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0034 Sales Ratio Study, Part I



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COLORADO GENERAL ASSEMBLY

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* * * * *

The Legislative Council, which is composed of five Senators, six Representatives, and the presiding officers of the two houses, serves as a continuing research agency for the legislature through the maintenance of a trained staff. Between sessions, research activities are concentrated on the study of relatively broad problems formally proposed by legislators, and the publication and distribution of factual reports to aid in their solution.

During the sessions, the emphasis is on supplying legislators, on individual request, with personal memoranda, providing them with information needed to handle their own legislative problems. Reports and memoranda both give pertinent data in the form of facts, figures, arguments, and alternatives.

LEGISLATIVE COUNCIL
REPORT TO THE
COLORADO GENERAL ASSEMBLY

PART I
SALES RATIO
REPORT FOR 1958-1959
AND
1957-1959

Research Publication No. 34

COLORADO GENERAL ASSEMBLY



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LETTER OF TRANSMITTAL

December 3, 1959

MEMBERS COLORADO GENERAL ASSEMBLY

Dear Colleagues:

Transmitted herewith is Part I of the report on the sales ratio study conducted by the Legislative Council. This report presents sales ratio data for the fiscal years 1957-1958 and 1958-1959 and for the two years combined.

Part II of the sales ratio report will contain the detailed figures for each county by class of property for 1958-1959 and 1957-1959 and will be submitted prior to the legislative session of 1960.

This report has been prepared for the General Assembly pursuant to S.J.R. No. 21 passed in 1959 during the First Regular Session of the Forty-second General Assembly.

Cordially,

/s/ Charles Conklin
Chairman
Colorado Legislative Council

CC:cg

FOREWORD

Senate Joint Resolution 21 passed at the First Regular Session of the 42nd General Assembly directed the Legislative Council to issue a report on sales ratios for the periods July 1, 1958, to June 30, 1959, and July 1, 1957 to June 30, 1959, to the Second Regular Session of the Forty-second General Assembly. This represents a continuation of the study made for the General Assembly pursuant to H.J.R. 31 passed in 1957 and S.J.R. 12 passed in 1958 and reported to the First Regular Session of the Forty-second General Assembly.

This is the first part of a two-part report on the results of the sales ratio study for 1958-1959 and the two-year period 1957-1959. Part I describes the method used in arriving at the sales ratio figures and gives the county ratio figures, the rural and urban ratio figures for each county, and the state-wide ratio by classes of property. Part II of the report will give detailed figures by class of property and by county.

Part I will be available for general distribution. The figures presented in Part II of the sales ratio report will include the number of conveyances in each property class, a frequency distribution showing the range of individual sales ratios and the sales ratios for all counties by class of property where sufficient sales occurred to permit the computation of sales ratios. The detailed data will be presented for 1958-1959 and 1957-1959. The second part of the sales ratio report will not be available for wide distribution. However, those who are interested in the details can obtain a copy from the Legislative Council.

The methodology used in arriving at the sales ratio figures and the results thereof have been reviewed by the Legislative Council Committee on Assessment Methods. The members of that committee are:

Senator David J. Clarke,
Chairman

Representative Ray Black
Senator T. Everett Cook
Senator Fay DeBerard
Senator Ranger Rogers
Senator Wilkie Ham

Representative Ray Simpson,
Vice-Chairman

Senator Richard F. Hobbs
Representative Yale B. Huffman, Jr.
Representative Elmer A. Johnson
Representative Guy Poe
Representative James M. French

Fitzhugh L. Carmichael is the staff member primarily responsible for this report. He has been assisted by Nai-Kwang Chang and Steve Teglovic.

The Legislative Council wishes to thank the county assessors, the clerks and recorders, and other public officials, as well as many private citizens and organizations, who cooperated with the staff in gathering the information reported herein.

Lyle C. Kyle
Director

December 3, 1959

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I

INTRODUCTION

The Assignment

Because continuance of the sales ratio study was deemed necessary to make it of "most value to the General Assembly in considering the improvements needed in assessment methods," the Legislative Council was directed to "continue to process the real estate conveyance certificates and issue a report on sales ratios for the periods, between July 1, 1958 and June 30, 1959, and between July 1, 1957 and June 30, 1959, to the second regular session of the Forty-second General Assembly."¹

In view of the conviction that "a sound and equitable program of state support of education requires that real and personal property in the several counties and school districts of the state be uniformly and equitably assessed"² and the further conviction that significant differences in assessment levels³ existed, the General Assembly had selected the sales ratio method as one means of achieving increased uniformity in assessments and had directed the Legislative Council to make the Sales Ratio Study for 1957-1958. The report on this study, in two parts, was issued as of December, 1958.⁴

In continuing the sales ratio study, the Legislative Council has employed the methodology developed in the course of the first year's study, as set forth in the indicated publications of the Legislative Council. For the reader's convenience, a review of this methodology is presented herein.

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1. S.J.R. No. 21, First Session, 42nd General Assembly, 1959.
 2. H.J.R. No. 31, First Session, 41st General Assembly, 1957.
 3. An assessment level, as the term is used here, is a measure of the average relationship between the assessed value and the market value of a group of properties such as one-family dwellings, commercial properties, or all property classes combined in a county or in the state as a whole. For example, single family homes, as a class of property, may be assessed at 25 per cent of market value on an average and commercial properties, as a class, may be assessed at 35 per cent of market value. The two figures represent two different levels of assessment.
 4. Colorado Legislative Council, "Sales Ratio Study" for 1957-1958, Part One (Research Publication No. 27, December, 1958) and Part Two (Research Publication No. 29, December, 1958).

What is a Sales Ratio Study?

A sales ratio study is a means of determining the relationship between the assessed valuation and the sales price of property. In general, the sales price, in case of bona fide, "arm's length transactions," is an indication of the market value of the property. If the sales price of a piece of property is \$10,000 and it is valued, for assessment purposes, at \$2,500, the sales ratio is 25 per cent.

This sales ratio study in the State of Colorado is based upon information which the county clerks and recorders and the county assessors reported to the Legislative Council under the provisions of the Realty Recording Act.⁵ It is limited to real property (land and improvements) exclusive of that owned by public utilities. Utilities were excluded because sales of such properties were insufficient for adequate determination of a sales ratio for them.⁶ The conveyance certificates from which the 1958-1959 sales ratios were derived were filed with the county clerks and recorders between July 1, 1958, and June 30, 1959; and those on which the 1957-1959 sales ratios were derived were filed between July 1, 1957, and June 30, 1959.

Uses of Sales Ratio Study

The purpose of a sales ratio study is to discover the extent of variations in levels or rates of assessment from one county to another, from one class of property to another in the same or different areas, and from one property to another of the same class in the same area. The consensus of writers in the property tax field is that a sales ratio study provides the best single guide to determining the facts on the basis of which the General Assembly can prescribe methods and regulations to bring about just and equalized assessments. However, it should be recognized that it is merely one of several tools which can be utilized for this purpose. The findings of a sales ratio study assist in making the diagnosis and help to point the way to corrective measures. In line with the practice followed in a number of states, such a study, for the most satisfactory results, should be a continuing process and not a "one shot" effort.

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5. S. B. 222, First Session, 41st General Assembly, 1957, Colorado Revised Statutes, Sections 118-6-21 through 118-6-33, Supplement 1957.
 6. Excluded also are interests in mineral properties which are assessed on the basis of mineral production and not as land and improvements.

The General Assembly has provided for the continuation of the sales ratio study under the requirements of S. B. 222 (1957). As indicated above, June 30, 1959, marked the end of its second year so far as the filing of certificates is concerned. The continuation should enable the General Assembly to determine the effectiveness of methods and procedures that may be prescribed by it in achieving equalized assessments.

Sales ratio data provide a significant guide for distributing state funds to local governments when such a distribution involves comparative property valuations. Many governmental programs, jointly financed by state and local governments, require the local unit to meet a specified standard of performance before state funds are granted. A requirement in some states, in their aid-to-education programs, is that each county make a specified effort, on an equalized basis, to support its educational system. Once that effort is determined, in terms of dollars, the state makes up the difference between the local effort and the amount guaranteed under the state program.

For example, assume (1) that property in one of these states is assessed at 25 per cent of market value on an average, (2) that one county has an assessed valuation of \$30 million and is assessing property at 30 per cent of market value, and (3) that another county with an assessed valuation of \$20 million is assessing property at 20 per cent of market value. Under the equalization program (because total market values are identical in the two counties under the conditions stated) each county would be guaranteed a budget of a certain amount, say \$1,000,000, and each county would be required to impose a certain levy, say 25 mills, on its assessed value adjusted to the state ratio (\$25,000,000 in each case). Accordingly, each county would raise \$625,000 locally and the state would pay each county \$375,000 to provide their guaranteed budgets of \$1,000,000 each.

If the adjustment had not been made, the county with the 30 per cent ratio would have raised \$750,000 locally from a 25-mill levy and would have received \$250,000 from the state; and the second county, with the 20 per cent ratio, would have raised \$500,000 locally from the 25-mill levy and received \$500,000 from the state.

The above example illustrates the variable assessment ratio method of requiring all school districts to meet a specified standard of performance on an equalized basis. An alternative method of making equalization adjustments is one based upon uniform assessment ratios. This method requires actual adjustment of assessments to the same level in all counties.

The results of sales ratio studies are used for a variety of purposes. Among them are: 1) distribution of state aid to schools; 2) distribution of state aid for city streets; 3) equalization of assessments among towns within school districts and

town improvement districts; 4) computation of tax limits for municipalities and school districts; and 5) computation of debt limits of municipalities and school districts.⁷

Sales ratio studies contribute in a variety of ways to improved administration of the property tax. Not only are there differences in the ratios among counties which must be reckoned with, but there are also differences in ratios within counties. These differences may be due to the fact that two or more people make the assessments therein. Or, even though one person may make all the assessments, his judgment of value may be less close to market value for one type of property than it is for another type. It is much easier, of course, for the assessor to determine the approximate value of a house than it is for him to determine the value of a large industrial plant.

As many of the assessors have realized since the initial study was started in July, 1957, such investigations bring to light variations in assessments and thus provide information that is useful in arriving at greater uniformity in assessments. To pinpoint the problem, consider two homes each with a market value of \$20,000. If one of these homes is assessed at 20 per cent of market value and the other at 30 per cent, a 12-mill levy would produce \$48 in the first case and \$72 in the second, for a total of \$120. Thus, in comparison with an equalized tax of \$60 on each property which would yield the same total of \$120, the first taxpayer would pay 20 per cent less than he should and the second taxpayer would pay 20 per cent more.

Necessity for Careful Screening of Conveyances

In making a sales ratio study it is necessary to relate assessed valuations to sales prices that are representative of market conditions. Because many sales take place under circumstances which cause the reported sales prices to be far from realistic, careful screening to eliminate such sales from the study is essential. Much of the information necessary for the purpose was obtained through provisions of the Realty Recording Act.

Among the sales that were excluded are those in which 1) buyers and sellers were affiliated companies, governmental agencies, eleemosynary institutions, or individuals related by blood, marriage, or business interest; 2) the conveyances were transfers

7. William Monroe Shenkel, An Evaluation of Assessment Ratio Studies in Selected States, an unpublished doctoral dissertation, University of Washington, p. 157, 1958.

of convenience involving, for example, a change in title of husband and wife from tenancy in common to joint tenancy; 3) the transfers involved exchanges of real estate between grantors and grantees; 4) the sales were made by guardians, trustees, executors, administrators, et cetera; 5) the legal instruments were deeds of trust, trustee's deeds, correction deeds, Sheriff's deeds, mineral deeds, rights-of-way or other easements, transfers made in lieu of foreclosure, administrator's deeds, executor's deeds, or tax deeds; 6) the conveyancing instruments were dated prior to January 1, 1958 for the 1958-1959 study (or prior to January 1, 1957, for the 1957-1958 study) or the dates of these instruments were in blank with dates of delivery to purchasers prior to the indicated dates; 7) the consideration was not shown, or represented a partial interest, or totalled \$50 or less; 8) the transfers involved property located in each instance in two counties; 9) the facts stated pointed to an obvious reason for believing that a relationship existed between buyer and seller, these noted as Smith Brothers and John Smith, for example; 10) the conveyancing instruments were quit claim deeds with sales ratios of 100 per cent or more; 11) the properties transferred had undergone changes in use (from a one-family dwelling, for example, to a restaurant) with no changes in assessment to conform to the new classifications; 12) the assessed valuations were based upon developer's or platter's rates or represented partial assessments; 13) the properties transferred had not been assessed individually, but were parts of larger units with overall assessments; 14) there were transfers of properties which had shortly previously changed hands under conditions of identical considerations and sales ratios; 15) there were indications, according to assessors' statements, that the facts reported were incomplete or that the assessed valuations were to be revised; 16) the transfers involved "major" improvements of two or more classes; 17) there were inconsistencies in terms of "type of property" or "appraisal classification of improvement" and "assessed valuation," as illustrated by one of them indicating the presence of improvements on the land and the other, that there were no improvements; 18) there was lack of information under conditions wherein data for a relatively large sample were available and the effort necessary to secure the required data was not considered warranted; 19) two or more major types of property, such as commercial property and one-family dwelling, were involved; 20) there was failure to receive replies to letters sent to buyers and/or sellers requesting necessary information, or incomplete information was received from them; 21) field checks indicated that the certificates were not usable; 22) there was evidence of extensive speculation; 23) the assessed valuations reported were for years other than 1958 in the case of the 1958-1959 study or other than 1957 in the case of the 1957-1958 study; and 24) there were other specific facts indicating that the transactions were not at "arm's length."

