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ASSESSMENT AND EQUALIZATION OF FARM AND CITY REAL ESTATE IN KANSAS

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SUMMARY.

1. The constitution of Kansas, and the laws enacted in accordance with it, require "uniform and equal rate of assessment and taxation" of all property. The basis of assessment is "full value in money."

2. The purpose of this investigation is to determine whether or not there are major departures from the intent of the law in the assessment of farm and city real estate.

3. Small parcels of real estate are assessed at a higher per cent of sale price than large parcels. Consequently small landowners are required to pay a part of the large landowners' taxes.

4. The probable reasons for the overassessment of small properties are: (1) the greater impressiveness of large numbers; (2) the fact that small properties can easily be examined more closely by the assessor than large properties; and (3) the possibility of a greater influence of large landowners over the assessor.

5. The probable consequences of overassessment of small real estate properties in Kansas are: (1) an excess tax probably amounting to more than a million dollars annually, on small properties; (2) a hindrance to farm ownership, and perhaps to home ownership in cities; and (3) a probable hindrance to wise city planning.

6. Several types of inequality in assessment have been considered in this investigation, in addition to inequalities between large and small properties. These are: (1) inequalities among individual parcels of farm and of city real estate irrespective of size; (2) inequalities among townships and among cities; and (3) inequalities among counties,

7. There was a marked increase in the degree of inequality between large and small properties during the 10-year period, 1913 to 1922. During the same period, there was little or no change in the degree of inequality among individual properties. A greater equality is found among townships than among other assessing units or among individual properties. Inequality in assessment of farm real estate has decreased during the last 10 years among the counties, but the rate of assessment of city real estate among the counties has become slightly more unequal.

8. Inequality in the rate of assessment among individual parcels of farm real estate is nearly 14 times as important as inequalities among counties, from the standpoint of the amount of taxes levied on overassessed properties, in excess of legal requirements. Inequalities between large properties of farm real estate are 5.6 times as important (Table XXV) as inequalities among counties.

9. The principal reason for important inequalities in assessing real estate is inherent in the present system of valuation. The greatest inequalities, and the most pronounced tendency toward retrogression in equalization, are found at the local assessors' point of contact with property.

10. A plan is suggested to improve the present system of assessing property, and to eliminate the effect of unequal assessments among counties. The plan embodies (1) the county unit plan of assessing property; and (2) separation of state revenue from the general property tax, by finding new sources that would yield enough revenue to finance the state government and the state institutions. Three sources are suggested: (1) a personal income tax; (2) a gross production tax on oil and minerals; and (3) an excise tax on the sale of certain standard commodities classified as nonessentials or luxuries.

TABLE OF CONTENTS.

ASSESSMENT AND EQUALIZATION OF FARM AND CITY REAL ESTATE IN KANSAS.[1]

Eric Englund

I. INTRODUCTION.

The general property tax is almost the only source of revenue for state and local purposes in Kansas. Special taxes, the poll tax, licenses and permits amounted to less than 7 per cent of total receipts in 1922. General property taxes and special assessments, as shown in Table I, were, in that year, more than 93 per cent of all taxes.

TABLE I.—Receipts from taxes in Kansas in 1922. (*a*)

	Total taxes.	General property tax.	Special taxes.	Poll taxes.	Licenses and permits.	Special assessments.
Amount in thousands....	$75,983	$65,961	$769	$364	$4,029	$4,860
Per cent of total taxes...	100	86.8	1.1	0.4	5.3	6.4

(*a*) Adapted from data published by the U. S. Bureau of the Census.

Purpose of the Investigation.— The first purpose of this investigation is to determine whether or not there are major tendencies in the present system and in the prevailing practices of assessing real estate in Kansas that have resulted in important departures from the intent of the law, and not to point out minor variations from the legal standard. Data assembled in this bulletin reveal notable discrepancies in assessing real estate. The second purpose of this investigation is to determine the extent of these discrepancies, to point out their probable consequences, the seriousness of which may increase if proper remedies are not applied, and to ascertain whether any progress has been made in assessment and equalization during the past decade. The third purpose is to suggest possible remedies and to give a new emphasis to certain proposals for tax reform, which have been advanced by public officials and other students of Kansas tax problems.

Uniform and Equal Rate Defined.—The constitution of Kansas stipulates that "The legislature shall provide for a uniform and

1. Contribution No. 9 from the Department of Agricultural Economics.

equal rate of assessment and taxation." This provision was adopted in 1859, and has not yet been changed. The meaning of this clause has been interpreted by the supreme court in a number of decisions, until it is entirely clear that it requires merely that there shall be "uniform and equal rate of assessment and taxation only in each separate taxing district of the state."[2]

All Property Taxable.—Laws governing assessment and taxation, enacted by the legislature under article XI of the state constitution, quoted above, are sufficiently clear to leave no doubt as to what the term "property" includes, or as to the basis of assessing property for taxation. Sections 11149-50, General Statutes of 1915, provide:

"That all property in this state, real and personal, not expressly exempted therefrom, shall be subject to taxation. . . .

". . . the term 'property' when used in this act, shall mean and include every kind of property subject to ownership."[3]

"True Value" the Basis of Assessment.—Section 11,183 of the same Statutes contain the following provisions:

"Each parcel of real property shall be valued at its true value in money, the value thereof to be determined by the assessor from actual view and inspection of the property; but the price at which such real property would sell at auction or forced sale shall not be taken as the criterion of such true value.

"Personal property shall be valued at the usual selling price in money at the place where the same may be held; but if there is no selling price known to the person required to fix the value thereon, it shall be valued at such price as is believed could be obtained therefor in money at such time and place."

Justice Within the Law Means Equal Assessment.—The citations made above leave no doubt as to the intent of the law. When property is the tax base, justice within the law demands relatively equal assessment. The letter of the law would be carried out if all legally taxable property were assessed at its "true value in money." Since perfect compliance with this principle is obviously impossible of attainment, the spirit of the law would surely be satisfied if all property were assessed at a uniform ratio to sale price. For example, the average assessed valuation of 1,459,239 acres of land, with improvements, that sold for $65,782,000 in 10,307 *bona fide* transactions in 15 counties from 1913 to 1922, inclusive, was 65.6 per cent of sale price. Likewise, $18,153,000 worth of city real estate that changed hands in 10,231 *bona fide* sales during the same period was assessed at 73.3 per cent of sale price. The

2. 50 Kan. 383. (Reports of Kansas Supreme Court, Volume 50, page 383.)

3. Taxes levied on each class of property in 1923 are shown in Tables XXIII and XXIV, in amount and in per cent of total tax levy.

average assessed valuation of both farm and city real estate was 67 per cent of sale price. The spirit of the law would have been met fully during that period if all real estate holdings and other property had been assessed at 67 per cent of sale price.

While the law is very plain in defining the general standard of assessment, everyone who knows anything about the problems of enforcing the law is aware of the fact that perfect compliance is unattainable. There would be many variations from the legal standard, even under the best system of assessment.

II. GENERAL PROCEDURE IN ASSEMBLING DATA.

Sources of Data.—Through the courtesy of the state tax commission, nearly all the basic data used in this bulletin were obtained from the records of *bona fide* sales of real estate in Kansas covering a period of 10 years, 1913 to 1922, inclusive. The tax commission is empowered by law to call upon local officers and others for such information as may be deemed necessary in carrying out the duties of the commision.[4] Accordingly, county assessors are required to make a detailed report each year to the tax commission of the items of real estate sold for a *bona fide* consideration in their respective counties. Each item is given separately, showing the date of transfer, description of the land (section, township and range, or block and number of lot in case of city property), number of acres, sale price, assessed valuation, and assessed valuation in per cent of sale price. County assessors are specifically instructed to report only *bona fide* sales, and to reject all transfers for "one dollar and other considerations" and those showing inflated values, such as might be involved in trading real estate.

Data included in Section III of this bulletin are based on the sale of 10,307 items of farm real estate in 15 counties, covering a period of 10 years, and 10,231 items of city real estate in 16 counties[5] The other sections are based on data from selected counties, townships, and cities, and on land transfers in all counties of the state.

Amount of Data Used.—In order that results in this study might be reasonably representative of conditions throughout Kansas, data were taken from counties in all sections of the state. Figure 1 shows the counties from which data were obtained for a

4. Chapter 408, Laws of 1907.

5. Land sold outside of cities is referred to in this bulletin as farm real estate, although some of this land is probably not included in "farms" as defined by the federal census. It is not at all likely that any appreciable amount of land is included in these sales that is not also included in "land in farms" in the census. The number of acres of land in farms in Kansas in 1920 was 88 per cent of all taxable land in the state, and the taxable land was 98.6 per cent of the land area of the state.

comparison of the rate of assessment on small and on large parcels of farm and of city real estate. The amounts of data used in other parts of this study are indicated in connection with the presentation of results.

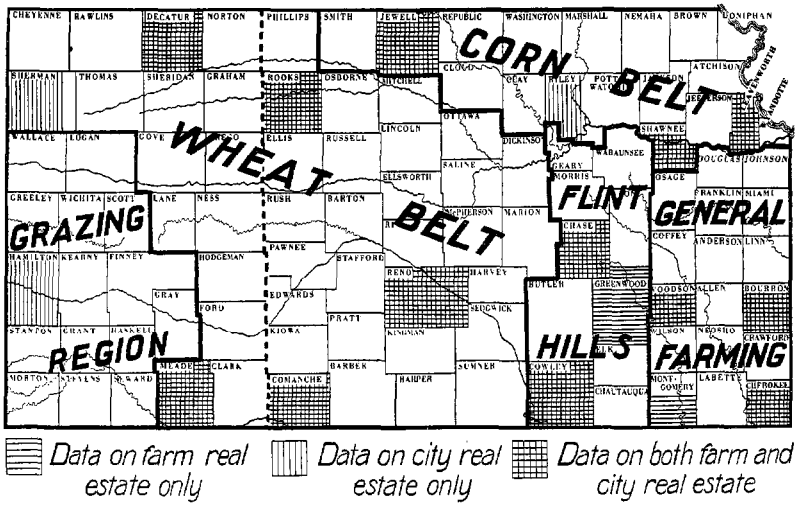

FIG. 1.—Map of Kansas, showing the counties for which data were obtained for a comparison of the rates of assessment of large and small properties of farm and city real estate. It also shows sections of the state in general outline. The dotted line between Norton and Phillips counties, and to the southern border of the state, marks a division between the eastern and the western halves of the Wheat Belt.

The total acreage of land represented in the comparison of large and small properties (Sec. **III)** is 19 per cent of all taxable land in these fifteen counties in 1923, and the assessed valuation of the city real estate is 15 per cent of the assessed value of all city real estate in the counties from which data on city property were obtained. This, together with the uniformity of results, indicates that sufficient data have been used to warrant the belief that the findings are representative of conditions throughout Kansas. While it would have been better to base the study on complete data from all counties, it is improbable that the greater accuracy to be had from such a large body of figures would have been sufficient to justify the additional time and expense that would have been required in making the study.

Small and Large Properties Defined.—The term "small properties," as used in this report, includes all parcels of real estate that fall in those groups in which the rate of assessment is above

the average for all groups. Likewise, the term "large properties" includes all parcels of real estate that fall in those groups in which the rate of assessment is below the average for all groups. For example, the average rate of assessment of farm real estate in Table IV is 65.6 per cent of sale price. The rates of assessment in Groups I to V, inclusive, are above this average while the rates in Groups VI to VIII are below the average. Hence, the first five groups include "small properties" of farm real estate, while the last three groups include "large properties." By the same definition, the first six groups of Table V include "small properties'' of city real estate, while the last two groups include "large properties."

Classification by Size Groups. —In an effort to ascertain whether or not large and small properties are assessed equally, all items of farm real estate were classified in eight groups according to size. Size in all cases is based on sale price and not on acreage. For example, all pieces of farm real estate in Bourbon, Chase, Comanche, Leavenworth, and Rooks counties were entered under Class A. (Tables II and IV.) All pieces of land in these counties that sold for less than $1,500, and that were reported in the records of sale, were entered under Group I. The actual sale price was entered in one column and the assessed valuation, at the time when the sale was made, in an adjoining column. Thus the various pieces of real estate were distributed in Groups I to VIII according to their sale price. The per cent of assessed valuation to sale price in each group was then calculated on the basis of total sale price and total assessed valuation of all entries. The same method of tabulation was followed in all classes of size groups for both farm land and city real estate.

TABLE II.—Number of sales of farm real estate, by size groups based on sale price, in fifteen counties, for a period of ten years, 1913 to 1922. (*a*)

COUNTY.	Size groups, based on sale value (*bona fide* sales).								
	All groups.	I.	II.	III.	IV.	V.	VI.	VII.	VIII.
All counties in classes A, B, C, D, and E	10,307	1,123	1,920	1,981	1,503	1,095	717	587	1,381
Class "A"	.....	Below $1,500	$1,500 to $2,999	$3,000 to $4,499	$4,500 to $5,999	$6,000 to $7,499	$7,500 to $8,999	$9,000 to $10,499	$10,500 and above
Total	2,877	245	452	584	385	350	209	189	463
Bourbon	622	73	156	135	58	57	41	30	72
Chase	345	18	41	66	49	47	24	18	82
Comanche	344	45	51	47	44	62	26	24	45
Leavenworth	894	56	112	168	113	91	68	85	201
Rooks	672	53	92	168	121	93	50	32	63
Class "B"	.....	Below $3,000	$3,000 to $4,999	$5,000 to $6,999	$7,000 to $8,999	$9,000 to $10,999	$11,000 to $12,999	$13,000 to $14,999	$15,000 and above
Total	3,262	392	607	626	534	349	251	144	359
Cowley	566	109	130	103	70	47	45	13	49
Jewell	851	86	184	197	137	89	65	30	63
Reno	1,112	82	144	198	228	147	87	69	157
Shawnee	733	115	149	128	99	66	54	32	90
Class "C"	.....	Below $1,000	$1,000 to $1,999	$2,000 to $2,999	$3,000 to $3,999	$4,000 to $4,999	$5,000 to $5,999	$6,000 to $6,999	$7,000 and above
Total	2,687	227	549	506	393	306	163	146	397
Cherokee	681	73	124	111	69	85	51	45	123
Decatur	953	46	192	194	170	116	53	61	121
Meade	1,053	108	233	201	154	105	59	40	153

Class "D"		Below $2,000	$2,000 to $3,199	$3,200 to $4,399	$4,400 to $5,599	$5,600 to $6,799	$6,800 to $7,999	$8,000 to $9,199	$9,200 and above
Total	986	196	219	181	115	62	50	78	85
Montgomery	670	156	136	123	73	40	35	48	59
Woodson	316	40	83	58	42	22	15	30	26
Class "E"		**Below $2,000**	**$2,000 to $3,499**	**$3,500 to $4,999**	**$5,000 to $6,499**	**$6,500 to $7,999**	**$8,000 to $9,499**	**$9,500 to $10,999**	**$11,000 and above**
Greenwood	495	63	93	84	76	28	44	30	77

(*a*) The purpose of this table is to show in detail the number of sales of farm real estate constituting the basis of Table IV.

On account of differences in the sale price of properties in the various parts of the state, it was impossible to use the same size groups for all counties and at the same time to secure a reasonably uniform distribution of the total number of transactions. For this reason it was necessary to divide the 15 counties from which data on land transfers were obtained into five classes, designated as A, B, C, D, and E. In the case of city real estate, it was necessary only to divide the 16 counties into three classes, all but one county being included in Classes A and B. By this method it was possible to secure a reasonably uniform distribution of the total number of real estate transfers among the eight size groups. The range of each size group, in the case of farm real estate, is shown in Tables II and IV. Table II shows in detail the distribution of 10,307 items of farm real estate among the various size groups and Table III shows the distribution in detail for 10,231 items of city real estate.

By this method of tabulation it was possible to determine the relation of assessed valuation to sale price of land and of city real estate, by size groups. The main purpose was to ascertain whether or not small parcels of real estate are generally assessed at a higher per cent of true value than larger properties. The findings are recorded in detail in Tables IV and V for farm real estate and city real estate, respectively.

Methods of calculation were used other than those already described, which will be explained later in connection with results of the investigation.

III. INEQUALITIES BETWEEN LARGE AND SMALL PROPERTIES.

SMALL PROPERTIES OVERASSESSED.

