

A Study in the Ratios of Assessed Values to Sale Values of Real Property in Oregon



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SUMMARY

1. Real property exclusive of that held by public service utility companies represents more than 70 percent of the total assessed values of the state.

2. The Oregon law requires full and equal assessment of all property.

3. Real properties in the low value groups are as a whole over-assessed in both rural and city assessments. There is a slight tendency for the ratios of assessments of rural properties in some counties to rise in the upper value groups. A similar tendency is pronounced in the assessments in most of the larger cities of the state.

4. The amount of taxes misplaced among the value groups due to inequalities in assessments aggregates less than 4 percent of the total annual levy. The ill results therefrom are unquestionably out of all proportion to the taxes so misplaced.

5. There is a greater variation in the assessments among the value groups of small cities than among the value groups of the larger cities of the state.

6. The variability in the assessments of individual properties in the state, rural and city, is the most significant finding of this investigation. Eighteen percent of all taxes is misplaced. Less than one-half of the real property of the state bears two-thirds of the real property levy and the other one-half of the real property bears the remaining one-third of the levy.

7. There is a strong tendency for the inequalities in the assessments of individual properties to increase with a decrease in general ratios of assessment. This proves the wisdom of the law requiring all property to be assessed at its full cash or actual value.

8. Weighted ratios of assessments for the years 1921 to 1923, indicate that city properties were assessed more highly than rural properties in twenty-one of the thirty-six counties of the state. Similar data for the years 1924 to 1926, indicate that city properties were assessed more highly than rural in only nine counties of the state.

9. Probable causes of variations in assessments of properties in different value groups: Small properties more easily evaluated than large properties; less frequent complaint by the small taxpayer; and perhaps a recognized overassessment in some counties of vacant lots and small acreages.

10. Probable causes of variations in assessments of individual properties: Low ratios of assessed values to actual values generally; prevalent idea that real properties bear an unfair portion of the total tax levy; inadequate expenditure of time and skill in the making of actual assessments.

11. Probable results of inequalities in assessments: Acts as a check to the purchase of small acreages and lots, frequently the first step in obtaining a home; places a burden upon those least able to bear it; may artificially stimulate a building program; creates dissatisfaction on the part of those overassessed; gives the state an unmerited reputation of being tax-ridden; is not conducive to good citizenship.

12. Suggested remedies: A thorough revision of the old assessment rolls is the only thing that will bring about an equalization. A constant change in assessed values coincident with changes in actual values is the only thing that will maintain equality in assessments. Adequate funds are prerequisite to this work.

A Study in the Ratios of Assessed Values to Sale Values of Real Property in Oregon

By W. H. Dreesen

I. INTRODUCTION

The principal source of revenue of the State of Oregon and its political subdivisions is the general property tax with real property constituting the major portion of the general property.¹

Rural real property, including tillable lands, non-tillable lands, and timber lands, represents approximately 40 percent of the total assessed values in the state, while city or urban real property averages about 31 percent of the assessed values. Real property exclusive of that held by public service utility companies represents more than 70 percent of the total assessed values of the state. Public service utility property has increased from 5.5 percent of the total in 1906 to nearly 15 percent in 1926, and personal property has decreased from 19 percent to about 13 percent of the total assessed values during the same period.²

TABLE I. STATEMENT OF MAJOR SOURCES OF REVENUE IN OREGON

Year	Taxes levied on assessment rolls in Oregon*			Motor vehicle department fees†	Gasoline tax receipts†	Inheritance tax receipts‡
	Taxes levied for state purposes	Taxes levied for all other purposes	Total levies on rolls			
1921....	\$9,493,105	\$31,690,846	\$41,183,951	\$ 2,334,683	\$ 299,675	-----
1922....	9,376,289	31,097,716	40,474,005	3,290,814	567,826	\$ 651,504
1923....	8,835,295	32,201,890	41,037,186	4,049,967	767,880	-----
1924....	7,460,170	32,764,581	40,224,751	4,791,317	1,943,190	631,145
1925....	7,492,761	35,167,577	42,660,338	5,311,977	1,965,110	-----
1926....	7,200,830	37,774,217	44,975,048	6,025,035	2,301,601	1,101,283

*On assessment rolls of preceding year. Biennial Reports State Tax Commission.

†For year ending September 30. Biennial Report, State Treasurer.

‡Amounts given are for bienniums, 1921-1922; 1923-1924; 1925-1926.

The variations in the percentages that each of these items represents of the total values have been slight as is shown in Table II and Fig. 1.

Purpose of the study. It is apparent that the real properties of the state bear the greater portion of the tax burden and therefore any discrepancies in the assessment of these properties are significant. The object of this study is to discover any existing inequalities or tendencies

¹The amount collected under the State Income Tax of 1923, in force for one year, was \$2,928,320.65. Ninth Biennial Report of the State Tax Commission, page 49.

²No segregation of personal and real property of public service utility companies appears on the assessment rolls of the state.

TABLE II. PERCENTAGE THAT EACH ITEM REPRESENTS OF THE TOTAL ASSESSED VALUE OF ALL GENERAL PROPERTY IN THE STATE¹

Year	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926
Tillable land ²	13.54	12.90	11.35	19.50	25.43	25.09	25.62	24.82	23.76	23.22	23.14	22.98	23.33	23.10	24.51	24.96	24.85	16.85	16.28	16.14	15.76
Non-tillable land	21.29	23.77	27.25	20.13	13.34	12.87	11.93	13.26	12.97	8.43	9.21	8.02	7.13	7.96	7.86	8.13	8.99	11.51	11.44	10.81	10.42
Timber lands										6.81	4.93	6.63	6.97	6.38	6.74	6.87	6.38	11.08	11.00	10.79	10.44
Improvements on lands	3.97	3.46	3.39	3.16	2.61	2.65	2.64	2.62	2.77	2.69	2.94	2.97	2.90	3.03	3.09	3.24	3.39	3.64	3.70	3.80	3.82
Total rural	38.80	40.13	41.99	42.79	41.38	40.61	40.19	40.70	39.50	41.15	40.22	40.60	40.33	40.47	42.20	43.20	43.61	43.08	42.42	41.54	40.44
Town and city lots	25.44	23.38	24.33	22.82	23.62	23.85	24.95	24.51	24.89	24.60	24.49	23.44	22.13	21.88	21.26	20.09	20.27	19.23	18.86	18.96	18.94
Improvements on lots	11.25	9.65	10.12	9.81	8.96	9.56	9.26	9.53	10.02	9.59	10.05	9.70	9.20	9.29	9.35	9.93	10.56	11.02	11.55	12.35	13.51
Total urban	36.69	33.03	34.45	32.63	32.58	33.41	34.21	34.04	34.91	34.19	34.54	33.14	31.33	31.17	30.61	30.02	30.83	30.25	30.41	31.31	32.45
Grand total rural and urban real property	75.49	73.16	76.44	75.42	73.96	74.02	74.40	74.74	74.41	75.34	74.76	73.74	71.66	71.64	72.81	73.22	74.44	73.33	72.83	72.85	72.89
Public service utili- ty property	5.51	7.27	7.17	8.10	11.51	11.96	12.37	12.47	13.53	13.05	13.40	13.00	12.38	12.22	11.90	12.13	12.25	13.61	14.02	14.30	14.57
Personal property..	19.00	19.57	16.39	16.48	14.53	14.02	13.23	12.79	12.06	11.61	11.84	13.26	15.96	16.14	15.29	14.65	13.31	13.06	13.15	12.85	12.54

¹Based upon Biennial Report of State Tax Commission.²Segregation of land into tillable, non-tillable, and timber is not complete for several counties. It has significance only in comparing data of one year with another.

TABLE III. NUMBER OF ACRES IN CLASSES OF LAND DESIGNATED FROM 1908 TO 1926 (THOUSANDS OMITTED)

Year	1908	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926
Tillable land ²	3,073	4,548	10,202	10,720	11,563	11,259	8,043	10,258	9,655	10,037	10,662	10,133	10,977	10,422	10,508	10,244	10,271	10,962	10,968
Non-till- able land	19,038	19,233	13,753	14,451	13,740	13,887	13,931	10,977	10,731	10,581	9,814	11,294	11,034	11,854	12,492	13,342	13,797	13,517	13,845
Timber land							1,301	4,527	3,503	3,841	4,241	3,826	3,813	3,785	3,379	3,219	3,185	2,809	2,689
Total acres	22,111	23,781	23,955	25,171	25,303	25,146	23,275	25,762	23,889	24,459	24,717	25,253	25,824	26,061	26,379	26,805	27,253	27,288	27,502

²Segregations are incomplete. In a number of counties all lands, tillable, non-tillable, and timber lands are included under tillable lands.

in the assessment of these properties in the state; probable causes and effects of such tendencies; and possible remedies for them.

The problem treated in this study is essentially one in the distribution of the burden of taxation, state, county, and city, among the individual holdings of real property. This investigation does not deal with the distribution of the state tax burden among the different counties. The State Tax Commission acting in the capacity of a State Board of Equalization annually establishes the county ratios.

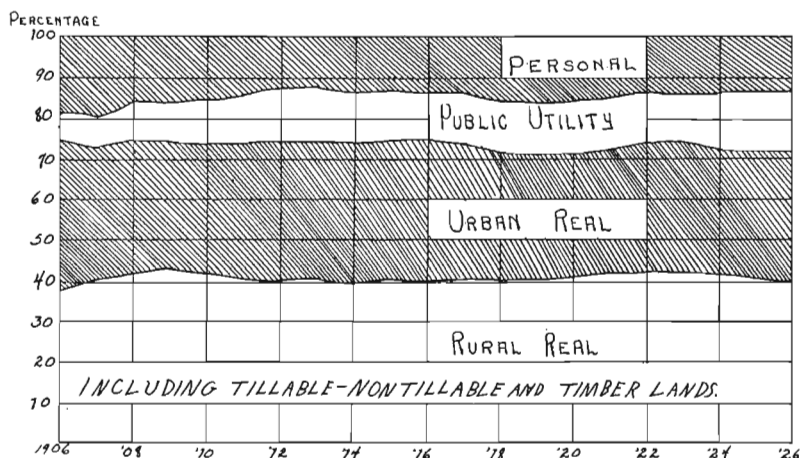


Fig. 1. Percent of total assessed value of all property in the state represented by each of the various classes of property covering a period of twenty years, 1906 to 1926.

Oregon Law on assessment. The evident intention of the taxation laws of the state is equality in assessments. The law provides for full and equal assessment of all property within the state:

"... the assessor shall enter in such assessment roll a full and complete assessment of such taxable property, including a full and precise description of the lands and lots ... and said lands or town lots shall be valued at their true cash value, taking into consideration the improvement on the land ...

"All personal property not exempt from taxation shall be valued at its true value in cash ...

"True cash value of all property shall be held and taken to mean the amount such property would sell for at a voluntary sale made in the ordinary course of business, taking into consideration its earning power and such other factors as may be applicable for determining such value."¹

The requirement in the law that all property be assessed at its fair cash value, or full value, would seem to imply that equality of assessment is most easily attainable if assessments are made on the one hundred percent basis. Data in this study verify this implication.

¹Laws of Oregon, Sections 4268, 4269.

TABLE IV. DISTRIBUTION OF SALES OF RURAL PROPERTIES BY VALUE GROUPS FOR ALL COUNTIES FOR THE YEARS 1921 TO 1926

All counties in classes "A," "B," and "C"	Value groups based on sale price									
	All groups	I	II	III	IV	V	VI	VII	VIII	IX
Total	16,806	1,972	2,743	2,698	2,159	1,620	1,088	815	2,509	1,202
Class "A"		Below \$500	\$500 to	\$1,000 to	\$1,500 to	\$2,000 to	\$2,500 to	\$3,000 to	\$3,500 and above	.....
Total	1,090	96	157	131	135	106	89	59	317	.....
Curry	104	18	19	10	10	4	3	8	32	.....
Grant	257	19	46	36	36	26	22	14	58	.....
Harney	201	31	25	26	25	13	15	7	59	.....
Jefferson	244	9	30	40	28	24	25	12	76	.....
Lake	284	19	37	19	36	39	24	18	92	.....
Class "B"		All groups	Below \$1,000	\$1,000 to	\$2,000 to	\$3,000 to	\$4,000 to	\$5,000 to	\$6,000 to	\$7,000 to
Total	14,501	1,652	2,348	2,384	1,877	1,425	938	703	2,085	\$14,000 and above
Baker	488	86	114	65	35	32	31	29	60	36
Clackamas	1,367	138	226	234	209	144	90	89	183	54
Clatsop	205	42	21	31	30	19	11	8	16	27
Columbia	451	99	93	77	58	38	17	17	27	25
Coos	301	67	68	45	27	21	15	10	32	16
Crook	283	37	65	52	29	27	14	7	28	24
Deschutes	348	20	71	55	63	36	17	22	45	19
Douglas	695	108	125	117	83	71	41	27	83	40
Gilliam	143	16	19	15	21	15	6	2	22	27
Hood River	362	43	66	50	47	25	22	24	53	32

RATIOS OF ASSESSED VALUES TO SALE VALUES

Jackson	569	50	80	101	79	61	40	30	86	42
Josephine	352	104	59	70	41	23	16	13	18	8
Klamath	367	29	46	100	55	36	25	10	42	24
Lane	933	103	144	169	123	92	67	51	129	55
Lincoln	320	53	62	56	38	19	16	11	43	22
Linn	838	54	74	129	100	100	63	53	188	77
Malheur	325	47	85	53	35	26	14	11	36	18
Marion	1,397	85	189	224	204	152	110	81	267	85
Morrow	246	30	41	43	28	23	7	7	32	35
Multnomah	347	23	34	56	59	42	25	24	57	27
Polk	562	55	73	91	67	70	40	18	101	47
Sherman	165	13	19	11	9	10	6	6	28	63
Tillamook	205	28	20	25	20	16	16	9	44	27
Union	415	64	72	40	52	35	21	19	56	56
Wallowa	309	29	59	50	40	23	18	10	48	32
Wasco	379	43	73	73	47	33	17	12	42	39
Washington	1,110	94	172	192	162	134	96	49	146	65
Wheeler	147	33	35	25	8	9	7	3	20	7
Yamhill	872	59	143	135	108	93	70	51	153	60
Class "C"	All	Below	\$1,500 to	\$3,000 to	\$4,500 to	\$6,000 to	\$7,500 to	\$9,000 to	\$10,500 to	\$16,000
Total	groups	\$1,500	2,999	4,499	5,999	7,499	8,999	10,499	16,000	and above
Benton	1,215	224	238	183	147	89	61	53	107	113
Umatilla	423	51	86	76	64	24	25	19	41	37
Umatilla	792	173	152	107	83	65	36	34	66	76

Sources of information. The Office of the State Tax Commission contains a complete record of all real property transfers in the state for the years 1921 to 1926 inclusive, with the following exceptions: Nominal considerations where the Government stamp is under \$2.00¹; sales executed during any period preceding the twelve months for which the data are gathered; forced sales and sheriff's sales.²

The State Tax Commission collected these data for the State Board of Equalization to aid that body in equalizing the county assessments and establishing the county ratios for the levying of the state tax. Therefore only representative or bona fide transfers of real property were selected. Opposite the sale price of each transfer was placed the assessed value of the property for the corresponding year.³ In this manner the assessed value of each transfer could be compared with the sale value; likewise the ratio of assessed value to sale value of all transfers for the county or city could be computed.^{4,5} Through the courtesy of the Office of the State Tax Commissioner the author was provided with the above described data without which this study would have been impossible.

