislative Division of Post Audit
Mercantile Bank Tower, Ste. 1200
800 S.W. Jackson
Topeka, Kansas 66612-2212

Dear Ms. Hinton:

I am pleased to have the opportunity to review your draft audit report on the sales ratio study program and to thank you for the courtesy and professionalism your staff exhibited during this audit. I find the comments and recommendations set forth in your report helpful, and I am certain they will assist the division of property valuation in their constant quest of updating and improving. I am most pleased by the fact that in your professional and objective opinion, the Kansas sales ratio study program is nothing short of a national benchmark of excellence. I found your survey of other states most telling in this regard.

It may be of interest to you to know that the International Association of Assessing Officers (IAAO) has also recognized Kansas for the innovative ratio study research it has performed over the last few years. In addition, many of the new ideas and state-of-the-art techniques developed by Kansas are currently being incorporated into IAAO standards and IAAO textbooks that will be used throughout the United States and in many foreign countries.

I would like to respond to two issues raised by your report. First, there appears to be concern regarding the fact that we do not find a county to be out of compliance statistically unless we can be certain that is indeed the case.

As you are aware, the real world does not always provide all the data needed for applying an exact statistical measurement. These limitations in actual data are the reason the department uses confidence intervals in order to determine statistical compliance. The statistical compliance results set forth in the Kansas sales ratio study comprise a crucial tool for assuring statewide uniformity. However, it is also a tool that should not be misused. When a county is found to be out of compliance, there are tremendous costs to that county in terms of resources and reputation. Taxpayers are best served when tax dollars are not devoted to "fixing" problems that may not exist. Furthermore, taxpayers should not be given the impression that a county's valuations are suspect, unless the county is truly out of compliance.

Second, your report notes that the department measures a county's performance using a combination of statistics and procedural reviews, while the court's primary emphasis is statistical results.

Common sense tells us that even when the statistics are reliable, statistics alone do not provide the whole story about whether a county is out of substantial compliance *or why*. In those instances when there is not sufficient data to responsibly draw conclusions from statistical results, the procedural review becomes a very important tool for evaluating and assisting a county.

Furthermore, while the sales ratio study relates to the bulk of property valued by county appraisers, i.e., residential and commercial real property, it does not measure all of the valuations made by the county appraisers. For example, county appraisers must value agricultural land based upon its use, and commercial and industrial machinery and equipment based upon a formula in the constitution.

Finally, there are functions besides valuations performed by the county appraisers which can effect uniformity and compliance. The procedural review allows an opportunity to evaluate that performance as well.

In summary, it is very important to the department that its overall performance evaluation of the counties be as accurate as possible to promote uniformity. It is also important that the performance evaluation be a useful tool to help the counties pinpoint their overall strengths and weaknesses. I believe that the department's leading edge statistical measurements combined with its traditional procedural evaluation provides an overall very reliable means for measuring if a county is truly out of compliance. It is also a useful tool for a county to determine where to devote its limited resources in order to best achieve uniformity for its taxpayers.

Again, thank you for recognizing the excellence of our sales ratio study program in terms of quality and innovation. I commend my staff for this accomplishment and I further commend those individuals on the Ratio Study Technical Advisory Committee, the Kansas County Appraiser's Association and the International Association of Assessing Officers who unselfishly devoted their time and expertise towards helping develop our program.

Attached, please find additional points my staff has compiled regarding your audit report. Thank you again. If I can be of further service, please let me know.

Sincerely,

John D. LaFaver, Secretary
Kansas Department of Revenue

Attachment

STATE OF KANSAS
Bill Graves, Governor

DEPARTMENT OF REVENUE
John D. LaFaver, Secretary

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Division of Property Valuation

MEMORANDUM

TO: John D. LaFaver, Secretary
Kansas Department of Revenue

FROM: Division of Property Valuation
Kansas Department of Revenue

DATE: March 7, 1997

SUBJECT: Final Comments regarding the LPA Review of the Ratio Study Program

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Page 2:

Caption:

The auditor notes that "State Law Requires all Property Subject to Taxation To Be Appraised Uniformly and Equally at to Class, And at Its Fair Market Value" This is true with respect to the residential and commercial real estate the sales ratio evaluates. However, state law does not require *all* property subject to taxation to be appraised *at its fair market value.* Article 11, Section 1, of the Kansas Constitution provides for the following exceptions: recreational vehicles, passenger motor vehicles, land devoted to agricultural use, and commercial and industrial machinery and equipment.

Paragraph 3:

The auditor states, in the last sentence, that "people who own these houses are paying different amounts of property taxes even though they should be paying the same amount." The auditor is probably aware that this statement is true provided that these homes are in the same tax unit and are therefore subject to the same exact mill levy. The mill levy varies from location to location depending upon the cost of the local services and the value of property in the tax base. For example, a location supporting a community college may have a higher mill levy. A location benefiting from a wealth of commercial property valuation may have a lower mill levy. However, the auditor is making the valid point that the properties should carry no more than their fair share of the local tax burden.