In many cases, investigations made by the staff by correspondence or field check led to verification of the data reported. In other cases it led to correction of the data reported and in still others it resulted in the exclusion of the conveyances from the study. A basic consideration involved in the detailed checking, aside from accuracy itself, is the fact that all usable certificates must represent "arm's length transactions."

It should be recognized, however, that there are many "arm's length transactions" wherein the assessed valuations of the properties transferred are not representative of general assessing practice. For example, the practice is followed in some counties of setting what is termed developer's or platter's rates for new subdivisions as noted above, the result being that the assessed valuations of properties concerned and the corresponding sales ratios are abnormally low. Because some areas develop rapidly or are affected by extensive speculation, it is to be expected (through no fault of the assessor) that time would be required to "catch up" with developments. There again the sales ratios based upon transfers of such properties will be abnormally low.

To explain the time element involved in "catching up," consider grazing land bought on February 15 for suburban development. Recognizing that assessments are made as of February 1, it is conceivable that an area of this kind could be laid out in city lots and houses built on many of them and sold before the next assessment date. The amounts paid for such properties (vacant lots or houses) within the year clearly have no significant relationship to the assessed valuations. A less common example is that of grazing land changed to cultivated land after the assessment date and sold prior to the next assessment date. Since land on which crops are grown carries a higher assessment rate and sells for a higher price than grazing land, it is not realistic to relate assessed valuations on the "grazing land" basis to sales prices on the "cultivated land" basis.

As stated above, low sales ratios are common on transfers of subdivision properties wherein the land is assessed at platter's or other rates below normal assessment levels. Because of this and the over-representation of such transfers due to the fact that subdividers push the sale of these properties, their inclusion in the sales ratio study would result in an abnormally low ratio for a county in which transfers of this type take place. For this reason, an especial effort has been made to exclude from the computations "arm's length transactions" of this nature in order to derive a sales ratio for each county that would be as representative as possible of general assessing practice.

Finally, it should be noted that the general level of economic activity at a given time is far from uniform from one

county to another and that there are disparate economic changes among the counties over the years. Because of the impact of weather upon farming and variations therein from year to year, for example, the difference between agricultural and other sections of the state in this regard is believed to be striking. Since the level of economic activity may be expected to affect the amount one is willing to pay for a property and hence the sales ratio (in the event of conveyance), the sales ratios based upon data for one year undoubtedly reflect such disparities. This fact was recognized by the General Assembly in its decision to have the sales ratio study continued.

II

PROCESSING OF THE CONVEYANCE CERTIFICATES

The Colorado Realty Recording Act provides that the county clerk and recorder "shall, on or before the fifteenth day of each month . . . file with the county assessor all certificates submitted to him pursuant to the provisions of section 5 of this Act" and that the county assessor "shall, on or before the last day of each month . . . file with the Legislative Council a copy of each document received from the clerk and recorder in accordance with this Act."

Separating the Usable Certificates from the Non-Usable

The first step in the processing of the certificates, upon receipt of them in the office of the Legislative Council, was that of separating them into three groups, namely (1) those that were clearly usable; (2) those that were clearly non-usable; and (3) those that required supplementary information to be obtained from the buyer or seller, from the county assessor, or by direct investigation by the staff.

The information needed from the buyer or seller falls in one or more of three categories. First, there is the possibility that one or more items (not a part of the real estate) such as household furnishings, equipment, inventory, growing crops, and goodwill were included in the consideration reported. In this event, the dollar value of such items was needed as a basis for making the necessary corrections in the sales price. Second, there is the possibility that some indebtedness against the property, assumed by the buyer as a part of the sales price, was excluded from the reported sales price. The third category pertains to relationship of buyer to seller which is sometimes not shown on the certificate.

A form letter was prepared for use in requesting the information required in each of these three categories. For convenience, the letters requesting information on (1) items erroneously included in the consideration, (2) items erroneously excluded from the consideration, and (3) relationship of buyer to seller are referred to as letters 1, 2, and 3, respectively.

Letter No. 1 was sent to all buyers of agricultural, commercial, and industrial properties; it was likewise sent to the buyers of other improved properties when the certificates in question revealed that items like household furnishings and equipment (the dollar values not given) were included in the consideration. Clearly, such certificates were not usable until information on the value of these items was obtained and the consideration was corrected accordingly.

When the sales ratio, based upon the data reported on the certificate, exceeded 50 per cent, it was the policy of the staff to send letter No. 2 to the buyer. In such cases the possibility was apparent that the value of an indebtedness against the property had been excluded from the reported sales price.

Since the consideration is frequently far from representative of market conditions in cases of a relationship by blood, marriage, or business interest between buyer and seller, letter No. 3 was sent to all buyers who failed to report whether such a relationship existed.

One or more of these three letters were sent to the buyers and/or sellers of approximately 5,900 properties in connection with the 1958-1959 sales ratio study and of approximately 4,000 properties in connection with the 1957-1958 study. As a result, about 49.5 per cent of this total of approximately 9,900 conveyance certificates were made usable, with the remainder found to be non-usable or else left in an uncertain category because information obtained was inconclusive.

During the course of field trips made in the summers of 1958 and 1959 for the two studies, extensive field checking was done. This checking pertained to items or questions as follows: 1) information available in the assessor's records but inadvertently omitted from the certificates, 2) whether reported assessed valuation is representative of normal assessing practice, 3) whether a major change of use had taken place or was in prospect, 4) whether speculation was a major item in the total consideration, and 5) facts of farm sales generally.

Reference has already been made to the practice followed by the assessors in some counties of setting developer's or platter's rates for new subdivisions which are well below those of developed areas. Because assessors in such instances adjust the assessment rates upward as these areas develop, adjustment to the normal assessment level is automatically made. An attempt was made, therefore, to exclude transactions involving developer's or platter's rates from the determination of a county's ratio. Other instances of assessments that were not representative of normal assessment levels also were excluded in determining the county ratio.

When a change of use has taken place or is in prospect at the time a property is purchased, the transaction is not representative of transfers of like properties under normal circumstances. Such instances occur when large residences are converted to restaurants or other business uses, when residential properties are acquired to make the sites available for commercial or industrial purposes, and when grazing land close to town is bought for suburban development. Another instance occurs when the price of farm land is affected by the prospect that a highway or dam will be built nearby. Because the amounts paid are

comparatively large in such instances, sales ratios are correspondingly small. Consequently, extensive field checking was done to ascertain the facts and determine whether such conveyances should be included in the computations of sales ratios or excluded from them.

Coding the Certificates for Card Punching

The plan for coding the certificates, which was developed and used in the 1957-1958 study, was continued without change in the 1958-1959 study. This plan provided for the name of the county, the names of incorporated towns, all unincorporated towns within a county as a group, all rural areas divided into four sub-classes -- agricultural land with improvements, agricultural land without improvements, miscellaneous rural land with improvements, and miscellaneous rural land without improvements -- the year in which the conveyancing instrument was filed, the certificate number, the date (year) of the conveyancing instrument, the nature of the instrument (whether warranty deed, special warranty deed, quit claim deed, or other type of instrument including contract of sale), the sales price, the date (year) of assessment, the assessed value of the land, the assessed value and age of the improvements, and each broad classification of property as set forth in the Assessors' Manual.⁸

Because sizable parts of the three counties in the vicinity of Denver are nominally rural but are actually urbanized and because sales ratios for such areas could be different from those for other miscellaneous rural areas in these counties, each of the miscellaneous rural land classes in such counties was divided into two sub-classes to distinguish the part near Denver from the part more remote from Denver.

Some of the conveyancing instruments which were filed during the period of the study were late filings and involved transactions which occurred one or more years prior to the date of filing. Because market conditions change over a period of time, certificates relating to transfers which occurred prior to January 1, 1958, were excluded from the 1958-1959 study and those relating to transfers which occurred prior to January 1, 1957, were excluded from the 1957-1958 study. Warranty deeds (exclusive of special warranty deeds) accounted for the great bulk of certificates found to be usable. Because quit claim deeds represented a sizable number of what appeared to be bona fide sales, particularly in some of the small counties, transfers by means of such deeds were used in a number of instances. However, all transfers by other than warranty deeds were carefully scrutinized before the certificates were determined to be usable. The total of the assessed value of the land and the improvements was not called for in the coding plan because the machine adds such

8. Assessors' Real Estate Appraisal Manual published by the State Tax Commission.

values and records the total. Assessed valuations for 1958 were used exclusively in determining all county- and state-wide sales ratios in the 1958-1959 study; and assessed valuations for 1957 were used exclusively in determining all county- and state-wide sales ratios in the 1957-1958 study.

III

DETERMINING AVERAGE SALES RATIOS

Sales ratios for the 1958-1959 study were derived for the same grouping of properties according to class and age as that used in the 1957-1958 study. Accordingly, sales ratios were determined, when feasible, for both urban and rural areas within each county and for classes and sub-classes as follows:

For urban areas,

1. One-family dwellings by age group⁹
 - a. 1 to 8 years of age
 - b. 9 to 18 years of age
 - c. 19 to 28 years of age
 - d. 29 to 48 years of age
 - e. Over 48 years of age
2. Multi-family dwellings
3. Commercial buildings
4. Industrial buildings
5. Vacant urban land

For rural areas,

1. Agricultural land with improvements
2. Agricultural land without improvements
3. Miscellaneous rural land with improvements
4. Miscellaneous rural land without improvements

In addition, two miscellaneous rural classes for Adams, Arapahoe, and Jefferson counties were divided into two groups to distinguish the nominally rural (though urbanized) parts of these counties which are located near Denver from the parts more remote from Denver.

Since property belonging to some of these classes is practically non-existent in some of the counties, it was impossible to obtain reliable sales ratios for all classes in each county. Also, because of the small number of property transfers in some of the counties during the period of the study, it was necessary to combine the data for two or more classes in such instances as a means of arriving at reasonably reliable average sales ratios. Admittedly, as in all sales ratio studies, the accuracy or dependability of the ratios for the different classes of property in the different counties varies to some extent with the number of

9. The five age groups of one-family dwellings in the 1958-1959 study represented properties built in 1951 through 1958, 1941 through 1950, 1931 through 1940, 1911 through 1930, and prior to 1911. For the 1957-1958 study, the breaking points between corresponding construction periods were one year earlier in each case than those shown for the 1958-1959 study.

usable certificates. However, with the exception of a few counties for which the number of real estate conveyances was small, the county ratios presented herein are believed to be good measures of the relationship of assessed valuations to market prices.

By combining the data for the two years, as directed by the General Assembly, sales ratios are derived (Chapter IV) which are believed to be more dependable, particularly for the small counties, than those derived from either the first year's study or the second. There are two considerations, however, which tend to raise questions concerning the wisdom of combining the data for more than a small number of years. In the first place, because changes in business conditions from one year to another appear to bring about changes in the magnitude of the sales ratio, the averaging procedure is open to the criticism that unlike things are averaged and hence that the results obtained are comparatively meaningless. In the second place, if assessment levels should be changed in individual counties to bring them more nearly into line with the state-wide average, the results obtained by taking averages for several years would clearly be misleading. Under these conditions, the averaging process tends to hide what is actually accomplished by the assessors.

Separation of one-family dwellings into age groups was necessary for two reasons. First, it was discovered that sales ratios are higher, generally speaking, for comparatively new one-family dwellings than they are for older properties of this class. Second, because most one-family dwellings are built for immediate sale, new homes are very likely to be over-represented in sales in comparison with old homes. Under these conditions, a simple average of the sales ratios for all one-family dwellings would be influenced too much by the high ratios for new-dwelling sales, with the result that a ratio determined by the simple average method would be too high. Likewise, the possibility was recognized that some of the broad classes of real estate could be over-represented in sales and that others could be under-represented. In case of significant differences among the sales ratios for the various classes of properties, such considerations have an important bearing upon the choice of method to be used to arrive at the average sales ratios. It is important that the method be such as to eliminate the effects of this over- or under-representation.

Another problem arises from the fact that there are many instances of a few very large or very small ratios which are far from representative of the ratios for the class of property involved and which, if averaged with the other ratios in the usual way, would result in distortion. Such extreme ratios may be caused by a willingness on the part of the buyer to pay an abnormally high price to gain possession of the property or from willingness on the part of the seller to sell for an amount well below the market price. Other abnormally high or abnormally low ratios may result from failure to report accurate information.

This means that a method is needed which minimizes the effect of extreme ratios. Considerations of this nature led to the decision to base the ratio for a given class of property for a given county upon the transactions, the individual ratios for which constituted the middle two-thirds of all the individual ratios when arranged from high to low.

The assessed valuations shown on all of the certificates in the middle two-thirds group were added together. Similarly, the sales prices from the same group of certificates were added. The resulting total assessed valuation figure was then divided by the total sales price figure and the average ratio for each class of property in each county was thus determined.

This procedure was followed in the derivation of the ratio for each class of property in each county, both for 1957-1958 and for 1958-1959. For the two years combined, the corresponding ratio was based upon a consolidation of the assessed values and of the market values of the "middle two-thirds" transactions for the two years. Thus, if total assessed and market values for the "middle two-thirds" transactions of the class of property in question were \$15,600,000 and \$52,000,000, respectively (ratio, 30 per cent) in 1957-1958 and \$8,320,000 and \$32,000,000, respectively (ratio, 26 per cent) in 1958-1959, the ratio for the two years combined would be the sum of the two assessed values (\$23,920,000) divided by the sum of the two market values (\$84,000,000) or 28.5 per cent.