There is a strong and general tendency throughout the state to assess small real estate properties at a higher per cent of true value than the larger properties. (Reference is made to overassessment of small parcels of real estate in Kansas, in Johns Hopkins University Studies in Historical and Political Science, Series XVIII No. 3, 1900.) Not a single county of the 15 from which data on farm real estate were obtained for this study failed to show this tendency. This was also true in the 16 counties showing the assessed valuation of city real estate. Consequently, owners of small pieces of real estate are required to pay a higher tax, in proportion to true value, than owners of large properties. This is shown in detail in Tables IV and V, which give the average assessed valuation in per cent of sale price over a period of 10 years. These data

TABLE III.—Number of sales of city real estate by size groups, based on sale price, in sixteen counties in Kansas for a period of ten years, 1913 to 1922. (*a*)

COUNTY.	Size groups, based on sale price (*bona fide* sales).								
	All groups.	I.	II.	III.	IV.	V.	VI.	VII.	VIII.
All counties in classes A, B, and C	10,231	1,411	1,552	1,547	924	1,120	1,138	1,052	1,487
Class "A"	.....	Below $150	$150 to $299	$300 to $449	$450 to $599	$600 to $999	$1,000 to $1,399	$1,400 to $1,849	$1,850 and above
Total	3,450	474	422	407	272	524	448	314	589
Chase	422	30	31	42	32	79	70	47	91
Cherokee	1,347	218	218	202	127	216	128	94	144
Comanche	488	56	61	44	36	49	56	48	138
Hamilton	42	4	5	3	2	9	8	5	6
Meade	437	95	47	38	23	63	69	35	67
Rooks	579	43	49	63	47	84	99	67	127
Sherman	135	28	11	15	5	24	18	18	16
Class "B"	.....	Below $400	$400 to $749	$750 to $1,099	$1,100 to $1,449	$1,450 to $1,799	$1,800 to $2,499	$2,500 to $3,499	$3,500 and above
Total	6,060	868	1,026	998	589	530	650	673	726
Bourbon	1,081	208	208	172	96	83	114	101	99
Cowley	923	92	113	143	104	87	120	125	139
Decatur	406	85	80	83	29	36	36	34	23
Jewell	359	25	61	64	59	35	41	42	32
Leavenworth	1,296	159	264	257	159	121	130	124	82
Reno	646	109	105	100	46	57	68	70	91
Riley	1,041	134	127	114	68	79	111	164	244
Woodson	308	56	68	65	28	32	30	13	16
Class "C"	.....	Below $750	$750 to $1,299	$1,300 to $1,849	$1,850 to $2,399	$2,400 to $2,949	$2,950 to $3,499	$3,500 to $4,049	$4,050 and above
Shawnee	721	69	104	142	63	66	40	65	172

(*a*) The purpose of this table is to show in detail the number of transfers of city real estate, constituting the basis of Table V.

TABLE IV.—Assessed valuation of farm real estate in per cent of sale price in fifteen counties by size groups for ten years, 1913 to 1922.

COUNTY.	Size groups, based on sale price (*bona fide* sales).									Number of sales.	Number of acres sold.	Total value of sales (000 omitted).
	All groups.	I.	II.	III.	IV.	V.	VI.	VII.	VIII.			
All counties in classes A,B,C,D, and E,	65.6	85.7	76.7	72.9	70.0	66.4	65.3	62.3	58.7	10,307	1,459,239	$65,782
Class "A"		Below $1,500	$1,500 to $2,999	$3,000 to $4,499	$4,500 to $5,999	$6,000 to $7,499	$7,500 to $8,999	$9,000 to $10,499	$10,500 and above			
Total	67.7	83.6	81.2	76.3	72.0	67.7	65.1	64.3	63.8	2,877	441,319	19,882
Bourbon	67.2	90.3	86.1	79.7	76.6	64.1	68.7	69.1	53.2	622	63,132	3,352
Chase	72.5	73.7	76.3	77.9	72.9	75.1	63.6	73.3	71.8	345	71,066	2,865
Comanche	53.1	76.7	69.8	58.1	53.6	56.0	51.9	46.6	51.0	344	105,878	2,924
Leavenworth	72.1	81.9	75.0	75.9	74.1	76.2	73.0	68.0	70.9	894	88,126	7,081
Rooks	67.5	98.4	88.8	78.6	74.2	65.6	59.2	57.9	57.2	672	113,117	3,660
Class "B"		Below $3,000	$3,000 to $4,999	$5,000 to $6,999	$7,000 to $8,999	$9,000 to $10,999	$11,000 to $12,999	$13,000 to $14,999	$15,000 and above			
Total	68.8	83.4	77.2	75.0	73.4	70.7	67.7	66.8	61.4	3,262	387,929	26,762
Cowley	65.4	85.3	73.5	69.3	67.8	67.1	63.3	66.5	53.8	566	70,689	4,006
Jewell	73.3	81.7	80.8	74.1	76.5	75.2	71.7	67.9	63.5	851	99,972	6,274
Reno	67.9	79.3	75.5	78.5	74.3	69.5	67.7	68.0	63.2	1,112	146,413	10,423
Shawnee	67.9	86.0	77.6	75.3	70.7	69.7	66.8	63.3	60.3	733	70,855	6,059
Class "C"		Below $1,000	$1,000 to $1,999	$2,000 to $2,999	$3,000 to $3,999	$4,000 to $4,999	$5,000 to $5,999	$6,000 to $6,999	$7,000 and above			
Total	54.9	87.3	74.3	65.3	59.0	55.1	56.1	53.0	47.0	2,687	453,139	11,038
Cherokee	58.2	91.9	74.0	69.9	72.9	62.9	59.7	59.1	48.6	681	63,355	2,926
Decatur	55.5	83.4	82.9	68.0	58.3	54.9	54.8	51.4	44.3	953	179,724	3,690
Meade	52.2	86.8	67.1	60.0	53.6	49.1	54.2	48.7	47.4	1,053	210,060	4,422
Class "D"		Below $2,000	$2,000 to $3,199	$3,200 to $4,399	$4,400 to $5,599	$5,600 to $6,799	$6,800 to $7,999	$8,000 to $9,199	$9,200 and above			
Total	61.2	93.4	70.8	65.4	64.5	58.3	66.3	54.1	49.9	986	98,218	4,525
Montgomery	59.5	100.2	69.5	65.3	61.8	53.5	66.2	50.7	55.9	670	61,236	3,006
Woodson	64.7	66.6	72.9	65.5	69.4	67.0	66.4	59.5	58.7	316	36,982	1,519
Class "E"		Below $2,000	$2,000 to $3,499	$3,500 to $4,999	$5,000 to $6,499	$6,500 to $7,999	$8,000 to $9,499	$9,500 to $10,999	$11,000 and above			
Greenwood	63.8	81.4	64.4	72.0	68.2	66.5	67.0	66.8	58.3	495	78,634	3,575

TABLE V.—Assessed valuation of city real estate in per cent of sale price in sixteen counties by size groups for ten years, 1913 to 1922.

COUNTY.	Size groups, based on sale price (*bona fide* sales).									Number of sales.	Total price of sales (000 omitted).
	All groups.	I.	II.	III.	IV.	V.	VI.	VII.	VIII.		
All counties in classes A, B and C	73.3	97.0	89.0	82.9	80.5	76.5	74.5	70.9	69.1	10,231	$18,153
Class "A"		Below $150	$150 to $299	$300 to $449	$450 to $599	$600 to $999	$1,000 to $1,399	$1,400 to $1,849	$1,850 and above		
Total	62.2	127.8	100.0	84.9	79.9	74.3	73.6	63.2	53.3	3,450	3,742
Chase	76.0	129.3	125.8	105.6	97.3	86.6	80.8	78.2	66.8	422	527
Cherokee	66.7	175.1	113.5	91.6	82.2	72.1	73.1	59.7	51.9	1,347	1,143
Comanche	47.1	63.2	64.1	44.8	56.9	53.9	60.5	48.8	53.2	488	643
Hamilton	70.3	90.0	73.2	85.9	106.9	79.4	60.4	72.8	65.9	42	42
Meade	50.7	69.5	63.9	59.4	60.8	60.5	61.0	50.7	42.4	437	431
Rooks	71.8	106.2	109.1	92.7	87.7	84.5	85.1	72.3	61.2	579	818
Sherman	69.2	83.0	82.6	88.0	73.1	88.2	80.9	68.6	57.0	135	138
Class "B"		Below $400	$400 to $749	$750 to $1,099	$1,100 to $1,449	$1,450 to $1,799	$1,800 to $2,499	$2,500 to $3,499	$3,500 and above		
Total	74.5	90.6	88.3	82.7	79.7	77.0	74.4	71.4	70.7	6,060	11,028
Bourbon	72.4	97.4	85.2	79.1	78.1	70.1	70.7	71.4	67.5	1,081	1,737
Cowley	76.6	104.5	85.6	86.4	81.3	82.6	80.2	71.7	72.9	923	1,888
Decatur	53.4	76.3	77.3	68.4	54.3	59.3	50.5	40.8	39.2	406	499
Jewell	82.3	103.4	86.2	85.2	83.3	78.4	75.4	88.2	80.2	359	563
Leavenworth	90.6	101.9	98.9	93.1	89.9	90.5	87.0	84.3	92.7	1,296	1,919
Reno	68.1	70.2	88.5	71.9	70.8	68.8	68.8	63.8	66.8	646	1,451
Riley	69.2	85.1	90.7	82.8	71.6	73.9	69.4	67.3	67.0	1,041	2,604
Woodson	70.3	70.4	71.5	75.0	74.5	68.8	68.6	75.3	64.3	308	367
Class "C"		Below $750	$750 to $1,299	$1,300 to $1,849	$1,850 to $2,399	$2,400 to $2,949	$2,950 to $3,499	$3,500 to $4,049	$4,050 and above		
Shawnee	79.7	97.3	84.6	82.7	85.4	78.8	79.4	82.7	78.4	721	3,383

are given by size groups and for all groups, for each county. The same data are also given for the counties under each class of size groups designated by A, B, C, D, E, and for all counties in all classes of size groups.

The average ratio of assessed valuation to sale price of farm real estate in all counties included in this study is shown graphically in figure 2, and for city real estate in figure 3. These graphs are merely a summary of data shown in detail in Tables IV and V.

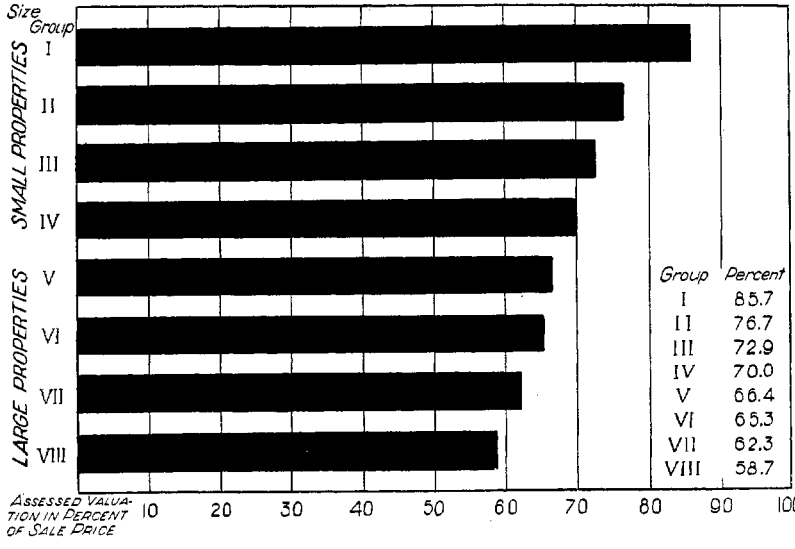

FIG. 2.—Assessed valuation of farm real estate in per cent of sale price, by size groups. Table IV gives these percentages in detail; it also gives the range of the size of the parcels of real estate in each group. The average sale price of the parcels in each group is as follows: I, $1,222; II, $2,567; III, $3,993; IV, $5,588; V, $6,885; VI, $8,662; VII, $9,714; VIII, $16,956.

The average assessed valuation of farm real estate was 65.6 per cent of sale price.[6] Group I shows an average ratio of assessed valuation to true value of 85.7 per cent for the smallest pieces of real estate as compared with 58.7 per cent for the largest properties, included in Group VIII, an average difference of 27.0 per cent between the large and the small properties. It should be noted that Group I, like all other groups in Table IV, contains five classes of entries. Each group in Table V includes three classes of entries, which are based on sale price, as in other tables.

6. The terms "sale price" and "true value" have the same meaning as used in this bulletin. This conforms with Kansas statutes.

LOWER ASSESSED VALUATION OF IMPROVEMENTS.

The relatively low sale price of the parcels of real estate that fell in Group I of these classes indicates that perhaps a larger per cent of them were small pieces of land without improvements, than was the case with properties that fell in the other seven groups. While the law intends that improvements should be assessed at the same ratio to true value as the land itself, it is generally conceeded by tax assessors and by members of boards of equalization that improve-

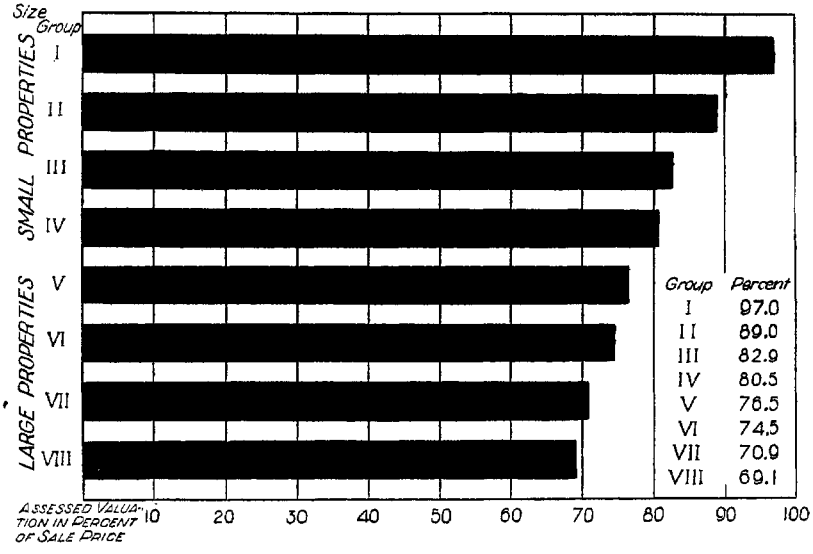

FIG. 3.—Assessed valuation of city real estate in per cent of sale price, by size groups. Table V gives these percentages in detail; it also gives the range of the size of the parcels of real estate in each group. The average sale price of the parcels in each group is as follows: I, $176; II, $483; III, $819; IV, $1,073; V, $1,242; VI, $1,703; VII, $2,496; VIII, $5,954.

ments are, on the whole, assessed at a lower per cent of true value than land. A few of the persons with whom the writer discussed this matter were of the opinion that this is a reason for the apparent discrimination against small properties, as shown in Table IV and figure 2.

The precise extent to which improvements are assessed at a lower per cent of true value cannot be shown statistically because separate sales of land and of fixed improvements seldom occur, and because few, if any, records are available of such sales. Although specific data having direct bearing on this point are lacking, the contention that improvements are subject to relatively lower assess-

TABLE VI.—Valuation of farm improvements compared with the combined valuation of land and improvements in Kansas as given by the federal census and by the Kansas Tax Commission, 1920 and 1910.

	Land and improvements. (a)		Improvements alone. (a)		Improvements, in per cent of land and improvements.	
	1920.	1910.	1920.	1910.	1920.	1910.
As reported by the census	$2,830,063,918	$1,737,556,172	$354,428,746	$199,579,599	12.5	11.5
As assessed for taxation	1,856,732,983	(b)1,365,455,604	144,101,557	(b)130,839,709	7.3	(b)9.6

(a) The State Tax Commission uses the word "improvements" and the census the word "buildings." Both terms as here used have essentially the same meaning.

(b) As of 1913. Assessed valuation of improvements not reported separately from land in 1910.

ment than land itself, finds substantial though indirect support in data published by the Bureau of the Census. Reports of the Kansas Tax Commission have for several years shown the assessed valuation of land and of improvements in separate columns. The assessed valuation of improvements was 9.6 per cent of the aggregate assessed valuation of land and improvements in 1913, and 7.3 per cent in 1920. Hence it is possible to compare the per cent that the assessed valuation of improvements alone is of the assessed valuation of land and improvements, with the per cent that the census valuation of buildings is of the total valuation of land and buildings, as shown in Table VI.