The data were compiled upon the basis of the statistical fact that a considerable number of frequencies are necessary to prove any trend or tendency. An occasional event proves nothing. No conclusion is valid unless based upon a sufficient body of data.

In the study of the ratios of assessed values to sale values, all the transfers of real property in the state as collected by the State Tax Commissioner are used. These consist of 16,806 rural property transfers

¹It has been estimated that this excludes about one-half of the small transfers.

²The Federal Law (now repealed) required during the six years 1921 to 1926 that a revenue stamp be attached to all real property transfers at the rate of \$0.50 for every \$500 of the sale price or fraction thereof.

³For example, the assessed value of a piece of property assessed as of March 1 appears opposite the sale price contracted for any time during the twelve preceding months.

⁴The State Tax Commissioner has classified all transfers into classes A and B. Class A contains all transfers in which the actual consideration is entered into the deed verified by the revenue stamp, and Class B contains all transfers in which the actual consideration is not found in the deed but is calculated from the revenue stamp. The method used by the Tax Commission in calculating the consideration from the revenue stamp is as follows: Every fifty cents of the revenue stamp is multiplied by \$500 and then \$400 is deducted from the product; e.g.—Revenue stamp \$5.00 $\div .50 = 10$. $10 \times \$500 = \$5,000 - \$400 = \$4,600$ as the consideration. In this study \$250 instead of \$400 is deducted from the product; e.g.—Revenue stamp \$5.00 $\div .50 = 10$. $10 \times \$500 = \$5,000 - \$250 = \$4,750$. This method gives a slightly higher consideration and is based on the assumption that on the average the actual consideration will fall about midway of the limits of the last \$500 on which the revenue is paid. In each case the amount of the recorded mortgage is added to the consideration as the law permitted the deduction of the mortgage from the actual consideration before calculating the revenue stamp.

⁵In an attempt to throw more light on the ratios of assessed values to actual values of real properties, an attempt was made to use the appraised values made in preparation of state loans under the Soldiers' Bonus Law. More than 4,500 city appraisals and more than 2,800 rural appraisals were available. The results indicated that the appraisal values lacked the uniformity essential for comparison with assessed values and real values.

and 23,327 city property transfers, a total of 40,133 transfers aggregating a sale value of \$196,247,344¹; rural property, \$95,068,836, and city property \$101,178,508.²

TABLE V. DISTRIBUTION OF SALES OF CITY PROPERTY BY VALUE GROUPS BASED ON SALE PRICE IN ALL COUNTIES IN OREGON FOR THE YEARS 1921 TO 1926

County	All groups	Value groups based on sale price							
		I	II	III	IV	V	VI	VII	VIII
All counties in classes "A" and "B"	23,327	2,412	3,178	2,491	3,048	2,099	2,218	1,865	6,016
		Below \$500	to \$500	to \$1,000	to \$1,500	to \$2,000	to \$2,500	to \$3,000	to \$3,500 and above
Class "A"									
Total	9,497	1,344	1,735	1,308	947	924	926	574	1,739
Baker	532	90	104	77	46	44	32	31	108
Clackamas	763	80	113	101	93	82	97	45	152
Columbia	277	71	74	42	22	14	20	8	26
Coos	521	80	109	84	30	32	45	28	113
Crook	64	5	8	15	7	6	8	2	13
Curry	34	15	7	4	2	3	1	0	2
Deschutes	537	53	116	61	53	58	49	39	108
Douglas	606	83	111	83	68	56	51	36	118
Gilliam	106	15	17	18	14	11	13	6	12
Grant	53	23	7	15	2	2	0	1	3
Harney	90	20	15	9	8	12	10	4	12
Hood River	250	39	56	32	21	12	24	14	52
Jackson	623	86	81	47	26	87	95	42	159
Jefferson	56	13	16	10	8	3	0	0	1
Josephine	274	58	64	29	19	26	24	14	40
Lake	88	13	9	10	9	12	7	9	19
Lincoln	279	72	74	43	28	14	21	7	20
Linn	553	52	65	52	53	76	86	44	125
Malheur	181	37	34	26	31	18	12	5	18
Morrow	130	19	22	20	21	15	6	4	23
Polk	450	62	90	88	57	47	37	16	53
Sherman	105	14	15	20	14	12	4	10	16
Tillamook	336	107	81	41	22	27	15	13	30
Umatilla	716	81	122	99	58	69	66	58	163
Wallowa	170	11	28	26	21	20	22	12	30
Wasco	475	39	84	65	57	44	58	38	90
Washington	583	44	85	90	73	50	70	48	123
Wheeler	41	3	12	4	6	8	2	4	2
Yamhill	604	59	116	97	78	59	51	36	108
		Below \$700	to \$700	to \$1,400	to \$2,100	to \$2,800	to \$3,500	to \$4,200	to \$4,900 and above
Class "B"									
Total	13,830	1,068	1,443	1,183	2,101	1,175	1,292	1,291	4,277
Benton	628	51	76	57	128	82	71	53	110
Clatsop	784	156	100	80	142	56	51	53	146
Klamath	325	56	26	23	61	34	20	27	78
Lane	1,106	144	136	144	212	101	109	84	176
Marion	1,815	205	243	246	380	178	168	136	259
Multnomah	8,471	332	673	544	1,103	671	816	909	3,423
Union	701	124	189	89	75	53	57	29	85

The assessed value of the real property included in these transfers aggregates an amount equal to 11.22 percent of the total assessed value of all real property for the year 1921. In other words, the real property included in this survey includes more than one-ninth of all the real property of the state.

¹Data used in determining coefficient of dispersion will be discussed later.

²In a number of instances the same parcel of real property undoubtedly sold two or more times during the six-year period under consideration.

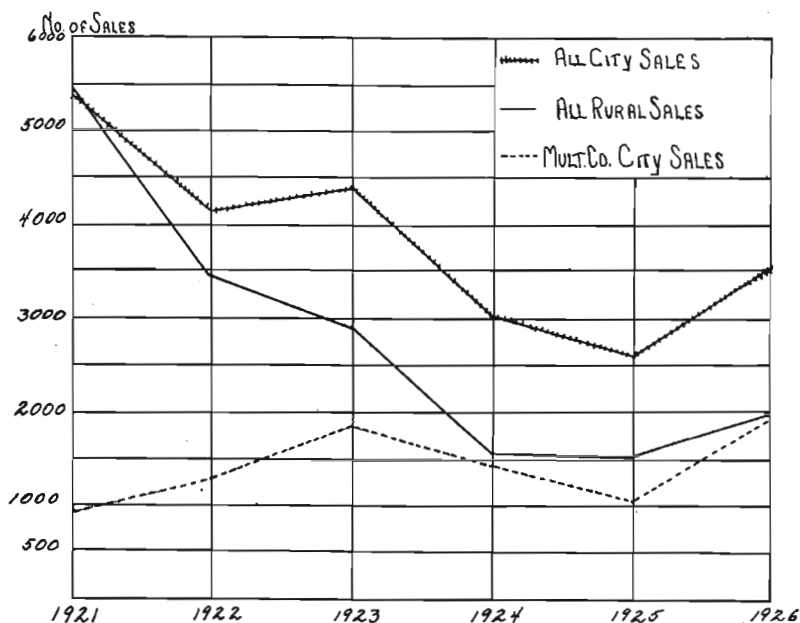


Fig. 2. Number of sales of rural properties, all city properties, and Multnomah county city properties for the years 1921 to 1926.

TABLE VI. PERCENT THAT THE ASSESSED VALUE OF THE PROPERTY, INCLUDED IN THE SALES OF THE CLASS OF PROPERTY SPECIFIED, REPRESENTS OF THE TOTAL ASSESSED VALUES OF THE CORRESPONDING CLASS OF PROPERTY FOR THE YEARS INDICATED.

Class of property	1921	1922	1923	1924	1925	1926
Rural	2.99	1.70	1.40	.85	.93	1.08
All cities	2.58	2.56	2.38	1.60	1.47	2.92
Multnomah county cities.....	1.59	2.44	2.06	1.55	1.38	3.44
Cities other than Multnomah county	4.48	2.79	2.96	1.68	1.66	1.91

Method of procedure. In the first part of this investigation an attempt is made to discover any existing tendencies to assess properties of certain values at a different rate from properties of a higher or lower value. The second part of this study is devoted to a measurement and analysis of variations in assessments of individual properties.¹

The first study is necessarily one dealing with groups of transfers. For this purpose the transfers of property have been arranged into so-called value groups based upon sale values. Due to the variations in the average values of both rural and city transfers in the different counties, it was impossible to use a uniform classification which would have been

¹A fuller explanation of the purpose and method of procedure of this second problem will be made later.

theoretically desirable and logical. Hence, three classes of groups were adopted for rural property and two classes for city property.

Class A, rural property, contains eight groups, and classes B and C contain nine groups each. The value limits of the different groups are indicated in the respective tables.

Classes A and B of city property are each divided into eight groups.¹ The city property of Multnomah county has been treated in a separate table containing eleven groups and the city property of a number of the other larger cities of the state has been divided into nine groups in Table XIV.²

II. TENDENCIES IN RATIOS OF ASSESSMENTS OF RURAL REAL PROPERTY

Rural real property transfers for the six years, 1921 to 1926 inclusive, were arranged into value groups according to counties and classes. The sale values and assessed values of each group were then added and the ratios of assessments obtained as explained above. These ratios of assessment are presented in Table VII. The number of transfers for each county and also the total sale value of all the transfers involved are given by counties.

It is apparent from this table of ratios that there is a strong tendency to assess more highly the properties in the lower value groups than in the higher value groups.³ This tendency is particularly strong in Class A counties where the ratio of assessment in the first group is 105 percent. The decrease in the weighted ratios of assessment continues into the last group, where it reaches approximately 39 percent. Class B counties do not indicate so strong a tendency, the ratios ranging from 71.72 percent in the first group to 41.65 percent in the ninth or last group.

It is further noticeable that the ratios of the last two groups are above those of the intermediate groups, the ratio of the ninth group coming within .16 percent of the average for the entire group. Only two counties are included in Class C. In the first county listed the

¹Part of a value group table indicating procedure:

COUNTY X, ACREAGE 1921

\$0 - \$999			\$1,000 - \$1,999			\$2,000 - \$2,999		
Sale value	Assessed value	Ratio	Sale value	Assessed value	Ratio	Sale value	Assessed value	Ratio
\$ 900	\$ 200	-----	\$1,500	\$1,175	-----	\$2,150	\$1,600	-----
75	205	-----	1,525	1,600	-----	2,015	1,610	-----
200	200	-----	1,600	1,100	-----	2,000	1,610	-----
175	120	-----	1,330	1,000	-----	2,800	580	-----
225	100	-----	1,050	1,000	-----	2,000	600	-----
\$1,575	\$ 825	52.38	\$7,005	\$5,875	83.87	\$10,965	\$6,000	54.72

²Classes A, B, and C, rural value groups are \$500-, \$1,000-, and \$1,500-value groups respectively.

Classes A and B, city value groups are \$500-, and 700-value groups, respectively.

³By the term ratio of assessment is meant the assessed value in percent of the sale value; e.g., a parcel of real property selling for \$900 is assessed at \$300; $300 \div 900 = 33\frac{1}{3}$ percent, the ratio of assessment.

TABLE VII. RATIOS OF ASSESSED VALUES TO SALE VALUES OF RURAL REAL PROPERTY BY VALUE GROUPS IN ALL COUNTIES FOR SIX YEARS, 1921 TO 1926

	Value groups based on sale price									Number of sales	Total value of sales in thousands	
	All groups	I	II	III	IV	V	VI	VII	VIII			IX
All counties in all classes, "A," "B," "C"	41.87	-----	-----	-----	-----	-----	-----	-----	-----	-----	16,806	\$95,069
Class "A"		Below \$500	\$500 to 999	\$1,000 to 1,499	\$1,500 to 1,999	\$2,000 to 2,499	\$2,500 to 2,999	\$3,000 to 3,499	\$3,500 and above			
Total	44.88	105.56	78.62	68.59	59.04	56.05	56.24	52.76	38.89	Not enough data for another group	1,090	4,282
Curry	50.94	119.57	67.85	65.71	75.51	43.50	50.32	73.40	45.75		104	407
Grant	55.09	102.98	91.08	83.09	62.22	73.38	58.53	62.57	45.49		257	769
Harney	40.61	80.59	80.02	49.18	44.70	43.18	48.91	50.45	35.80		201	596
Jefferson	47.01	172.36	92.09	72.47	52.73	66.72	59.51	48.05	36.94		244	741
Lake	39.60	104.31	55.76	58.82	66.21	43.52	55.77	40.12	36.73		284	1,769
Class "B"		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 to 14,000	\$14,000 and above		
Total	41.81	71.72	54.35	46.56	42.43	40.64	39.40	37.84	38.81	41.65	14,501	82,407
Baker	50.25	94.03	80.70	57.70	64.40	57.11	43.78	48.00	48.25	40.07	488	2,294
Clackamas	27.96	36.57	34.24	30.31	29.19	28.67	29.10	25.30	26.35	26.54	1,367	6,313
Clatsop	51.39	65.79	41.42	48.39	42.08	57.27	46.85	40.17	25.41	53.10	205	3,871
Columbia	48.78	78.67	54.79	47.41	42.86	58.57	35.98	43.55	48.62	48.02	451	2,420
Coos	43.06	59.30	49.22	41.58	42.91	48.81	40.61	44.71	41.87	41.32	301	1,524
Crook	43.38	98.66	63.78	57.84	40.11	43.77	41.44	67.27	40.49	33.38	283	1,323
Deschutes	32.80	83.25	51.86	52.35	36.00	32.09	42.03	27.07	31.11	22.77	348	1,815
Douglas	39.37	74.95	65.52	45.79	46.45	42.37	40.89	36.91	35.28	32.73	695	3,463
Gilliam	72.27	142.49	101.56	88.23	142.99	96.96	84.05	97.57	70.60	62.76	143	1,412
Hood River	47.37	82.51	62.03	69.17	49.20	46.69	56.65	39.75	47.23	39.71	362	1,929