After an average ratio had been calculated for each class of property, the next step was to combine classes of property and compute a county ratio. For this purpose, the total locally assessed valuation for each class of property, which was supplied by the county assessor, was divided by the average sales ratio for that class to obtain an estimate of the market value of all properties in the class. This procedure was followed for all classes of property in the county thus arriving at figures, the total of which represented market value of all locally assessed real property in the county. This total divided into the total assessed valuation of locally assessed real property yielded the average sales ratio for the county. The following table shows this complete computation in one county for each class of property and for the county.

Division of the assessed value of one-family dwellings, one to eight years old (\$8,200,000) by the sales ratio (32.1 per cent) gives an estimate of market value (\$25,550,000). By repeating this operation for one-family dwellings of each age group and taking assessed value and market value totals for the five age groups combined, the respective totals, \$40,000,000 and \$162,380,000 were obtained. The average sales ratio for all one-family dwellings in the county (24.6 per cent) was found by dividing the one total by the other. The other average sales ratios shown in the table, namely, those for total urban, total rural, and total county were determined in the same manner.

This method is equivalent to that of weighting the sales ratios of the different property groups by their respective market value totals. For example, in the first line of Table I, weighting (or multiplying) the ratio (32.1 per cent) by market value (\$25,550,00) yields the assessed valuation (\$8,200,000). Dividing the total of all such products (the total assessed value of \$100,000,000) by total market value (\$384,710,000) yields the average county-wide ratio (26.0 per cent). Industrial buildings in the example account for approximately five per cent of total market value. This means that this property class was given a weight of five per cent in finally computing the average county ratio.

Market values used as weights in the 1958-1959 study (as reported in Chapter IV) are those obtained by dividing 1957 assessed values (reported by the assessors for all properties on the tax rolls in that year and used in the 1957-1958 study) by sales ratios from the 1958-1959 study. Similarly, market values used as weights in the consolidated two-year, 1957-1959, study are those obtained by dividing 1957 assessed values by sales ratios from the 1957-1959 study. In justification of this procedure, it should be noted (1) that net additions to the property inventory do not affect the weighted average ratios unless such additions result in changes in the proportionate distribution of properties by property classes, (2) that the change from one year to the next in the proportionate distribution of properties by property classes is believed to be small in any case, and (3) that a considerable change in this proportionate distribution is required to bring about a significant change in a county's average ratio. In view of these considerations, the effort required to compile the assessed value for 1958 by property classes in each county was not believed to be warranted.

The average state-wide ratio was determined by dividing total assessed value for the state by total market value. These two figures were obtained by adding the assessed values and the market values for all sixty-three counties. The state-wide sales ratio for each property class was similarly determined.

TABLE I

Method of Deriving Average Sales Ratios: County X
An Illustrative Computation

<u>Class of Property</u>	<u>Sales Ratio</u>	<u>Assessed Valuation</u>	<u>Market Value</u>	<u>Average Sales Ratio</u>
One-family dwellings				
1 to 8 years old	32.1%	\$ 8,200,000	\$ 25,550,000	
9 to 18 " "	27.3	5,800,000	21,250,000	
19 to 28 " "	25.8	6,200,000	24,030,000	
29 to 48 " "	22.6	12,300,000	54,420,000	
Over 48 " "	<u>20.2</u>	<u>7,500,000</u>	<u>37,130,000</u>	
All ages combined		\$ 40,000,000	\$162,380,000	24.6%
Multi-family dwellings	33.4	5,100,000	15,270,000	
Commercial buildings	36.1	7,600,000	21,050,000	
Industrial buildings	35.2	6,800,000	19,320,000	
Vacant urban land	<u>18.4</u>	<u>3,500,000</u>	<u>19,020,000</u>	
Total urban		\$ 63,000,000	\$237,040,000	26.6
Agric. land having impts.	27.2	\$ 23,600,000	\$ 86,760,000	
Agric. land having no impts.	24.1	5,100,000	21,160,000	
Misc. rural land having impts.	21.6	6,200,000	28,700,000	
Misc. rural - no impts.	<u>19.0</u>	<u>2,100,000</u>	<u>11,050,000</u>	
		\$ 37,000,000	\$147,670,000	25.1
Grand Total		\$100,000,000	\$384,710,000	26.0

IV

SALES RATIOS IN COLORADO BY COUNTY AND BY CLASS OF PROPERTY 1958-1959 and 1957-1959

The number of certificates filed with the Legislative Council was greater during the second year of the study than it was during the first. During the fiscal year July 1, 1958, through June 30, 1959, the total approximated 79,700, whereas in the preceding fiscal year it was approximately 76,300.

The difference between these two figures is an understatement of the increase in real estate activity from the first year to the second. This is true because the Realty Recording Act was interpreted at the outset to cover a sizable number of transactions which, according to a ruling of the Attorney General dated September 4, 1957, were not required to be reported. The number of certificates was, therefore, over-stated during the early weeks of the first year's study and hence to that extent the total for the first year.

The study for 1958-1959 is based upon a total of 32,002 property transfers. The number per county in that year ranged from 7,945 in Denver to 10 in San Juan. Transfers of one-family dwellings in towns and cities account for 70 per cent of the total, and other urban sales account for 15 per cent. About 15 per cent were transfers of rural properties. It is of interest here that the latter figure is larger than the corresponding proportion (13 per cent) from the first year's study. The greater proportionate increase in the number of rural property transfers than in the number of urban property transfers is reflected, as noted below, in a greater decrease in the sales ratio for rural properties than for urban properties.¹⁰

10. The number of certificates (24,670) used in the first year's study is not fully comparable with that of the second year's study. During the early weeks of the first year's study the county assessors were instructed to report assessed values for 1956 rather than for 1957. When it was decided to base all sales ratios for the first year's study on 1957 assessed values, it was ruled that the effort required to secure the 1957 assessed values and make the changes on the certificates already submitted was not warranted in the case of a few of the large counties because the number of certificates available without them would be adequate for determination of the sales ratios. For this reason there is likewise lack of comparability as noted in a later paragraph, among assessed values reported on certificates in the two years expressed as proportions of total assessed value of properties on the tax rolls.

The state-wide sales ratio declined from 27.9 per cent in 1957-1958 to 27.0 per cent in 1958-1959. Most of this decline is accounted for by declines in the ratios for rural properties. The state-wide rural ratio declined from 24.3 per cent in the first year to 22.1 per cent in the second, whereas the state-wide urban ratio underwent a much smaller decline -- from 29.5 per cent in the first year to 29.3 per cent in the second. The comparative agricultural ratios for the two years were 24.2 per cent and 21.8 per cent, respectively.

Of significance in this connection is the fact that cash income from farm marketings in Colorado increased sharply from calendar year 1957 to calendar year 1958 -- from \$455,144,000 in 1957 to \$568,505,000 in 1958, as reported by the Denver office of the United States Department of Agriculture. This amounts to an increase of 24.9 per cent in 1958 over 1957. If assessments were comparable for the farm properties sold in the two years, the decline in the sales ratio for farm properties indicated above represents an increase in market price of 11 per cent. While it is not possible to determine precisely the effect of a given increase in income from farm marketings upon the market price of farm properties, the comparative percentage increases noted (24.9 per cent in income from farm marketings and 11 per cent in market price of farm properties, according to the indicated assumption) are believed to be reasonable. If so, the decline in the sales ratio for farm properties is explained.

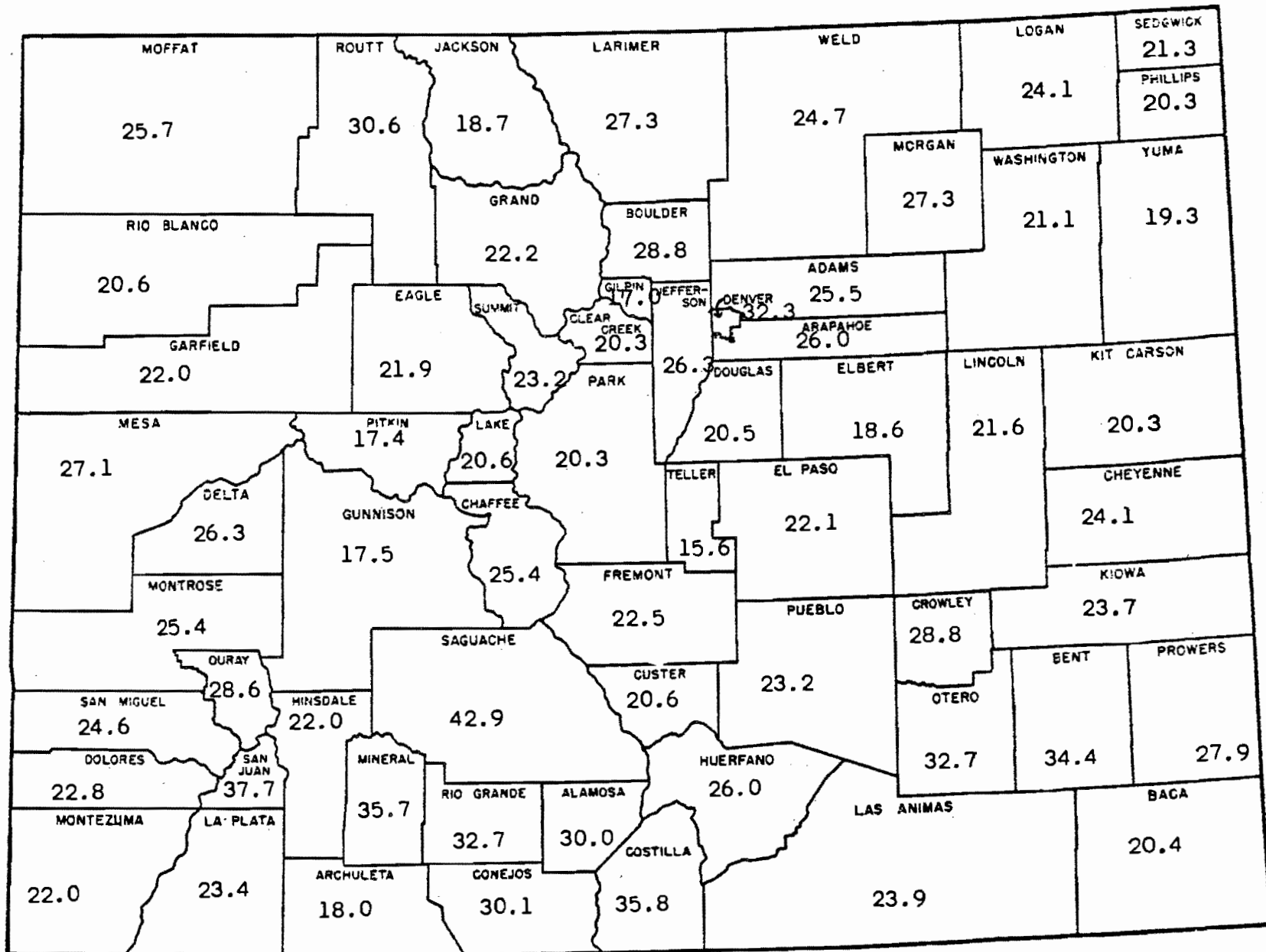
There are eleven counties in the state for which the 1958-1959 sales ratios are less than those of 1957-1958 by four percentage points or more. These counties are: Archuleta, Conejos, Custer, Eagle, Garfield, Gunnison, Kiowa, Mineral, Park, Rio Blanco, and San Miguel. With reference to the above discussion, it is worth noting that rural properties represented from 56.5 per cent to 87.9 per cent of the total assessed value of properties on the tax rolls in these counties in 1957, whereas the corresponding proportion state-wide was only 26.3 per cent. There are 44 counties for which the 1958-1959 sales ratios differed from those for 1957-1958 by not more than three percentage points (Table II).

Most of the counties with comparatively high average ratios are found in the southern one-third of the state. There appears to be no similar geographical concentration of counties with comparatively low ratios unless it is in the dry farming sections of eastern Colorado. This is true of the ratios for the second year of the study (Chart 1), the two years combined (Chart 2), and for the first year of the study as well.