If census valuations of land and of buildings correctly represent true value, or if these census valuations stand in the same ratio to true value of land and of buildings, figures in Table VI substantiate the contention that improvements are assessed at a lower per cent of true value than the land itself. In fact, this difference appears to be rather important. If the assessed valuation of improvements in 1920 had been 12.5 per cent of the aggregate assessment of land and improvements, instead of 7.3 per cent, it could have been concluded that the two kinds of property were assessed equally.

The fact that improvements are subject to lighter assessment than land finds its real significance in the further fact that the true value of improvements is a much greater part of the total value of land and improvements of small farms than of large farms, as shown in Table VII. This table is based on data for the United States as a whole, because the census does not report valuation of land and of buildings separately, by states, for the different sizes of farms.

It should be noted that the size groups in this table (Table VII) are based on acres, whereas in other tables in this bulletin sale price is the basis. But it surely cannot be doubted that a sufficiently close relation exists between aggregate sale price and area of land per farm to make the comparison valid. Therefore, it seems undeniable that improvements are a smaller per cent of the aggregate sale price of the items of farm real estate in the larger size groups of Table IV.

As noted in a previous part of this report, Group I in Table IV may, in part, be an exception since it probably includes a relatively large number of pieces of land with no improvements. But it is by no means certain that this is true, for pieces of land without improvements are surely not confined to the smallest size group. Common observation and the fact that much land is without im-

TABLE VII.—Census valuation of farm buildings compared with census valuation of land and buildings in the United States by size of farms, 1920 and 1910. (*a*)

SIZE GROUP.	Land and buildings (000 omitted).		Buildings alone (000 omitted).		Buildings, in per cent of land and buildings.	
	1920.	1910.	1920.	1910.	1920.	1910.
Acres.						
All groups	$66,316,003	$34,801,126	$11,486,440	$6,325,452	17.3	18.2
Under 20	2,093,165	1,309,908	770,608	507,697	36.8	38.8
20 to 49	4,921,515	2,485,471	1,243,481	670,108	25.3	27.0
50 to 99	9,345,378	5,029,511	2,208,012	1,220,148	23.6	24.3
100 to 174	17,820,668	9,405,392	3,253,843	1,792,287	18.3	19.1
175 to 449	22,879,246	11,762,615	3,128,439	1,695,855	13.7	14.4
500 to 999	4,725,558	2,483,160	532,602	272,432	11.3	11.0
1,000 and over	4,530,473	2,325,069	349,454	166,925	7.7	7.2

(*a*) Adapted from "Abstract of the Fourteenth Census," p. 607.

provements, particularly in central and western Kansas, indicate that many pieces of land having no improvements were included in the larger size groups. Since land alone is assessed at a higher ratio to true value than improvements, it follows that any size group, containing a proportionately larger amount of land without improvements, would show a higher per cent of assessed valuation to true value than if improvements were distributed uniformly among all the groups. While it is not improbable that this accounts for a part of the difference in the per cent of assessed valuation between Groups I and II, it cannot possibly explain the general downward trend of assessed valuation from Groups I to VIII, as shown in figure 2 and in Table IV. This difference could not be explained, even in part, on the ground that improvements are generally assessed at a lower per cent of true value than land itself, since the true value of improvements on the larger farms is a lower per cent of the true value of both land and improvements than is the case on small farms.

It seems certain that a lower rate of assessment on farm improvements than on land has not intensified the general tendency toward a lower rate of assessment on the larger properties. On the contrary, the difference between the rate of assessment of the upper and of the lower size groups would be greater than these tabulations indicate if the ratio of assessed valuation to sale price of land alone could be shown separately. Since improvements constitute a larger per cent of total real estate investment in small farms than in large farms, it appears logical to conclude that if small farms have any advantage at all in the assessment of improvements (because of having relatively more of them), this advantage is offset and greatly exceeded by the fact that smaller properties are generally assessed at a much larger per cent of true value than the larger properties.

Lots and Improvements Not Differentiated. —The assessed valuation of city improvements in Kansas in 1923 was 64.4 per cent of the aggregate assessed valuation of both lots and improvements. Here, as in the case of farm real estate, records of sales do not show separate values for lots and for improvements. Furthermore, no data are at hand showing whether or not city improvements are assessed at a lower per cent of true value. But, if city improvements were assessed at a lower rate, it would follow that any size group in Tables III and V containing more than its proportionate share of vacant lots would show a higher ratio of assessed valuation to sale price than other groups. If there should be a size group

consisting mainly of vacant lots, it would probably be Group I, because the parcels of real estate, included in that group, sold for less than $150 in seven counties, less than $400 in eight counties, and below $750 in one county. It is not likely that city and town real estate selling at such low figures per item would include any appreciable amount of improvements. Hence, it is probable that they consisted mainly of vacant lots. On the other hand, it is unlikely that many properties selling for $3,000 or more were without improvements in these counties where towns and cities are comparatively small. Therefore, it is logical to assume, that the tendency has been to assemble the sales of vacant lots in the lower size groups.

However, it is by no means an established fact that city improvements are assessed at a lower per cent of true value than are lots separate from improvements. Again, the regularity of the decline in the per cent of assessed valuation from the lower to the higher size groups (fig. 3) indicates that the difference in assessment of larger and of smaller holdings must be based very largely, if not altogether, on fundamental differences in the assessors' valuations and not on the probability that the lower size groups include proportionately less improvements, nor on the supposed higher assessment of lots without improvements.

As a further indication that the differences in assessments, shown in Table V are not due in any appreciable degree to relative differences in the amount of improvements included in various groups, it should be noted that Groups I to VI include 74.5 per cent of the total number of transactions and 36.5 per cent of the total sale price of the 10,231 items of city real estate included in the tabulations. The average ratio of assessed valuation falls within Group VII of Table V. It is not likely that a very large part of the higher per cent of assessed valuation in Groups I to VI could be due to supposed difference in assessing lots and improvements, when those groups include as much as 36.5 per cent of the total sale price in all groups.

Different Rate for Improvements Not Sanctioned by Law.— Finally, since we are here concerned with major departures from the intent of the law in assessing property, it should be remembered that the law requires that all property be assessed at full value or at a uniform ratio to full value. The law does not allow a different rate for land or lots than for improvements, although such difference may have the sanction of common practice. There are those who

contend that a lower rate of assessment for improvements would be desirable, but up to the present time the laws of Kansas have not recognized the desirability of such differences in rates. Hence there is no escaping the conclusion that small real estate properties are assessed at a higher per cent of true value than larger ones, and that as a consequence of this discrepancy owners of small parcels of real estate are required to bear a portion of the taxes which the law intends that owners of large properties should pay.

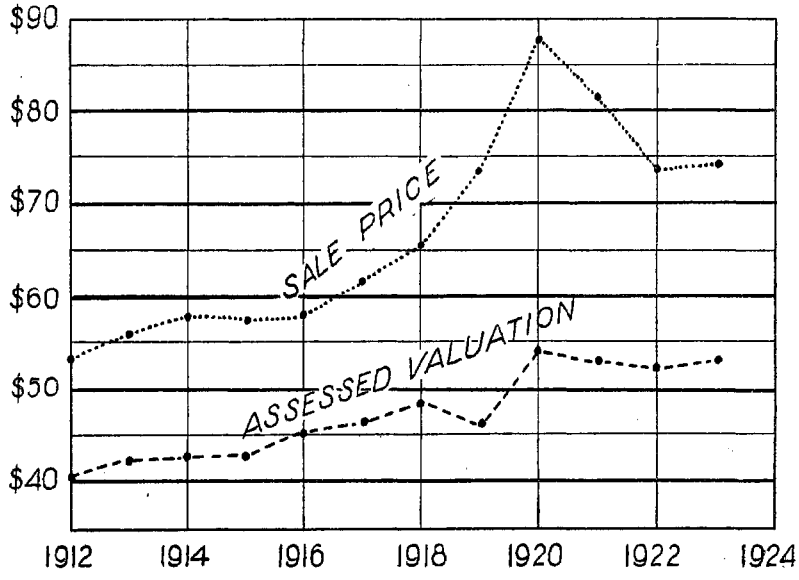

FIG. 4.—Sale price and assessed valuation per acre of farm land; average for four counties—Cowley, Jewell, Reno, and Shawnee—by years, 1912 to 1923.

INFLUENCE OF RISING LAND VALUES ON RATE OF ASSESSMENT.

It has been suggested to the writer that the apparent discrimination against owners of small pieces of real estate might be due, at least in part, to the fact that the price of land rose rapidly during a part of the 10-year period covered by this investigation, while assessed valuation advanced more slowly. Hence, the assessed valuation of real estate was generally a lower per cent of sale price in the period of high land prices than before or after that period.

Real estate in Kansas is now assessed every four years, except that cities of the first and second classes may provide for assessment in any year. It was required by law that all taxable real estate should be assessed in 1916, in 1918, and every four years thereafter.[7] It

7. Paragraph 11262, General Statutes, 1915.

may be noted from figure 4 that the average sale price of land in four counties—Cowley, Jewell, Reno, and Shawnee—rose more rapidly from 1916 to 1920, inclusive, and that the rise was particularly rapid from 1918 to 1920, when there was no general reassessment of real estate.

The data from which the graphs in figure 4 were made are as follows:

Year.	Sale price.	Assessed valuation.	Year.	Sale price.	Assessed valuation.
1912.....	$53.26	$40.35	1918.....	$65.11	$48.83
1913.....	55.63	42.19	1919.....	73.47	46.11
1914.....	57.88	42.08	1920.....	87.79	54.34
1915.....	57.15	42.94	1921.....	81.47	53.04
1916.....	57.92	45.05	1922.....	73.78	52.41
1917.....	61.95	46.26	1923.....	74.22	53.26

The figures in this tabulation show fairly typically the trend of land values in all parts of the state during this period.

In the 15 counties included in this study, there was a more rapid turnover of large pieces of land during the years of high land values than at other times in the 10-year period, as shown in Table VIII. This is the basis of the opinion that the comparatively low assessment of large properties shown in this investigation might be due partly to the fact that they were sold in greater number at a time when the general ratio of assessed valuation to sale price was low because of a sudden rise in the price of land. This point is important enough to warrant careful consideration.

TABLE VIII.—Distribution of the number of sales of farm real estate by years and by size groups in fifteen counties, 1913 to 1922.

YEAR.	All groups.	I.	II.	III.	IV.	V.	VI.	VII.	VIII.
1913 to 1922.....	10,307	1,123	1,920	1,981	1,503	1,095	717	587	1,381
1913.....	1,099	160	254	232	163	114	48	41	87
1914.....	1,032	160	231	227	141	90	46	46	91
1915.....	1,076	129	257	251	190	89	58	37	65
1916.....	1,164	184	273	253	189	108	51	31	75
1917.....	1,005	107	210	181	159	123	73	49	103
1918.....	993	97	197	186	149	92	79	63	130
1919.....	1,572	106	217	263	215	178	136	130	327
1920.....	1,223	78	131	181	152	160	125	87	309
1921.....	672	50	90	111	91	88	57	62	123
1922.....	471	52	60	96	54	53	44	41	71

Increase in Sale Price May Counterbalance Decrease.—This investigation is based on land sales over a 10-year period which includes years of slowly rising and rapidly falling land values, as well as years of rapid increase in the price of land. Therefore, it is not likely that more frequent sales of large properties during the

time of rising land values would influence the ratio between assessed valuation and sale price in the different size groups enough to make it appear that large properties were underassessed, relative to small properties. Notwithstanding this fact, it might still seem that the apparent discrimination against small properties was caused, in a large measure, by the sale of a relatively; greater number of large properties during the years of rapidly increasing land prices, because the increase in land values during the 10-year period covered by this study was greater than the decrease. In other words, it might be held that the downward trend in the price of land was not. enough to offset the upward trend.

Consideration of a Possible Bias in Data.—It remains to be shown whether rapidly rising land prices, together with slowly increasing assessments, have introduced a statistical bias in any part of the data which would make the difference in the rate of assessment of small and of large properties appear greater than would be the case if the date covered a 10-year period of stationary or of slowly rising land values.

It seems logical that a relatively greater number of sales of large parcels of farm real estate in the three years (1918 to 1920), when the ratio of assessed valuation to sale price was low (fig. 2), should have caused a downward trend in the weighted average ratio for the 10-year period, in Groups VI, VII and VIII.

Table IX has been constructed to show whether or not such a bias exists in the data represented by Table IV and figure 2. The ratio of assessed valuation to sale price has been calculated by years in each size group and in the average of all groups. The weighted averages for the 10-year period are given in the first line of the table, these figures being the same as in Table IV. The 10 yearly averages in each size group were added and divided by 10. This gave the arithmetic average for the 10-year period, as shown in the second line from the top of Table IX. If a more rapid turnover of large properties in the three years, 1918 to 1920, when the ratio of assessed valuation to sale price was low, resulted in a downward trend of the weighted average ratio in Groups VI, VII, and VIII, it would appear in a difference between the weighted average and the arithmetic average in these groups for the 10-year period. The arithmetic average would be higher. This average is higher in all size groups, excepting Group II. The following is the extent to which the arithmetic average in each size group is greater than the weighted average: All groups, 1.0 per cent; Group I, 0.4 of 1

TABLE IX.—Assessed valuation of 10,307 parcels of farm real estate in per cent of sale price, by size groups, by years, and by periods of years as indicated, 1913 to 1922. (*a*)

		All groups.	I.	II.	III.	IV.	V.	VI.	VII.	VIII.
1913 to 1922.	Weighted average	65.6	85.7	76.7	72.9	70.0	66.4	65.3	62.3	58.7
	Arithmetic average (*b*)	66.6	86.1	76.1	73.5	70.6	66.8	66.4	64.0	59.7
WEIGHTED AVERAGE.	1913	71.4	86.2	84.0	76.3	74.0	70.2	67.3	65.3	62.9
	1914	68.6	87.0	77.8	74.0	73.9	69.4	73.0	67.3	56.5
	1915	69.2	82.8	77.5	71.1	67.3	70.1	69.1	72.3	61.0
	1916	70.6	84.6	79.6	76.6	68.5	68.0	68.7	67.7	63.1
	1917	66.1	93.1	77.2	72.7	68.5	64.5	67.1	63.9	57.2
	1918	70.1	84.2	78.0	75.6	73.6	72.6	68.8	67.5	65.1
	1919	59.2	81.3	69.3	67.6	65.8	63.1	61.0	56.8	53.8
	1920	61.7	86.3	65.7	66.8	67.2	62.1	61.8	61.7	59.2
	1921	63.8	91.1	73.9	79.4	71.4	64.4	63.0	55.3	59.1
	1922	65.8	84.3	77.7	75.2	75.8	63.5	64.3	61.8	59.3
1913 to 1915 and 1921 to 1922.	Weighted average	68.1	85.9	79.1	74.7	72.0	68.0	67.3	63.4	59.6
	Arithmetic average (*b*)	67.7	86.3	78.2	75.2	72.5	67.5	67.5	64.4	59.8
1916 to 1920.	Weighted average	64.1	85.6	74.5	71.6	68.5	65.3	64.3	61.7	58.3
	Arithmetic average (*b*)	65.5	85.9	74.0	71.9	68.7	66.1	65.5	63.5	59.7

(*a*) With the exception of the five-year periods shown in the lower part of this table, this is intended as a companion table to Table VIII.
(*b*) This is the arithmetic average of the weighted averages as given for each size group, by years.

per cent; II, -0.6; III, 0.6; IV, 0.6; V, 0.4; VI, 1.1; VII, 1.7; and VIII, 1.0 per cent. These differences, excepting in Group II, are in all probability due to a somewhat greater turnover of land, in each of the eight size groups, in the years of high land values. It will be noted that the difference is slightly greater in the larger size groups; but, since this difference is only a fraction of one per cent, it will be assumed that any statistical bias which it may indicate is not significant enough to warrant consideration in the other calculations in this report.

For purposes of comparison, Table IX also shows the weighted average and the arithmetic average for the five years of slowly rising or rapidly declining land values (1913 to 1915 and 1921 to 1922), and for the five years of rapidly increasing land values (1916 to 1920).