Paragraph 4:

In paragraph 4, the auditor correctly notes that a property's sales price (assuming it is a valid, arms length transaction) is an important element in establishing fair market value, but it isn't the sole criteria. One additional example not addressed in the report that is noteworthy is **inflation**. As the Kansas Supreme Court has put it, substantial weight should be given to a sales price from a willing buyer to a willing seller; however, other factors set forth in K.S.A. 79-503 are important, *such as inflation. Board of County Comm'rs v. Brookover*, 198 Kan. 71, 77, 422 P.2d 906 (1967). This point was more recently recognized by the Kansas Court of Appeals in *Wolf Creek Golf Links, Inc. v. Johnson Board of Co. Comm'rs*, 18 K.A.2d 263, 266, 853 P.2d 62 (1993).

Page 3

Step 1:

The auditor notes that for larger counties, the division of property valuation (hereinafter "PVD") evaluates a sample of sales. Actually, PVD evaluates a sample of sales only in the **residential** property category, in compliance with K.S.A. 1996 Supp. 79-1488.

Page 5

Paragraph 2:

In paragraph 2, the last sentence, the auditor states that the order in Shawnee County District Court Case No. 92-CV-796 "says the determination of whether the statistical standards have been met will be measured by the ratio study only, *without considering a county's procedures.*"

The court order does not contain a statement that the determination will be made "without considering a county's procedures." The court order is silent as to that point. It is not possible to predict how the courts will address this issue.

Page 7

Caption: "What is required of property appraisals?"

The auditor correctly notes that the goal is to appraise all property at its fair market value. The auditor is probably aware that in a mass appraisal setting, perfection is never achieved. It is not possible for every single property in Kansas to be appraised exactly at its fair market value at a single point in time. There are simply too many properties and too much movement in the market. The courts have recognized that fact, and do not require absolute perfection in uniformity. For example, in *Allegheny Pittsburg Coal Co. v. Co. Comm'n of Webster County*, 488 U.S. 336, 109 S. Ct. 633, 638 (1989). Thus, accuracy, as used in this report, refers to the *level* of the appraisals in the state.

Caption: "Is Kansas' requirement consistent with industry standards?"

For income property, the categories recognized by IAAO should be • **urban** and • **rural,** not new and old.

Page 10

The auditor uses a simple example for illustrative purposes on page 10. The auditor is probably aware that in real life, either a much larger sample must be drawn and evaluated, or confidence invervals must be used in order to draw responsible conclusions.

Page 11

Graphic at bottom of page:

The auditor also uses a simple example for illustrative purposes on page 11. The auditor is probably aware that in real life, either a much larger sample must be drawn and evaluated, or confidence invervals must be used in order to draw responsible conclusions.

Page 13

Paragraph 1:

The auditor states in the last sentence that "Under the court order, all 18 of those counties would have been out of compliance." It is not possible to predict how the court would address this situation. In addition, it should be noted that the analysis is more complex than presented.

The court order addresses statistical performance measures for the commercial and residential **classes** of property in each county. If one of those classes is out of compliance, that class or even a mere portion thereof may be considered defective, **but the entire county may not be found out of compliance.**

The PVD Substantial Compliance Review requires a comprehensive evaluation of statistical measures, appraisal procedures and statutory functions. The annual PVD substantial compliance evaluation rates overall county performance. It should be noted that a county with acceptable statistical measures for both residential and commercial property may still be found in non-compliance under the PVD substantial compliance review.

Page 14

Paragraph 2:

The auditor states that the buyer, seller or **real estate agent** must complete the real estate validation questionnaire before a deed can be filed. Actually, any **agent** acting on behalf of the buyer or seller can sign. (K.S.A. 1996 Supp. 79-1437c).

Appendix D

Here, the auditor is using real data to draw conclusions about statewide appraisal performance. In order to draw responsible conclusions, confidence invervals must be used.

Without the use of confidence intervals, the inferences made about the PRD problems in Kansas are misleading. Using the confidence intervals in the residential class, the statistics suggest that only 15 counties may have problems with regressivity (no progressivity problems can be demonstrated). The median residential PRD statewide is 1.02. Counties with PRD problems are typically rural with low parcel counts. They represent approximately 6% of the *residential* value statewide, and even less of the overall value statewide.

Using the confidence intervals in the commercial subclass, the median PRD statewide is 1.04 and the confidence intervals suggest that only 11 counties may have some regressivity problems (no progressivity problems can be demonstrated). Two of the problem counties were under reappraisal in 1995 with frozen values. The other 9 counties represent only about 9% of the *commercial* value statewide, and even less of the overall value statewide.