There is wide variation in the county average ratios among the sixty-three counties of the state. The range for the second year's study is from 15.6 per cent for Teller County to 42.9 per cent for Saguache County. Eleven of the counties have average ratios 30 per cent or higher and eight of them have

CHART 1

SALES RATIOS BY COUNTIES OF COLORADO FOR FISCAL YEAR 1958-1959

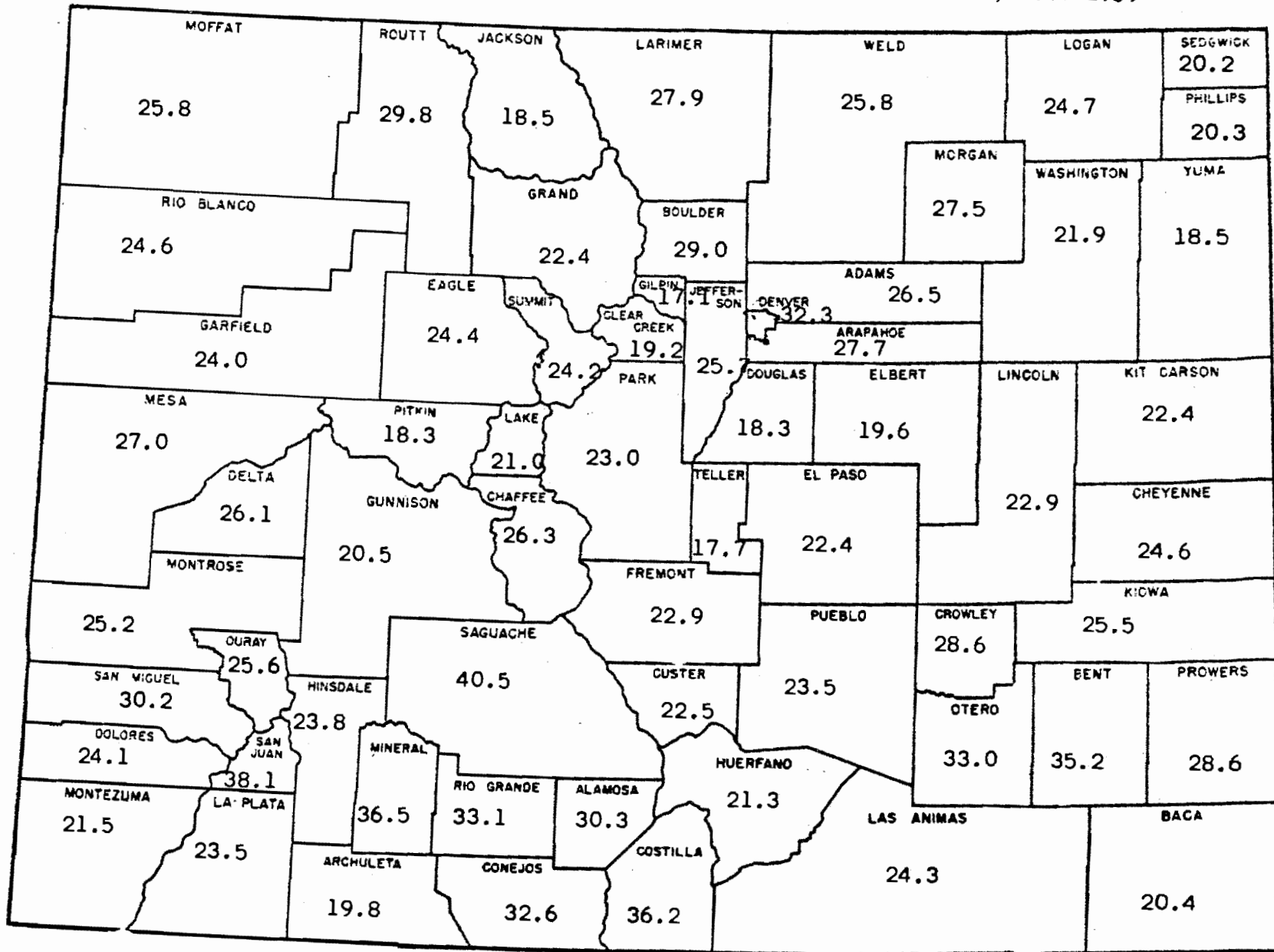


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Expressed In Percentage Form

CHART II

SALES RATIOS BY COUNTIES OF COLORADO FOR THE TWO-YEAR PERIOD, 1957-1959



Express in Percentage Form

ratios below 20 per cent. However, the ratios for approximately one-third of the counties fall within the four percentage point range from 22 per cent to 26 per cent (Table II).

There are a few instances in which the sales ratio for the two years combined falls outside the range of the corresponding ratios for the first year and the second. The ratios for Dolores County, for example, were 23.7 per cent in 1957-1958, 22.8 per cent in 1958-1959, and 24.1 per cent in 1957-1959. The explanation of this behavior of the ratio lies in the fact that there were insufficient data for determination of this county's ratios for 1958-1959 for three classes of property (one-family dwellings over 48 years old, commercial buildings, and miscellaneous rural land with improvements) for which the ratios for 1957-1958 and 1957-1959 were above the respective average ratios for the county. This means that the county-wide ratio for 1958-1959 is under-stated in comparison with that for either the first year of the study or the two years combined. If the first year's ratios for these classes of property were used in the computations for the second year, the county-wide ratio for 1958-1959 would be 24.3 per cent instead of 22.8 per cent. Under these conditions the ratio for the two years combined would fall between the ratios for the two years separately. Because the second year's ratio is understated, the ratio for the two years combined is believed to be a better measure of assessment level in relation to market price than that for 1958-1959. It is perhaps debatable whether the two-year sales ratio for Dolores County is better than that for 1957-1958. In any case, as explained in Chapter III, it is believed to be unwise to combine the data for more than a small number of years.

Average sales ratios for land without improvements are lower than those for land with improvements. This is true in both urban and rural areas. The state-wide average ratio for vacant urban land, for example, for the two years combined is 21.4 per cent in contrast to the over-all urban average ratio of 29.4 per cent (Table III).

The state-wide average ratio for one-family dwellings in urban areas (all age groups combined) is below the state-wide average ratio for urban properties and only slightly above the state-wide average ratio for all properties. However, the ratio for one-family dwellings varies widely from one age group to another. For one-family dwellings one to eight years old for the two years combined it is 31.7 per cent; and for those that are over 48 years old it is only 21.8 per cent.

The average ratios for multi-family dwellings and for commercial and industrial properties are sharply above the average ratio for all urban properties combined. Of the property classes distinguished, industrial properties have the highest average ratio, 35.8 per cent for the two years combined. Miscellaneous rural land without improvements is the class with the lowest average ratio, 17.4 per cent.

The state-wide pattern which shows the urban average ratio to be higher than the rural ratio is by no means true of all counties. There are a few counties in which the rural average ratio is higher than the urban average ratio. Agricultural land with improvements was the rural class with the highest ratio in 1957-1958; miscellaneous rural land with improvements had slightly the higher ratio in 1958-1959.

The total assessed value reported on the certificates used in the study for 1958-1959 is 5.2 per cent as large as the total assessed value on the tax rolls for 1957 as reported by the assessors to the Legislative Council (Table III). Urban property sales accounted for 6.2 per cent of total urban assessed value in that year and rural property sales for only 2.5 per cent of total rural assessed value. In the case of one-family dwellings, sales in the group one to eight years old accounted for 11.5 per cent of the total assessed value of that group, while the corresponding proportion for the "over 48" group was 4.9 per cent.

These differences point up the marked over-representation of some of the property classes in sales and the market under-representation of others and hence the need for a system of weights, explained earlier, by which to correct for such over- or under-representation in determining average sales ratios. One-family dwellings one to eight years old, for example, have a high sales ratio, whereas total rural property has a low sales ratio and is under-represented in sales. Unless property class ratios are weighted, the high ratios for one-family dwellings would have too much influence on the average and the low ratios for total rural property would have too little influence on it, thus tending to cause the computed ratio to be higher than the facts would warrant.

As noted elsewhere, the dependability of the average sales ratio for a given county or class of property depends largely upon (1) the number of usable sales and (2) the extent of variation among the ratios based upon them. With reference to considerations of this nature, it is worth noting that there are eleven counties for which the number of usable certificates in the two years combined was less than 80 per county. These counties are: Archuleta, Cheyenne, Costilla, Eagle, Hinsdale, Jackson, Mineral, Ouray, Saguache, San Juan, and San Miguel. The average range within which the middle half of the ratios fall (when arranged from low to high) is greater for each of these counties than that for the state as a whole. Because variation among the ratios is comparatively high on an average for Hinsdale, Mineral, and San Juan and the sample of usable certificates for these counties is smaller in each case than that for any of the other sixty counties, the ratios for them are regarded as the least dependable of the county-wide ratios. With reference to the eleven counties listed above, it is noted that their combined assessed value amounts to only 1.8 per cent of the state-wide total. Hence, such lack of dependability could have no significant effect upon the size of the state-wide average ratio.

Mention should be made in this connection of the six-counties -- Alamosa, Baca, Jackson, Lake, Phillips, and Sedgwick -- for which the number of usable property transfers in one or more of three classes (commercial, industrial, and agricultural with improvements) each of which represents a sizable proportion of total assessed value on the tax rolls in the county in question was insufficient to determine sales ratios for them in one or both of the years. As noted in Table II, these property classes were excluded from the computations of the ratios for one or more of these counties and the state-wide average ratios. Analysis shows that the state-wide average ratios for all property classes combined would remain unchanged if the combined assessed value of these properties had been included in the computations using the indicated state-wide ratios for these property classes.

TABLE II

Sales Ratios in Colorado by Counties: Total, Urban, and Rural
For Fiscal Years 1957-1958 and 1958-1959 and for the Two Years Combined

<u>County</u>	<u>Total County</u>		<u>Total Urban</u>		<u>Total Rural</u>	
	<u>No. of Certs.</u>	<u>Sales Ratio</u>	<u>No. of Certs.</u>	<u>Sales Ratio</u>	<u>No. of Certs.</u>	<u>Sales Ratio</u>
Adams						
'57-'58	1,587	27.6%	1,412	29.3%	175	24.2%
'58-'59	2,028	25.5	1,857	27.7	171	21.0
'57-'59	3,615	26.5	3,269	28.6	346	22.4
Alamosa ^a						
'57-'58	113	29.9	96	28.7	17	31.5
'58-'59	103	30.0	89	25.0	14	34.9
'57-'59	216	30.3	185	28.0	31	33.4
Arapahoe						
'57-'58	1,820	29.0	1,496	31.1	324	25.0
'58-'59	2,638	26.0	2,031	27.0	607	23.9
'57-'59	4,458	27.7	3,527	28.7	931	25.3
Archuleta						
'57-'58	30	25.2	24	30.4	6	24.0
'58-'59	38	18.0	27	24.2	11	16.9
'57-'59	68	19.8	51	26.7	17	18.5
Baca ^b						
'57-'58	80	20.3	45	26.5	35	19.5
'58-'59	117	20.4	77	27.8	40	19.1
'57-'59	197	20.4	122	27.7	75	19.1
Bent						
'57-'58	104	36.2	70	34.4	34	36.8
'58-'59	68	34.4	39	33.7	29	34.7
'57-'59	172	35.2	109	34.7	63	35.3
Boulder						
'57-'58	1,325	29.3	1,162	30.1	163	26.8
'58-'59	1,552	28.8	1,265	30.7	287	23.4
'57-'59	2,877	29.0	2,427	30.4	450	24.9
Chaffee						
'57-'58	140	28.1	123	28.0	17	28.3
'58-'59	159	25.4	137	27.5	22	22.7
'57-'59	299	26.3	260	27.8	39	24.1

TABLE II
(continued)

County	Total County		Total Urban		Total Rural	
	No. of Certs.	Sales Ratio	No. of Certs.	Sales Ratio	No. of Certs.	Sales Ratio
Cheyenne						
'57-'58	20	26.1%	10	45.3%	10	24.4%
'58-'59	55	24.1	24	35.1	31	22.9
'57-'59	75	24.6	34	36.6	41	23.3
Clear Creek						
'57-'58	108	18.9	64	18.9	44	18.9
'58-'59	105	20.3	60	20.9	45	19.7
'57-'59	213	19.2	124	19.5	89	19.0
Conejos						
'57-'58	77	37.1	46	34.9	31	37.7
'58-'59	69	30.1	38	31.5	31	29.8
'57-'59	146	32.6	84	34.3	62	32.2
Costilla						
'57-'58	31	39.5	15	48.1	16	37.7
'58-'59	44	35.8	12	60.3	32	32.4
'57-'59	75	36.2	27	53.1	48	33.4
Crowley						
'57-'58	39	26.6	26	31.8	13	25.3
'58-'59	54	28.8	37	33.2	17	27.5
'57-'59	93	28.6	63	34.6	30	27.0
Custer						
'57-'58	61	27.1	40	28.9	21	26.9
'58-'59	47	20.6	28	22.4	19	20.4
'57-'59	108	22.5	68	24.7	40	22.2
Delta						
'57-'58	284	25.7	168	28.1	116	21.5
'58-'59	293	26.3	182	28.0	111	24.9
'57-'59	577	26.1	350	28.3	227	24.3
Denver						
'57-'58	5,413	32.2	5,413	32.2	-----	-----
'58-'59	7,945	32.3	7,945	32.3	-----	-----
'57-'59	13,358	32.3	13,358	32.3	-----	-----
Dolores						
'57-'58	30	23.7	19	34.0	11	21.6
'58-'59	51	22.8	35	23.7	16	22.6
'57-'59	81	24.1	54	31.2	27	22.5

TABLE II
(continued)

<u>County</u>	<u>Total County</u>		<u>Total Urban</u>		<u>Total Rural</u>	
	<u>No. of Certs.</u>	<u>Sales Ratio</u>	<u>No. of Certs.</u>	<u>Sales Ratio</u>	<u>No. of Certs.</u>	<u>Sales Ratio</u>
Douglas						
'57-'58	81	16.3%	42	22.6%	39	14.9%
'58-'59	95	20.5	38	28.1	57	18.8
'57-'59	176	18.3	80	25.9	96	16.7
Eagle						
'57-'58	43	29.3	32	35.4	11	27.5
'58-'59	33	21.9	19	42.0	14	18.5
'57-'59	76	24.4	51	36.8	25	21.6
Elbert						
'57-'58	46	21.2	29	41.1	17	20.1
'58-'59	67	18.6	25	21.1	42	18.3
'57-'59	113	19.6	54	31.9	59	18.8
El Paso						
'57-'58	1,967	23.0	1,904	23.1	63	22.1
'58-'59	2,718	22.1	2,581	22.8	137	19.0
'57-'59	4,685	22.4	4,485	23.0	200	19.8
Fremont						
'57-'58	293	23.8	270	24.8	23	22.5
'58-'59	427	22.5	359	22.5	68	22.5
'57-'59	720	22.9	629	23.4	91	22.2
Garfield						
'57-'58	159	26.9	117	24.2	42	29.4
'58-'59	204	22.0	151	23.3	53	21.1
'57-'59	363	24.0	268	23.7	95	24.3
Gilpin						
'57-'58	41	14.6	20	20.8	21	13.6
'58-'59	71	17.0	15	15.1	56	17.5
'57-'59	112	17.1	35	19.3	77	16.6
Grand						
'57-'58	106	22.8	71	25.3	35	20.9
'58-'59	113	22.2	66	25.5	47	19.8
'57-'59	219	22.4	137	25.3	82	20.4
Gunnison						
'57-'58	106	23.8	91	25.5	15	22.9
'58-'59	113	17.5	95	18.9	18	16.8
'57-'59	219	20.5	186	23.7	33	19.0