Jackson	41.07	85.30	62.90	51.88	49.80	38.27	43.01	40.40	39.36	34.29	569	3,160
Josephine	45.23	68.61	58.75	46.65	42.84	41.12	38.64	46.56	44.78	36.68	352	1,026
Klamath	42.83	107.86	75.78	61.05	46.92	51.98	41.60	40.22	37.30	32.97	367	1,981
Lane	34.54	53.86	45.27	42.15	38.90	35.65	28.63	30.43	32.44	32.27	933	4,619
Lincoln	61.08	100.38	76.37	71.29	65.11	62.05	56.45	61.93	62.80	56.45	320	2,112
Linn	34.45	49.21	35.08	40.00	35.26	36.46	36.97	34.24	34.53	31.71	838	5,341
Malheur	47.54	77.01	59.17	55.48	52.79	49.97	54.83	43.92	45.04	40.20	325	1,460
Marion	36.26	55.93	46.71	42.55	37.93	37.72	37.17	38.30	34.79	32.09	1,397	7,626
Morrow	47.26	85.82	70.13	70.77	55.77	56.68	59.70	44.80	46.07	39.78	246	1,611
Multnomah	37.59	84.13	40.20	39.44	36.93	34.97	29.25	37.71	35.19	40.67	347	2,041
Polk	29.42	55.77	38.59	32.90	31.22	31.06	32.72	27.83	28.74	25.85	562	3,127
Sherman	63.45	89.01	70.44	107.06	60.16	59.68	85.69	58.97	68.88	61.31	165	2,223
Tillamook	48.94	66.79	66.71	59.74	63.82	64.38	49.45	46.87	57.93	40.40	205	1,639
Union	57.67	94.01	65.68	55.01	58.76	56.69	57.66	75.05	52.80	56.81	415	2,664
Wallowa	46.21	99.58	66.78	65.10	55.46	51.25	50.65	40.17	42.02	40.66	309	2,005
Wasco	48.73	67.18	65.86	50.25	47.67	45.51	57.92	42.91	48.25	46.49	379	2,140
Washington	32.09	42.80	37.89	35.87	32.30	31.37	32.03	26.86	31.68	31.22	1,110	5,684
Wheeler	72.40	108.77	106.20	80.68	67.32	54.14	68.34	53.85	81.53	55.99	147	639
Yamhill	40.27	92.69	43.77	37.90	40.73	37.55	39.09	41.85	40.19	40.00	872	4,945
Class "C"												
		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 to \$16,000			
Total	40.92	64.14	45.82	39.79	38.71	40.50	41.88	46.57	40.72	38.80	1,215	8,380
Benton	37.28	60.84	42.20	38.96	37.71	39.87	41.80	34.57	38.31	33.45	423	2,951
Umatilla	42.91	65.06	48.07	40.40	39.50	40.74	41.94	53.35	42.33	41.15	792	5,429

TABLE VIII. RATIOS OF ASSESSED VALUES TO SALE VALUES OF RURAL REAL PROPERTY BY CLASSES AND GROUPS FOR THE YEARS 1921 - 1926

Value groups based on sale price											Number of sales	Total value of sales in thousands
		I	II	III	IV	V	VI	VII	VIII	IX		
		All groups	Below \$500	\$500 to 999	\$1,000 to 1,499	\$1,500 to 1,999	\$2,000 to 2,499	\$2,500 to 2,999	\$3,000 to 3,499	\$3,500 and above		
Class "A" including all rural property sales in five counties. ¹	Year											
	1921	46.62	105.59	68.39	57.75	47.61	45.04	45.14	40.62	44.88	389	\$ 1,374
	1922	45.08	71.28	72.58	67.63	46.02	45.60	55.63	81.11	34.70	178	517
	1923	51.41	109.75	74.83	70.99	73.33	61.67	58.74	40.98	40.57	174	450
	1924	39.86	82.26	104.56	79.73	100.65	58.36	52.50	57.31	34.61	100	631
	1925	37.02	137.80	103.67	86.74	78.64	78.83	75.11	55.56	29.22	112	777
	1926	52.12	130.33	97.92	75.87	52.90	69.62	47.55	54.03	47.56	137	532
		All groups	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 to 14,000		
Class "B" including all rural property sales in twenty-nine counties. ²	Year											
	1921	42.05	74.57	54.09	45.77	43.37	40.71	39.77	39.01	36.51	4,601	27,719
	1922	40.57	70.09	53.43	43.18	41.59	38.11	37.79	36.30	38.41	3,084	16,488
	1923	41.64	64.46	51.52	48.82	41.45	40.03	40.22	40.18	40.91	2,491	12,974
	1924	42.52	74.44	56.45	47.48	41.94	42.56	38.24	39.78	40.78	1,402	7,391
	1925	42.60	70.88	59.79	51.00	43.64	43.79	37.53	36.15	42.02	1,326	8,151
	1926	42.21	75.04	59.64	46.05	42.51	40.96	41.61	33.95	39.68	1,597	9,684
		All groups	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 to 15,999		
Class "C" including all rural property sales in two counties. ³	Year											
	1921	35.48	60.18	37.40	32.93	35.40	35.39	32.88	34.36	37.04	421	2,557
	1922	38.45	62.30	44.18	42.12	42.99	34.30	44.27	44.12	31.99	199	1,436
	1923	44.06	77.19	51.60	39.96	36.38	42.10	39.26	55.52	37.60	224	1,448
	1924	43.59	58.67	56.37	47.80	40.29	38.91	46.74	42.23	45.74	105	956
	1925	44.94	72.62	47.96	42.11	36.86	45.34	57.13	57.45	51.00	122	959
	1926	47.32	56.97	55.35	48.74	45.30	57.25	56.53	56.83	45.95	144	1,023

¹Curry, Grant, Harney, Jefferson, and Lake counties.²Baker, Clatsop, Clackamas, Columbia, Coos, Crook, Deschutes, Douglas, Gilliam, Hood River, Jackson, Josephine, Klamath, Lane, Lincoln, Linn, Malheur, Marion, Morrow, Multnomah, Polk, Sherman, Tillamook, Union, Wallowa, Wasco, Washington, Wheeler, and Yamhill counties.³Benton and Umatilla counties.

TABLE IX. RATIOS OF ASSESSED VALUES TO SALE VALUES OF RURAL REAL PROPERTY BY CLASSES AND VALUE GROUPS FOR SIX- AND THREE-YEAR PERIODS

	Year	Value groups based on sales										Number of sales	Total value of property sold in thousands	Coefficient of dispersion
		All groups	I	II	III	IV	V	VI	VII	VIII	IX			
All rural property Class "A" ¹			Below \$500	\$500 to 999	\$1,000 to 1,499	\$1,500 to 1,999	\$2,000 to 2,499	\$2,500 to 2,999	\$3,000 to 3,499	\$3,500 and above				
	1921-26	44.88	105.56	78.62	68.59	59.04	56.05	56.24	52.76	38.89	No ninth group	1,090	\$ 4,282	.1949
	1921-23	47.20	99.80	70.37	63.70	55.00	49.17	52.97	51.19	42.23		741	2,341	.1379
	1924-26	42.08	117.69	100.70	80.07	74.39	69.86	62.37	55.98	35.67		349	1,941	.2502
All rural property Class "B" ²			Below \$1,000	\$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 to 7,999	\$8,000 to 14,000	\$14,000 and above			
	1921-26	41.81	71.72	54.35	46.56	42.43	40.64	39.40	37.84	38.81	41.65	14,501	82,407	.0591
	1921-23	41.53	70.91	53.29	45.79	42.32	39.79	39.41	38.46	37.98	41.65	10,176	57,181	.0596
	1924-26	42.43	73.74	58.35	48.11	42.67	42.30	39.39	36.59	40.74	41.66	4,325	25,226	.0580
All rural property Class "C" ³			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 to 15,999	\$16,000 and above			
	1921-26	40.92	64.14	45.82	39.79	38.71	40.50	41.88	46.57	39.97	38.80	1,215	8,380	.0583
	1921-23	38.55	65.09	43.26	36.87	37.54	36.92	36.79	43.87	35.69	37.33	844	5,442	.0690
	1924-26	45.33	61.47	52.59	46.12	41.44	48.15	54.10	54.02	47.39	41.19	371	2,938	.0741

¹Includes counties of Curry, Grant, Harney, Jefferson, and Lake.

²Baker, Clatsop, Clackamas, Columbia, Coos, Crook, Deschutes, Douglas, Gilliam, Hood River, Jackson, Josephine, Klamath, Lane, Lincoln, Linn, Malheur, Marion, Morrow, Multnomah, Polk, Sherman, Tillamook, Union, Wallowa, Wasco, Washington, Wheeler, and Yamhill counties.

³Includes counties of Benton and Umatilla.

ratios of assessment vary from 60.84 percent for the first group to 33.45 percent for the last or ninth group. In the second county the variation is from 65.06 percent in the first group to 39.50 percent in the fourth group. The dispersion for this last county is extremely low.

In Table VIII the ratios of assessed values to sale values are classified into groups by years. The object of this table was to discover whether the tendencies noted in the preceding table were the same for each of the years included in the study, particularly as these were years of readjustment following the depression of 1920. No outstanding changes, however, are evident.

The ratios of assessment for "All Groups" in Class A are somewhat erratic, probably owing to the scarcity of data for the years 1922 to 1926. The ratios of assessment for "All Groups" in Class B are almost incredibly uniform throughout the six years, ranging from 40.57 percent to 42.60 percent. In Class C the ratios gradually rise from 35.48 percent to 47.32 percent, an increase of more than 33 percent in the assessment.

The ratios of assessments are classified into groups by three-year periods in Table IX. In this table the data are combined into more compact form than in the preceding tables. The following tendencies are noticeable: the ratios of assessment of "All Groups" decrease more than 5 percent in Class A, rise very slightly in Class B, but rise almost 7 percent in Class C. A possible inference from these changes will be made later. The coefficients of dispersion or variability, explained more fully later, have also been computed for the value groups.

The variability in the ratios of assessments of the groups of Class A is almost four times as great as the variability in classes B and C. The coefficient of variability of Class A is also more than twice as great for

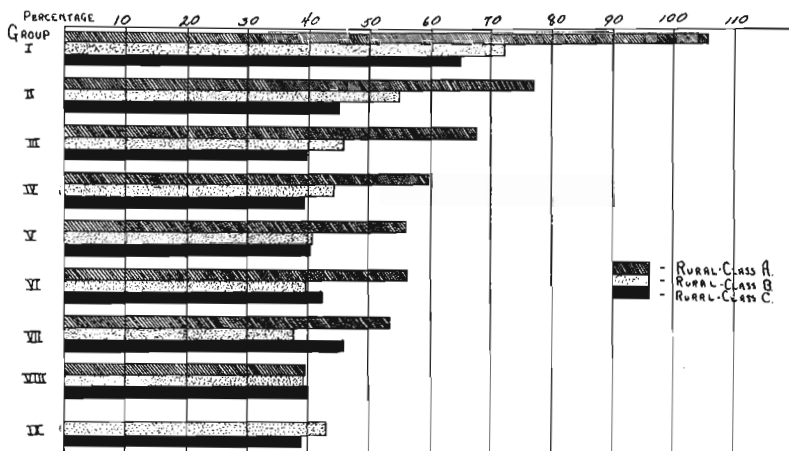


Fig. 3. Ratios of assessed values to sale values of rural real property graphically shown. Average sale value of transfers in each value group including classes A, B, and C are as follows: Group I, \$585; Group II, \$1,443; Group III, \$2,457; Group IV, \$3,409; Group V, \$4,392; Group VI, \$5,350; Group VII, \$6,370; Group VIII, \$9,705; Group IX, \$27,861. The above graph is based upon Table VII.

the years 1924 to 1926 as it is for the preceding three years, whereas no perceptible change has taken place in the groups of classes B and C during this period.

The data of the United States Census of Agriculture have been used to assist in determining to what degree the sales of rural properties in the different value groups are representative of the actual number of properties within the respective groups. An approximation only could be reached. In a number of counties there appears a tendency for the properties in the higher value groups to be overemphasized, but for the state as a whole the properties in the lower value groups are slightly overemphasized. The lack of proportionate representation tends slightly to exaggerate the inequalities in assessments owing to the greater variations or inequalities in ratios of assessments of properties in the lower groups. This bias in results is, however, scarcely perceptible since all ratios of assessments and coefficients of dispersion, unless otherwise stated, are weighted. The percent of total sales values in the lower value groups is at most small, as the following figures will indicate:

Percent of total sales values in each of the nine groups of rural properties:

Group I, 1.21; Group II, 4.16; Group III, 6.97; Group IV, 7.74; Group V, 7.48; Group VI, 6.12; Group VII, 5.46; Group VIII, 25.61; Group IX, 35.23.

Assessment of farm improvements. There are several indications that farm improvements are assessed at a lower ratio than the land on which they are located, but there is no conclusive evidence on this point. Improvements and land are listed and assessed separately on the assessment rolls but no segregation is made in the transfers since the acreages with the improvements thereon are normally sold as units.

The first indication of the lower assessment of improvements is the high ratio of assessed value to sale value of the transfers in the lowest value groups.

Apparently rural transfers involving considerations as low as those in Group I, of either Class A, B, or C, contain few improvements, and this would be particularly true of transfers in the first group of Class A, where the considerations are below \$500. In this group with the lowest considerations the ratio of assessment (105 percent) is the highest for any group in any class. In the first group of Class B and Class C, where the average considerations are higher, the ratios of assessed values to sale values fall respectively to 71 and 64 percent.

This indication of lower assessments of improvements than of lands may be more than offset, however, by the behavior of the data in the other groups. According to Table X the percent of the total value of farms represented by buildings decreases with the increase in size of farms.

If the above mentioned indication of under-assessment of improvements were valid, there should appear a perceptible rise in the ratios of assessments in the higher value groups due to the relatively low value of buildings in these groups.

There is a slight rise in the ratios of assessments of groups VIII and IX in Class B including twenty-nine counties, but no rise in ratios

TABLE X. UNITED STATES CENSUS OF AGRICULTURE TABLE ON SIZE AND VALUE OF FARMS¹

Acreage in farms		Value of land and building	Value of buildings	Value of land	Percent represented by value of buildings	Percent of value in acres	Value per acre without building	Value per acre with building
Land in farms	Acres							
Total acreage	14,130,847	\$616,068,770	\$110,927,340	\$505,141,430	18.01	81.99	\$ 35.75	\$ 43.60
Under 20 acres	111,297	52,837,537	18,900,496	33,937,041	35.77	64.23	304.92	474.74
20 to 49 acres	351,351	67,283,576	16,848,324	50,435,252	25.04	74.96	143.55	191.50
50 to 99 acres	657,480	81,133,007	17,420,236	63,712,771	21.47	78.53	96.90	123.40
100 to 174 acres	1,279,513	93,089,824	17,755,010	75,334,814	19.07	80.93	58.88	72.75
175 to 499 acres	2,541,192	135,244,843	21,206,566	144,038,277	15.68	84.32	44.88	53.22
500 to 999 acres	2,219,513	71,988,783	8,469,220	63,519,563	11.76	88.24	28.62	32.43
1000 and over	6,970,501	114,491,200	10,327,488	104,163,712	9.02	90.98	14.94	16.43

¹United States Census of Agriculture. 1925 for Oregon, County Table VII, p. 7.