Apparent Overassessment of Small Properties Not Due to Undervaluation of Improvements or to Rising Land Values: Summary.— Several pages have been devoted to a consideration of the possibility that the apparent discrimination in assessment against small properties may be due (1) to the fact that improvements are generally assessed at a lower per cent of true value than land alone, and (2) to a more rapid increase in the sale price of land from 1916 to 1922 than in the assessed valuation, together with a greater turnover of large properties during this period. Data bearing on these points show conclusively that no part of the apparent overassessment of small properties can be attributed to relatively lower assessment of improvements. Data also show that increasing land values have had no appreciable effect on the apparent difference in the rates of assessment of large and small properties. Therefore, this difference must be due to actual overassessment of small properties, since it is not due to either of above mentioned plausible causes.

PROBABLE REASONS FOR OVERASSESSMENT OF SMALL PROPERTIES.

Although it is difficult to find specific and measurable reasons for the general tendency to overassess small properties, a number of probabilities can be presented. But before doing so, it might be well to mention some of the principal features of the present system of assessing real estate in Kansas. This can best be done by quoting the Kansas Tax Commission:

"Under the present plan the work of assessment is a sort of side issue upon the part of those engaged in the work. Personal property is annually assessed; real estate, under the present law, is assessed every four years. Engaged in

the work of assessments are about 2,000 persons of varying opinions and judgments as to the value of property. Few of them are chosen for the work because they possess qualifications which enable them to properly value property. In the year when real estate is assessed, the assessment of approximately four billion dollars' worth of property confronts the assessing officers,, Their work must be done, if it is performed in accordance with law, between March 1 and May 1—about sixty days. Under such conditions it should go without saying that there can be no just and proper placing of correct values. The varying judgments of the persons engaged in the work produce inevitably different valuations of the same kind of property, circumstances and conditions alike. It is fundamental that unless the assessments of property are made in a relatively equal way no equality in laying the taxes can result.

"Boards of equalization are ineffective to produce equality assessments. This is so because the duties of the county boards of equalization are to be performed practically within 10 days. This is too short a time for a board of the kind to investigate carefully the relative values placed upon like kinds of property throughout the whole county. In practice the work of the boards is confined to hearing complaints and giving relief when cases for relief are sufficiently established, but obviously, it is the complainant who gets relief, and those who do not complain must suffer from the inequality inherent in the assessment work under the present plan."[8]

Greater Impressiveness of Large Numbers.—General overassessment of small properties is perhaps due partly to a proportionately greater impressiveness of large numbers. This seems to influence the minds of both assessors and owners. To illustrate this point, assume two items of real estate, differing in size but located in the same city or township, and owned by different parties. Assume also that the smaller piece is assessed at $2,000 and the larger at $15,000. Suppose further that it should become necessary to raise the assessment 10 per cent in the local taxing district where these properties are situated. An increase of $200 in the valuation of the smaller piece of property is not likely to make as much impression on either the assessor or the owner as $1,500 on the larger piece. The assessor may be more hesitant to make the larger increase, consequently, he is likely to make proportionately greater increases in the assessed valuation of small properties in adjusting the assessment of real estate to a new and higher level. He may do so with the best intention to assess all real estate uniformly, while in fact the psychology of large numbers probably causes him to overassess the small properties,

If the greater impressiveness of large numbers applies to the assessor, it applies equally well to the owner. It is probable that an

8. Eighth Report to the Legislature. Page 29. 1923.

increase of $1,500 in assessed valuation has more than a proportionately greater influence on the owner's mind than an increase of $200 even though the larger figure should be no greater in proportion to the previous assessment or to true value of the land. Persons with large assessments are more likely to complain to the local assessor and even to the county board of equalization; and, as stated by the tax commission in the paragraph just quoted, the county board seldom has the opportunity to consider cases of inequality other than those brought before it by complainants. Consequently, the small owner is more likely to suffer a disadvantage silently and perhaps unknowingly.

Closer Examination of Small Properties.— The assessor is required by law to visit each parcel of real estate before fixing the assessment. Such visits do not, as a rule, permit dose inspection of the larger properties, especially since the assessor's work must be done in a comparatively short time. A small farm can be seen from the farmstead, while thorough inspection of a large farm necessitates visits to several parts of it. The assessors who have been interviewed on this subject are generally of the opinion that the greater ease with which small pieces of real estate can be examined probably results in overassessment of the smaller properties.

Greater Influence of Large Landowners.— The local assessor's tenure of office depends upon his ability to remain in the good grace of the people of his district. Large landowners frequently have more influence in the community than the less well-to-do owners of small pieces of land. It is quite in accordance with human nature that assessors may at times be moved to give more favorable consideration to the interests of the more influential citizens. This is probably a minor reason for the general tendency to overassess small properties, but it may be a contributing factor,

CONSEQUENCES OF OVERASSESSMENT OF SMALL PROPERTIES.

Excessive Tax on Small Landowners.— The inevitable effect of a higher rate of assessment on small properties is that small parcels of real estate are required to bear a portion of the taxes which the law intends should be borne by the large properties. In other words, small real estate owners are required to pay a portion of the large owners' taxes. Table X shows, in per cent, the average excess taxes which the small properties included in this study were required to bear during the last 10 years because of overassessment.

It also shows the reduction in taxes on large properties, and the per cent of the total tax levy on these properties misplaced because of unequal assessment of large and small properties,

TABLE X.—Decrease in taxes on large properties, increase on small properties, and total tax misplaced because of inequalities in assessing large and small parcels of real estate Average, 1913 to 1922.

	Per cent decrease in tax on large properties.	Per cent increase in tax on small properties.	Per cent of total real estate tax misplaced because of unequal assessment of large and small properties.
Farm real estate.....	7.88	9.23	4.25
City real estate.....	5.25	9.17	3.34

The per cent of taxes wrongfully levied on owners of small parcels of real estate, by reason of overassessment of their property, has been calculated on the basis of data given in Tables XI and XII. The ratio of assessed valuation to sale price in Group V of Table XI is above the average for all groups, and in Group VI this ratio is slightly below the average. Hence, the actual zero point, the point where the rate of assessment equals the average rate for all groups, must fall somewhere within these two groups. In arriving at the per cent of excess taxes levied on the small properties, it was necessary to determine the actual zero point. This was done on the basis of the deviation of the ratio of assessment of the other groups from the average for all groups. In this way, it was possible to calculate the amounts of the excess and of the deficit taxes that do not appear in Table XI. This amount is so small (about $25) that it is almost negligible. It would hardly be necessary to explain in greater detail how these calculations were made. Suffice to say that the excess tax on the upper side of the calculated zero point equaled the deficit tax on the lower side, thus indicating the substantial correctness of the method used in dividing these groups.

In the case of city real estate, in Groups VI and VII, Table XII, the same method was used in making the necessary adjustment of data.

It is certain that small parcels of real estate are generally overassessed, as shown in Tables IV and V, and that the small properties of farm land included in this study were required to bear about 7.88 per cent of the taxes which, according to law, should have been borne by the larger properties (Table X). But it is not self-evident

TABLE XI.—Assessed valuation and approximate tax levy per $1,000 of sale price of farm real estate; and excess tax levy on $1,000 sale price, on average piece of property and on total sale price because of differences in rate of assessment.

SIZE GROUP.	Assessed valuation per $1,000 of sale price. (a)	Tax levy on $1,000 sale price, at .0150681 per dollar of assessed valuation. (b)	Tax levy above or below average per $1,000 of sale price.	Sale price of average piece of property.	Total sale price.	Excess tax on account of differences in rate of assessment.		Total tax.
						On average piece of property.	On total sale price.	
Weighted average of all groups..	$656.24	$9.888	.....	$6,353	$65,478,570	.....	.....	$647,451
I.....	857.26	12.917	$3.029	1,222	1,372,168	$3.70	$4,156	17,724
II.....	766.54	11.550	1.662	2,567	4,929,374	4.27	8,193	56,934
III.....	730.17	11.002	1.114	3,993	7,909,382	4.45	8,811	87,019
IV.....	699.69	10.543	.655	5,588	8,399,266	3.66	5,562	88,553
V.....	663.62	10.000	.112	6,885	7,539,188	.77	844	75,392
VI.....	653.32	9.844	—.044	8,662	6,210,503	—.38	—273	61,136
VII.....	623.24	9.391	—0.497	9,714	5,702,269	—4.83	—2,834	53,550
VIII.....	587.10	8.846	—1.042	16,956	23,416,420	—17.67	—24,400	207,142

(a) Assessed valuation and sale price are based on averages for ten years, 1913 to 1922.
(b) The tax levy per dollar of assessed valuation (.0150681) is the average rate on all property outside of cities in Kansas in 1923.

TABLE XII.—Assessed valuation and approximate tax levy for $1,000 of sale price of city real estate; and excess tax levy on $1,000 sale price, on average piece of property and on total sale price because of differences in rate of assessment. (*a*)

SIZE GROUP.	Assessed valuation per $1,000 of sale price. (*a*)	Tax levy on $1,000 sale price, at .036534 per dollar of assessed valuation. (*b*)	Tax levy above or below average per $1,000 of sale price.	Sale price of average piece of property.	Total sale price.	Excess tax on account of differences in rate of assessment.		Total tax.
						On average piece of property.	On total sale price.	
Weighted average of all groups..	$733.00	$26.779	.....	$1,766	$18,066,015	.....	.....	(*c*)$483,790
I.....	969.60	35.423	$8.644	176	248,490	$1.52	$2,148	8,802
II.....	890.20	32.523	5.744	484	750,727	2.78	4,312	24,416
III.....	829.20	30.294	3.515	819	1,267,486	2.88	4,455	38,297
IV.....	804.80	29.403	2.624	1,073	991,620	2.82	2,602	29,157
V.....	764.90	27.945	1.166	1,242	1,391,089	1.45	1,622	38,874
VI.....	745.00	27.218	.439	1,702	1,937,474	.75	851	52,734
VII.....	709.30	25.914	—.865	2,495	2,625,541	—2.16	—2,271	68,038
VIII.....	690.60	25.230	—1.549	5,954	8,853,588	—9.22	—13,714	223,376

(*a*) Assessed valuation and sale price are based on averages for ten years, 1913 to 1922.
(*b*) The tax levy per dollar of assessed valuation (.036534) is the average rate on all property in cities in Kansas in 1923.
(*c*) This exceeds the total for all size groups by $96, an error of about 0.02 of 1 per cent.

that these ratios and percentages express the exact situation throughout the state. As far as the 10,307 parcels of farm real estate included in this study are concerned, the amount of taxes wrongfully placed upon the small properties, because of overassessment, was about 4.26 per cent of all taxes levied on these parcels of real estate. It does not follow inevitably that 4.25 per cent of all taxes on farm real estate in Kansas is levied on small properties in excess of the amount which the law requires them to bear, nor that the small landowners of Kansas pay 7.88 percent of the large owners' taxes. The accuracy of these figures, as measurements of the true situation in the state, rests on the question of how far this body of data is representative of conditions throughout Kansas. Tables II and III show the distribution of the total number of parcels of real estate among the various size groups. If the true value of all parcels of real estate in Kansas were known and if they were classified by the method used in this study, would they be distributed among the various size groups in the same proportion to the total number, as these 10,307 parcels of farm real estate and 10,231 parcels of city real estate are distributed in the tabulations of this report? It is impossible to answer this question accurately, since real estate is subject to an indefinite number of divisions. Available data bearing on this question are sufficient only for rough approximation.

With the aid of the Agricultural Census, it is possible to formulate a general idea of the extent to which the data used in this study include a representative and proportionate number of large and small parcels of farm real estate. If the ratio of the number of large properties (Groups VI, VII and VIII) to the 10,307 properties included in Table IV were greater than the ratio of all properties of corresponding size to all parcels of farm real estate in Kansas, the ratios of assessed valuation to sale price in the various size groups would not be a correct measurement of the amount of taxes wrongfully levied on small parcels of farm real estate because of overassessment. It would place too much emphasis on large properties. The opposite would be true if relatively too many small properties were included.

Table XIII has been constructed for a general comparison of the number of farms in Kansas and the number of parcels of farm real estate included in this study. The census valuation of land and buildings per farm in each size group is compared with the average price of the parcels of farm real estate in Tables IV and VIII.

TABLE XIII.—Size and number of farms and value of land and buildings, compared with the number of sales of farm real estate, by size groups, and price of all sales.

Farms in Kansas according to the U. S. census. (a)					Items of farm real estate included in the comparison of large and small properties.				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Size of farms (acres).	Number of farms.	Number of farms in per cent of total.	Average value per farm. (b)	Total value of land and buildings in per cent.	Size groups.	Number of sales.	Number of sales in per cent of total.	Average price per sale.	Total sale price in per cent.
(1) Total	171,562	100.0	$13,312	100.0	All	10,307	100.0	$6,382	100.0
(2) under 20	7,686	4.5	2,989	1.0	I	1,123	11.0	1,222	2.1
(3) 20 to 49	9,507	5.5	3,889	1.6	II	1,920	18.6	2,567	7.6
(4) 50 to 99	23,219	13.5	5,878	6.0	III	1,981	19.2	3,993	12.0
(5) 100 to 174	53,416	31.2	9,924	23.2	IV	1,503	14.6	5,588	12.8
(6) 175 to 499	62,666	36.5	16,893	46.4	V	1,095	10.6	6,885	11.5
(7) 500 to 999	11,301	6.6	26,924	13.3	VI	717	6.9	8,662	9.4
(8) 1,000 and over	3,767	2.2	51,598	8.5	VII	587	5.7	9,714	8.7
(9)					VIII	1,381	13.4	16,956	35.9

(a) These figures are averages for the two census years, 1910 and 1920.
(b) Value of land and buildings.

It will be noted in Tables IV and XI that the ratio of assessed valuation to sale price, in Groups VI, VII, and VIII, is below the average of all groups. These three groups include 26 per cent of the number of parcels of farm real estate in all groups, and 54 per cent of the total sale price in all groups. The average sale price of the parcels of farm real estate in these size groups is $8,662, or higher. These figures are found on lines 7, 8, and 9, in columns 8, 9, and 10, of Table XIII.

Turning to the other half of the table (columns 1 to 5, inclusive), it will be noticed that the average valuation of land and buildings per farm, as given on lines 5 to 8, is greater than the average sale price of the properties in Size Groups VI to VIII, inclusive. The number of farms having a higher average valuation of land and buildings than the parcels of farm real estate included in Group VI, is 76.5 per cent of the total number of farms. These farms include 91.4 per cent of the census valuation of all farms.

These figures (Table XIII) indicate that the data used in comparing the rate of assessment of large and small properties perhaps do not include a sufficient number of large properties, compared with the total number. This would certainly be the case if the term "parcel of farm real estate," as used in this study, were fully comparable with the word "farm," as defined by the census. A "parcel of real estate" may be, and frequently is, only a part of a farm. Since these two terms are so far from comparable, no precise conclusion can be drawn from Table XIII. Nevertheless, this table suggests that the 10,307 sales of farm real estate in Tables IV and XI probably include relatively too few rather than too many large properties. This, together with the fact that the discrepancy between large and small properties in the rate of assessment has increased in recent years (Table XVIII), indicates that it is probably not an exaggeration to assume that the figures shown in Tables IV, X, and XI are fairly typical of conditions throughout the state.

Probable Amount of Taxes Wrongfully Levied on Small Properties.—Assuming that data included in this study are representative of conditions throughout the state, it is possible to compute the approximate amount of excess taxes wrongfully levied on small properties because of overassessment. Excess taxes levied on the small pieces of farm real estate represented in Table XI were 4.25 per cent of the total levy. This per cent was determined by two methods, first by taking the per cent that the total excess tax

is of total taxes; and, second, by taking the per cent that the excess rate of assessment multiplied by total sale price in each group, is of the average rate for all groups times total sale price. These two methods produced the same result.

Farm real estate in Kansas bore $26,213,000 of property taxes in 1923, or 34.7 per cent of the total levy for all purpose.[9] This amount multiplied by 4.25 per cent gives $1,114,000 as the probable amount of taxes wrongfully levied on the smaller pieces of farm real estate. Again, this is based on the assumption that results shown in this investigation correctly represent conditions throughout Kansas. As already pointed out, there is good reason to believe that these results are not an exaggeration of conditions in the state, (1) because of the large body of data used, (2) because these data were taken from all parts of the state, and (3) because large properties have evidently not been overemphasized in the tabulation.

The tax levy on city real estate in 1923 was $20,928,000 or 27.7 per cent of the total levy for all purposes in the state. This figure multiplied by 3.34 per cent gives $699,000 as the probable amount of excess taxes levied on the small city properties by reason of overassessment.