TABLE II
(continued)

County	Total County		Total Urban		Total Rural	
	No. of Certs.	Sales Ratio	No. of Certs.	Sales Ratio	No. of Certs.	Sales Ratio
Hinsdale						
'57-'58	10	25.5%	9	c %	1	c %
'58-'59	13	22.0	12	c	1	c
'57-'59	23	23.8	21	c	2	c
Huerfano						
'57-'58	114	19.9	79	26.7	35	15.7
'58-'59	98	26.0	62	37.9	36	19.4
'57-'59	212	21.3	141	28.0	71	16.9
Jackson ^d						
'57-'58	27	14.1	21	28.0	6	12.5
'58-'59	28	18.7	19	25.9	9	12.2
'57-'59	55	18.5	40	30.4	15	16.8
Jefferson						
'57-'58	2,425	25.3	1,796	25.5	629	24.4
'58-'59	3,292	26.3	2,415	27.7	877	19.8
'57-'59	5,717	25.7	4,211	26.6	1,506	21.3
Kiowa						
'57-'58	50	28.5	18	27.0	32	28.9
'58-'59	67	23.7	25	31.6	42	22.3
'57-'59	117	25.5	43	29.1	74	24.7
Kit Carson						
'57-'58	101	24.1	51	35.8	50	21.5
'58-'59	145	20.3	100	31.6	45	17.9
'57-'59	246	22.4	151	35.9	95	19.7
Lake ^e						
'57-'58	75	21.6	74	c	1	c
'58-'59	58	20.6	52	c	6	c
'57-'59	133	21.0	126	c	7	c
La Plata						
'57-'58	314	23.9	245	23.5	69	24.3
'58-'59	315	23.4	229	25.1	86	21.8
'57-'59	629	23.5	474	24.3	155	22.7
Larimer						
'57-'58	1,171	28.7	962	28.7	209	28.8
'58-'59	1,355	27.3	1,056	28.0	299	25.9
'57-'59	2,526	27.9	2,018	28.5	508	26.9

TABLE II
(continued)

County	Total County		Total Urban		Total Rural	
	No. of Certs.	Sales Ratio	No. of Certs.	Sales Ratio	No. of Certs.	Sales Ratio
Las Animas						
'57-'58	155	26.0%	126	35.9%	29	21.3%
'58-'59	166	23.9	127	32.2	39	19.8
'57-'59	321	24.3	253	33.1	68	20.1
Lincoln						
'57-'58	54	24.1	25	23.1	29	24.4
'58-'59	99	21.6	49	26.7	50	20.6
'57-'59	153	22.9	74	26.9	79	22.0
Logan						
'57-'58	265	25.2	227	28.1	38	23.1
'58-'59	387	24.1	330	29.3	57	20.9
'57-'59	652	24.7	557	28.9	95	22.0
Mesa						
'57-'58	1,025	26.2	869	26.0	156	26.5
'58-'59	1,142	27.1	884	28.9	258	24.7
'57-'59	2,167	27.0	1,753	27.9	414	25.7
Mineral						
'57-'58	5	40.6	4	c	1	c
'58-'59	18	35.7	16	c	2	c
'57-'59	23	36.5	20	c	3	c
Moffat						
'57-'58	96	26.6	84	26.6	12	26.5
'58-'59	143	25.7	104	28.6	39	23.1
'57-'59	239	25.8	188	27.4	51	24.3
Montezuma						
'57-'58	174	21.2	134	23.5	40	19.6
'58-'59	136	22.0	87	26.8	49	19.2
'57-'59	310	21.5	221	25.2	89	19.3
Montrose						
'57-'58	224	24.9	169	27.0	55	23.2
'58-'59	234	25.4	170	28.0	64	23.5
'57-'59	458	25.2	339	27.5	119	23.5
Morgan						
'57-'58	291	27.6	215	31.3	76	25.3
'58-'59	363	27.3	292	29.3	71	25.9
'57-'59	654	27.5	507	30.2	147	25.6

TABLE II
(continued)

<u>County</u>	<u>Total County</u>		<u>Total Urban</u>		<u>Total Rural</u>	
	<u>No. of Certs.</u>	<u>Sales Ratio</u>	<u>No. of Certs.</u>	<u>Sales Ratio</u>	<u>No. of Certs.</u>	<u>Sales Ratio</u>
Otero						
'57-'58	311	33.8%	259	35.7%	52	31.5%
'58-'59	441	32.7	384	35.7	57	29.1
'57-'59	752	33.0	643	35.4	109	30.0
Ouray						
'57-'58	26	22.4	19	c	7	c
'58-'59	46	28.6	20	c	26	c
'57-'59	72	25.6	39	c	33	c
Park						
'57-'58	86	25.2	49	27.5	37	24.4
'58-'59	99	20.3	44	24.8	55	18.9
'57-'59	185	23.0	93	25.7	92	22.0
Phillips ^f						
'57-'58	76	20.3	49	27.3	27	19.1
'58-'59	84	20.3	64	30.0	20	18.8
'57-'59	160	20.3	113	29.2	47	18.8
Pitkin						
'57-'58	57	20.7	48	19.5	9	21.8
'58-'59	119	17.4	86	18.2	33	16.7
'57-'59	176	18.3	134	18.8	42	17.9
Prowers						
'57-'58	131	30.6	111	31.1	20	30.4
'58-'59	217	27.9	153	28.6	64	27.4
'57-'59	348	28.6	264	29.5	84	28.0
Pueblo						
'57-'58	1,627	24.3	1,567	25.0	60	23.1
'58-'59	1,786	23.2	1,653	25.4	133	19.6
'57-'59	3,413	23.5	3,220	25.3	193	20.6
Rio Blanco						
'57-'58	70	32.9	61	34.5	9	31.9
'58-'59	57	20.6	46	23.5	11	19.1
'57-'59	127	24.6	107	31.9	20	21.5
Rio Grande						
'57-'58	120	33.8	95	32.1	25	34.8
'58-'59	146	32.7	110	33.5	36	32.4
'57-'59	266	33.1	205	32.6	61	33.3

TABLE II
(continued)

County	Total County		Total Urban		Total Rural	
	No. of Certs.	Sales Ratio	No. of Certs.	Sales Ratio	No. of Certs.	Sales Ratio
Routt						
'57-'58	135	27.8%	110	40.2%	25	24.6%
'58-'59	131	30.6	94	35.8	37	28.9
'57-'59	266	29.8	204	38.1	62	27.3
Saguache						
'57-'58	34	40.9	24	31.9	10	44.1
'58-'59	38	42.9	29	36.0	9	45.1
'57-'59	72	40.5	53	33.7	19	42.7
San Juan						
'57-'58	15	38.7	14	c	1	c
'58-'59	10	37.7	10	c	0	c
'57-'59	25	38.1	24	c	1	c
San Miguel						
'57-'58	31	40.0	24	46.5	7	38.5
'58-'59	30	24.6	19	42.1	11	22.0
'57-'59	61	30.2	43	41.5	18	28.0
Sedgwick ⁹						
'57-'58	39	19.7	22	29.3	17	18.4
'58-'59	61	21.3	52	24.9	9	20.7
'57-'59	100	20.2	74	26.9	26	19.2
Summit						
'57-'58	37	21.6	29	28.8	8	20.6
'58-'59	44	23.2	29	28.7	15	22.4
'57-'59	81	24.2	58	29.5	23	23.4
Teller						
'57-'58	146	18.4	111	22.8	35	16.3
'58-'59	115	15.6	93	22.1	22	13.1
'57-'59	261	17.7	204	22.5	57	15.5
Washington						
'57-'58	68	23.3	38	29.8	30	22.6
'58-'59	106	21.1	50	26.2	56	20.6
'57-'59	174	21.9	88	30.6	86	21.1
Weld						
'57-'58	877	27.7	742	30.0	135	26.4
'58-'59	1,080	24.7	881	27.8	199	23.1
'57-'59	1,957	25.8	1,623	28.6	334	24.3

TABLE II
(continued)

<u>County</u>	<u>Total County</u>		<u>Total Urban</u>		<u>Total Rural</u>	
	<u>No. of Certs.</u>	<u>Sales Ratio</u>	<u>No. of Certs.</u>	<u>Sales Ratio</u>	<u>No. of Certs.</u>	<u>Sales Ratio</u>
Yuma						
'57-'58	104	18.2%	61	25.1%	43	16.8%
'58-'59	126	19.3	81	25.3	45	18.0
'57-'59	230	18.5	142	24.7	88	17.3
Total State						
'57-'58	24,670	27.9	21,346	29.5	3,324	24.3
'58-'59	32,002	27.0	27,159	29.3	4,843	22.1
'57-'59	56,672	27.4	48,505	29.4	8,167	22.9

- a. Exclusive of commercial and industrial properties in 1958-1959, for which there were no conveyances in that year.
- b. Exclusive of commercial properties in 1957-1958, for which there were no conveyances in that year.
- c. Insufficient data for determination of the sales ratio.
- d. Exclusive of agricultural properties with improvements in 1958-1959, for which there was only one conveyance in that year.
- e. Exclusive of industrial properties, for which there were no conveyances in either year.
- f. Exclusive of industrial properties, for which there were no conveyances in 1957-1958 and only one conveyance in 1958-1959.
- g. Exclusive of commercial and industrial properties, for which there were no conveyances in 1957-1958 and only one conveyance in each class in 1958-1959.

TABLE III

Sales Ratios and Proportion of Total Assessed Value Reported
on the Certificates by Class of Property For Fiscal Years
1957-1958 and 1958-1959 and for the Two Years Combined

<u>Class of Property</u>	<u>Number of Certif- icates</u>	<u>Average Sales Ratio</u>	<u>Assessed Value On Certificates As Per Cent of Total Assessed Value^a</u>
One-family dwellings			
1 to 8 years old			
'57-'58	8,579	31.8%	8.4
'58-'59	11,548	31.6	11.5
'57-'59	20,127	31.7	19.9
9 to 18 years old			
'57-'58	2,455	29.1	5.0
'58-'59	3,646	28.8	7.6
'57-'59	6,101	28.9	12.6
19 to 28 years old			
'57-'58	917	27.0	4.2
'58-'59	1,032	26.7	5.3
'57-'59	1,949	26.8	9.5
29 to 48 years old			
'57-'58	2,603	24.6	3.4
'58-'59	3,186	24.0	4.4
'57-'59	5,789	24.3	7.9
Over 48 years old			
'57-'58	2,470	22.0	3.8
'58-'59	3,074	21.6	4.9
'57-'59	5,544	21.8	8.7
All Ages Combined			
'57-'58	17,024	28.1	6.1
'58-'59	22,486	27.7	8.4
'57-'59	39,510	27.9	14.5
Multi-family dwellings			
'57-'58	628	31.3	4.2
'58-'59	808	30.8	5.5
'57-'59	1,436	30.7	9.6

TABLE III
(continued)

<u>Class of Property</u>	<u>Number of Certif- icates</u>	<u>Average Sales Ratio</u>	<u>Assessed Value On Certificates As Per Cent of Total Assessed Value^a</u>
Commercial buildings			
'57-'58	521	32.0%	1.6
'58-'59	574	33.4	2.2
'57-'59	1,095	32.8	3.9
Industrial buildings			
'57-'58	93	37.1	0.9
'58-'59	139	34.4	1.2
'57-'59	232	35.8	2.1
Vacant urban land			
'57-'58	3,080	21.4	7.0
'58-'59	3,152	21.5	7.8
'57-'59	6,232	21.4	14.7
Total urban			
'57-'58	21,346	29.5	4.6
'58-'59	27,159	29.3	6.2
'57-'59	48,505	29.4	10.8
Agric. land having impts.			
'57-'58	799	25.7	1.5
'58-'59	1,005	23.1	1.8
'57-'59	1,804	24.1	3.4
Agric. land having no impts.			
'57-'58	448	20.2	0.9
'58-'59	773	18.3	1.6
'57-'59	1,221	18.8	2.5
Misc. rural land having impts.			
'57-'58	1,184	25.6	2.5
'58-'59	1,961	24.1	4.4
'57-'59	3,145	24.7	6.9
Misc. rural land having no impts.			
'57-'58	893	16.7	2.7
'58-'59	1,104	16.5	2.7
'57-'59	1,997	17.4	5.4

TABLE III
(continued)

<u>Class of Property</u>	<u>Number of Certif- icates</u>	<u>Average Sales Ratio</u>	<u>Assessed Value On Certificates As Per Cent of Total Assessed Value^a</u>
Total Rural			
'57-'58	3,324	24.3%	1.7
'58-'59	4,843	22.1	2.5
'57-'59	8,167	22.9	4.2
All Classes Combined			
'57-'58	24,670	27.9	3.8
'58-'59	32,002	27.0	5.2
'57-'59	56,672	27.4	9.0

a. Total assessed value of properties on the tax rolls as reported by the assessors for 1957.