TABLE XI. CENSUS VALUATIONS OF FARM REAL PROPERTY COMPARED WITH ASSESSED VALUATIONS OF TILLABLE LAND AND IMPROVEMENTS ON LAND IN OREGON

Year	Census valuations ¹			State assessments ²			Number of acres in farms as per census data ³	Number of acres in tillable land as per state assessment data ³
	Total value land and buildings	Value of farm buildings	Value of buildings in percent of value of land and buildings	Total assessed value of tillable land and improvements	Assessed value of improvements	Value of improvements in percent of value of land and improvements		
1910	453,576,309	43,880,207	9.63	236,945,378	22,051,569	9.31	11,685,110	.....
1920	675,213,284	88,971,235	13.18	286,017,811	30,953,186	10.82	13,542,318	10,976,864
1925	616,068,770	110,927,340	18.01	294,060,582	39,563,997	13.45	14,130,847	10,962,501

¹Adopted from the 1920 Census Report, Vol. 6, Part III, and United States Census of Agriculture. (1925.)²Biennial report of State Tax Commission.³Census data include all land in farms. State assessment data include only tillable land. Most of the timber land and unimproved land in Oregon is included in neither census nor state assessment data.

of assessment in the higher value groups of classes A and C including seven counties.

The second indication of the underassessment of improvements is the fact that the assessed value of improvements represents a smaller percent of the total assessed value of tillable land and improvements on the state assessment rolls than the estimated value of buildings represents of the total estimated value of farm lands and buildings in the United States Census Reports.¹

According to Table XI, the percentage of the total value represented by buildings in the Census Report is as follows: 1910, 9.63 percent; 1920, 13.18 percent; and 1925, 18.01 percent. The corresponding percentages based on the state assessment roll data are 9.31, 10.82, and 13.45. Not only are the latter percentages lower, but the ratio of increase in the relative value of buildings during the fifteen-year period 1910 to 1925 is much greater according to the census data than according to the state assessment rolls. An increase from 9.63 percent to 18.01 percent is an increase of 87 percent on the 1910 basis; whereas an increase from 9.31 percent to 13.45 percent is an increase of only 44 percent on the 1910 basis. The inference is that the underassessment of improvements has intensified during this period.

A third indication of the underassessment of improvements on farm lands is found in the relation of assessment ratios of rural properties in the different counties to the ratios of the value of buildings to total values of farm properties. In twenty-six out of the thirty-six counties in the state the ratios of assessment were either below the average where the ratios of the value of buildings to the total farm values were above the average, or the ratios of assessment were above the average where the ratios of the value of the buildings were below the average. The coefficient of correlation was $-.3755 \pm .08$. This coefficient, although low, carries some weight.²

As was stated in the beginning of this topic, there are indications but there is no conclusive evidence that improvements on farm lands are underassessed.

III. TENDENCIES IN THE RATIOS OF ASSESSMENTS OF CITY REAL PROPERTY

The ratios of assessed values to sale values of city real property have been computed and tabulated, first by counties including the real properties of all of the cities in the respective counties, and second by specified cities including the larger cities of the state. A table has also been added (Table XVI) in which the ratios of assessment of all of the cities by counties, the ratios of assessments of the specified or the larger cities of the state, and the ratios of the smaller cities are tabulated by three-year periods. Finally, a table dealing with the ratios of assessment of city real property of Multnomah county only, has been added.³

¹The Census data and State assessment data are not fully comparable but it is believed that more nearly comparable data would strengthen the above deduction.

²The corresponding data of city assessments were compared but no correlation was discovered.

³No segregation of the urban real property transfers of Multnomah county has been made. A comparative study of the different districts of Portland and its suburbs would be interesting and instructive, but it is beyond the limits of this bulletin.

TABLE XII. RATIOS OF ASSESSED VALUES TO SALE VALUES OF CITY REAL PROPERTY BY VALUE GROUPS AND BY COUNTIES FOR SIX YEARS, 1921 TO 1926

	All groups	Value groups based on sale price								Number of sales	Total value of sales in thousands
		I	II	III	IV	V	VI	VII	VIII		
All counties in classes "A" and "B"	43.55									23,327	\$101,178
Class "A"		Below \$500	\$500 to 999	\$1,000 to 1,499	\$1,500 to 1,999	\$2,000 to 2,499	\$2,500 to 2,999	\$3,000 to 3,499	\$3,500 and above		
Total	42.24	76.11	61.98	51.11	44.35	42.15	40.52	38.49	38.43	9,497	22,042
Baker	53.88	89.65	68.04	56.84	51.85	50.85	43.64	55.14	51.41	532	1,078
Clackamas	25.51	59.78	42.60	33.04	29.24	26.59	24.46	21.03	22.45	763	1,929
Columbia	42.92	85.13	66.56	48.35	45.29	32.61	42.37	29.24	31.83	277	414
Coos	45.96	68.54	59.36	53.42	49.31	58.11	47.14	39.99	42.40	521	1,333
Crook	38.83	105.74	55.59	40.64	40.40	32.70	38.94	35.84	37.45	64	172
Curry	43.62	66.55	62.59	59.76	25.33	39.21	.....	.....	34.78	34	30
Deschutes	30.62	60.80	42.01	39.10	35.13	33.16	25.83	23.94	28.52	537	390
Douglas	49.42	93.93	81.06	58.44	58.23	45.66	42.45	42.86	44.68	606	1,370
Gilliam	65.71	67.19	60.56	84.40	64.93	62.59	63.49	59.89	64.66	106	206
Grant	41.10	70.89	59.85	43.56	29.83	18.49	.....	33.33	33.10	53	50
Harney	35.34	50.18	44.98	48.84	35.91	29.28	32.10	49.15	33.25	90	217
Hood River	50.85	105.63	56.03	56.74	44.22	50.31	50.78	43.43	49.57	250	578
Jackson	43.55	84.65	68.61	62.26	51.46	47.85	44.61	42.81	39.53	623	1,933
Jefferson	42.41	51.16	70.35	37.37	36.29	35.73	.....	.....	24.00	56	61
Josephine	55.20	83.27	73.14	55.72	50.99	51.65	57.19	63.58	49.17	274	529
Lake	44.87	94.25	73.24	50.13	58.18	54.05	50.38	41.63	36.23	88	211

Lincoln	50.62	70.57	78.46	64.00	48.71	45.72	43.97	32.86	39.56	279	397
Linn	40.78	63.05	64.12	51.51	42.60	41.17	42.49	38.26	38.43	553	1,720
Malheur	33.19	61.60	52.88	42.69	34.28	27.04	25.32	27.97	26.83	181	283
Morrow	44.41	64.63	67.95	52.81	51.93	41.47	49.07	44.20	37.61	130	268
Polk	34.27	60.23	48.88	41.91	38.62	37.13	35.10	32.71	26.22	450	886
Sherman	48.01	115.63	92.21	52.23	52.11	48.62	35.59	34.22	43.94	105	218
Tillamook	48.37	70.35	63.22	55.72	47.43	50.08	43.33	51.73	39.29	336	517
Umatilla	44.29	65.69	63.68	51.65	41.92	41.87	39.35	39.50	43.69	716	1,827
Wallowa	49.07	81.14	73.76	65.36	51.23	48.10	53.74	38.30	43.95	170	432
Wasco	55.81	103.16	81.90	68.85	57.54	52.87	50.85	47.85	53.68	475	1,170
Washington	31.10	66.92	48.45	42.68	33.91	34.54	31.59	28.20	27.18	583	1,546
Wheeler	64.68	81.08	81.07	63.04	54.73	64.66	52.94	64.86	65.19	41	73
Yamhill	41.14	89.98	57.40	48.38	46.75	39.31	44.12	37.74	35.33	604	1,311
Class "B"	All	Below	\$700 to	\$1,400 to	\$2,100 to	\$2,800 to	\$3,500 to	\$4,200 to	\$4,900		
	groups	\$700	1,399	2,099	2,799	3,499	4,199	4,899	and above		
Total	43.91	72.93	63.75	45.21	42.67	38.36	36.53	36.21	45.06	13,830	\$79,136
Benton	39.78	85.95	61.50	49.76	45.46	39.81	36.31	39.97	33.92	628	2,035
Clatsop	41.40	56.44	43.59	33.87	33.70	38.51	31.72	27.70	46.36	784	2,937
Klamath	44.26	85.44	57.80	38.29	40.66	39.18	30.95	36.16	46.80	325	1,352
Lane	45.46	76.24	60.27	49.94	47.94	40.72	42.21	40.34	44.45	1,106	3,621
Marion	41.62	71.11	57.53	46.80	41.74	38.98	38.55	37.98	40.41	1,815	6,019
Multnomah	43.96	72.86	69.37	43.83	42.46	36.99	35.15	35.69	45.19	8,471	61,195
Union	54.45	83.56	65.82	50.52	49.46	46.38	45.90	41.20	57.76	701	1,978

In Table XII, the ratios of assessment based on the transfers for the years 1921 to 1926 are classified by counties and value groups. A strong tendency to overassess the properties in the lower value group is again apparent as in the case of rural property ratios. This is particularly true in Class A counties where the weighted ratios of assessed values to sale values range from 76.11 percent in Group I, to 38.43 percent in Group VIII. In Class B the ratios of assessment decrease from 72.93 percent in Group I, to 36.21 percent in Group VII, with a subsequent rise to 45.06 percent in Group VIII. The latter is 1.15 percent above the average for all groups. A rise in the ratios of assessment in the eighth group appears in all but one of the counties of Class B.¹

The ratios of assessment are arranged in Table XIII, by classes, groups, and years. The first tendency noticeable in this table is the decrease in the weighted ratios throughout the entire six years. In Class A the drop is from 44.28 percent in 1921 to 37.74 percent in 1926, a decrease of more than 17 percent. In Class B the drop is from 46.10 percent to 38.91 percent, a decline of more than 18 percent. In both classes A and B the ranges between the ratios of assessment of the first group and the eighth group respectively have widened during the six-year period.

The data on ratios of assessment of the thirty-three specified cities are tabulated in Tables XIV and XV.² Transfers of six cities of Class B were divided into nine value groups. In all but one of these six cities the ratios of assessment rise in the ninth group. The ratios of assessment of these specified cities show the same tendency to decline from 1921 to 1926 as do the ratios of all the cities in Table XIII.

The following observations may be made on the data in Table XVI. The tendency to overassess properties of low value is general for all classes of cities. The weighted ratios of assessments for the three years 1924 to 1926 are in every instance lower than those for 1921 to 1923. Properties in small cities in Class A are assessed lower than properties in the large cities in the same class. In Class B the reverse is true.

The most outstanding difference in the ratios of assessment between the large and small cities in both classes A and B, is the difference in coefficients of dispersion or variability of the groups. In both classes of cities the dispersion is more than twice as great among the groups of the small cities than among the groups of the large cities.³

The data on city real property transfers in Multnomah county were adequate to admit of classification into eleven value groups, ranging from transfers under \$700 in Group I, to transfers of more than \$20,000 in Group XI. The most noteworthy fact established by these data, involving 8,471 transfers with a sale value of more than \$61,000,000, is that the transfers in Group XI are for every year assessed above the average for all groups. The weighted average for Group X is also slightly above the average for all groups. This is graphically shown in Fig. 5. The ratios of assessment decrease from 1921 to 1925, and then rise perceptibly for the year 1926.

¹Benton county.

²Transfers for the years 1924-1926, only, were used in finding ratios for the cities of Newport and Toledo.

³Coefficients of dispersion and their significance will be explained later. See page 37.

TABLE XIII. RATIOS OF ASSESSED VALUES TO SALE VALUES OF CLASSES "A" AND "B" OF CITY PROPERTY BY YEARS, 1921 TO 1926

	Year	Value groups based on sale price								Number of sales	Value of sales in thousands
		All groups	I	II	III	IV	V	VI	VII	VIII	
Class "A" including all city property sold in twenty-nine counties. ¹			Below \$500	\$500 to 999	\$1,000 to 1,499	\$1,500 to 1,999	\$2,000 to 2,499	\$2,500 to 2,999	\$3,000 to 3,499	\$3,500 and above	
	1921	44.28	82.51	64.26	51.46	43.82	43.21	40.76	40.70	39.99	3,064
	1922	43.67	70.96	61.26	51.93	45.63	42.53	39.97	37.32	39.32	1,908
	1923	44.14	76.97	62.58	55.04	44.11	41.60	40.70	41.18	41.80	1,616
	1924	40.12	71.61	59.15	44.64	45.06	40.75	39.00	34.33	37.34	1,014
	1925	39.82	68.51	55.31	45.49	41.52	40.88	41.17	36.62	37.92	890
	1926	37.74	80.20	61.19	55.35	44.92	41.72	41.30	34.99	33.71	1,005
Class "B" including all city property sold in six counties. ²			Below \$700	\$700 to 1,399	\$1,400 to 2,099	\$2,100 to 2,799	\$2,800 to 3,499	\$3,500 to 4,199	\$4,200 to 4,899	\$4,900 and above	
	1921	46.10	69.21	59.75	47.08	44.69	42.10	40.29	37.64	47.29	1,390
	1922	44.82	62.68	59.97	48.07	43.63	40.21	38.29	34.10	45.88	1,036
	1923	46.29	78.85	61.86	47.95	43.71	39.97	40.71	38.98	48.65	1,029
	1924	42.72	98.53	53.68	42.38	44.25	40.23	35.69	38.44	43.29	579
	1925	41.71	68.57	57.87	44.61	39.12	35.71	36.90	36.69	43.18	584
	1926	38.91	70.56	52.70	34.67	40.75	40.64	37.93	37.55	37.66	741

¹Baker, Clackamas, Columbia, Coos, Crook, Curry, Deschutes, Douglas, Gilliam, Grant, Harney, Hood River, Jackson, Jefferson, Josephine, Lake, Lincoln, Linn, Malheur, Morrow, Polk, Sherman, Tillamook, Umatilla, Wallowa, Wasco, Washington, Wheeler, Yamhill counties.

²Benton, Clatsop, Klamath, Lane, Marion, and Union counties.