A Hindrance to Farm Ownership. — Discrimination against the smaller pieces of farm real estate in the rate of assessment, and the consequent increase in the tax burden on small properties, certainly must be a hindrance to farm ownership. Many tenants hope to become independent farm owners first by purchasing comparatively small farms with correspondingly small initial payments, and then gradually paying off their mortgages. The initial purchase price must generally come from earnings accumulated, first as laborers and later as tenants. The mortgages must be paid out of the net earnings of the farm business, after deducting the cost of the family living. Taxes are among the items that must be deducted from gross returns before farmers can begin to count net income.

All those who have given careful thought to land taxation know that taxes take a large part of the net income from land. The following figures show the average tax on land and improvements per acre of all taxable land in 1923, in the various sections of Kansas:

9. See Tables XXIII and XXIV.

Section of the state.[10]	Average tax per acre of taxable land with improvements, 1923.
Corn belt	91.0
General farming	75.7
Flint Hills	49.0
Eastern half of wheat belt	52.5
Western half of wheat belt	28.1
Grazing region (southwest)	18.7
Average for the state	50.7

Although these figures were prepared as a part of another study in taxation, they are given here so that owners and prospective owners of land in various parts of Kansas can formulate, on the basis of their first-hand knowledge of land income, a better opinion of the amount that taxes take of the returns from land. It is the problem of another study to show definitely how much of the income from farm land is taken by taxes. Suffice here to mention the fact that taxes take a large part, in some instances all, of the rent of land.

This study shows that small farms bear a large part of the taxes which would be borne by large properties if real estate were assessed uniformly, as prescribed by law. This tax, in addition to the taxes levied according to law, must be paid out of farm earnings. It is obvious that this will reduce the amount that can be applied on the farm mortgage, and thus make it more difficult to pay for the farm than if property were assessed in accordance with the intent of the law.

In opposition to the contention that overassessment of small properties is a hindrance to farm ownership, it might be held that this additional tax, as other property taxes, is capitalized in the purchase price of the land, thus reducing the sale price of small properties to a point where it would be within reach of small investors. This is logical enough, except that it does not take into account the highly diffused nature of this excess tax. It is not easily perceived. This investigation is concerned with a general tendency; but it must be recognized that there are many individual exceptions. Many small farms are no doubt assessed at a lower per cent of true value than a number of large farms. Consequently, very few farmers, if any, are aware of the fact that small farms are generally assessed at a higher ratio to sale price. Hence, it is unlikely that this general and pronounced tendency to overassess small properties, and consequently to overtax them, enters into the calculations of any considerable number of prospective buyers and sellers of small farms.

10. See figure 1 for the position of each section on the map of Kansas.

The important fact, from the standpoint of farm ownership, is that overassessment makes small farms less profitable than they would be otherwise. Those who are about to begin their careers as farm owners are usually able to make only a small initial investment. The large farms are beyond their reach; and the small farms are made less profitable by overassessment. Consequently, discrimination against small properties is a hindrance to independent farm ownership.

A few concrete illustrations may serve to emphasize more fully the effect of unequal assessment on farm ownership. The average sale price of the 7,622 items of farm real estate included in Groups I to V, inclusive (Table XII), was $3,955. Assuming that the results of this investigation correctly represent conditions in the state, as a whole, excess taxes to the amount of $1,114,000 were paid on small properties in Kansas in 1923 because of unequal assessment. This sum would buy outright, each year, 282 pieces of farm real estate at $3,955 each. In 20 years it would pay 3,328 Federal Farm Land Bank loans at $4,000 per loan, with 5½ per cent interest. In 10 years it would pay 2,099 such loans. These figures are not intended as specific measurements of the effect of overassessment of small properties on farm ownership, but rather to emphasize the fact that this discrimination is a hindrance to farm ownership.

Possible Effect on Size of Farms.—It is logical to assume that overassessment of small properties tends toward a decrease in the number of small farms and an increase in the average size of farms. But it should not be assumed that this is the principal cause of the increase in the average size of farms in Kansas from 244 acres in 1910 to 274.8 acres in 1920.

Possible Effect on Standard of Living.—Overassessment, and the consequent overtaxation, of small properties surely must have a depressing influence on the standard of living of those who make their living by tilling small farms. It will not only diminish their opportunities to become independent farm owners, as already pointed out, but will also reduce the income available for food, clothing, education, and recreation for the members of the family.

Possible Effect on Home Ownership.—Overassessment of small city properties probably has a depressing influence on home ownership. Here, as in the case of farm real estate, owners of small properties are required to bear a part of the taxes which, according to law, should be borne by the owner of large properties.

In 1923, excess taxes amounting to about $699,000 were paid by owners of small city properties, if the data included in this study are typical of conditions throughout the state. The average sale price of all items of city real estate included in Groups I to V, inclusive (Table XII), was $699. The probable amount of taxes wrongfully levied on small city properties in 1923 on account of overassessment would buy 1,000 parcels of city property at $699 per parcel. It would buy 175 town properties worth $4,000 each. In ten years it would pay off 1,165 loans of $4,000 each under a building and loan plan requiring a payment of $50 per month. These figures are used merely to show that general overassessment of small city properties is perhaps a hindrance to independent home ownership. However, this hindrance to ownership does not seem to be quite as clear in the case of city real estate as in farm land.

It has been pointed out (Sec. III), that the lower size groups of Table V, especially Group I, probably include sales of a relatively greater number of vacant lots than the upper groups. If this is the case, overassessment, and the consequent overtaxation, of smaller lots would tend to force them into use sooner than if they were not overassessed. There are those who believe that the sooner lots are forced into use the better it is for the community. But it should be borne in mind that many disadvantages may come to cities and towns by a forced utilization of the land within the community limits.

Possible Effect on City Planning.— Premature use of lots for building purposes may cause the erection of cheap and unsightly structures and thus be a hindrance to wise city planning. Cities and towns of Kansas have an abundance of land, compared with the larger cities in other parts of the country. Hence it is possible to purchase lots for residential purposes, at a reasonable figure, within a comparatively short distance from the principal business sections. Taxation of city real estate has an important bearing on the development of residential districts. Heavy taxation of building sites makes it necessary for people to economize on land. This results in more crowded residential sections. On the other hand, a lighter land tax is an encouragement to wider parkings, larger grass lawns, more space for family gardens, etc., all of which improves the appearance and enhances the home value of residential districts.

The opinion may be advanced that disproportionately high taxes on vacant lots would reduce their sale price and thus make it easier for people who want homes to buy them. But this argument is

not based on all the facts pertaining to home ownership. The value of a lot in most Kansas towns is a relatively small part of the price of a residence, while the price of farm land is by far the principal part of a farm. Land alone was 87.5 per cent of the combined value of farm land and improvements in Kansas in 1920. While the price of land is the principal obstacle to farm ownership, the cost of building material and labor, and the high taxes on the home after it is built, are the real dificulties that must be met by those who would be home owners.

Therefore, while overassessment of small items of city real estate may have only a small influence on home ownership, it probably has a greater effect on city planning.

IV. INEQUALITIES AMONG INDIVIDUAL PROPERTIES.

Unequal valuation of large and small properties is not the only inequality in the assessment of real estate in Kansas. Wide disparity also exists among individual properties, and to a lesser extent among townships, and among the various counties.

It was noted in the beginning of this bulletin that justice within the law requires uniform valuation of all property. Students of taxation and administrators of existing tax laws have repeatedly pointed to the fact that the present system of assessing property has resulted in gross inequalities. The state tax commission has made suggestions from time to time concerning needed legislaton to improve the present system. Minor aspects of these suggestions have been acted upon, but the major recommendations have not been realized. Consequently, great inequality exists among individual properties. The result is that certain owners are required to pay heavier taxes than the law intends they should pay; while others, by reason of underassessment of their property, are not called upon to bear their full share of the public burden.

Table XIV shows that great inequality exists in assessing real property. This table includes 1,140 parcels of farm real estate and 1,954 parcels of city real estate, transferred in *bona fide* sales in 15 counties in a period of two years (1921 to 1922). These properties are classified in 18 groups according to the ratio of assessed valuation to sale price of each piece of property.

The assessed valuation of the farm real estate represented by this table is 63.6 per cent of the sale price, based on the weighted average. The corresponding figure for city real estate is 69.7 per cent. It will be noted that only 124 items of farm real estate fall

TABLE XIV.—Distribution of 1,140 items of farm real estate and 1,954 items of city real estate according to the per cent of assessed valuation to sale price of each item; 1921 and 1922.

PER CENT.	Below 35 per cent.	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70 to 74	75 to 79	80 to 84	85 to 89	90 to 94	95 to 99	100 to 104	105 to 109	110 to 114	115 per cent and above.
Farm real estate . . .	39	39	70	87	109	123	124	90	95	77	64	68	44	26	26	15	8	37
City real estate . . .	127	61	86	116	160	150	181	155	157	130	134	85	86	47	75	30	19	155

within the group (60 to 64) which includes the weighted average for farm real estate. As far as the 1,140 items of farm real estate are concerned, absolute equality of assessment would exist only if all items were assessed at 63.6 per cent of true value. But everyone recognizes the fact that complete equality is unattainable, and that approximate equality is the only practical objective. Full equality is approached in proportion as all items of real estate are concentrated at the point where lies the weighted average of all items. Therefore, Table XIV would reveal approximate equality in the assessing of farm real estate in proportion to the concentration of all items in and near the 60-to-64 per cent group.

The same principle applies to city real estate, where equality would exist in proportion to the degree of concentration of the 1,954 items in and near the 70-to-74 group. Although Table XIV shows a tendency toward concentration near the weighted average, each group in both directions from this point contains a large number of items. Such wide dispersion reveals great inequality in the assessing of individual items of both farm and city real estate. A measurement of these inequalities is discussed in another part of this bulletin (Table XIX).

V. INEQUALITIES AMONG TOWNSHIPS.

Any assessing unit whose property is assessed at a lower per cent of true value than the property of the larger taxing unit, of which the assessing unit is a part, pays less than its share of the total tax burden of the larger unit. For example, any township that is assessed at a proportionately lower ratio to true value than the county, pays less than its share of county taxes, and any county with an assessment proportionately lower than that of the whole state, pays less than its share toward the support of the state government and state institutions.

Table XV shows the average ratio of assessed valuation to sale price by townships in six counties for a period of 10 years. For the purpose of indicating the amount of data constituting the basis of this table the number of acres reported sold in each county during the 10-year period is given at the bottom of the table, in per cent of all taxable land in 1923.

A comparison of the ratio of assessed valuation to sale price, in each township, with the weighted average for the county reveals the fact that for a period of 10 years certain townships have borne a larger share of the county taxes than the law intended they should

TABLE XV.—Assessed valuation of farm real estate in per cent of sale price by townships in six counties: Average for ten years, 1913 to 1922.

TOWNSHIP. (a)	Cowley.	Decatur.	Jewell.	Meade.	Reno.	Shawnee.
County average	65.4	55.5	73.3	52.2	67.9	67.9
Township 1	67.6	59.1	73.7	45.4	71.7	66.0
Township 2	71.5	58.8	71.1	54.6	69.5	72.6
Township 3	71.3	66.8	72.8	54.0	64.8	64.6
Township 4	64.9	55.5	70.0	49.5	68.0	63.6
Township 5	65.0	59.1	71.9	55.0	71.5	68.9
Township 6	72.1	53.6	68.8	56.5	82.2	66.0
Township 7	53.8	54.2	69.4	53.7	62.3	62.3
Township 8	60.2	47.8	67.1	56.2	76.4	73.8
Township 9	71.9	50.3	73.7	48.7	68.9	65.7
Township 10	59.7	55.0	80.5	.....	77.9	73.4
Township 11	60.8	54.2	75.6	.....	73.5	70.4
Township 12	58.2	57.4	74.8	.....	69.5	(c)66.0
Township 13	74.2	58.5	81.0	.....	68.0	.....
Township 14	77.8	54.4	69.8	.....	62.1	.....
Township 15	69.0	52.0	76.7	.....	76.0	.....
Township 16	71.1	54.7	79.6	.....	66.6	.....
Township 17	74.7	59.6	78.5	.....	65.3	.....
Township 18	76.4	58.9	76.5	.....	68.3	.....
Township 19	65.8	65.4	78.7	.....	71.5	.....
Township 20	52.7	62.4	71.4	.....	72.1	.....
Township 21	69.0	60.9	69.1	.....	67.7	.....
Township 22	71.2	52.7	68.3	.....	68.4	.....
Township 23	60.4	49.6	76.9	.....	71.7	.....
Township 24	62.2	51.2	74.1	.....	52.8	.....
Township 25	57.5	53.5	69.5	.....	71.7	.....
Township 26	.....	.....	.....	.....	67.9	.....
Township 27	.....	.....	.....	.....	62.2	.....
Township 28	.....	.....	.....	.....	69.1	.....
Township 29	.....	.....	.....	.....	70.4	.....
Township 30	.....	.....	.....	.....	69.2	.....
Township 31	.....	.....	.....	.....	58.3	.....
Township 32	.....	.....	.....	.....	67.6	.....
Total acres reported sold, in per cent of all taxable land (b)	9.9	31.0	17.2	33.6	18.4	21.2

(a) Townships are listed by number instead of by name, for convenience in constructing the table.
(b) Taxable land as of 1923.
(c) Average for four years, 1919 to 1922. No report for 1913 to 1918.

bear, while others have contributed less than their part of the county levy. Specific and somewhat technical measurements of these inequalities are given in Table XXI, which is a part of another section (Sec. VIII) of this bulletin.

VI. INEQUALITIES AMONG CITIES.

For the purpose of finding out whether or not real estate in the various cities and towns is assessed at widely differing ratios to sale price, all items of real estate that were reported sold during the 10-year period, 1913 to 1922, in six counties were assembled separately for each city and town. The results are shown in Table XVI. The ratio for each city or town is compared with the weighted average of all city real estate reported sold in the county for the same period.

Since an attempt is made in another part of the bulletin to measure the relative importance of these and other inequalities in assessments, it is sufficient to note here that real estate in certain cities is assessed at a much lower ratio to sale price than is all city real estate in the county. If property in these cities is assessed at a lower ratio to sale price than all property in the state, these cities pay less than their share of state taxes.

VII. INEQUALITIES AMONG COUNTIES.

Equalization of assessment among the various counties has always presented important problems to the State Board of Equalization. This phase of the large and intricate task of equalization is important, for obvious reasons. The state tax, aggregating several millions of dollars annually, is levied by a uniform rate on all taxable property in the state.[11] Those counties in which the ratio of assessed valuation to sale price is generally below the ratio in other counties contribute less than their share toward the support of the state government. Within the meaning of the present law, state taxes can be distributed fairly among the various counties only by a uniform valuation of property among all counties. Table XVII is constructed to show to what extent uniform valuation among the several counties has been attained during the last 10 years. The problem of determining whether there has been any progress during the last 10 years toward greater uniformity in assessment among counties is taken up in the next section (Sec. VIII) and the relative importance of these and other inequalities is shown in Section IX.

11. See Table XXVI, which gives the total tax levy for all purposes, the state levy, and the state tax levy in per cent of total levy, by years, 1913-'23, inclusive.

TABLE XVI.—Assessed valuation of city real estate in per cent of sale price by cities and towns in six counties: Average for ten years, 1913 to 1922.

CITY OR TOWN (a)	Cowley.	Decatur.	Jewell.	Meade.	Reno.	Shawnee.
COUNTY AVERAGE	76.6	53.4	82.3	50.7	68.1	79.7
No. 1	73.8	54.9	71.6	51.5	73.3	65.6
No. 2	81.7	50.2	72.8	53.9	57.3	79.4
No. 3	66.3	54.3	72.0	46.2	69.0	82.8
No. 4	54.5	58.7	77.3	.....	69.6	70.5
No. 5	62.1	39.0	76.7	.....	68.5	.....
No. 6	73.3	40.3	84.3	.....	66.0	.....
No. 7	.....	.....	81.6	.....	69.7	.....
No. 8	.....	.....	.....	.....	71.8	.....
No. 9	.....	.....	.....	.....	70.8	.....
No. 10	.....	.....	.....	.....	64.4	.....
No. 11	.....	.....	.....	.....	43.5	.....
No. 12	.....	.....	.....	.....	61.7	.....
Assessed valuation of city real estate sold, in per cent of total assessment of city real estate in 1923	8.6	28.0	18.8	29.6	5.1	5.6

(a) Cities and towns are listed by number instead of by name, for convenience in constructing the table.

TABLE XVII.—Assessed valuation in per cent of sale price of farm real estate and city real estate by counties: Weighted average for the years indicated.