MEASURING THE DEPENDABILITY OF THE AVERAGE SALES RATIOS

Variations among the individual sales ratios for a given class of property have an important bearing upon the reliability of the average sales ratio for that class. For example, if in County "A" the majority of the individual ratios fall between 25 per cent and 30 per cent with an average sales ratio of 27.5 per cent and if in County "B" the conditions are the same (including the average sales ratio and the number of certificates) except that the individual ratios are spread over a wider range (say 20 per cent to 35 per cent), 27.5 per cent would generally be a more dependable average ratio in County "A" than it would be in County "B".

Because exceptionally high or exceptionally low individual sales ratios are believed to be less accurate on the whole than those which fall closer to points of concentration or "middle" of the distribution, it was decided to use as a measure of variation the range within which the middle half of the individual ratios fall when arranged from low to high. To illustrate, assume that there were 22 conveyances of one-family dwellings one to eight years old in County "X" with percentage ratios of 19.1, 22.4, 24.8, 27.5, 29.0, 29.8, 30.2, 30.6, 31.2, 31.6, 31.8, 32.4, 32.8, 33.2, 33.5, 33.9, 34.8, 35.5, 37.8, 40.2, 45.8, and 58.4 and that the average sales ratio for these 22 conveyances was 32.1 per cent.

The range from 29.8 per cent (the 6th item in this list) to 34.8 per cent (the 17th item) is the range within which the middle half of the ratios fall. The lower limit of this range (29.8) is 2.3 percentage points below the average sales ratio of 32.1 per cent; and the upper limit (34.8) is 2.7 percentage points above it. This spread of five percentage points (2.3 plus 2.7) is a measure of the degree of concentration of the middle half of the individual sales ratios for one-family dwellings one to eight years old in County "X".

To obtain a measure of the average degree of concentration of the middle half of the sales ratios, all classes combined, for a given county it is necessary to weight the ranges or spreads (of the kind described above) for all property groups according to market value of all properties in the respective groups. The weighted average range so determined for County "X" is shown in Table IV to be 3.3 plus 3.8 or 7.1 percentage points.

This procedure was used to derive measures of the average degree of concentration of the middle half of the sales ratios for each of the 63 counties (total, urban, and rural as shown in Table V) for which there was a sufficient number of conveyances and for each class of property in the state as a whole as shown in Table VI.

While a high degree of concentration or low measure of variation "reflects credit on those performing the assessment function, complete uniformity in the assessment-sales ratios is not a reasonable objective. It is too much to expect that the judgment of the assessor will in every instance conform to that of purchasers and sellers of property. The principal usefulness of the various measures of dispersion is that they afford a basis for comparing the performance of individual assessors in terms of a reasonably uniform standard. It is thus possible to draw fairly reliable conclusions as to the quality of assessment administration."

"In ranking the various counties by quality of assessment as indicated by measures of dispersion, an important factor to be considered is the relative difficulty of the assessment problem from county to county. Within certain counties there may be a marked similarity in the type of property to be assessed making the assessors' problems in determining full values relatively simple. It is reasonable to expect that a higher standard with respect to uniformity should be attained in such cases than in assessment districts where there is a great variety in the kinds of property together with an absence of market criteria of fair cash values for some types. Because of the complexity of the situation the assessors' judgments of value cannot necessarily be expected to agree altogether with the opinions of buyers and sellers of real estate. An objective appraisal of the quality of an assessment, therefore, should take into account the difficulties confronting the assessor as well as quantitative measures of his accomplishments."¹¹

Examination of the measures of variation state-wide by class of property (Table VI) shows that variation is least among the sales ratios for one-family dwellings and greatest among those for commercial buildings. This is true of the data for each year and for the two years combined. For one-family dwellings by age groups it is least among those for properties one to eight years old and greatest among those that are over forty-eight years old; and it is smaller for urban properties than for rural properties. These comparisons are believed to reflect in considerable part the comparative difficulties encountered in the assessment of properties in the different classes. For most of the property classes there was some decline in variation among the sales ratios from the first year of the study to the second.

11. Excerpted from "Guide For Assessment - Sales Ratio Studies" pp. 27 and 28 published by National Association of Tax Administrators in 1954.

TABLE IV

Method of Deriving Average Degree of Concentration of the Middle
Half of the Sales Ratios, All Classes Combined; County X
An Illustrative Computation

Class of Property	No. of Certif- icates	Spread in Percentage Points of Middle Half of Ratios		Market Value W (Unit: 1,000)	Product S ₁ x W	Product S ₂ x W	Weighted Average Spread in Percent- age Points	
		Below Average Ratio S ₁	Above Average Ratio S ₂				Below Average Ratio	Above Average Ratio
One-family dwelling								
1 to 8 years old	22	2.3	2.7	\$ 25,550	58.8	69.0		
9 to 18 " "	15	2.6	3.0	21,250	55.2	63.8		
19 to 28 " "	12	2.5	2.8	24,030	60.1	67.3		
29 to 48 " "	19	2.7	3.2	54,420	146.9	174.1		
Over 48 " "	13	3.0	3.5	37,130	111.4	130.0		
All ages combined	<u>81</u>			<u>\$162,380</u>	<u>432.4</u>	<u>504.2</u>	2.7	3.1
Multi-family dwellings	11	3.5	3.8	\$ 15,270	53.4	58.0		
Commercial buildings	14	3.6	4.0	21,050	75.8	84.2		
Industrial buildings	9	3.1	3.3	19,320	59.9	63.8		
Vacant urban land	25	5.0	6.2	19,020	95.1	117.9		
Total urban	<u>140</u>			<u>\$237,040</u>	<u>716.6</u>	<u>828.1</u>	3.0	3.5
Agric. land having impts.	23	3.2	3.5	86,760	277.6	303.7		
Agric. land having no impts.	12	4.1	4.6	21,160	86.8	97.3		
Misc. rural land having impts.	17	5.1	5.8	28,700	146.4	166.5		
Misc. rural land having no impts.	9	5.2	6.0	11,050	57.5	66.3		
Total rural	<u>61</u>			<u>\$147,670</u>	<u>568.3</u>	<u>633.8</u>	3.8	4.3
Grand Total	<u>201</u>			<u>\$384,710</u>	<u>1284.9</u>	<u>1461.9</u>	3.3	3.8

Weighted Average Sales Ratio = 26.0 per cent

Weighted Average Spread of
middle half of Sales Ratio = 7.1 percentage points (from 3.3 percentage points below the ratio of 26.0
per cent to 3.8 percentage points above it.)

TABLE V

Average Degree of Concentration of the Middle Half of the Sales Ratios By County: Total, Urban, and Rural
For Fiscal Years 1957-1958 and 1958-1959 and for the Two Years Combined

County and Year	Total County				Total Urban				Total Rural			
	No. of Certif- icates	Sales Ratio	Range in Pct. Pts. ^a		No. of Certif- icates	Sales Ratio	Range in Pct. Pts. ^a		No. of Certif- icates	Sales Ratio	Range in Pct. Pts. ^a	
			Below Aver. Ratio	Above Aver. Ratio			Below Aver. Ratio	Above Aver. Ratio			Below Aver. Ratio	Above Aver. Ratio
Adams												
'57-'58	1,587	27.6%	4.3	4.1	1,412	29.3%	3.8	4.5	175	24.2%	5.6	3.1
'58-'59	2,028	25.5	4.0	4.7	1,857	27.7	3.6	5.2	171	21.0	4.5	4.0
'57-'59	3,615	26.5	3.7	4.5	3,269	28.6	3.4	4.8	346	22.4	4.6	3.7
Alamosa ^b												
'57-'58	113	29.9	5.6	10.6	96	28.7	7.9	12.7	17	31.5	3.2	8.1
'58-'59	103	30.0	7.6	12.7	89	25.0	5.0	14.4	14	34.9	9.9	11.3
'57-'59	216	30.3	8.6	9.4	185	28.0	9.8	8.4	31	33.4	6.8	10.9
Arapahoe												
'57-'58	1,820	29.0	5.7	5.0	1,496	31.1	5.5	4.9	324	25.0	6.3	5.0
'58-'59	2,638	26.0	3.2	3.7	2,031	27.0	3.2	3.7	607	23.9	3.4	3.5
'57-'59	4,458	27.7	4.7	3.7	3,527	28.7	4.5	3.8	931	25.3	5.0	3.6
Archuleta												
'57-'58	30	25.2	3.1	6.6	24	20.4	5.7	18.6	6	24.0	2.2	6.0
'58-'59	38	18.0	4.7	20.7	27	24.2	2.1	18.1	11	16.9	4.4	21.5
'57-'59	68	19.8	2.6	16.2	51	26.7	3.4	15.1	17	18.5	1.8	17.0
Baca ^c												
'57-'58	80	20.3	2.6	4.7	45	26.5	4.4	8.8	35	19.5	2.3	4.2
'58-'59	117	20.4	4.2	5.9	77	27.8	5.3	16.5	40	19.1	3.9	4.1
'57-'59	197	20.4	3.5	6.2	122	27.7	5.3	16.8	75	19.1	3.1	4.5

TABLE V
(continued)

County and Year	Total County				Total Urban				Total Rural			
	No. of Certif- icates	Sales Ratio	Range in Pct. Pts. ^a		No. of Certif- icates	Sales Ratio	Range in Pct. Pts. ^a		No. of Certif- icates	Sales Ratio	Range in Pct. Pts. ^a	
			Below Aver. Ratio	Above Aver. Ratio			Below Aver. Ratio	Above Aver. Ratio			Below Aver. Ratio	Above Aver. Ratio
Bent												
'57-'58	104	36.2%	6.5	12.5	70	34.4%	6.6	20.5	34	36.8%	6.5	9.9
'58-'59	68	34.4	10.4	5.5	39	33.7	7.0	7.9	29	34.7	11.5	4.7
'57-'59	172	35.2	8.1	9.6	109	34.7	7.5	9.1	63	35.3	8.3	9.8
Boulder												
'57-'58	1,325	29.3	4.9	6.7	1,162	30.1	4.6	6.9	163	26.8	6.1	6.0
'58-'59	1,552	28.8	4.4	4.2	1,265	30.7	3.7	3.9	287	23.4	5.8	5.3
'57-'59	2,877	29.0	4.6	5.2	2,427	30.4	4.1	4.8	450	24.9	6.0	6.4
Chaffee												
'57-'58	140	28.1	4.3	10.8	123	28.0	4.6	15.9	17	28.3	3.9	2.3
'58-'59	159	25.4	5.0	9.7	137	27.5	7.1	10.3	22	22.7	2.2	8.9
'57-'59	299	26.3	4.9	9.9	260	27.8	6.1	10.6	39	24.1	3.2	9.0
Cheyenne												
'57-'58	20	26.1	4.4	7.3	10	45.3	3.1	15.5	10	24.4	3.4	7.7
'58-'59	55	24.1	3.9	6.6	24	35.1	10.9	18.0	31	22.9	2.9	6.4
'57-'59	75	24.6	4.9	8.7	34	36.6	9.6	14.7	41	23.3	4.1	8.6
Clear Creek												
'57-'58	108	18.9	3.5	7.5	64	18.9	3.9	7.6	44	18.9	3.1	7.4
'58-'59	105	20.3	4.5	10.0	60	20.9	3.5	11.2	45	19.7	5.3	9.0
'57-'59	213	19.2	3.9	9.2	124	19.5	3.9	10.4	89	19.0	4.0	7.9
Conejos												
'57-'58	77	37.1	10.5	29.0	46	34.9	12.8	23.0	31	37.7	9.8	30.7
'58-'59	69	30.1	8.2	12.7	38	31.5	6.5	26.6	31	29.8	8.3	10.9
'57-'59	146	32.6	7.9	17.5	84	34.3	11.0	18.3	62	32.2	7.2	17.3

TABLE V
(continued)

County and Year	Total County				Total Urban				Total Rural			
	No. of Certificates	Sales Ratio	Range in Pct. Pts. ^a Below Aver. Ratio Above Aver. Ratio		No. of Certificates	Sales Ratio	Range in Pct. Pts. ^a Below Aver. Ratio Above Aver. Ratio		No. of Certificates	Sales Ratio	Range in Pct. Pts. ^a Below Aver. Ratio Above Aver. Ratio	
Costilla												
'57-'58	31	39.5%	7.7	19.5	15	48.1%	6.7	13.7	16	37.7%	7.9	20.7
'58-'59	44	35.8	7.4	39.3	12	60.3	17.2	20.2	32	32.4	4.7	42.4
'57-'59	75	36.2	7.0	25.7	27	53.1	13.7	17.6	48	33.4	5.1	27.8
Crowley												
'57-'58	39	26.6	8.6	8.1	26	31.8	12.1	7.0	13	25.3	7.6	8.6
'58-'59	54	28.8	7.3	12.9	37	33.2	6.8	10.8	17	27.5	7.3	13.6
'57-'59	93	28.6	6.8	16.0	63	34.6	9.6	8.8	30	27.0	5.9	17.9
Custer												
'57-'58	61	27.1	9.2	17.8	40	28.9	10.5	28.7	21	26.9	9.1	16.8
'58-'59	47	20.6	4.7	4.9	28	22.4	3.0	10.5	19	20.4	4.9	4.3
'57-'59	108	22.5	6.2	11.8	68	24.7	6.0	13.5	40	22.2	6.2	11.7
Delta												
'57-'58	284	25.7	5.2	10.9	168	28.1	4.4	13.4	116	21.5	3.3	11.6
'58-'59	293	26.3	6.4	6.8	182	28.0	5.2	7.0	111	24.9	7.4	6.7
'57-'59	577	26.1	5.7	8.3	350	28.3	4.8	9.4	227	24.3	6.4	7.6
Denver												
'57-'58	5,413	32.2	5.3	5.7	5,413	32.2	5.3	5.7	-----	-----	-----	-----
'58-'59	7,945	32.3	4.9	4.7	7,945	32.3	4.9	4.7	-----	-----	-----	-----
'57-'59	13,358	32.3	5.0	5.0	13,358	32.3	5.0	5.0	-----	-----	-----	-----
Dolores												
'57-'58	30	23.7	4.3	10.3	19	34.0	7.7	6.4	11	21.6	3.4	11.3
'58-'59	51	22.8	5.9	6.3	35	23.7	3.5	7.6	16	22.6	6.4	6.0
'57-'59	81	24.1	5.6	9.0	54	31.2	5.5	4.6	27	22.5	5.6	10.0