RATIOS OF ASSESSED VALUES TO SALE VALUES

TABLE XIV. RATIOS OF ASSESSED VALUES TO SALE VALUES OF REAL PROPERTY OF SPECIFIED CITIES FOR THE SIX YEARS, 1921 TO 1926

	All groups	Value groups based on sale price									Number of sales	Value of property sold in thousands
		I	II	III	IV	V	VI	VII	VIII	IX		
		Below \$500	\$500 to 999	\$1,000 to 1,499	\$1,500 to 1,999	\$2,000 to 2,499	\$2,500 to 2,999	\$3,000 to 3,499	\$3,500 to and above			
Class "A"												
Total	43.62	82.75	66.88	54.36	45.84	43.89	43.30	40.01	40.65	.....	5,302	\$14,580
Baker	55.02	90.09	71.75	57.01	53.87	52.79	49.92	57.37	52.76	.....	409	920
Oregon City	30.87	72.25	43.97	41.67	31.81	27.91	27.88	24.45	30.95	.....	240	696
Rainier	50.48	67.07	70.49	60.30	50.58	31.45	55.78	25.90	40.67	.....	76	110
St. Helens	33.44	67.62	46.71	37.36	38.62	42.47	33.56	29.00	28.83	.....	76	172
Marshfield	44.08	74.09	66.98	60.33	41.41	69.01	48.80	38.29	41.54	.....	202	806
Bend	30.35	54.18	37.57	40.69	33.71	32.74	27.87	23.31	28.76	.....	447	1,103
Roseburg	50.58	101.41	93.38	62.14	63.81	47.50	44.76	43.63	46.03	.....	397	1,042
Condon	64.67	67.11	59.75	76.32	64.01	64.83	61.62	63.01	63.91	.....	62	121
Hood River	51.78	115.43	59.09	63.41	45.09	49.66	50.90	44.43	50.21	.....	211	522
Medford	41.22	56.90	73.78	56.37	45.55	48.56	42.19	43.28	38.08	.....	396	1,438
Ashland	47.58	135.64	73.64	71.89	57.11	46.39	50.93	42.69	43.83	.....	128	406
Prineville	39.08	128.26	55.98	41.24	44.09	32.70	38.94	35.84	37.45	.....	64	170
Grants Pass	55.34	86.00	74.55	57.27	50.99	51.65	57.19	63.58	49.17	.....	264	521
Newport	50.22	86.67	111.37	65.15	51.55	51.64	45.59	43.33	31.90	.....	42	83
Toledo	46.24	65.26	77.00	68.75	.....	28.89	65.45	28.86	38.27	.....	22	42
Albany	41.94	55.51	69.69	50.88	43.58	44.47	45.88	40.49	39.96	.....	320	1,242
Ontario	33.45	56.96	61.02	46.19	27.46	29.76	25.96	27.46	28.16	.....	98	153
Dallas	33.60	68.13	45.92	43.54	38.34	37.67	31.23	31.65	26.38	.....	199	436
Tillamook	48.33	121.32	80.69	65.22	53.74	48.76	41.73	49.60	42.41	.....	97	255
Milton	38.16	76.84	78.43	40.75	39.96	31.53	37.07	22.10	33.20	.....	104	178
Pendleton	47.56	49.68	107.28	70.47	47.45	47.76	46.76	43.44	46.08	.....	316	1,133
The Dalles	56.36	134.46	90.36	70.73	60.46	53.89	51.98	48.70	53.70	.....	387	1,069
Hillsboro	33.57	62.78	61.72	41.50	35.49	38.29	35.50	28.75	29.80	.....	177	489
Forest Grove	30.23	106.69	51.65	40.77	35.35	29.62	32.76	25.52	26.92	.....	197	589
McMinnville	41.08	104.32	64.16	44.52	49.77	39.46	57.24	34.79	34.49	.....	142	335
McMinnville	40.88	132.28	59.23	54.59	44.85	42.16	41.20	40.43	35.85	.....	229	559
Class "B"		Below \$700	\$700 to 1,399	\$1,400 to 2,099	\$2,100 to 2,799	\$2,800 to 3,499	\$3,500 to 4,199	\$4,200 to 4,899	\$4,900 to 7,999	\$8,000 and above		
Total	43.65	80.76	63.71	47.99	43.25	40.73	39.33	37.62	37.51	49.16	4,050	15,472
Corvallis	39.56	92.88	79.36	54.12	45.89	39.37	36.71	39.94	34.54	31.28	542	1,912
Astoria	43.61	67.16	42.77	34.43	33.55	39.31	32.85	28.47	38.16	53.99	474	2,317
Klamath Falls	44.53	86.14	61.03	39.57	40.03	39.45	31.73	36.16	33.80	54.30	297	1,300
Eugene	45.62	87.35	69.71	52.66	49.39	42.00	43.24	41.32	38.92	48.94	796	3,131
Salem	41.64	76.38	60.55	48.10	41.98	40.48	38.55	37.92	37.70	43.49	1,341	5,017
Silverton	34.38	75.97	56.36	41.25	31.51	28.41	35.23	28.38	25.14	.....	103	246
La Grande	52.03	87.84	65.87	50.00	48.69	46.39	45.52	40.69	47.21	56.56	497	1,549

TABLE XV. RATIOS OF ASSESSED VALUES TO SALE VALUES OF REAL PROPERTY OF SPECIFIED CITIES BY CLASSES AND YEARS

	Year	Value groups based on sale price of transfers								Number of sales	Value of property sold in nearest thousands
		All groups	I	II	III	IV	V	VI	VII	VIII	
Class "A" cities, including twenty-six cities. ¹			Below \$500	\$500 to 999	\$1,000 to 1,499	\$1,500 to 1,999	\$2,000 to 2,499	\$2,500 to 2,999	\$3,000 to 3,499	\$3,500 and above	
	1921	45.73	85.50	67.68	56.15	45.17	44.79	43.70	41.22	42.83	1,749
	1922	44.08	75.20	66.08	54.26	46.56	44.30	41.52	38.92	40.22	990
	1923	47.08	95.14	68.88	56.01	47.76	44.48	47.31	45.15	44.94	911
	1924	42.72	87.61	66.81	51.39	47.36	38.49	39.04	34.53	41.33	530
	1925	40.25	62.36	56.00	45.53	40.91	39.91	41.71	38.69	39.18	537
Class "B" cities, including seven cities. ²	1926	38.45	85.14	69.13	56.32	42.10	46.27	44.55	34.25	34.99	585
			Below \$700	\$700 to 1,399	\$1,400 to 2,099	\$2,100 to 2,799	\$2,800 to 3,499	\$3,500 to 4,199	\$4,200 to 4,899	\$4,900 and above	
	1921	46.12	85.47	62.66	47.65	45.87	42.77	40.82	36.96	47.45	977
	1922	45.28	67.50	65.29	48.36	43.97	41.23	39.35	34.29	46.48	810
	1923	44.69	85.65	72.26	51.98	42.57	40.03	40.11	39.22	45.29	810
	1924	43.06	110.65	57.84	37.42	46.47	40.34	37.02	37.16	44.45	410
	1925	41.68	65.60	57.20	47.13	37.91	35.82	35.76	38.32	43.64	450
	1926	39.52	78.15	62.79	42.59	41.79	41.76	39.34	38.62	38.04	593

¹Baker City, Oregon City, Rainier, St. Helens, Marshfield, Bend, Roseburg, Condon, Hood River, Medford, Ashland, Prineville, Grants Pass, Newport, Toledo, Albany, Ontario, Dallas, Tillamook, Milton, Pendleton, The Dalles, Hillsboro, Forest Grove, Newberg, McMinnville.

²Corvallis, Astoria, Klamath Falls, Eugene, Salem, Silverton, La Grande.

TABLE XVI. RATIOS OF ASSESSED VALUES TO SALE VALUES OF CITY PROPERTY BY CLASSES AND THREE-YEAR PERIODS, 1921 TO 1926

	Years	Value groups based on sale prices									Number of sales	Value of property in thousands	Coefficient in thousands of person
		All groups											
			I	II	III	IV	V	VI	VII	VIII			
			Below \$500	\$500 to 999	\$1,000 to 1,499	\$1,500 to 1,999	\$2,000 to 2,499	\$2,500 to 2,999	\$3,000 to 3,499	\$3,500 and above			
All city property—	1921-26	42.24	76.11	61.98	51.11	44.35	42.15	40.52	38.49	38.43	9,497	\$22,042	.1147
Class "A"	1921-23	44.08	76.92	63.15	52.28	44.42	42.58	40.54	40.00	40.37	6,588	13,854	.1159
	1924-26	39.13	74.10	58.83	47.65	44.03	41.24	40.49	35.46	36.04	2,909	8,188	.1094
All large cities—	1921-26	43.62	82.75	66.88	54.36	45.84	43.89	43.30	40.01	40.65	5,302	14,580	.0909
Class "A"	1921-23	45.68	84.34	67.52	55.47	46.20	44.58	44.10	41.70	42.83	3,650	9,054	.0905
	1924-26	40.23	79.22	65.05	50.93	44.17	42.51	41.72	35.98	37.99	1,652	5,526	.0874
All small cities—	1921-26	39.55	72.24	57.57	48.09	42.28	38.90	35.29	35.30	32.45	4,195	7,462	.1889
Class "A"	1921-23	41.06	72.82	59.09	49.26	41.90	39.03	33.57	35.75	33.86	2,938	4,800	.1930
	1924-26	36.83	70.70	53.71	44.79	43.84	38.59	38.33	34.66	30.67	1,257	2,662	.1765
			Below \$700	\$700 to 1,399	\$1,400 to 2,099	\$2,100 to 2,799	\$2,800 to 3,499	\$3,500 to 4,199	\$4,200 to 4,899	\$4,900 and above			
All city property—	1921-26	43.91	72.93	63.75	45.21	42.67	38.36	36.53	36.21	45.06	13,830	79,136	.0622
Class "B"	1921-23	45.70	70.60	63.18	45.66	41.32	38.00	37.06	35.75	47.61	7,478	37,796	.0855
	1924-26	42.28	77.52	65.29	43.50	44.13	38.77	35.92	36.54	42.95	6,352	41,340	.0458
All large cities—	1921-26	43.65	80.76	63.71	47.99	43.25	40.73	39.33	37.62	44.11	4,050	15,472	.0619
Class "B"	1921-23	45.42	79.25	65.37	49.16	44.18	41.46	40.20	37.15	46.51	2,597	9,088	.0810
	1924-26	41.13	84.54	58.89	42.40	41.80	39.47	37.58	38.08	41.28	1,453	6,384	.0388
All small cities—	1921-26	44.47	63.85	52.97	43.08	40.86	36.65	35.98	35.90	46.63	1,309	2,469	.1282
Class "B"	1921-23	47.89	59.57	53.81	44.12	43.28	37.03	38.13	38.61	55.13	858	1,565	.1469
	1924-26	38.55	73.86	51.14	40.45	37.73	36.13	32.29	33.53	30.77	451	904	.1760

TABLE XVII. RATIOS OF ASSESSED VALUES TO SALE VALUES OF CITY REAL PROPERTY IN MULTNOMAH COUNTY FOR SIX YEARS, 1921 TO 1926

	Year	All groups	Value groups based on sale price										Number of sales	Value of property sold in thousands
			I	II	III	IV	V	VI	VII	VIII	IX	X	XI	
			Below \$700	\$700 to 1,399	\$1,400 to 2,099	\$2,100 to 2,799	\$2,800 to 3,499	\$3,500 to 4,199	\$4,200 to 4,899	\$4,900 to 6,999	\$7,000 to 9,999	\$10,000 to 19,999	\$20,000 and above	
Number of sales			332	673	544	1,103	671	816	909	1,598	908	540	377	8,471
Multnomah county	1921-26	43.96	72.86	69.37	43.83	42.46	36.99	35.15	35.69	34.82	37.64	44.33	52.05	\$61,195
city property	1921	47.21	54.69	46.56	36.70	34.56	33.12	36.48	35.40	40.09	37.71	44.68	60.45	937
	1922	45.49	87.49	74.32	43.72	34.81	32.76	35.46	38.49	35.55	41.31	45.70	50.42	1,265
	1923	44.77	71.06	69.13	46.21	41.36	37.68	33.07	32.74	32.66	35.93	44.75	58.39	1,821
	1924	39.84	74.49	80.71	42.57	37.94	36.78	34.78	33.44	32.09	35.32	48.69	44.37	1,433
	1925	38.29	-----	51.25	38.13	46.87	40.73	33.66	34.89	34.23	37.59	43.13	40.19	1,161
	1926	45.80	77.59	70.67	54.36	50.00	38.78	37.48	38.97	35.85	37.35	41.60	52.97	1,854

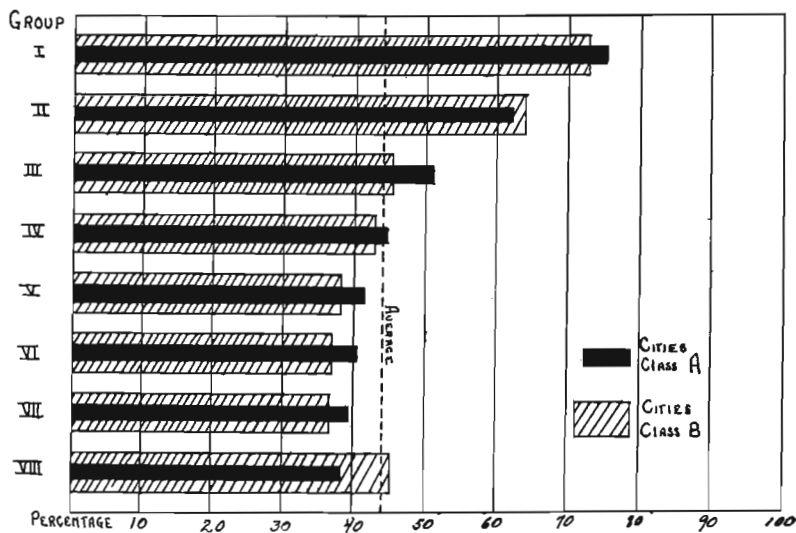


Fig. 4. Ratios of assessed values to sale values of city real property graphically presented. The above graph is based upon Table XII. Average sale value of transfers in each group including classes A and B: Group I, \$358; Group II, \$817; Group III, \$1,420; Group IV, \$2,246; Group V, \$2,726; Group VI, \$3,303; Group VII, \$4,120; Group VIII, \$11,071.

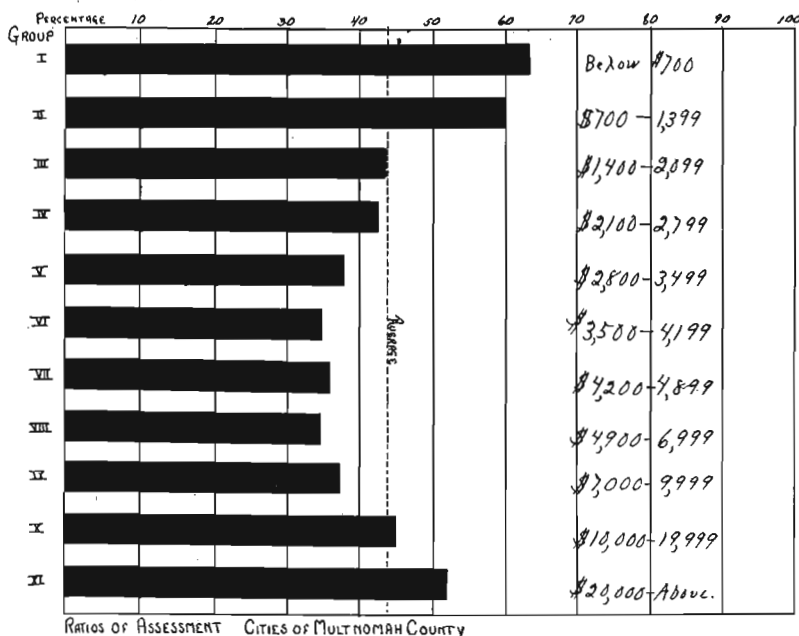


Fig. 5. Ratios of assessed values to sale values of the different value groups of Multnomah county city transfers graphically presented.