COUNTY.	Farm and city real estate combined. Average for 10 years, 1913 to 1922.	Farm real estate.			City real estate.		
		Average for 10 years, 1913 to 1922.	Average for 5 years, 1913 to 1917.	Average for 5 years, 1918 to 1922.	Average for 10 years, 1913 to 1922.	Average for 5 years, 1913 to 1917.	Average for 5 years, 1918 to 1922.
STATE AVERAGE	64.6	63.9	67.7	61.3	67.4	75.4	63.4
Allen	63.9	62.1	62.7	61.7	71.7	72.8	70.8
Anderson	72.9	71.8	74.0	68.6	77.9	80.4	76.0
Atchison	73.6	70.2	72.9	68.7	83.5	90.5	79.6
Barber	60.0	58.7	60.7	56.2	65.3	52.4	81.6
Barton	68.9	71.1	76.2	67.0	64.0	79.9	55.7
Bourbon	68.9	67.3	83.8	61.6	72.1	89.9	67.9
Brown	57.8	55.8	63.3	52.2	68.6	80.0	62.0
Butler	65.7	68.4	68.5	68.3	58.8	57.6	59.6
Chase	73.6	73.2	71.3	75.3	76.1	91.2	67.3
Chautauqua	67.8	68.0	70.1	66.4	67.5	76.6	63.1
Cherokee	60.8	58.6	66.0	53.9	66.4	68.0	65.4
Cheyenne	46.6	46.9	56.2	40.3	40.9	58.4	34.7
Clark	50.1	48.9	53.3	42.8	57.1	60.1	50.9
Clay	63.8	63.3	65.1	62.2	67.0	70.5	61.2
Cloud	65.7	66.7	66.1	67.4	62.3	60.2	64.4
Coffey	63.0	62.9	68.4	60.1	63.1	74.2	59.1
Comanche	53.7	53.1	56.0	52.7	46.8	58.4	42.8
Cowley	69.1	65.4	74.5	57.3	77.0	84.4	67.2
Crawford	64.1	63.9	74.3	57.4	64.4	73.1	58.9
Decatur	55.1	55.4	63.2	48.0	53.4	69.9	42.1
Dickinson	56.7	55.5	61.8	51.4	59.8	71.8	55.2
Doniphan	58.9	59.2	59.8	58.6	57.3	58.4	55.8
Douglas	69.0	69.1	75.8	66.4	68.5	71.1	67.6
Edwards	54.0	53.1	52.9	53.2	61.2	62.7	59.7
Elk	61.3	61.9	67.7	58.8	59.1	79.3	51.0
Ellis	64.6	64.6	72.9	52.9	64.8	69.4	58.1
Ellsworth	63.4	62.5	67.5	58.6	67.3	75.5	63.4
Finney	56.6	54.6	54.2	54.9	65.0	82.2	59.0
Ford	56.8	58.0	56.9	58.8	51.2	53.8	50.5
Franklin	68.9	68.4	79.2	64.8	70.9	88.3	64.4
Geary	65.0	62.5	62.4	62.5	70.1	83.8	62.4
Gove	66.1	67.0	83.7	55.4	45.3	87.0	41.2
Graham	67.6	67.2	76.5	61.8	78.4	82.5	75.6
Grant	68.2	68.6	75.0	61.5	54.6	60.2	51.8
Gray	54.1	54.3	53.1	56.4	50.8	56.1	47.8
Greeley	60.2	61.3	83.6	55.6	47.4	48.4	47.1
Greenwood	64.3	64.5	71.5	59.1	63.6	80.3	55.8
Hamilton	76.9	77.9	81.1	74.6	70.3	84.2	54.9
Harper	71.8	71.0	80.4	64.8	75.5	84.9	69.8
Harvey	65.1	64.6	71.0	58.0	67.1	76.2	58.1
Haskell	55.7	55.8	52.3	61.1	50.5	53.0	48.5
Hodgeman	63.8	64.0	62.3	67.1	54.6	66.4	42.8
Jackson	74.8	74.6	67.5	78.2	77.1	66.0	83.5
Jefferson	70.5	70.9	76.9	68.6	67.3	75.3	63.0
Jewell	73.8	73.3	76.1	71.9	81.6	80.2	78.6
Johnson	62.9	62.7	74.7	57.6	64.0	65.5	63.1
Kearny	74.7	74.8	89.2	72.0	72.1	102.8	60.5
Kingman	70.9	71.4	79.3	65.3	67.4	73.1	63.0
Kiowa	61.2	61.9	68.6	57.1	57.4	63.0	54.2
Labette	58.2	66.6	67.4	66.2	34.5	83.3	71.1
Lane	55.3	55.3	61.9	48.8	56.6	72.4	45.6
Leavenworth	76.3	72.3	73.4	69.8	90.2	92.0	85.5
Lincoln	65.3	65.4	68.3	62.4	64.2	67.9	80.9
Linn	70.4	70.1	75.3	64.1	72.0	82.2	65.2
Logan	65.6	65.3	100.5	56.5	69.6	93.7	60.7
Lyon	73.2	71.0	73.8	67.9	81.2	86.6	77.7
Marion	60.4	59.9	63.7	56.9	63.5	69.3	59.7
Marshall	64.9	65.7	75.0	60.5	60.7	64.9	57.2
McPherson	57.9	57.1	55.0	59.6	64.7	70.2	60.0
Meade	51.3	51.4	50.4	53.4	50.8	53.1	47.9
Miami	68.5	69.3	72.7	68.1	65.5	83.9	59.9
Mitchell	68.8	71.2	69.9	72.3	60.2	61.4	58.7
Montgomery	66.7	59.2	62.1	57.0	71.3	83.1	65.3

TABLE XVII.—CONCLUDED.

COUNTY.	Farm and city real estate combined. Average for 10 years, 1913 to 1922.	Farm real estate.			City real estate.		
		Average for 10 years, 1913 to 1922.	Average for 5 years, 1913 to 1917.	Average for 5 years, 1918 to 1922.	Average for 10 years, 1913 to 1922.	Average for 5 years, 1913 to 1917.	Average for 5 years, 1918 to 1922.
Morris	57.1	56.9	61.3	55.1	58.4	69.8	45.8
Morton	56.1	55.1	65.6	51.6	58.1	98.5	53.8
Nemaha	64.5	65.6	70.9	63.6	56.7	61.9	53.2
Neosho	68.3	69.8	61.5	77.8	64.6	68.2	60.5
Ness	49.0	49.7	44.9	57.5	38.8	42.4	35.9
Norton	70.4	69.6	76.7	64.1	79.7	90.8	69.3
Osage	68.9	68.7	76.3	65.9	71.0	78.9	66.0
Osborne	76.3	76.1	80.8	71.3	77.6	82.6	73.7
Ottawa	69.8	68.5	76.7	62.7	80.9	81.8	80.4
Pawnee	72.0	72.1	88.5	66.7	71.4	90.1	68.0
Phillips	61.9	62.2	71.6	58.0	59.9	82.4	54.8
Pottawatomie	63.0	63.4	69.3	59.9	60.0	69.1	54.6
Pratt	67.4	69.4	76.0	60.8	56.7	67.9	51.1
Rawlins	52.4	52.5	62.3	43.1	50.6	63.4	38.2
Reno	68.9	67.8	75.8	63.9	68.2	77.0	68.2
Republic	59.3	58.2	67.1	49.7	68.5	68.4	68.7
Rice	65.1	65.6	69.5	63.4	63.0	84.5	58.9
Riley	65.8	63.5	61.4	65.0	69.4	71.6	69.1
Rooks	68.0	67.3	74.3	62.6	72.0	82.8	67.3
Rush	62.3	62.9	65.4	60.4	54.8	68.1	50.5
Russell	70.7	70.2	76.6	63.6	73.7	81.3	68.7
Saline	63.1	62.0	65.1	59.1	65.8	73.2	59.0
Scott	47.0	46.2	52.0	41.7	51.1	75.1	44.9
Sedgwick	69.8	68.9	73.3	67.1	73.2	97.6	60.2
Seward	60.8	62.1	64.4	59.2	57.5	54.6	58.1
Shawnee	71.4	67.9	73.2	62.5	79.7	83.5	78.6
Sheridan	55.9	56.4	65.0	53.5	47.5	57.5	44.4
Sherman	56.9	55.2	70.7	48.1	69.1	80.4	63.1
Smith	66.4	66.4	67.1	65.7	65.6	66.7	64.1
Stafford	60.9	60.4	64.4	58.4	63.4	68.7	60.3
Stanton	61.9	61.9	63.3	59.4	16.7	16.6	.....
Stevens	55.0	55.3	56.2	54.5	51.3	52.3	50.9
Sumner	65.6	65.5	72.4	61.2	66.0	77.4	60.1
Thomas	60.0	60.4	80.9	46.9	49.3	60.1	46.1
Trego	52.8	52.4	52.9	51.9	57.8	70.8	49.8
Wabaunsee	63.6	63.6	63.7	63.5	64.0	67.7	61.3
Wallace	61.7	60.9	69.7	56.5	70.1	81.0	66.5
Washington	72.0	71.3	82.0	67.7	76.9	85.8	73.5
Wichita	50.2	49.8	70.3	46.5	65.2	81.5	58.1
Wilson	67.6	65.8	75.9	52.6	74.3	79.1	63.6
Woodson	65.8	64.7	64.8	64.6	70.4	74.2	66.7
Wyandotte	69.6	65.4	86.3	62.8	70.1	95.4	64.4

Farm Real Estate and City Real Estate Compared.—City real estate is generally assessed at a higher per cent of sale price than farm real estate. This difference is usually greater in those counties having a proportionately larger amount of city real estate. Figure 5 gives a direct comparison between the ratios of assessed valuation to sale price of farm real estate and of city real estate. The same comparison is shown in somewhat greater detail in Table XVII. Tables IV and V show that farm real estate in the counties included in the comparison between large and small properties was, on the average, assessed at 65.6 per cent of the sale price, and that city real estate was, on the average, assessed at 73.3 per cent of the sale price.

The most probable reason for the higher rate of assessment of city real estate is found in the greater fiscal requirements of cities than of rural districts, and in the legal limitations on the tax rate on city property. Cities in Kansas are limited by state law to a maximum rate of taxation for various public purposes.[12] These limitations vary with the size of cities. For instance, cities of the first class having a population of 40,000 or less shall not fix a tax rate each year for the respective purposes in excess of the following

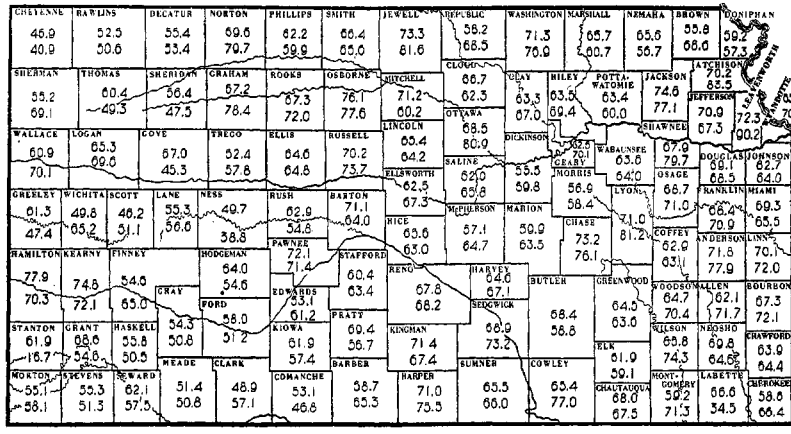

FIG. 5.—Map of Kansas showing assessed valuation of farm and city real estate by counties, in per cent of sale price: weighted average for 10 years, 1913 to 1922.

named rates: "For general revenue fund, two and one-half mills; for general improvement fund, excepting improvements for which special assessments are levied, two mills; for the purpose of paying any existing legal obligations of the city for water, light, heat and power supplied to the city, three and one-half mills; for the purpose of paying interest coupons as they mature and all bonds of the city now or that may hereafter be issued, such tax as may be neccassary to pay the same; far the purpose of paying judgments, one-half mill; for park fund, one-half mill; for library fund, one-half mill; for fire department fund, two and one-half mills; for band fund, three-tenths mill."

Many cities have evidently increased their rate of assessment in order to remain within the legal limit on tax rates, and at the same

12. Revised Statutes of Kansas, 1923, sec. 79-1923 to 79-1933.

time raise sufficient revenue to meet public expenses, By this means it is possible to remain within the law and at the same time respond to the public demand for greater expenditures; but it also means an increase in the portion of state and county taxes borne by those cities that increase their assessments in order to maintain a lower rate of taxation. The governing bodies of such cities, and the taxpayers themselves, are no doubt aware of the fact that state and county taxes are a relatively small part of the total tax levy on city property. In 1923, 80.9 per cent of total taxes levied on all property in cities and towns in Kansas was spent within these taxing units (Tables XXIII and XXIV). The levies for county and for state purposes amounted to only 19.1 per cent of the total levy. A given increase, say 10 per cent, in the assessed valuation of all property in a city would of course result in an almost proportionate increase in the city's quota of state and county taxes. But this increase would be a relatively small increase in all taxes borne by the taxpayers of the city. If the city levy were 80 per cent of all taxes on city property (80.9 per cent was the average throughout the state in 1923), this increase would be only 2 per cent. At the same time an increase of 10 per cent in assessment would increase local revenue by 10 per cent without any increase in the tax rate. In other words, the city may be willing to endure an increase of 10 per cent in the tax burden in order to add 80 per cent of this increase to the local budget, while the remaining 20 per cent of the increase goes to the county and the state as a by-product of the city's efforts to circumvent legal limitation on the tax rate.

Tendency Toward a Lower Rate of Assessment in Western Kansas. — It will be noticed in figure 5 that there is a tendency to assess real estate at a lower per cent of sale price in western Kansas than in the eastern part of the state. This difference is more pronounced in city real estate than in farm real estate, which may be accounted for by the fact that eastern Kansas has more and larger cities. As was noted above, city real estate is generally assessed at a higher rate in counties that have a relatively greater amount of city real estate. Hence it is not at all surprising that a higher rate of assessment on city real estate should be found in the eastern part of the state.

The figures given below show the ratio of assessed valuation to sale price of farm and of city real estate in each section of Kansas. These averages were determined by adding the figures representing

the rate of assessment in the counties, and dividing by the number of counties in each section.

Section of the State.[13]	Farm Real Estate.	City Real Estate.
Corn belt	66.2	70.0
General farming	65.9	67.2
Flint Hills	65.5	67.6
Eastern half of wheat belt	64.9	65.4
Western half of wheat belt	56.8	55.0
Grazing region (southwest)	60.2	57.6
Average for the state[14]	63.5	64.0

It would be difficult, if at all possible, to show statistically why real estate is assessed at a lower ratio to sale price in the western part of the state. One possible reason is that local assessors may seek to fix the assessed valuation of land more nearly on the basis of approximate income from the land, at the time it is assessed, than on sale price. During the last 10 years, the sale price of land in the western part of the state has probably been based proportionately more on anticipated increase in land values than has been the case in the older sections. The writer knows personally of tracts of land in western Kansas that have for several years been rented out for taxes only. Competent observers have reported land that has been, and is, rented for less than the taxes levied on it. On the basis of current net income, such land would have no market value. Nevertheless, it commands a price in the land market because buyers and sellers still cling to their faith in an increase in land values.

Notwithstanding a somewhat lower rate of assessment, delinquent taxes on farm real estate in western Kansas have increased faster during the last six years than in any other part of the state. This increase was 470 per cent from 1917 to 1933 in 10 representative counties of the wheat belt, and 368 per cent in five counties of the southwestern grazing region. The increase in delinquent taxes on farm real estate during the same period in the corn belt section and in the southeastern general farming region was 164 per cent and 171 per cent, respectively. These figures are indicative of the severity of the tax burden on land in western Kansas, notwithstanding a lower ratio of assessed valuation to sale price. This brings up for consideration not only the question of the adequacy and fairness of the present laws governing assessment and taxation but also the whole problem of the general property tax as the principal source of

13. See figure 1 for the position of each section on the map of Kansas.

14. These averages differ slightly from the corresponding averages given in Table XVII, because the latter are weighted.

state and local revenue in Kansas. These questions are beyond the scope of this investigation, and will be treated in a future publication on taxation problems in the state.