TABLE V
(continued)

County and Year	Total County				Total Urban				Total Rural			
	No. of Certif- icates	Sales Ratio	Range in Pct. Pts. ^a		No. of Certif- icates	Sales Ratio	Range in Pct. Pts. ^a		No. of Certif- icates	Sales Ratio	Range in Pct. Pts. ^a	
			Below Aver. Ratio	Above Aver. Ratio			Below Aver. Ratio	Above Aver. Ratio			Below Aver. Ratio	Above Aver. Ratio
Douglas												
'57-'58	81	16.3%	2.9	7.5	42	22.6%	3.8	12.2	39	14.9%	2.5	6.9
'58-'59	95	20.5	4.7	5.4	38	28.1	3.1	6.2	57	18.8	4.7	5.6
'57-'59	176	18.3	3.4	7.2	80	25.9	3.7	9.0	96	16.7	3.1	7.0
Eagle												
'57-'58	43	29.3	5.8	8.8	32	35.4	6.3	19.5	11	27.5	5.5	6.2
'58-'59	33	21.9	4.2	4.4	19	42.0	10.4	25.0	14	18.5	2.9	1.6
'57-'59	76	24.4	6.0	8.2	51	36.8	8.7	24.7	25	21.6	5.2	5.1
Elbert												
'57-'58	46	21.2	3.5	6.9	29	41.1	12.3	15.8	17	20.1	2.8	6.9
'58-'59	67	18.6	3.5	8.4	25	21.1	6.5	12.2	42	18.3	3.1	8.2
'57-'59	113	19.6	3.4	9.4	54	31.9	12.4	36.9	59	18.8	2.8	8.0
El Paso												
'57-'58	1,967	23.0	4.3	4.9	1,904	23.1	3.4	4.6	63	22.1	8.5	6.4
'58-'59	2,718	22.1	3.8	4.1	2,581	22.8	3.6	4.0	137	19.0	4.3	4.3
'57-'59	4,685	22.4	3.9	4.6	4,485	23.0	3.6	4.3	200	19.8	5.2	5.4
Fremont												
'57-'58	293	23.8	5.1	8.7	270	24.8	5.9	5.8	23	22.5	4.2	12.8
'58-'59	427	22.5	3.7	5.7	359	22.5	4.2	4.6	68	22.5	2.8	7.3
'57-'59	720	22.9	4.3	5.9	629	23.4	5.1	4.5	91	22.2	3.2	7.8
Garfield												
'57-'58	159	26.9	6.2	13.5	117	24.2	3.7	18.0	42	29.4	8.4	9.3
'58-'59	204	22.0	4.3	9.0	151	23.3	5.8	10.5	53	21.1	3.2	7.9
'57-'59	363	24.0	4.7	10.2	268	23.7	4.8	10.9	95	24.3	4.6	9.5

TABLE V
(continued)

County and Year	Total County				Total Urban				Total Rural			
	No. of Certif- icates	Sales Ratio	Range in Pct. Pts. ^a		No. of Certif- icates	Sales Ratio	Range in Pct. Pts. ^a		No. of Certif- icates	Sales Ratio	Range in Pct. Pts. ^a	
			Below Aver. Ratio	Above Aver. Ratio			Below Aver. Ratio	Above Aver. Ratio			Below Aver. Ratio	Above Aver. Ratio
Gilpin												
'57-'58	41	14.6%	3.3	5.9	20	20.8%	6.2	3.8	21	13.6%	2.7	6.4
'58-'59	71	17.0	4.9	8.4	15	15.1	2.8	9.3	56	17.5	5.4	8.1
'57-'59	112	17.1	5.2	6.5	35	19.3	5.5	5.5	77	16.6	5.0	6.8
Grand												
'57-'58	106	22.8	4.2	7.4	71	25.3	5.0	12.1	35	20.9	3.5	4.2
'58-'59	113	22.2	3.8	8.6	66	25.5	5.0	12.3	47	19.8	2.8	6.3
'57-'59	219	22.4	3.7	7.7	137	25.3	4.6	11.1	82	20.4	3.1	5.4
Gunnison												
'57-'58	106	23.8	3.2	11.9	91	25.5	4.8	8.3	15	22.9	2.3	13.8
'58-'59	113	17.5	5.4	8.0	95	18.9	3.8	7.9	18	16.8	5.6	8.4
'57-'59	219	20.5	2.5	12.7	186	23.7	4.9	7.0	33	19.0	1.3	15.3
Hinsdale												
'57-'58	10	25.5	7.2	9.3	9	d	---	---	1	d	---	---
'58-'59	13	22.0	2.8	10.8	12	d	---	---	1	d	---	---
'57-'59	23	23.8	4.9	14.2	21	d	---	---	2	d	---	---
Huerfano												
'57-'58	114	19.9	3.8	16.6	79	26.7	6.7	15.5	35	15.7	2.1	17.2
'58-'59	98	26.0	5.3	9.1	62	37.9	9.0	10.6	36	19.4	3.1	8.7
'57-'59	212	21.3	3.9	17.2	141	28.0	6.2	20.9	71	16.9	2.4	14.9
Jackson ^e												
'57-'58	27	14.1	2.5	0.4	21	28.0	6.9	6.8	6	12.5	1.6	0.5
'58-'59	28	18.7	3.6	8.8	19	25.9	2.3	4.0	9	12.2	1.8	14.0
'57-'59	55	18.5	5.9	8.1	40	30.4	9.0	1.9	15	16.8	5.2	9.2

TABLE V
(continued)

County and Year	Total County				Total Urban				Total Rural			
	No. of Certif- icates	Sales Ratio	Range in Pct. Pts. ^a		No. of Certif- icates	Sales Ratio	Range in Pct. Pts. ^a		No. of Certif- icates	Sales Ratio	Range in Pct. Pts. ^a	
			Below Aver. Ratio	Above Aver. Ratio			Below Aver. Ratio	Above Aver. Ratio			Below Aver. Ratio	Above Aver. Ratio
Jefferson												
'57-'58	2,425	25.3%	3.8	5.1	1,796	25.5%	3.5	4.6	629	24.4%	5.9	8.2
'58-'59	3,292	26.3	4.1	5.1	2,415	27.7	4.0	4.5	877	19.8	4.1	8.1
'57-'59	5,717	25.7	3.7	5.2	4,211	26.6	3.6	4.7	1,506	21.3	4.6	7.6
Kiowa												
'57-'58	50	28.5	7.5	6.5	18	27.0	1.6	25.4	32	28.9	8.3	4.5
'58-'59	67	23.7	5.3	6.1	25	31.6	3.6	10.5	42	22.3	5.0	6.1
'57-'59	117	25.5	5.8	7.9	43	29.1	3.4	12.9	74	24.7	5.9	7.4
Kit Carson												
'57-'58	101	24.1	5.7	7.5	51	35.8	7.9	17.8	50	21.5	5.0	5.9
'58-'59	145	20.3	4.0	4.1	100	31.6	7.3	7.7	45	17.9	2.9	4.1
'57-'59	246	22.4	5.0	5.6	151	35.9	9.3	11.3	95	19.7	3.9	5.0
Lake ^f												
'57-'58	75	21.6	6.9	12.1	74	d	---	----	1	d	---	---
'58-'59	58	20.6	9.1	6.6	52	d	---	----	6	d	---	---
'57-'59	133	21.0	7.5	7.7	126	d	---	----	7	d	---	---
La Plata												
'57-'58	314	23.9	4.9	5.7	245	23.5	3.5	4.1	69	24.3	6.2	7.5
'58-'59	315	23.4	5.5	8.3	229	25.1	3.6	10.3	86	21.8	7.3	6.6
'57-'59	629	23.5	5.4	6.4	474	24.3	3.6	6.1	155	22.7	7.2	6.7
Larimer												
'57-'58	1,171	28.7	5.8	6.1	962	28.7	5.2	4.7	209	28.8	7.3	8.8
'58-'59	1,355	27.3	6.2	6.5	1,056	28.0	6.2	6.0	299	25.9	6.0	7.5
'57-'59	2,526	27.9	6.1	6.7	2,018	28.5	6.0	5.5	508	26.9	6.6	8.8

TABLE V
(continued)

County and Year	Total County				Total Urban				Total Rural			
	No. of Certif- icates	Sales Ratio	Range in Pct. Pts. ^a		No. of Certif- icates	Sales Ratio	Range in Pct. Pts. ^a		No. of Certif- icates	Sales Ratio	Range in Pct. Pts. ^a	
			Below Aver. Ratio	Above Aver. Ratio			Below Aver. Ratio	Above Aver. Ratio			Below Aver. Ratio	Above Aver. Ratio
Las Animas												
'57-'58	155	26.0%	5.3	10.4	126	35.9%	5.2	14.5	29	21.3%	5.9	7.8
'58-'59	166	23.9	4.4	20.6	127	32.2	4.9	20.3	39	19.8	4.0	21.0
'57-'59	321	24.3	5.6	19.5	253	33.1	5.4	20.3	68	20.1	5.6	19.3
Lincoln												
'57-'58	54	24.1	4.8	10.4	25	23.1	3.2	10.7	29	24.4	5.2	10.2
'58-'59	99	21.6	4.3	8.7	49	26.7	4.4	33.6	50	20.6	4.4	3.3
'57-'59	153	22.9	5.4	7.1	74	26.9	5.7	22.9	79	22.0	5.3	3.5
Logan												
'57-'58	265	25.2	4.5	8.2	227	28.1	4.1	8.0	38	23.1	4.7	8.4
'58-'59	387	24.1	3.9	5.9	330	29.3	3.1	6.3	57	20.9	4.3	5.6
'57-'59	652	24.7	4.7	6.3	557	28.9	4.6	6.3	95	22.0	4.7	6.2
Mesa												
'57-'58	1,025	26.2	3.9	8.7	869	26.0	2.9	10.0	156	26.5	5.4	6.8
'58-'59	1,142	27.1	4.2	5.9	884	28.9	3.8	5.5	258	24.7	4.5	6.4
'57-'59	2,167	27.0	4.5	6.4	1,753	27.9	4.0	6.8	414	25.7	5.2	6.1
Mineral												
'57-'58	5	40.6	13.8	8.4	4	d	---	---	1	d	---	---
'58-'59	18	35.7	13.2	36.8	16	d	---	---	2	d	---	---
'57-'59	23	36.5	12.3	21.4	20	d	---	---	3	d	---	---
Moffat												
'57-'58	96	26.6	5.2	7.2	84	26.6	7.1	8.9	12	26.5	2.2	4.7
'58-'59	143	25.7	6.8	12.2	104	28.6	6.3	12.7	39	23.1	7.1	11.9
'57-'59	239	25.8	6.0	8.6	188	27.4	5.4	7.6	51	24.3	6.7	9.6

TABLE V
(continued)

County and Year	Total County				Total Urban				Total Rural			
	No. of Certif- icates	Sales Ratio	Range in Pct. Pts. ^a		No. of Certif- icates	Sales Ratio	Range in Pct. Pts. ^a		No. of Certif- icates	Sales Ratio	Range in Pct. Pts. ^a	
			Below Aver. Ratio	Above Aver. Ratio			Below Aver. Ratio	Above Aver. Ratio			Below Aver. Ratio	Above Aver. Ratio
Montezuma												
'57-'58	174	21.2%	5.3	7.4	134	23.5%	6.6	9.7	40	19.6%	4.4	5.9
'58-'59	136	22.0	6.6	7.6	87	26.8	8.2	9.1	49	19.2	5.7	6.7
'57-'59	310	21.5	5.9	7.4	221	25.2	7.5	8.8	89	19.3	5.0	6.4
Montrose												
'57-'58	224	24.9	6.1	7.7	169	27.0	6.6	8.7	55	23.2	5.5	7.1
'58-'59	234	25.4	5.6	9.0	170	28.0	7.1	10.3	64	23.5	4.5	8.1
'57-'59	458	25.2	6.0	8.2	339	27.5	6.7	9.2	119	23.5	5.4	7.3
Morgan												
'57-'58	291	27.6	5.2	8.0	215	31.3	4.6	8.4	76	25.3	5.7	7.6
'58-'59	363	27.3	6.3	7.5	292	29.3	6.1	5.7	71	25.9	6.3	8.7
'57-'59	654	27.5	5.8	7.3	507	30.2	5.6	6.9	147	25.6	5.8	7.7
Otero												
'57-'58	311	33.8	6.8	10.3	259	35.7	8.0	13.3	52	31.5	5.4	6.5
'58-'59	441	32.7	8.1	10.2	384	35.7	8.4	8.5	57	29.1	7.6	12.2
'57-'59	752	33.0	7.7	9.8	643	35.4	7.7	10.1	109	30.0	7.5	9.5
Ouray												
'57-'58	26	22.4	7.8	9.5	19	d	---	---	7	d	---	---
'58-'59	46	28.6	6.3	14.4	20	d	---	---	26	d	---	---
'57-'59	72	25.6	5.1	13.2	39	d	---	---	33	d	---	---
Park												
'57-'58	86	25.2	8.1	9.1	49	27.5	9.1	30.3	37	24.4	7.7	2.2
'58-'59	99	20.3	6.0	9.4	44	24.8	5.5	7.4	55	18.9	5.7	10.2
'57-'59	185	23.0	6.7	10.4	93	25.7	6.0	27.0	92	22.0	6.9	4.9