Direct comparisons of ratios of assessments of specified cities of the different counties and ratios of assessments of the remaining city properties of the corresponding counties are made in Table XVIII.

The table is self-explanatory. In nearly every instance the ratios of assessment of the larger cities and the smaller cities are remarkably similar.

TABLE XVIII. COLUMN II CONTAINS RATIOS OF ASSESSED VALUE TO SALE VALUE OF ALL CITY PROPERTIES FOR THE RESPECTIVE COUNTIES FOR SIX YEARS; COLUMN IV CONTAINS RATIOS OF ASSESSMENT OF PROPERTIES FOR CITIES IN COLUMN III; COLUMN V CONTAINS RATIOS OF ASSESSMENT OF CITY PROPERTIES IN THE COUNTIES EXCLUSIVE OF PROPERTY OF CITIES IN COLUMN III; COLUMN VI SHOWS SALE VALUE OF PROPERTIES REPRESENTED IN COLUMN V IN THOUSANDS OF DOLLARS.

I	II	III	IV	V	VI ¹
Baker	53.88	Baker	55.02	47.29	159
Benton	39.78	Corvallis	39.56	43.21	123
Clackamas	25.51	Oregon City	30.87	22.48	1,234
Clatsop	41.40	Astoria	43.61	33.14	619
Columbia	42.92	St. Helens	33.44	49.69	242
Coos	45.96	Marshfield	44.08	48.84	528
Crook	38.83	Prineville	39.08	.....	.....
Curry	43.62	.....	.....	.....	.....
Deschutes	30.62	Bend	30.35	32.32	171
Douglas	49.42	Roseburg	50.58	45.76	329
Gilliam	65.71	Condon	64.67	67.20	85
Grant	41.10	.....	.....	.....	.....
Harney	35.34	.....	.....	.....	.....
Hood River	50.85	Hood River	51.78	42.13	56
Jackson	43.55	{ Ashland	47.58 }	63.05	89
Jefferson	42.41	{ Medford	41.22 }	.....	.....
Josephine	55.20	Grants Pass	55.34	46.70	8
Klamath	44.26	Klamath Falls	44.53	37.52	52
Lake	44.87	.....	.....	.....	.....
Lane	45.46	Eugene	45.62	44.46	490
Lincoln	50.62	{ Newport	50.22 }	.....	.....
Linn	40.78	{ Toledo	46.24 }	.....	.....
Malheur	33.19	Albany	41.94	37.78	478
Marion	41.62	Ontario	33.45	32.88	131
Morrow	44.41	Salem	41.64	41.52	1,002
Multnomah ²	43.96	.....	.....	.....	.....
Polk	34.27	Dallas	33.60	34.91	450
Sherman	48.01	.....	.....	.....	.....
Tillamook	48.37	Tillamook	48.33	48.42	262
Umatilla	44.29	Pendleton	47.56	38.95	694
Union	54.45	La Grande	52.03	63.20	429
Wallowa	49.07	.....	.....	.....	.....
Wasco	55.81	The Dalles	56.36	50.07	102
Washington	31.10	{ Forest Grove	30.23 }	29.67	499
Wheeler	64.68	{ Hillsboro	33.57 }	.....	.....
Yamhill	41.14	{ McMinnville	40.88 }	41.54	418
		{ Newberg	41.08 }	.....	.....

¹For sale values in cities in Column III see Table XIV.

²No segregation is made of city property in Multnomah county.

IV. COMPARISON OF RURAL AND CITY RATIOS OF ASSESSMENT

The weighted ratio of assessments of all rural real property involved in this investigation, based upon 16,806 transfers with a sale value of \$95,068,836, is 41.87 percent as against a weighted ratio of assessment of

43.55 percent for all city real property studied involving 23,327 transfers with a sale value of \$101,178,508.

The ratios by years are as follows:

Year	Rural	All city	Multnomah county cities	Cities other than Multnomah county
1921.....	41.72	45.87	47.21	45.00
1922.....	40.53	44.99	45.49	44.20
1923.....	42.17	44.93	44.77	45.15
1924.....	42.45	40.35	39.84	41.27
1925.....	42.39	39.18	38.29	40.69
1926.....	43.15	43.88	45.80	38.32

The discrepancies between rural and city assessments as totals are insignificant. The ratios of assessment between Multnomah city properties and real properties of other cities in the state are likewise slight with the exception of the ratios for the year 1926, when Multnomah city property was assessed approximately 20 percent higher than all other city property of the state.

The ratios of assessment of rural real properties and city real properties by counties, however, show marked discrepancies.¹

TABLE XIX. RATIOS OF ASSESSED VALUE TO SALE VALUE OF CITY AND RURAL REAL PROPERTY FOR THREE-YEAR AND SIX-YEAR PERIODS. WEIGHTED.

County	City 1921 to 1923	Rural 1921 to 1923	City 1924 to 1926	Rural 1924 to 1926	City 1921 to 1926	Rural 1921 to 1926
Baker	55.46	48.90	50.14	55.11	53.88	50.25
Benton	39.12	35.21	40.76	40.76	39.78	37.28
Clackamas	27.22	27.83	22.59	28.21	25.51	27.96
Clatsop	41.11	51.81	42.02	46.24	41.40	51.39
Columbia	49.24	48.53	37.90	49.07	42.92	48.78
Coos	51.89	43.59	41.04	41.89	45.96	43.06
Crook	40.12	43.13	36.17	44.08	38.83	43.38
Curry	41.80	54.04	49.65	49.66	43.62	50.94
Deschutes	33.14	33.45	26.54	31.85	30.62	32.80
Douglas	54.23	39.29	41.94	39.52	49.42	39.37
Gilliam	66.26	70.17	63.83	84.27	65.71	72.27
Grant	40.60	53.76	43.49	59.23	41.10	55.09
Harney	35.58	41.51	35.07	38.89	35.34	40.61
Hood River	55.21	48.12	46.08	45.42	50.85	47.37
Jackson	45.73	40.26	39.98	43.29	43.55	41.07
Jefferson	42.62	41.34	40.96	62.05	42.41	47.01
Josephine	57.95	45.85	50.26	43.83	55.20	45.23
Klamath	45.03	41.64	43.28	45.03	44.26	42.83
Lake	40.42	48.27	51.54	33.75	44.87	39.60
Lane	48.46	34.41	42.28	34.78	45.46	34.54
Lincoln	55.54	62.40	44.24	60.34	50.62	61.08
Linn	40.93	32.64	40.51	38.16	40.78	34.45
Malheur	34.07	47.53	31.71	47.57	33.19	47.54
Marion	44.22	35.11	38.25	39.60	41.62	36.26
Morrow	44.33	47.03	44.65	47.68	44.41	47.26
Multnomah	45.67	40.03	42.59	32.42	43.96	37.59
Polk	33.28	28.10	36.30	32.06	34.27	29.42
Sherman	45.41	64.72	54.29	60.75	48.01	63.45
Tillamook	48.90	46.22	47.54	52.56	48.37	48.94
Umatilla	45.43	40.27	42.00	48.07	44.29	42.91
Union	58.59	57.61	43.70	57.95	54.45	57.67
Wallowa	48.99	43.97	49.40	53.19	49.07	46.21
Wasco	55.32	46.65	57.03	56.03	55.81	48.73
Washington	31.11	31.24	31.10	34.50	31.10	32.09
Wheeler	64.53	71.26	65.29	76.49	64.68	72.40
Yamhill	43.84	40.56	36.06	39.79	41.14	40.27
Weighted average	45.26	41.49	41.76	42.69	43.55	41.87

¹The coefficient of correlation between the ratios of assessment of rural real properties and the ratios of assessment of city real properties of the corresponding counties was found to be .7536 $\pm$.049.

RATIOS OF ASSESSED VALUES TO SALE VALUES

33

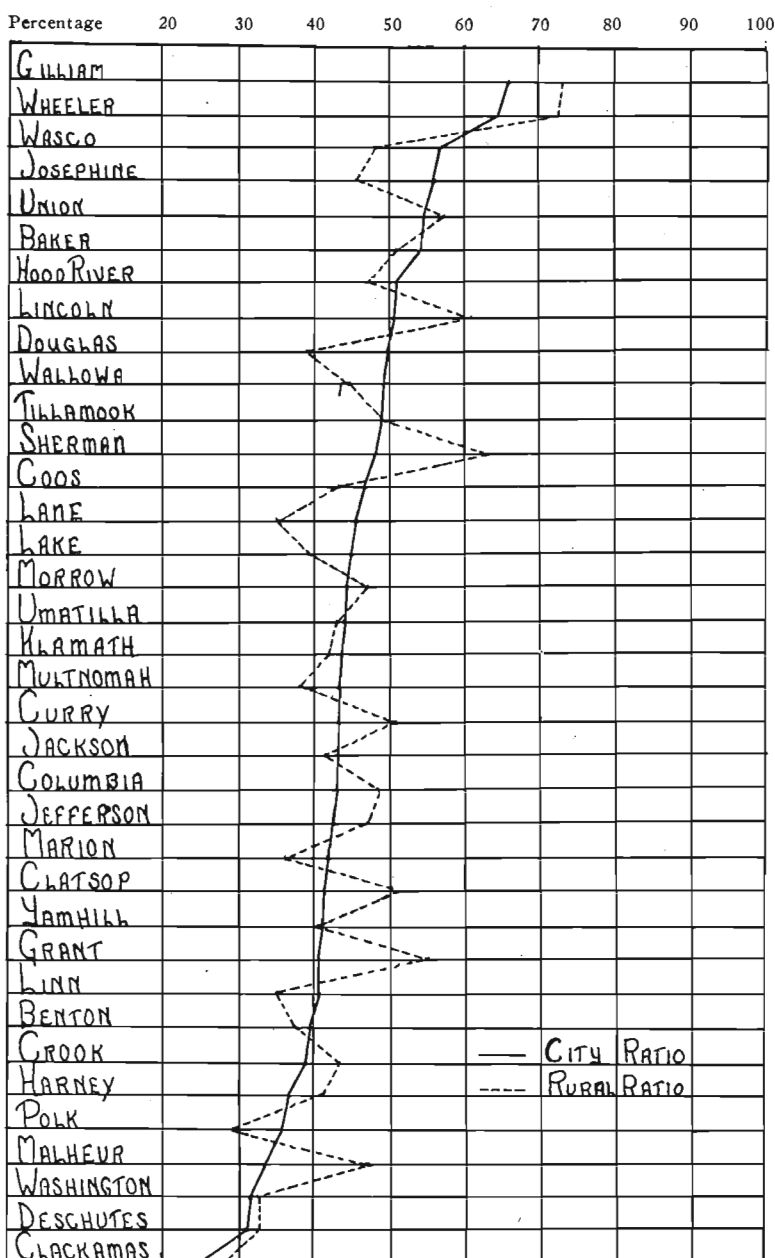


Fig. 6. Comparison of ratios of assessments of rural and city real properties by counties.

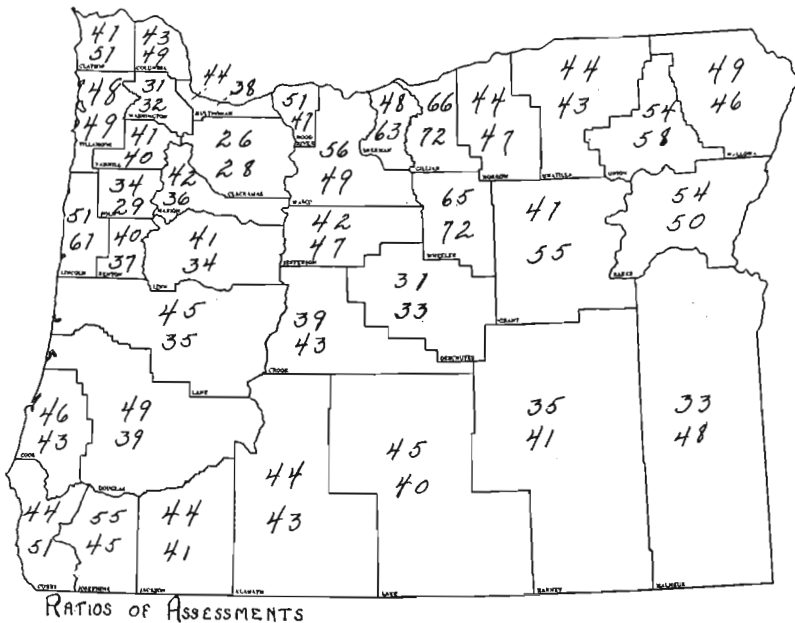


Fig. 7. In the above outline map of Oregon the ratios of assessment of city and rural real properties are given. Upper figures refer to city real property and lower figures to rural real property. Ratios are the weighted averages for the years 1921 to 1926, in nearest whole percentages.

Fig. 6 is based upon the last two columns of data in Table XIX. The counties are arranged in order of importance of assessment of city property.

The data in the first two columns of Table XIX, based upon the transfers of the three years 1921 to 1923, indicate that in twenty-one counties the city properties are assessed more highly and in fifteen counties rural properties are assessed more highly. The data in the third and fourth columns, based upon the transfers of the years 1924 to 1926, reveal that in only nine counties city property is assessed more highly and that in twenty-seven counties rural properties are assessed more highly.

In Table XX, based upon the six-year data 1921 to 1926, the difference in the ratios of assessment of rural and city real properties is expressed in terms of percentages using the lower ratio of assessment in each case as the base.¹

This table reveals the fact that almost without exception those counties containing the larger cities and towns of the state assess the

¹For example, in Lane county the ratio of assessed value to sale value of city property for the six years, 1921 to 1926, was 45.46 percent and of rural property 34.54 percent. The city ratio 45.46 divided by 34.54, the rural ratio, equals 1.32; that is, city property is assessed 32 percent higher than rural property.

TABLE XX. TABLE INDICATING PERCENT BY WHICH EITHER CITY OR RURAL REAL PROPERTY IS ASSESSED THE HIGHER. PERCENTAGES ARE BASED UPON ALL TRANSFERS, CITY AND RURAL, FOR THE SIX YEARS 1921 TO 1926. COUNTIES ARRANGED IN ORDER OF IMPORTANCE OF PERCENTAGE VARIATION.