VIII. MEASUREMENTS OF PROGRESS IN EQUALIZATION.

Thus far this report has dealt with various types of inequalities in the ratio of assessed valuation to sale price of farm and city real estate. It remains to be shown whether any progress has been made during the last 10 years toward a more uniform rate of assessment. In order to facilitate tabulations, the following have been designated as types of inequalities:

1. Between large and small properties;
2. Among individual parcels of farm real estate;
3. Among individual parcels of city real estate;
4. Among townships;
5. Among counties.

An effort has been made to measure each type of inequality by years to determine whether any change took place during the 10-year period covered by this investigation. This was done by means of the average deviation and the corresponding coefficient of dispersion.

An Explanation of the Coefficient of Dispersion.—The coefficient of dispersion is a measurement of uniformity among items. To *disperse* means to *scatter,* and to say that several items are widely dispersed is equivalent to saying that they are widely scattered. If all parcels of real estate were assessed at the same ratio to true value, the dispersion would be zero; but if one parcel were assessed at 100 per cent of true value, another at 30 per cent, and a third at 15 per cent, there would be a wide dispersion among them. To illustrate, assure four pieces of farm land with the following ratios of assessed valuation to true value. No. 1, 95 per cent; No. 2, 40 per cent; No. 3, 25 per cent; and No. 4, 16 per cent. The following steps are necessary to express the inequality in assessment of these properties in terms of the, coefficient of dispersion:

(1) Add the four items and divide by four to find the average rate of assessment (the arithmetic average); (2) find the difference between this average and each item, by subtracting the smaller figure from the larger; (3) add these differences (pay no attention to plus or minus signs); (4) divide the total of the differences (sum of deviation) by the number of items to find the average deviation, which is the average difference between the rates of assessment of the individual items and the average rate for the four items;

(5) divide the average deviation by the average rate of assessment for the four items, This gives the coefficient of dispersion. Thus—

Item.	Rate of Assessment (Per cent).	Difference between each item and the average (44). (Deviation.)
1	95	51
2	40	4
3	25	19
4	16	28
	176	102

176 ÷ 4 = 44, average rate of assessment.
102 ÷ 4 = 25.5, average deviation.
25.5 ÷ 44 = .579, coefficient of dispersion.

With the aid of this brief explanation, it can readily be seen that the higher the coefficient of dispersion, the greater the inequality among the items which it represents. In this illustration, the coefficient of dispersion has been calculated for the four items. The same calculation has been made for 11,000 items in Tables XIX and XX. The difference lies only in the number of items and not in the principle.

When the coefficient of dispersion is 579, it means that the items included in the calculation fall 57.9 per cent short of being equal. It means that these four items are 57.9 per cent wrong, when the law requires uniform assessment. But it does not mean that 57.9 per cent of the whole property tax burden is misplaced, *i. e.*, placed on the overassessed properties in excess of the amount the law intends they should bear. It does mean, however, that one-half of this per cent of the total levy is misplaced. To illustrate, suppose four pieces of property have the same true value. Suppose further that two of them are assessed at 80 per cent of their value, while the other two have for some reason escaped the assessor's notice. Since two of them are not assessed at all, the average assessment of all of them is only 40 per cent. By the method of calculation explained above, the average deviation is found to be 40 and the coefficient of dispersion 1.00, or 100 per cent. But it is obvious that only 50 per cent of the tax burden is misplaced. If the assessor should discover the two properties that have heretofore escaped his notice, and place them on the tax roll at 80 per cent of their true value, it would reduce the tax burden on the other two properties exactly 50 per cent, assuming the same total levy as before. The per cent of the tax levy misplaced by reason of unequal assessment is only one-half of the coefficient of dispersion, expressed in per cent, because a given amount of taxes wrongfully placed on property is counted twice when it is expressed in terms of dispersion. It is counted once when subtracted from the amount which the underassessed property should bear, and it is counted again when added to the taxes which the overassessed property is legally required to pay. Therefore, when the coefficient of dispersion is 225 (the average for 10 counties from 1913 to 1922, Table XIX), it means that the properties that were assessed above the average rate had to pay 11¼ per cent more taxes than if all property in these counties had been assessed uniformly.

If this measurement shows an increase in a particular type of inequality during the last 10 years, it follows that retrogression instead of progress has taken place in equalization during that period. On the other hand, a decrease in the degree of inequality, as shown by the coefficient, indicates progress in equalization.

INCREASING INEQUALITY BETWEEN LARGE AND SMALL PROPERTIES.

There has been retrogression, rather than progress, in equalization between large and small properties during the last 10 years, as shown in Table XVIII. The coefficient of dispersion for the five-year period, 1913-'17, is .087 as compared with .098 for the five-year period, 1918-'22. This is an increase of 12.6 per cent in the inequality between large and small properties in the second half of the last 10 years, over the first half. The coefficient for the first two years (1913 to 1914) is .092 as compared with .120 for the last two years, an increase of 30 per cent. The average inequality for the 10-year period is expressed by a coefficient of .092. This means that 4.60 per cent of the total tax, levied on the property represented in this table, was placed on small properties in excess of legal requirements, because of overassessment. This figure is reasonably near the figure arrived at by an entirely different method in Table XI, and shown in Table X. The excess tax levied on small properties, because of overassessment as determined by the other method, was 4.25 per cent.

The coefficient of dispersion was calculated for each of the five-year periods shown in the lower part of Table IX, by the method used in Table XVIII. The coefficient for the five years, 1913 to 1915 and 1921 to 1922 was .093, and .092 for the five-year period 1916 to 1920.

The fact that inequality in the rate of assessment between large and small parcels of farm real estate has increased during the last 10 years is quite consistent with the probable reasons for overassessment of small properties. The assessed valuation of all land and improvements in Kansas in 1913 was $1,365,455,604 as compared with $1,738,324,506 in 1922.[15] This was an increase of $372,868,902, or 27.3 per cent, in a period of 10 years. This means that local assessors were constantly facing the necessity of increasing the valuation of property during the 10-year period covered by this study. It is highly probable that a proportionately greater part of this increase was made in the valuation of the smaller properties, because of a

15. Eighth Biennial Report of the Tax Commission to the Legislature. Page 19. 1923.

TABLE XVIII.—Inequalities in the rate of assessment between large and small parcels of farm real estate, by the years indicated, expressed in terms of the coefficient of dispersion.

Basis of calculation (*a*)	10 years, 1913 to 1922.	5 years, 1918 to 1922.	5 years, 1913 to 1917.	1922.	1921.	1920.	1919.	1918.	1917.	1916.	1915.	1914.	1913.
Average (*b*)	.092	.098	.087	.113	.127	.067	.109	.067	.104	.082	.063	.094	.091
Arithmetic average	.092	.097	.087	.114	.133	.080	.095	.064	.111	.085	.064	.082	.094
Weighted average	.102	.112	.093	.122	.147	.085	.128	.076	.115	.081	.069	.104	.096
Arithmetic average and assessed valuation in each size group	.092	.100	.083	.115	.125	.077	.119	.065	.099	.082	.061	.088	.085
Weighted average and assessed valuation in each size group	.082	.082	.084	.102	.101	.044	.094	.064	.089	.079	.059	.103	.088

(*a*) The coefficient of dispersion is here calculated by four methods: (1) by taking the deviation of the ratio of assessed valuation to sale price in each size group (Table IX) from the arithmetic average of all groups; (2) by taking the deviation from the weighted average for all groups; (3) by multiplying each deviation from the arithmetic average by the assessed valuation in each group; and (4) by multiplying each deviation from the weighted average by the assessed valuation in each size group.

(*b*) This is the arithmetic average of the corresponding figures in the four lines below.

greater impressiveness of large numbers, greater influence of large landowners, and a closer examination of small properties by the local assessor.[16]

NO CHANGE IN THE DEGREE OF INEQUALITY AMONG INDIVIDUAL PARCELS OF FARM REAL ESTATE.

There is no evidence of either an increase or a decrease in the degree of inequality in the valuation of individual parcels of farm real estate, irrespective of size, during the 10-year period, 1913 to 1922. Table XIX represents a calculation of the coefficient of dispersion of 7,353 parcels of farm real estate reported sold in 10 counties.

The average coefficient of dispersion for the first five years was .224, for the second five years, .226, and .225 for the 10-year period. This means that, as far as these 7,353 parcels of real estate are concerned, 11¼ percent of the total tax burden on these properties was levied, in excess of legal requirements, on those properties that were overassessed.[17]

SLIGHT INCREASE IN DEGREE OF INEQUALITY AMONG INDIVIDUAL PARCELS OF CITY REAL ESTATE.

Inequality in the valuation of city real estate increased slightly during the 10-year period, 1913 to 1922, according to data compiled for six cities, as shown in Table XX. The coefficient of dispersion for the first 5-year period is .191 as compared with .204 for the second five years, an increase of 6.8 per cent.

The coefficient of dispersion for the 10-year period was .197, which means that the average inequality among the 3,647 parcels of city real estate included in Table XX was 19.7 per cent, and that approximately 9.9 per cent of the tax levy on these parcels of real estate was borne by the properties that were overassessed.

LOW DEGREE OF INEQUALITY AMONG TOWNSHIPS.

Less inequality is found in the rate of assessment among 196 townships in the 10 counties in Table XXI, than in any other of the four types of inequalities. A comparison of the degree of inequality in each type is shown more clearly in column 1 of Table XXV.

16. See Section III for an explanation of the probable reasons for overassessment of small properties.

17. Here, as elsewhere in this bulletin, conclusions are based on a strict interpretation of the present law, which requires a uniform rate of assessment based on the "true value in money" of property.

TABLE XIX.—Inequality in the assessment of individual parcels of farm real estate in ten counties, for the years indicated, expressed in terms of the coefficient of dispersion. (*a*)

YEAR.	Average for ten counties.	Bourbon.	Chase.	Cherokee.	Comanche.	Decatur.	Meade.	Leavenworth.	Reno.	Rooks.	Shawnee.	Number of items.
1913 to 1922.....	.225	.188	.190	.258	.285	.236	.277	.190	.168	.234	.214	7,353
1913 to 1917.....	.224	.158	.181	.258	.311	.235	.312	.213	.160	.210	.205	3,963
1918 to 1922.....	.226	.218	.204	.258	.258	.237	.242	.166	.175	.257	.223	3,390
1913.....	.248	.243	.164	.151	.384	.254	.377	.236	.224	.248	.202	799
1914.....	.220	.113	.182	.260	.228	.210	.335	.242	.175	.234	.221	705
1915.....	.207	.092	.202	.194	.356	.239	.245	.223	.121	.204	.194	794
1916.....	.222	.192	.166	.290	.288	.245	.303	.189	.147	.172	.231	912
1917.....	.224	.150	.190	.394	.300	.227	.300	.175	.133	.190	.178	753
1918.....	.190	.125	.205	.258	.198	.230	.176	.164	.117	.252	.171	649
1919.....	.223	.221	.202	.266	.212	.246	.279	.170	.220	.227	.190	1,129
1920.....	.217	.223	.206	.241	.294	.213	.226	.147	.205	.224	.186	828
1921.....	.261	.261	.....	.273	.410	.272	.291	.162	.171	.232	.279	479
1922.....	.238	.260	.....	.250	.176	.224	.239	.189	.163	.352	.290	305
Number of items..	(*b*) 7,353	616	339	677	365	951	1,042	861	1,106	656	740	.....

(*a*) The coefficient of dispersion was calculated from the arithmetic average of the ratio of assessed valuation to sale price of all items of farm real estate reported sold in each county by years. The average coefficient for each of the five-year periods, 1913 to 1917 and 1918 to 1922, for the ten-year period, and for the ten counties was determined by taking the arithmetic average of the figures for each year and for each county.

(*b*) Total for ten counties.

TABLE XX.—Inequalities in the assessment of individual parcels of city real estate in six cities, for the years indicated, expressed in terms of the coefficient of dispersion.(a)

YEAR.	Average for six cities.	Hutchinson.	Leavenworth.	Manhattan.	Fort Scott.	Topeka.	Winfield.	Number of items.
1913 to 1922	.197	.165	.221	.195	.229	.197	.175	3,647
1913 to 1917	.191	.163	.247	.197	.187	.185	.163	1,555
1918 to 1922	.204	.167	.189	.193	.271	.209	.186	2,092
1913	.164	.177	.271	.160	.106	.187	.081	255
1914	.204	.317	.284	.184	.092	.134	.211	342
1915	.172	.148	.219	.193	.101	.232	.136	251
1916	.194	.089	.218	.219	.327	.171	.142	432
1917	.219	.086	.241	.235	.307	.199	.245	275
1918	.164	.085	.200	.162	.171	.175	.192	369
1919	.220	.263	.257	.178	.218	.198	.203	413
1920	.227	.228	.....	.166	.296	.223	.224	518
1921	.229	.135	.152	.274	.365	.248	.202	469
1922	.179	.122	.148	.183	.305	.203	.110	323
Number of items	(b) 3,647	176	843	857	868	527	376	.....

(a) See footnote to Table XIX, substituting "city real estate" for "farm real estate."
(b) Total for six cities.

TABLE XXI.—Inequalities among townships in rate of assessment of farm real estate, in ten counties, for the five-year periods 1913 to 1917 and 1918 to 1922, and for the ten-year period, 1913 to 1922, expressed in terms of the coefficient of dispersion.

	Average for ten counties. (a)	Brown.	Cowley.	Decatur.	Jewell.	Meade.	Reno.	Riley.	Shawnee.	Sherman.	Stafford.
Average, 10 years, 1913 to 1922.....	.077	.056	.098	.085	.064	.060	.083	.080	.058	.098	.086
Average, 5 years, 1913 to 1917.....	.071	.067	.072	.073	.073	.061	.084	.089	.062	.049	.078
Average, 5 years, 1918 to 1922.....	.082	.044	.123	.096	.054	.058	.082	.071	.053	.147	.093

(a) Includes averages for 196 townships.

The ratio of assessed valuation to sale price by townships (Table XXI) was determined for each five-year period by calculating the per cent that the total valuation of all farm real estate reported sold in the township in five years, is of the total sale price. The arithmetic average for each county was determined by adding the ratios for all townships in the county and dividing by the number of townships. The average deviation and the coefficient of dispersion were calculated from this average for the county. It was deemed inadvisable to attempt to show the inequalities between townships by years, since it sometimes occurs that only one sale is recorded for a township in one year. It frequently occurs that only two or three sales are recorded. Hence, in the case of certain counties, a comparison of inequalities by years among townships would too closely resemble a comparison of inequalities among individual properties.

An average for the ten counties included in Table XXI, indicates a tendency toward greater inequality among these townships, but this tendency is found in only four of the 10 counties, notably in Cowley and Sherman. The comparatively high coefficient of dispersion in these two counties for the second five-year period may be due to exceptional fluctuations in the price of land in some of the townships. Since data for the majority of the counties indicate a diminution in the degree of inequality, a tendency in the opposite direction in the average for the 10 counties, could hardly be taken as conclusive evidence of retrogression in equalization among townships.

TENDENCY TOWARD GREATER EQUALITY AMONG COUNTIES IN THE RATE OF ASSESSMENT OF FARM REAL ESTATE.

There is evidence of improvement in equalization among counties, so far as farm real estate is concerned. The coefficient of dispersion for the 105 counties is shown, by years, in Table XXII. The coefficient for the second five-year period is 4.4 per cent lower than for the first five years. The same tendency toward improvement is found by taking the average deviation from the arithmetic average of the ratios for each five-year period as given for farm real estate in Table XVII, and by calculating the corresponding coefficient of dispersion. By this method, the coefficient for the first five years was found to be .107, and .104 for the second five years, a very small indication of improvement.

TABLE XXII.—Inequalities in assessing farm and city real estate among all counties of Kansas, by years, 1913 to 1923, and for the periods of years indicated, expressed in terms of the coefficient of dispersion. (*a*)

	1913 to 1922.	1918 to 1922.	1913 to 1917.	1923. (*b*)	1922.	1921.	1920.	1919.	1918.	1917.	1916.	1915.	1914.	1913.
Farm real estate.....	.122	.120	.123	.130	.127	.148	.122	.108	.096	.125	.105	.114	.126	.146
City real estate.....	.160	.163	.157	.164	.162	.182	.167	.147	.156	.183	.137	.142	.174	.149

(*a*) The figures representing the ratio of assessed valuation to sale price for each of the 105 counties were added by years and divided by 105 to arrive at the arithmetic average for all counties. The coefficient of dispersion was calculated from this average.