TABLE V
(continued)

County and Year	Total County				Total Urban				Total Rural			
	No. of Certificates	Sales Ratio	Range in Pct. Pts. ^a		No. of Certificates	Sales Ratio	Range in Pct. Pts. ^a		No. of Certificates	Sales Ratio	Range in Pct. Pts. ^a	
			Below Aver. Ratio	Above Aver. Ratio			Below Aver. Ratio	Above Aver. Ratio			Below Aver. Ratio	Above Aver. Ratio
Phillips ⁹												
'57-'58	76	20.3%	2.8	5.6	49	27.3%	5.8	17.8	27	19.1%	2.2	3.4
'58-'59	84	20.3	3.3	4.2	64	30.0	6.6	14.7	20	18.8	2.8	2.5
'57-'59	160	20.3	2.9	4.1	113	29.2	6.3	7.8	47	18.8	2.4	3.5
Pitkin												
'57-'58	57	20.7	1.6	4.8	48	19.5	1.7	5.8	9	21.8	1.4	3.9
'58-'59	119	17.4	3.3	6.9	86	18.2	3.8	4.2	33	16.7	2.9	9.1
'57-'58	176	18.3	3.1	6.7	134	18.8	3.2	5.7	42	17.9	3.1	7.6
Prowers												
'57-'58	131	30.6	6.3	8.6	111	31.1	4.9	10.5	20	30.4	7.3	7.4
'58-'59	217	27.9	8.1	10.4	153	28.6	4.2	11.7	64	27.4	10.5	9.6
'57-'59	348	28.6	8.1	9.0	264	29.5	4.4	10.8	84	28.0	10.4	7.9
Pueblo												
'57-'58	1,627	24.3	4.7	4.4	1,567	25.0	4.7	4.2	60	23.1	4.7	4.6
'58-'59	1,786	23.2	4.1	6.6	1,653	25.4	4.0	5.5	133	19.6	4.1	8.4
'57-'59	3,413	23.5	4.5	5.9	3,220	25.3	4.6	4.9	193	20.6	4.6	7.5
Rio Blanco												
'57-'58	70	32.9	4.1	6.5	61	34.5	5.6	10.1	9	31.9	3.1	4.3
'58-'59	57	20.6	5.1	14.0	46	23.5	2.7	9.0	11	19.1	5.2	16.2
'57-'59	127	24.6	7.9	15.0	107	31.9	8.5	10.0	20	21.5	7.7	17.1
Rio Grande												
'57-'58	120	33.8	8.5	13.4	95	32.1	5.7	10.2	25	34.8	10.1	15.0
'58-'59	146	32.7	9.8	7.9	110	33.5	3.6	5.2	36	32.4	12.6	9.1
'57-'59	266	33.1	10.5	10.0	205	32.6	6.0	7.7	61	33.3	12.6	11.1

TABLE V
(continued)

County and Year	Total County				Total Urban				Total Rural			
	No. of Certificates	Sales Ratio	Range in Pct. Pts. ^a		No. of Certificates	Sales Ratio	Range in Pct. Pts. ^a		No. of Certificates	Sales Ratio	Range in Pct. Pts. ^a	
			Below Aver. Ratio	Above Aver. Ratio			Below Aver. Ratio	Above Aver. Ratio			Below Aver. Ratio	Above Aver. Ratio
Routt												
'57-'58	135	27.8%	4.9	11.1	110	40.2%	10.3	18.8	25	24.6%	3.6	8.9
'58-'59	131	30.6	2.1	19.6	94	35.8	3.9	54.5	37	28.9	1.5	7.9
'57-'59	266	29.8	5.5	9.3	204	38.1	7.5	17.4	62	27.3	4.9	6.9
Saguache												
'57-'58	34	40.9	7.4	12.6	24	31.9	6.3	28.1	10	44.1	7.9	7.2
'58-'59	38	42.9	5.3	15.8	29	36.0	9.6	24.0	9	45.1	4.2	13.2
'57-'59	72	40.5	6.0	14.2	53	33.7	7.5	22.2	19	42.7	5.5	11.5
San Juan												
'57-'58	15	38.7	12.1	18.8	14	d	---	----	1	d	---	----
'58-'59	10	37.7	8.7	7.3	10	d	---	----	0	d	---	----
'57-'59	25	38.1	10.0	16.6	24	d	---	----	1	d	---	----
San Miguel												
'57-'58	31	40.0	12.6	23.9	24	46.5	17.7	24.5	7	38.5	11.4	23.7
'58-'59	30	24.6	5.6	26.1	19	42.1	7.9	19.3	11	22.0	5.2	27.1
'57-'59	61	30.2	7.4	24.6	43	41.5	9.3	25.7	18	28.0	7.0	24.5
Sedgwick ^h												
'57-'58	39	19.7	2.9	3.5	22	29.3	2.4	9.8	17	18.4	2.7	3.1
'58-'59	61	21.3	8.5	4.0	52	24.9	3.3	5.5	9	20.7	9.4	3.8
'57-'59	100	20.2	4.2	3.3	74	26.9	3.8	6.9	26	19.2	4.3	2.7
Summit												
'57-'58	37	21.6	8.6	9.9	29	28.8	10.0	31.3	8	20.6	8.3	7.2
'58-'59	44	23.2	6.8	19.2	29	28.7	6.4	17.0	15	22.4	6.5	19.7
'57-'59	81	24.2	9.9	17.5	58	29.5	6.3	24.0	23	23.4	9.8	17.3

TABLE V
(continued)

County and Year	Total County				Total Urban				Total Rural			
	No. of Certificates	Sales Ratio	Range in Pct. Pts. ^a		No. of Certificates	Sales Ratio	Range in Pct. Pts. ^a		No. of Certificates	Sales Ratio	Range in Pct. Pts. ^a	
			Below Aver. Ratio	Above Aver. Ratio			Below Aver. Ratio	Above Aver. Ratio			Below Aver. Ratio	Above Aver. Ratio
Teller												
'57-'58	146	18.4%	5.2	9.2	111	22.8%	4.1	19.8	35	16.3	5.6	4.5
'58-'59	115	15.6	2.8	5.3	93	22.1	4.2	9.1	22	13.1	2.4	3.7
'57-'59	261	17.7	5.4	6.5	204	22.5	4.9	13.4	57	15.5	5.7	3.2
Washington												
'57-'58	68	23.3	5.9	5.9	38	29.8	9.5	0.1	30	22.6	5.4	6.5
'58-'59	106	21.1	3.6	4.4	50	26.2	6.3	9.7	56	20.6	3.2	4.4
'57-'59	174	21.9	3.5	5.5	88	30.6	3.7	11.3	86	21.1	3.5	5.0
Weld												
'57-'58	877	27.7	6.1	9.1	742	30.0	5.6	8.8	135	26.4	6.2	9.4
'58-'59	1,080	24.7	5.9	6.9	881	27.8	4.5	6.0	199	23.1	6.6	7.4
'57-'59	1,957	25.8	5.4	7.1	1,623	28.6	4.8	6.7	334	24.3	5.7	7.4
Yuma												
'57-'58	104	18.2	2.7	7.5	61	25.1	4.4	17.6	43	16.8	2.3	5.6
'58-'59	126	19.3	4.2	10.4	81	25.3	4.1	33.7	45	18.0	4.2	5.5
'57-'59	230	18.5	3.6	7.7	142	24.7	4.5	16.8	88	17.3	3.5	5.7
Total												
'57-'58	24,670	27.9	5.1	6.4	21,346	29.5	4.9	6.1	3,324	24.3	5.5	7.0
'58-'59	32,002	27.0	4.7	6.0	27,159	29.3	4.5	5.4	4,843	22.1	5.0	7.2
'57-'59	56,672	27.4	4.9	6.1	48,505	29.4	4.7	5.5	8,167	22.9	5.1	7.4

a. Average range above and below the average sales ratio within which the middle half of the sales ratios fall when arranged from low to high.

(Footnotes continued on next page)

TABLE V
(continued)

- b. Exclusive of commercial and industrial properties in 1958-1959, for which there were no conveyances in that year.
- c. Exclusive of commercial properties in 1957-1958, for which there were no conveyances in that year.
- d. Insufficient data for determination of the sales ratio.
- e. Exclusive of agricultural properties with improvements in 1958-1959, for which there was only one conveyance in that year.
- f. Exclusive of industrial properties, for which there were no conveyances in either year.
- g. Exclusive of industrial properties, for which there were no conveyances in 1957-1958, and only one conveyance in 1958-1959.
- h. Exclusive of commercial and industrial properties, for which there were no conveyances in 1957-1958 and only one conveyance in each class in 1958-1959.

TABLE VI

Sales Ratios by Classes of Property in
Colorado For Fiscal Years 1957-1958
and 1958-1959 and For the Two Years Combined

Class of Property and Year	Number of Certif- icates	Average Sales Ratio	Average Spread ^a of Middle Half of Ratios - Pct. Pts.	
			Below Average Ratio	Above Average Ratio
One-family dwellings				
1 to 8 years old				
'57-'58	8,579	31.8%	2.6	3.1
'58-'59	11,548	31.6	2.7	3.0
'57-'59	20,127	31.7	2.7	3.1
9 to 18 years old				
'57-'58	2,455	29.1	3.6	4.1
'58-'59	3,646	28.8	3.0	3.4
'57-'59	6,101	28.9	3.2	3.6
19 to 28 years old				
'57-'58	917	27.0	4.2	5.6
'58-'59	1,032	26.7	4.0	4.6
'57-'59	1,949	26.8	4.1	4.9
29 to 48 years old				
'57-'58	2,603	24.6	4.0	4.8
'58-'59	3,186	24.0	3.8	4.5
'57-'59	5,789	24.3	3.9	4.5
Over 48 years old				
'57-'58	2,470	22.0	4.7	5.4
'58-'59	3,074	21.6	4.3	5.1
'57-'59	5,544	21.8	4.5	5.4
All ages combined				
'57-'58	17,024	28.1	3.5	4.2
'58-'59	22,486	27.7	3.3	3.9
'57-'59	39,510	27.9	3.4	4.0
Multi-family dwellings				
'57-'58	628	31.3	7.0	4.1
'58-'59	808	30.8	5.6	5.3
'57-'59	1,436	30.7	5.9	5.1

TABLE VI
(continued)

Class of Property and Year	Number of Certif- icates	Sales Ratio	Average Spread ^a of Middle Half of Ratios - Pct. Pts.	
			Below Average Ratio	Above Average Ratio
Commercial buildings				
'57-'58	521	32.0%	7.5	12.8
'58-'59	574	33.4	7.5	9.9
'57-'59	1,095	32.8	7.6	10.2
Industrial buildings				
'57-'58	93	37.1	8.2	5.7
'58-'59	139	34.4	5.9	7.0
'57-'59	232	35.8	6.9	6.4
Vacant urban land				
'57-'58	3,080	21.4	5.7	8.5
'58-'59	3,152	21.5	6.1	7.7
'57-'59	6,232	21.4	5.9	8.1
Total urban				
'57-'58	21,346	29.5	4.9	6.1
'58-'59	27,159	29.3	4.5	5.4
'57-'59	48,505	29.4	4.7	5.5
Agric. land having impts.				
'57-'58	799	25.7	5.6	7.1
'58-'59	1,005	23.1	5.6	7.3
'57-'59	1,804	24.1	5.6	7.5
Agric. land having no impts.				
'57-'58	448	20.2	4.4	7.7
'58-'59	773	18.3	4.0	6.4
'57-'59	1,221	18.8	3.9	6.9
Misc. rural land having impts.				
'57-'58	1,184	25.6	6.2	6.0
'58-'59	1,961	24.1	4.6	7.0
'57-'59	3,145	24.7	5.1	7.2
Misc. rural land having no impts.				
'57-'58	893	16.7	4.1	6.7
'58-'59	1,104	16.5	4.5	8.1
'57-'59	1,997	17.4	5.2	7.2

TABLE VI
(continued)

Class of Property and Year	Number of Certif- icates	Sales Ratio	Average Spread ^a of Middle Half of Ratios - Pct. Pts.	
			Below Average Ratio	Above Average Ratio
Total rural				
'57-'58	3,324	24.3%	5.5	7.0
'58-'59	4,843	22.1	5.0	7.2
'57-'59	8,167	22.9	5.1	7.4
All Classes Combined				
'57-'58	24,670	27.9	5.1	6.4
'58-'59	32,002	27.0	4.7	6.0
'57-'59	56,672	27.4	4.9	6.1

a. Average range above and below the average sales ratio within which the middle half of the sales ratios fall when arranged from low to high.