County	Percent by which city property is assessed the higher	County	Percent by which rural property is assessed the higher
Laure	31.62	Tillamook	1.18
Douglas	25.53	Washington	3.18
Josephine	22.04	Union	5.91
Linn	18.37	Morrow	6.42
Multnomah	16.95	Deschutes	7.12
Polk	16.49	Clackamas	9.60
Marion	14.78	Gilliam	9.98
Wasco	14.53	Jefferson	10.85
Lake	13.31	Crook	11.72
Hood River	7.35	Wheeler	11.94
Baker	7.22	Columbia	13.65
Coos	6.73	Harney	14.91
Benton	6.71	Curry	16.78
Wallowa	6.19	Lincoln	20.66
Jackson	6.04	Clatsop	24.13
Klamath	3.34	Sherman	32.16
Umatilla	3.22	Grant	34.04
Yamhill	2.16	Malheur	43.24

city real property more highly than the rural property. It should be remembered that this conclusion is based upon the average of the six-year data.

During the six years under consideration there was an increase in the actual value of rural real property of but one percent. The six years therefore represent a period of practically unchanging land values.¹ The actual value of city real property, however, increased almost thirty percent between 1921 and 1925, with a decrease the following year to about twenty-three percent above the 1921 mark.² This fact together with the fact of a decline in ratios of assessment of city property from 45.87 percent in 1921 to 39.18 percent in 1925, and a rise to 43.88 percent the following year, 1926, may warrant the inference that changes in assessments of property lag in case of changes in actual values of property.³

V. COMPARISONS OF THE VARIABILITY OF VALUE GROUP ASSESSMENTS OF RURAL AND CITY REAL PROPERTIES

Coefficients of variability of ratios of assessments of value groups are presented in Table XXI. These coefficients measure twice the percent of tax misplaced among the properties in the different value groups.⁴

¹The actual values are obtained by dividing the assessed values of the respective properties for the different years by the corresponding ratios of assessment.

²According to the assessment rolls of the state, the rise in city values is almost entirely due to an increase in the value of improvements on lots.

³The percent increase in the value of city property in Multnomah county was not perceptibly greater than the percent increase in value of all other city property of the state.

⁴Explanation is made elsewhere that a coefficient of dispersion represents twice the percent of tax misplaced (see page 38).

The coefficients of dispersion for rural assessments vary from .0238 to .2683 in the different counties, and for city assessments from .0595 to .2839.

TABLE XXI. COEFFICIENTS OF DISPERSION OF RATIOS OF ASSESSMENTS OF THE DIFFERENT VALUE GROUPS OF RURAL AND CITY REAL PROPERTY. COEFFICIENTS ARE BASED UPON THE RATIOS FOUND IN TABLES VII AND XII.

County	Rural	City	County	Rural	City
Baker	.1856	.0768	Lake	.1189	.2040
Benton	.0700	.1329	Lane	.1101	.0772
Clackamas	.0678	.1570	Lincoln	.0706	.2383
Clatsop	.0238	.1359	Linn	.0467	.0749
Columbia	.0705	.2680	Malheur	.1304	.2321
Coos	.0566	.1115	Marion	.0799	.0693
Crook	.2063	.0686	Morrow	.1748	.1673
Curry	.1667	.2839	Multnomah	.0458	.0595
Deschutes	.2329	.1426	Polk	.0907	.1940
Douglas	.1703	.1601	Sherman	.0325	.1765
Gilliam	.1815	.0597	Tillamook	.0890	.1691
Grant	.2146	.2633	Umatilla	.0699	.0724
Harney	.1653	.1258	Union	.0540	.1201
Hood River	.1364	.0673	Wallowa	.1589	.1394
Jackson	.1399	.1149	Wasco	.0657	.0982
Jefferson	.2683	.2657	Washington	.0440	.1482
Josephine	.1134	.1221	Wheeler	.1310	.0710
Klamath	.2281	.1096	Yamhill	.0285	.1525

The value of the property in the overassessed groups of rural property represents only thirty-two percent of the total value of all groups, and the city property in the overassessed groups represents only forty-five percent of the total property value of all groups. The misplaced rural and city tax therefore falls upon thirty-two percent of the rural and upon forty-five percent of the city property, respectively.

The calculation of the amount of tax misplaced among the value groups of the rural and city properties for the six years 1921 to 1926, is beyond the scope of this study. An estimate, however, based upon the 1926 levy, would indicate that almost \$850,000 of rural taxes are misplaced among the different value groups and approximately \$1,100,000 of city taxes are so misplaced.

The amount so misplaced, although not large and representing less than four percent of the total tax levied for all purposes in the state, is more than five times as great as the amount of the state levy that would have been misplaced among the different counties on the 1926 rolls in the absence of any equalization of the county assessments by the State Board of Equalization. The meaning of this condition becomes more significant when it is remembered that this extra and unfair burden falls for the most part upon the small property holders, owners of vacant lots and small rural acreages.¹

¹State tax burden emphasized out of all proportion to its relative importance. The total state levy for the year 1927, for example, on the rolls of 1926, is \$7,447,561.80. The levy for elementary schools constitutes \$2,221,354.70 of this amount leaving only \$5,226,207.10 for general state purposes. This constitutes a levy of 4.7 mills on the total taxable property of the state for that year. The coefficient of dispersion of ratios of assessed values to actual values of property generally in each county, as equalized by the State Tax Commission, is .1415. Therefore, in the absence of any equalization by the State Tax Commission only 7.07 percent or \$369,874.36 of the state tax levy would have been misplaced among the counties.

VI. VARIATIONS IN THE ASSESSMENT OF INDIVIDUAL RURAL AND CITY REAL PROPERTIES

In the first part of this study, variations or inequalities in the assessments of value groups of real property were calculated and tabulated. The investigation indicated tendencies to assess properties of low values at a higher ratio than properties of higher values. The percent of the total tax misplaced was small.

The second part of this study is devoted to an investigation and measurement of the discrepancies in the ratios of assessments of individual rural and city real properties. The unit of measurement used in calculating these variations is the coefficient of dispersion.

Coefficient of dispersion or variability. The coefficient of dispersion measures the degree of variability of the items in a series. A low coefficient indicates a high degree of equality among the items whereas a high coefficient indicates a wide scattering among the items or a wide deviation from the average or type.

The following problem will illustrate the meaning of the coefficient of dispersion as used in this study. A, B, C, etc. are each owners of properties respectively valued and assessed as indicated. The coefficient of dispersion is obtained by the following process:

Owners	Actual or sale value of properties	Assessed at	Ratio of assessed value to sale value	Deviation from the average assessed value of 40 per cent	Deviation times the actual value
A.	\$500	\$150	.30	.10—	50.00
B.	300	90	.30	.10—	30.00
C.	200	100	.50	.10+	20.00
D.	300	180	.60	.20+	60.00
E.	200	70	.35	.05—	10.00
F.	400	150	.375	.025—	10.00
G.	100	60	.60	.20+	20.00
Total	\$2,000	\$800	—	.775	200.00

$800 \div 2,000 = .40$, the average rate of assessment.

$200 \div 2,000 = .10$, the average deviation.

$.10 \div .40 = .25$, the coefficient of dispersion.

Now let us assume that a \$20 tax levy is placed upon the above property. The percent of tax misplaced is calculated as follows:

Owners	Actual value	Assessed value	Assessed value times levy of .025	Levy of .01 on actual value	Difference between levy on assessed values and on actual values
A.	\$500	\$150	\$3.75	\$5.00	\$1.25—
B.	300	90	2.25	3.00	.75—
C.	200	100	2.50	2.00	.50+
D.	300	180	4.50	3.00	1.50+
E.	200	70	1.75	2.00	.25—
F.	400	150	3.75	4.00	.25—
G.	100	60	1.50	1.00	.50+
	\$2,000	\$800	\$20.00	\$20.00	\$2.50—
					\$2.50+

$\$20 \div 2,000 = .01$, levy necessary on actual value to raise \$20.00.

$\$20 \div 800 = .025$, levy necessary on assessed value to raise \$20.00.

It is evident from the above problem that \$2.50 of the tax is misplaced. The owners, C, D, and G, who are assessed above the average, pay \$2.50 in excess of their fair share of the levy. The other owners, A, B, E, and F, who are underassessed, pay \$2.50 less than their fair share. Two dollars and fifty cents represent 12.5 percent of the total levy of \$20. In other words, the percent of total tax misplaced is equal to one-half of the coefficient of dispersion. The coefficient of dispersion equals twice the percentage of tax misplaced because the plus and minus deviations are added together, thereby adding the amount by which one group is overassessed to the similar amount by which the other group is underassessed.

The coefficient of dispersion, .25, is weighted. Every deviation has been multiplied or weighted according to the actual or full value of the property. The unweighted coefficient of dispersion is .2767. This is obtained by taking the aggregate deviations, .775, and dividing by 7, the number of properties assessed; e.g.:

$$.775 \div 7 = .1107 \text{ average deviation.}$$

$$.1107 \div .40 = .2767 \text{ coefficient of dispersion (unweighted).}$$

TABLE XXII. WEIGHTED COEFFICIENTS OF DISPERSION OF RATIOS OF ASSESSED TO SALE VALUE OF RURAL REAL PROPERTY FOR ALL COUNTIES FOR THE YEARS 1921, 1923, 1925, AND 1926, AND THE AVERAGE FOR THE FOUR YEARS.

	1921	1923	1925	1926	Average 4 yrs.	Rank
Baker	.3773	.3106	.3443	.2771	.3272	7
Benton	.2967	.2596	.4337	.3338	.3310	8
Clackamas	.4272	.3398	.4119	.4242	.4008	25
Clatsop	.2395	.4839	.7488	.3174	.4474	35
Columbia	.4759	.3830	.3852	.3193	.3909	22
Coos	.3717	.2142	.1974	.4464	.3074	6
Crook	.4031	.3975	.4141	.3144	.3823	20
Curry	.3133	.3077	.2993	.4310	.3378	11
Deschutes	.3915	.3414	.3306	.4428	.3766	18
Douglas	.4101	.4048	.3337	.5029	.4129	27
Gilliam	.3433	.2376	.3758	.2661	.3057	5
Grant	.3496	.3607	.6913	.3210	.4307	31
Harney	.5052	.3424	.6749	.3175	.4600	36
Hood River	.3757	.3394	.4323	.3210	.3671	17
Jackson	.3613	.4002	.3953	.4357	.3981	24
Jefferson	.3845	.5195	.4363	.4105	.4377	34
Josephine	.3605	.3400	.4688	.5151	.4211	28
Klamath	.3334	.5056	.3374	.3935	.3925	23
Lake	.5852	.4298	.4411	.2905	.4367	33
Lane	.3846	.4055	.4818	.4171	.4223	29
Lincoln	.3317	.3986	.1358	.3168	.2957	4
Linn	.3083	.3511	.2939	.3987	.3380	12
Malheur	.3683	.3064	.5252	.4994	.4248	30
Marion	.3214	.3432	.3288	.3450	.3346	10
Morrow	.4426	.1886	.2004	.5607	.3481	14
Multnomah	.4419	.4272	.4686	.3949	.4332	32
Polk	.3885	.4931	.2898	.3514	.3807	19
Sherman	.3059	.2400	.1859	.3218	.2634	2
Tillamook	.4896	.3476	.3849	.4142	.4091	26
Umatilla	.3871	.4819	.3563	.3205	.3865	21
Union	.3309	.3490	.2720	.2145	.2916	3
Wallowa	.3084	.2415	.2525	.5265	.3322	9
Wasco	.3332	.3357	.4028	.3171	.3472	13
Washington	.3403	.3205	.4533	.3458	.3650	16
Wheeler	.3480	.2585	.0992	.2620	.2419	1
Yamhill	.2843	.3412	.3592	.4614	.3615	15
Average	.3728	.3541	.3790	.3763	.3705	

The significance of the difference between these two coefficients lies in the statistical fact that a higher unweighted coefficient than weighted coefficient implies that the aggregate value of the properties over-assessed is either greater or less than the aggregate value of the properties underassessed. The meaning of this in the problem at hand will become evident later.

The coefficients of dispersion, both weighted and unweighted, were calculated for both rural and city assessments for the years 1921, 1923, 1925, and 1926. In finding the coefficients of variability of rural assessments for the four years indicated, all the real property transfers, 11,738, were used. The corresponding coefficients of variability of assessments of city properties are based upon 9,474 transfers,¹ a total of 21,212.²

Tables XXII and XXIII give the weighted coefficients of dispersion for each county for each of the four years for rural ratios of assessment and city ratios respectively. The averages for the four years of each county, the average coefficients for all counties by years, and the average coefficient for all counties for all four years are given.

TABLE XXIII. WEIGHTED COEFFICIENTS OF DISPERSION OF THE RATIOS OF ASSESSED VALUES TO SALE VALUES OF CITY PROPERTIES FOR ALL COUNTIES FOR THE YEARS 1921, 1923, 1925, AND 1926, AND THE AVERAGE FOR THE FOUR YEARS.

	1921	1923	1925	1926	Average 4 yrs.	Rank
Baker	.3221	.3304	.2130	.3340	.2999	8
Benton	.2288	.3785	.2423	.2501	.2749	5
Clackamas	.3577	.4415	.3776	.3286	.3763	26
Clatsop	.5034	.4992	.4820	.5153	.4999	36
Columbia	.3559	.3569	.4392	.5131	.4162	32
Coos	.3902	.3974	.4735	.3879	.4123	31
Crook	.6057	.3207	.2066	.1612	.3236	13
Curry	.4705	.2191	.5097	.1545	.3385	17
Deschutes	.4843	.3633	.2798	.4911	.4046	30
Douglas	.3819	.3385	.3127	.3454	.3446	18
Gilliam	.2796	.2930	.3638	.1185	.2650	3
Grant	.4497	.3896	.3630	.0992	.3254	15
Harney	.4418	.0962	.4374	.3222	.3244	14
Hood River	.2973	.5199	.1868	.3029	.3267	16
Jackson	.2673	.3263	.2752	.3865	.3138	10
Jefferson	.6186	.4310		.2644	.4380	33
Josephine	.2590	.2926	.4433	.2309	.3065	9
Klamath	.2704	.3719	.5391	.4060	.3968	28
Lake	.3387	.1530	.2233	.2540	.2423	2
Lane	.2813	.3239	.4266	.3635	.3488	19
Lincoln	.3597	.3412	.3235	.4710	.3751	25
Linn	.2312	.2669	.2465	.3245	.2673	4
Malheur	.5515	.4664	.3588	.6191	.4990	35
Marion	.3745	.3042	.3242	.2606	.3159	11
Morrow	.3183	.1895	.4572	.6417	.4017	29
Multnomah	.3882	.4031	.3757	.2641	.3580	22
Polk	.2994	.3754	.4771	.6933	.4613	34
Sherman	.4212	.2322	.3456	.4626	.3654	24
Tillamook	.4634	.2694	.2312	.4581	.3555	21
Umatilla	.3791	.3330	.2914	.2839	.3219	12
Union	.3947	.4424	.3406	.3452	.3807	27
Wallowa	.3009	.3818	.2591	.5034	.3613	23
Wasco	.3291	.2890	.3300	.2253	.2934	7
Washington	.2838	.2980	.2737	.2802	.2839	6
Wheeler	.2959	.1621		.1489	.2023	1
Yamhill	.3189	.4274	.2539	.3989	.3498	20
Average	.3698	.3340	.3440	.3503	.3492	

¹One-half of the transfers of Lane and Multnomah counties and three-fourths of the transfers of Linn and Marion counties were used. All transfers of the remaining thirty-two counties were used.