(*b*) This year 1923 was omitted in calculating the 10-year average and the average for each of the two five-year periods, to make the averages for these periods comparable with figures in other tables.

NO CHANGE IN DEGREE OF INEQUALITY AMONG COUNTIES IN TEE RATE OF ASSESSMENT OF CITY REAL ESTATE.

The average rate of assessment of city real estate in the various counties was somewhat further from the average rate for the state as a whole in 1918 to 1922 than in 1913 to 1917, as shown in Table XXII. The coefficient for the first five years is .157 and, for the second five years, .163, a retrogression of 3.8 per cent. The opposite tendency was noted when testing this result, as in the case of farm real estate, by finding the deviation of each county ratio from the arithmetic average for all counties in each of the five-year periods (Table XVII). By this method, the coefficient for the first five years was found to be .141 as compared with .135 for the second five years, a progress of 4.2 per cent. These opposite tendencies are small and nearly equal. Therefore, it may be concluded that no significant change has taken place in the degree of inequality among counties in the assessment of city real estate.

Since city real estate bore only one-third as large a share of the total tax levy for the state government and the soldier bonus as farm real estate in 1923,[18] a greater significance can be attached to the progress that has been made during the last 10 years in equalization of farm real estate among counties than would be warranted alone by the differences in the coefficient of dispersion.

Any improvement that has taken place in the equalization of farm real estate among the counties is unquestionably due to the efforts of the State Board of Equalization to adjust valuation so that each county shall bear, as nearly as possible, its share of the state levy, according to law.

The first column of Table XVII shows the average ratio of assessed valuation to sale price of farm and city real estate combined, for 10 years by counties. The deviation of the county averages from the arithmetic average for all counties gives .087 as the corresponding coefficient of dispersion. This is the lowest degree of dispersion shown in these measurements of inequalities in assessment, except in the case of the 196 townships in Table XII.

PROGRESS AND RETROGRESSION IN EQUALIZATION: SUMMARY.

In these efforts to measure progress in equalization, a few facts appear important, enough to deserve mention in summary paragraphs:

1. Inequalities between large and small properties have increased during the last 10 years. This is altogether a problem in the valua-

18. See Tables XXIII and XXIV.

tion of individual properties, and is therefore different from the problems of equalization among the taxing units—townships, cities and towns, and counties.

2. There has been no change in equalization among individual properties of farm and city real estate. Greater inequalities are found among individual properties, irrespective of size, than among the taxing units or between large and small properties. Here, again, is a problem of the valuation of separate parcels of property. Fundamentally, it is a problem of the local assessors, rather than of the boards of equalization.

3. Greater equality exists among townships than among the other taxing units, if data assembled in Table XXI may be taken as typical of the state as a whole. This seems to indicate that the county boards of equalization have been quite effective in adjusting the valuation of the various townships.

4. There is evidence of progress in the equalization of farm real estate among the various counties, although the evidence is not pronounced. There is no evidence of change in the degree of inequality in the valuation of city real estate among the counties.

These facts indicate that the principal problem lies with the local assessor. The greatest inequalities and the most marked tendency toward retrogression (large *vs.* small properties, Table XVIII) are found at the point of his contact with property.

IX. RELATIVE IMPORTANCE OF VARIOUS TYPES OF INEQUALITIES IN ASSESSED VALUATION OF REAL ESTATE.

It is not enough merely to ascertain which type of inequality is the greatest and where progress or retrogression has taken place in equalization. It is necessary to know the relative importance of these inequalities, before it can be said with certainty where the principal efforts at improvement should be directed.

Relative importance of various inequalities depends as much upon how great a portion of the property tax levy is concerned with each of them as upon the relative magnitude of the inequalities themselves, apart from the tax levy.

Inequality in assessed valuation is important only because it requires the properties that are overassessed to contribute more than their share of the tax burden, while underassessed properties escape a portion of the taxes which the law intends they should bear. Tables XXIII and XXIV have been constructed to show the average amount of taxes levied on each class of property in cities and out-

side of cities for each public purpose, in 1923, in dollars and in per cent of the total levy. It should be noted that every figure in Table XXIV represents the per cent that,the corresponding figure in Table XXIII is of the total tax levy on all property in the state.

Each type of inequality is concerned only with that portion of the tax levy which falls with an equal rate on all the property, or on all taxing units included in the measurement of inequalities. For example, inequalities between large and small properties of farm real estate and among individual parcels of farm real estate are concerned with the total tax levy on farm real estate. This levy was $26,213-000 in 1923, or 34,7 per cent of the total tax levy on all property, as shown in Tables XXIII and XXIV. Likewise, inequality among individual properties of city real estate is concerned with that portion of the total property tax levy (27.7 per cent) that falls on city real estate.

Inequality among townships, as assessing units, is concerned only with the county and the state taxes, which are levied on the various townships at a uniform rate.[19]

State taxes and the soldier bonus are levied on all taxable property in the state at a uniform rate. Consequently, inequality in the rate of assessment among the various counties is concerned only with the state and the bonus levies.

A study of Table XXV reveals the facts listed below with respect to the relative importance of various types of inequalities, from the ,standpoint of the amount of.excess taxes levied on over-assessed property. Inequalities in the rate of assessment of farm real estate among the counties are the basis of comparisons. The various types of inequalities are given in the order of their importance:

1. Inequality among individual parcels of farm real estate, 13.7 times as important as inequalities in the assessment of farm real estate among the counties.
2. Inequality among individual parcels of city real estate, 9.6 times as important.
3. Inequality between large and small properties of farm real estate, 5.6 times as important.
4. Inequalities among townships, 2.1 times as important.

19. Although county taxes vary, both in rate and amount, among the counties, these taxes are here assumed to be uniform, since Tables XXIII and XXIV are based on averages for the whole state.

TABLE XXIII.—Average tax levy on each class of property for each public purpose in 1923, expressed in thousands of dollars.

CLASS OF PROPERTY.		Total tax levy.	State. (a)	Soldier bonus.	County.	Township.	Rural high school.	District school.	Drainage.	City, general.	City schools.
ALL PROPERTY		(b) $75,583	$5,901	$2,411	$16,803	$6,251	$3,010	$11,139	$246	$12,393	$17,429
PROPERTY OUTSIDE OF CITIES.	Total	38,664	4,233	1,730	12,055	6,251	3,010	11,139	246	.....	.....
	Farm real estate	26,213	2,870	1,173	8,173	4,238	2,040	7,552	167	.....	.....
	Lots and improvements	369	40	17	115	60	29	106	2	.....	.....
	Personal property	6,111	669	273	1,905	988	476	1,761	39	.....	.....
	Public service corporations	5,971	654	267	1,862	965	465	1,720	38	.....	.....
PROPERTY IN CITIES.	Total	36,919	1,668	681	4,748	.....	.....	.....	.....	12,393	17,429
	Real estate	20,927	945	386	2,691	.....	.....	.....	.....	7,025	9,880
	Personal property	12,587	569	232	1,619	.....	.....	.....	.....	4,225	5,942
	Public service corporations	3,405	154	63	438	.....	.....	.....	.....	1,143	1,607

(a) State government and all state institutions.
(b) The total tax levy as shown by the records of the tax commission was $75,593,695.00, or $10,675.00 more than the total shown in this table. This in an error in calculation of 0.014 of 1 per cent.

TABLE XXIV.—Average tax levy on each class of property for each public purpose in 1923, expressed in per cent of total levy on all property.

CLASS OF PROPERTY		Total tax levy.	State.	Soldier bonus.	County.	Township.	Rural high school.	District school.	Drainage.	City, general.	City schools.
ALL PROPERTY		100.0	7.8	3.2	22.2	8.3	4.0	14.7	.3	16.4	23.1
PROPERTY OUTSIDE OF CITIES.	Total	51.2	5.6	2.3	16.0	8.3	4.0	14.7	.3	.....	.....
	Farm real estate	34.7	3.8	1.6	10.8	5.6	2.7	10.0	.2	.....	.....
	Lots and improvements	.5	+	+	.2	+	+	.1	+	.....	.....
	Personal property	8.1	.9	.4	2.5	1.4	.6	2.3	.1	.....	.....
	Public service corporations	7.9	.9	.3	2.5	1.3	.6	2.3	+	.....	.....
PROPERTY IN CITIES.	Total	48.8	2.2	.9	6.2	.....	.....	.....	.....	16.4	23.1
	Real estate	27.7	1.3	.5	3.5	.....	.....	.....	.....	9.3	13.1
	Personal property	16.6	.7	.3	2.1	.....	.....	.....	.....	5.6	7.9
	Public service corporations	4.5	.2	.1	.6	.....	.....	.....	.....	1.5	2.1

TABLE XXV.—Relative importance of types of inequalities in the assessment of farm and city real estate.

TYPES OF INEQUALITY.	1 Coefficient of dispersion (10-year period).	2 Per cent of total property tax levy concerned with inequality. (*a*)	3 Column 1 times column 2.	4 Relative importance.	5 Approximate amount of excess tax. (*b*)
Between large and small properties (farm real estate)	.092	34.7	3.19	5.6	$1,206,000
Among individual parcels of farm real estate	.225	34.7	7.81	13.7	2,935,000
Among individual parcels of city real estate	.197	27.7	5.46	9.6	2,072,000
Among townships	.077	16.2	1.25	2.1	472,000
Among counties (farm real estate)	(*c*) .106	5.4	.57	1.0	214,000
Among counties (city real estate)	(*c*) .138	1.8	.25	.4	92,000
Among counties (farm and city real estate combined)	.087	7.2	.63	1.1	231,000

(*a*) The per cent of the total property tax levy in 1923, concerned with each type of inequality, is shown in this column. This per cent has been multiplied by the corresponding coefficient of dispersion, and the result shown in column 3. The relative importance of each figure in this column is shown in column 4, with .57 (farm real estate among counties) as 1. In other words, each figure has been divided by .57 as shown in column 4.

(*b*) Based on real estate levies in 1923. The probable amount of taxes levied on overassessed property in each type of inequality was determined by multiplying the tax levy concerned with each inequality, as shown in Table XXIII, by one-half of the corresponding coefficient of dispersion given in column 1.

(*c*) The coefficient of dispersion for each five-year period added and divided by 2; based on the average for each five-year period in Table XVII.

5. Inequalities among counties, farm and city real estate combined, 1.1 times as important.

6. Inequalities among counties, city real estate only, 0.4 times as important.

X. A PLAN TO BRING ABOUT GREATER EQUALITY IN THE VALUATION OF REAL ESTATE.

One fact stands out more clearly than any other, in this long and detailed analysis of inequalities in the assessment of real estate; namely, that the chief difficulty is inherent in the work of valuation under the present plan. The greatest inequalities, and the most pronounced tendency toward retrogression in equalization, are found at the local assessor's point of contact with property. The state tax commission has repeatedly pointed out the inadequacy of the present system, and has suggested improvements, but legislature after legislature has failed to act on these suggestions.

THE COUNTY-UNIT PLAN OF ASSESSING PROPERTY.

This plan has been advanced a number of times by the tax commission. In its last report to the legislature the commission says:[20]

"What is needed is the creation of larger assessment districts, so that the varying judgment of a large number of workers may be eliminated. The township is now the unit of assessment, but the best results in the way of equality will be impossible of attainment until the county is made the unit of assessment and a single officer given power to assess all property in the county. In this way only can the assessment reflect the judgment of one person, and in only this way will it be possible to secure what is so necessary in distributing the tax burden properly, *i. e.,* an equalization of the assessments."

The data presented in this bulletin support emphatically the commission's recommendation. There is every reason to believe that one person in each county, specially qualified for the work of assessing property, would be able to fix more uniform values on individual parcels of real estate than is attained under the present system. Likewise, he should be able to bring about a more equitable adjustment between large and small properties, so that the small landowner would be required to bear an important part of the large landowner's taxes. The county officer would be able to fix more uniform values on property not only because of superior skill and greater opportunity to devote his time to this work, but also because he would be somewhat farther removed from the per-

20. Eighth Report of the Legislature, Page 30. 1923.

sonal influence of the owners. This would perhaps enable him to do his work more objectively than is possible for the local assessor under the present system.

It is not likely that the county unit plan of assessing property would be more expensive than the present system. In fact it should cost less, because the number of assessing officers would be reduced to a fraction of the present number.

Data assembled in this bulletin indicate that the work of the county boards of equalization has been effective in reducing the inequalities among townships. As noted above, the differences in the rates of assessment among the townships are less than the differences found in any other comparison in this investigation. It is perhaps not excessively optimistic to assume that the county unit plan of assessing individual parcels of real estate would tend to produce comparable results.

SEPARATION OF STATE REVENUE FROM THE GENERAL PROPERTY TAX.

The effect of existing inequalities among counties, in the rate of assessment of real estate, could be eliminated by a separation of state revenue from the general property tax. This could be done by finding new sources that would yield enough revenue to finance the state government and the state institutions. Property taxes would then be the source of local revenue only; and it would cease to be of any practical consequence to any county whether the rate of assessment in other counties was high or low.

In this bulletin a mere mention will be made of a plan for accomplishing this objective, since the separation of state revenue from the general property tax is the subject of another study in Kansas taxation problems. It is probable that the following sources would yield enough revenue to finance the state government and institutions:

1. **Personal Income Tax.**—An income tax law should provide for a low exemption, not to exceed $1,000 for persons without dependents, a low tax rate, preferably 1 per cent on small incomes, and higher rates on large incomes, with the highest rate not exceeding 6 or 8 per cent.

2. **Gross Production Tax.**—A production tax on the gross value of oil and minerals at the point of production would yield a substantial revenue each year. Such a tax would enable the state government to share in the natural wealth that is removed every year from the oil and mineral deposits of Kansas.

3. **Excise Tax on Certain Nonessentials.**—An excise tax on the sale of certain standard commodities classified as nonessentials of luxuries, such as tobaccos and commercialized entertainments, would be a fruitful source of revenue. This would help to reduce the burden on agriculture and other productive business by levying a tax on nonessential or luxurious spending.

Although the separation of the state revenue from the general property tax is desirable because it would eliminate the effect of unequal assessment among counties, the principal advantage of the plan lies in the fact that it would bring about a substantial reduction in the tax burden on real estate and other property, Table XXVI shows the total property tax levy, the state levy, and the state levy in per cent of the total levy, by years since 1913.

TABLE XXVI.—Total property tax levy, state levy, and state levy in per cent of total levy, by years, 1913 to 1923.

YEAR.	Total levy.	State levy.	State levy in per cent of total levy.
1923	$75,617,688	(a) $8,321,775	11.0
1922	69,378,647	5,916,416	8.5
1921	75,962,537	8,504,359	11.2
1920	68,026,739	5,440,339	8.0
1919	55,613,474	6,049,650	10.9
1918	44,543,634	4,013,937	9.0
1917	41,179,180	4,469,219	10.9
1916	35,788,531	3,880,011	10.8
1915	33,849,567	3,620,202	10.7
1914	30,988,122	3,381,757	10.9
1913	29,483,883	3,371,988	11.4

(a) Includes levy for soldier bonus, $2,412,968.

Table XXVI shows the amount of revenue necessary to obtain from sources other than property, in order to separate the state government from the general property tax. These figures also show the amount that such a plan would reduce the tax burden on property. The principal justification for this plan is that it would relieve property of a portion of the burden it now bears, and would distribute the growing cost of government more widely than is possible under the present system.

XI. CONCLUSION.

It has been the purpose of this investigation to determine whether or not there are major tendencies in the present system and in the prevailing practices of assessing real estate in Kansas that have resulted in important departures from the intent of the law. Minor variations from the letter, and even from the spirit, of the law are inevitable under any system of assessing property. It has not

been the purpose of this study to point out inconsequential and unavoidable variations from the legal standard.

Any investigation of the kind reported in this bulletin, is important when it reveals that supposed flaws, or certain shortcomings which it has become popular to take for granted, do not exist in reality. Such results will gradually remove popular illusions and ill-founded beliefs and allow people to turn their attention to more important problems. An investigation is also valuable if it proves that significant faults exist in the present system. Such evidence may bring public attention to bear on these faults, and may in time result in beneficial legislation, or better administration of existing laws, or both.

This investigation is of the latter kind, for it shows that important faults exist in the present system of assessing real estate for taxation. Attention has repeatedly been called to some of these shortcomings by administrators of existing laws, notably by the tax commission. This investigation would serve its purpose if the facts herein presented should cause sufficient attention to be focused on these problems to bring about fundamental improvements in the present system of assessing farm and city real estate in Kansas.

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