²In the case of each one of the 21,212 transfers used, the sale value was divided into the assessed value and the coefficient calculated as explained above.

TABLE XXIV. UNWEIGHTED COEFFICIENTS OF DISPERSION OF THE RATIOS OF ASSESSED VALUES TO SALE VALUES OF REAL PROPERTIES. AVERAGE FOR THE FOUR YEARS 1921, 1923, 1925, AND 1926.

County	City	Rural	County	City	Rural
Baker	.3902	.4641	Lake	.3689	.5919
Benton	.4077	.5212	Lane	.4235	.5169
Clackamas	.5970	.4427	Lincoln	.6278	.4455
Clatsop	.5443	.7000	Linn	.4281	.3724
Columbia	.5773	.5170	Malheur	.5631	.5805
Coos	.4732	.5083	Marion	.3551	.3791
Crook	.5576	.5803	Morrow	.5375	.4727
Curry	.6298	.5061	Multnomah	.4128	.4413
Deschutes	.5146	.5232	Polk	.5808	.4329
Douglas	.4563	.6290	Sherman	.6412	.4262
Gilliam	.2685	.4362	Tillamook	.5067	.4481
Grant	.5217	.6668	Umatilla	.4398	.4964
Harney	.3745	.6680	Union	.4564	.4416
Hood River	.4757	.5376	Wallowa	.5339	.4664
Jackson	.5880	.5060	Wasco	.4170	.4693
Jefferson	.5245	.6176	Washington	.4101	.4058
Josephine	.4151	.4901	Wheeler	.2684	.3930
Klamath	.5090	.5874	Yamhill	.4505	.4104
			Average	.4800	.5026

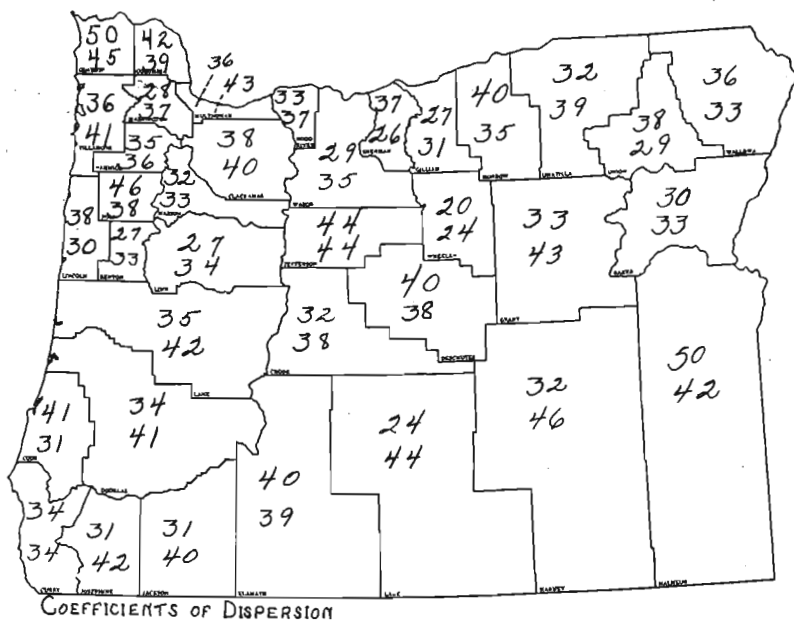


Fig. 8. In the above outline map of Oregon are given the coefficients of variability of city and rural ratios of assessments. Upper figures refer to the dispersion of city ratios and lower figures to rural ratios.

The results obtained in the calculation of the coefficients of variability of individual assessments are the most significant findings in this study. The four-year averages of the coefficients of variability of ratios of assessments of rural properties, according to Table XXII, range from 24 percent to 46 percent for the different counties; the average for all

counties is 37.05 percent. The corresponding coefficients for city ratios of assessment range from 20 percent to 50 percent with an average for all counties of 34.92 percent.

Remembering the meaning of these coefficients of variability as explained above, the findings are that in the case of rural assessments from 12 percent to 23 percent of the tax on rural real properties is misplaced, and from 10 to 25 percent of the tax on city real properties is misplaced. On the average, more than eighteen percent of the rural tax and more than seventeen percent of the city tax on real property is misplaced. According to Table XXIV the unweighted coefficients of dispersion are in every instance higher than the weighted coefficients, which implies that the properties overassessed are either greater or less in value than the properties underassessed.¹ This fact, together with the fact that the properties in the lower value groups are assessed more highly, as groups, than the properties in the higher value groups, proves that the overassessed properties can not represent in any case more than one-half of the total values of the real properties included in this study, and undoubtedly in many instances represent considerably less than one-half of the property.

It is this overassessed property which bears the misplaced tax in addition to its own due share of the levy. This overassessed one-half of the real property including most of the small properties therefore bears its own levy, 50 percent of the total, plus the misplaced tax, 18 percent of the total levy, an aggregate of 68 percent of the tax burden.²

This places only 32 percent of the tax levy, less than one-third of the total, upon the underassessed one-half of the real property. This underassessed property contains relatively few of the properties in the lower value groups. It is also apparent that the smaller the percent of the property that is overassessed, the more severe will be the burden due to that overassessment.

VII. TAXES MISPLACED DUE TO INEQUALITIES IN ASSESSMENTS OF INDIVIDUAL PROPERTIES

This study deals with ratios or percentages of assessments and not with taxes. Therefore, an analysis of the exact amount of taxes misplaced is beyond its purpose and scope. A general estimate may, however, be made. Real property represents more than seventy-two percent

¹The unweighted coefficients of dispersion, annual averages for all counties rural and city, and the averages for all counties for the four years indicated are as follows:

Unweighted Coefficients of Dispersion. Average 4 years.

	City	Rural
1921.....	.5180	.5187
1923.....	.4413	.4666
1925.....	.4615	.4993
1926.....	.4991	.5257
Average.....	.4800	.5026

²A detailed analysis of the misplacement of taxes due to inequalities in assessments of individual real properties, may prove that in many counties the property overassessed which consequently bears the misplaced tax, constitutes considerably less than fifty percent of the total real property of the state.

of the assessed value of the general property of the state and may be correctly assumed to bear about seventy-two percent of the total tax levy. On the basis of a total levy of \$50,000,000, real property would bear \$36,000,000. The overassessed property bears eighteen percent of this amount, or \$6,480,000, in addition to its own due share of the \$36,000,000 levy. Hence the overassessed one-half of the real property bears \$18,000,000 plus \$6,480,000, or \$24,480,000, and the underassessed property bears \$18,000,000 less \$6,480,000, or \$11,520,000 in taxes.¹

There is no appreciable change in the averages of the coefficients of dispersion of all counties for the years under consideration. The averages of the coefficients based upon the variability of assessments of rural properties are almost identical for each of the four years under consideration: .3728, .3541, .3790, and .3763. In the corresponding coefficients based upon the variability of city property assessments there is a slightly greater variation: .3698, .3340, .3440, and .3503.

A low coefficient of dispersion of the ratios of assessed values to sale values for any county indicates that the real properties are assessed on a basis of equality; the assessor is approximating the intent of the law which demands equality. A high coefficient of dispersion means great inequality of tax burdens and variation from the intent of the law.

VIII. CAUSES AND RESULTS OF INEQUALITIES IN ASSESSMENTS AND SUGGESTED REMEDIES

This study is primarily an investigation of conditions that may be presented in statistical form. The discrepancies in the assessments both of value groups and individual properties are clearly apparent from the data presented. The causes responsible for the situation and the results of the existing conditions, however, are not so evident and cannot be stated with the same degree of assurance. Only very general causes and results can be pointed out as every county undoubtedly has its own unique conditions to contend with.

The causes of variations in group assessments. The causes of variations in group assessments are difficult to discover. The idea that a tax is a personal tax and that every one should contribute something to the support of his government may consciously or unconsciously influence the assessor. This idea is closely allied to the "benefit theory" in taxation that each should pay according to benefits received from the state rather than in proportion to ability to pay.

Recognized overassessment of lots and small acreages seems to play its part in some counties. It is also easier to examine and evaluate small properties than large properties. Another cause of overassessment of small properties may be less frequent complaint by the small taxpayer.

The assertion that the influence of wealthy taxpayers is responsible for the underassessment of the more valuable properties would appear

¹A detailed analysis of the amounts misplaced in each of the thirty-six counties of the state might reveal a slight variation from the above general estimate. The author is confident, however, that such an analysis would show no appreciable change in results. The coefficients of dispersion of the wealthier counties very closely approximate the average for all counties.

to lose its weight in all counties where the ratios of assessments of the larger value groups of either rural or city properties approximate or exceed the average ratios for all groups. It is evident from Table XIV that the assessment ratios of Group VIII in Class A cities tend to rise in a number of cases, whereas the assessment ratios in Group IX in Class B cities rise in all but one case. No perceptible rise is noticeable in the upper value group of rural properties.

Causes of inequalities in assessments of individual properties. One of the principal causes of the inequalities in assessments of individual properties is, no doubt, the low ratios of assessed values to actual values generally. The above statement is made upon the basis of the existing inverse correlations between the several ratios of assessments and coefficients of variability of the ratios of individual assessment in the thirty-six counties in the state.¹

The coefficients of correlation between the above mentioned variables for rural and city properties are $-.5108 \pm .083$ and $-.4278 \pm .092$ respectively. The coefficient of rural ratios is significant and the coefficient of city ratios indicates a strong tendency. The meaning of the above, stated in non-statistical terms is this: with a decrease in the general ratios of assessed values to sale values there is a strong tendency for the variability or inequalities in the assessments of the individual properties to increase. This would substantiate the implication in the law that the greatest equality in assessments is attainable if all property is assessed as nearly as possible at its full cash or actual value. Our far straying from the law in this particular, together with the increase in the tax burden, has raised the levy on the assessed value to such a point that the premium on further reduction of assessments becomes extremely high. It is a bad situation that perpetuates and intensifies itself.

Another cause of the inequalities in assessments of real properties, and probably the basic cause, is found in the prevalent idea that real property is unjustly bearing the major portion of the tax levy. Hence any escape from taxes through underassessment of real properties is regarded not an evasion of a just obligation but escape from an unfair burden. The immediate cause of the inequalities in assessments of individual properties in many counties is perhaps a lack of funds necessary to obtain accurate and scientific assessments. Changes in value take place but no corresponding changes in assessments are made. Our present assessors have very largely inherited the present situation from their predecessors and they are not in a position to make the necessary changes. Since complaints coming before the County Boards of Equalization are largely complaints of overassessments, the process of equalization is generally a downward one.

¹The coefficient of correlation is a statistical unit of measurement of the degree of relationship existing between two series of variables. For example, if the number of pounds of fruit produced per acre over a series of years varied directly with the annual rainfall, there would be a high direct correlation; if, on the other hand, the price of apples varied inversely over a series of years with the number of bushels of apples produced, there would be an inverse or negative correlation. In the study at hand it was found that with a general decrease in the ratios of assessed value to sale value of real property in the different counties, the inequalities in the assessments of individual properties tended to increase.

Attention has been called to the shifting in values of real properties as a prolific cause of inequalities in assessments. The financial center or the retail center or both change location. The sale values of the properties in the old section fall but assessments are more or less fixed. There is at least a lag between the changes in actual values and assessed values covering several years. Public improvements in certain sections of the city may likewise bring about a change in actual values with no corresponding changes in assessed values for several years.

To what extent ratios of assessments in the different counties are low due to an attempt to avoid an undue share of the state levy cannot be measured. Undoubtedly the importance of the county ratios is overemphasized.¹

Results of inequalities in assessments. Inequalities in assessments and the consequent inequality in tax burdens represent in the majority of cases a more or less fixed situation. Properties usually retain the same relative assessed values from year to year.

The overassessment of small acreages and lots which is so general, as evidenced by the foregoing data, must act as a check to the purchase of these properties, which is frequently the initial step in the ownership of a home. Furthermore, the general overassessment of properties in the lower value groups places a permanent burden upon those least able to bear it.

Overassessment of vacant lots may artificially stimulate building activities in excess of a healthy and normal demand. This is detrimental to all real property holders as rents are extremely sensitive to changes in the supply of and demand for buildings.

Inequality in assessments may have its effect upon the market value of real properties. The prospective purchaser often inquires as to the taxes on the property and the realtor often volunteers the information that the taxes on the place are very low.

Another result of inequalities in assessments of real properties is the creation of dissatisfaction and discontent on the part of those unfairly burdened. The just complaint of a few overtaxed property owners may materially aid in giving a state the unsought and unmerited reputation of being a state with a tax-ridden people.

Inequality in the tax burden, irrespective of the size of the property concerned, has all the evil effects of inequality and unfairness in other phases of our economic life. It destroys equality of economic opportunity, it unfavorably affects the standard of living of those unfairly burdened, and it brings law into disrepute.

Suggested remedies to reduce inequalities in assessments. It is a generally recognized fact that relief from the tax burden must come through an equalization of the tax and not through any material reduction in the public expenditures. A rise in the public standard of living goes hand in hand with a rise in our private standard of living. Finer homes demand better streets, better fire protection, and better street lighting. Better cars demand better roads. A better educated and enlightened electorate demands better school systems, better public health

¹See note on page 36.

service, and better care of the unfortunate. A more intricate industrial system demands more regulation and supervision. The people in their collective capacity will also probably continue to use their public credit commensurate with the use of their private credit.

An equalization of the tax burden among real property owners is not something that can be accomplished in a day by the assessor or by a simple act of the legislature. More scientific and exacting assessments are necessary. There must be a thorough revision of the old rolls in the majority of the counties. Constant changes in the assessed values of properties coincident with changes in the shifting value of those same properties alone will maintain equality of assessment.

Adequate funds should be made available for this work of equalizing assessments.

A general awakening on the subject would aid. Much could be accomplished by a constructive and conservative educational campaign. Occasional tax reduction programs will not help the situation. Frequent radical changes in the tax system of any state introduce elements of uncertainty and may be more detrimental than a heavy tax burden in checking its economic development. Any changes made in the tax system should be conservative.

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