Report to the Colorado General Assembly:

SALES RATIO STUDY

Part One

COLORADO LEGISLATIVE COUNCIL

RESEARCH PUBLICATION NO. 27

December 1958

L E G I S L A T I V E C O U N C I L

OF THE

C O L O R A D O G E N E R A L A S S E M B L Y

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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, without these involving definite recommendations for action. Fixing upon definite policies, however, is facilitated by the facts provided and the form in which they are presented.

LEGISLATIVE COUNCIL

REPORT TO THE

COLORADO GENERAL ASSEMBLY

PART I

SALES RATIO

REPORT FOR 1957-1958

Research Publication No. 27

STATE OF COLORADO

Legislative Council

STATE CAPITOL - DENVER 2, COLORADO

LETTER OF TRANSMITTAL

November 20, 1958

The Honorable Ray B. Danks, Chairman
Colorado Legislative Council
Denver, Colorado

Dear Senator Danks:

Transmitted herewith is Part I of the report on the sales ratio study conducted by the Committee on Assessment Methods during 1957 and 1958.

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

This report has been prepared for the General Assembly pursuant to H.J.R. 31 passed in 1957 and S.J.R. 12 passed in 1958.

Sincerely yours,

/s/ David J. Clarke
Chairman
Committee on Assessment Methods

DJC:mrl

FOREWORD

House Joint Resolution 31 passed at the First Regular Session of the 41st General Assembly directed the Legislative Council to study: 1) the uniformity of property assessments within and among the 63 counties of the state; 2) the assessment methods and procedures used by the county assessors and the Tax Commission and the statutes concerning property assessment.

The assignment was divided into two parts: 1) an assessment-sales or sales ratio study; and 2) a methods and procedures study.

Fitzhugh L. Carmichael, Director of the Bureau of Business and Social Research at the University of Denver, was retained in July, 1957 to supervise the sales ratio study. Work by the staff of the Legislative Council was begun on this phase of the study in July, 1957 after the effective date of the Realty Recording Act.

In the Second Session of the 41st General Assembly, in 1958, authority for the Legislative Council to continue the assessment study was granted by S.J.R. 12. Early in 1958 a committee was appointed by the Chairman of the Legislative Council to supervise the work of the staff. The members of that committee are:

Senator David J. Clarke, Chairman
Representative Ray Black
Representative Palmer L. Burch
Representative Charles R. Conklin
Senator T. Everett Cook
Representative R. S. Crites
Senator Fay DeBerard
Representative Guy Poe, Vice-Chairman
Representative James M. French
Senator Wilkie Ham
Senator Ranger Rogers
Senator Herrick Roth
Representative Arthur M. Wyatt

This is the first part of a two-part report on the results of the sales ratio study. 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 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 Committee 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

November 20, 1958

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INTRODUCTION

The Assignment

The General Assembly of the State of Colorado directed the Legislative Council to "examine into the matter of uniformity of property assessments within and among the sixty-three counties of the state." In explaining the purpose of the assignment, the General Assembly took cognizance of the state constitutional provision that:

> "...all taxes shall be uniform upon each of the various classes of real and personal property [with exemption permissible as to certain household furnishings and personal effects] located within the territorial limits of the authority levying the tax, and shall be levied, assessed, and collected under general laws, which shall prescribe such methods and regulations as shall secure just and equalized valuations for assessment of taxes upon all [such] property..." [1]

The General Assembly also resolved 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]

Because significant differences in assessment levels[3] were believed to exist, it was considered necessary to determine the actual facts. In order to determine the facts a method had to be selected. The Legislative Council had previously explored the

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1. Article X, Section 3, as amended, Colorado Constitution.

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.

possibility of using an economic index as a measure of tax paying ability but decided against its use.[4] After considering a number of alternatives, the General Assembly selected the sales ratio method. In so doing, Colorado followed a number of other states which have selected the sales ratio method as one means of achieving greater uniformity of assessments.[5]

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 cases 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.

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4. During the course of the Legislative Council study which culminated in the School Foundation Act, the education committee discussed the feasibility of using an economic index as a measure of tax paying ability. The Bureau of Business Research at the University of Colorado constructed such an index, for consideration by the Legislative Council Committee on Education, in 1956. However, the Bureau recommended against the use of the index as a means of measuring local contributions for the support of schools and its recommendation was followed.

5. While sales ratio studies have been made for many years in several states by both private and governmental agencies, such studies have served a far more important fiscal purpose since World War II than in any other period. There are a number of reasons why increased emphasis has been placed on assessment equalization and consequently on sales ratio studies. First, of course, is the ever increasing burden of the property tax for local government purposes. In 1955, property taxes constituted approximately 87 per cent of all taxes collected by local governments in the United States -- a dollar amount approximately two and one-half times as great as was collected from property taxes in 1940. Second, the large absolute increase in property taxes has thrown an ever increasing burden upon agricultural, public utility, commercial and other forms of property. A third reason is the increasing reliance of local governments on various forms of state grants in aid. The fact that such grants are quite often closely related to assessed valuations further points up the need for equalization of assessments.

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.[6] 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.[7] The conveyance certificates on which this report is based were filed with the county clerks and recorders between July 1, 1957, and June 30, 1958.

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 between or among counties, between or among classes of property in the same or different areas, and between and among properties 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.

The General Assembly has provided for the continuation of the sales ratio study under the requirements of S.B.222. 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 where 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

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6. S.B. 222, First Session, 41st General Assembly, 1957. Colorado Revised Statutes, Sections 118-6-21 through 118-6-33, Supplement 1957.

7. Excluded also are interests in mineral properties which are assessed on the basis of mineral production and not as land and improvements.

county with an assessed valuation of $20 million is assessing property at 20 per cent of market value. Under the equalization program both counties 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 valuation adjusted to the state ratio ($25,000,000 in each case). Under these conditions, 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. States reported to use this method include Arkansas, Maine, New Hampshire, New Jersey, New York, Oregon, Pennsylvania, Washington, West Virginia, and Wisconsin.[8]

States reported to use the uniform assessment ratio method of making equalization adjustments include California, Illinois, Iowa, Kentucky, Missouri, Nebraska, and South Dakota. This method requires actual adjustment of assessments to the same level in all counties.[9]

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 improvements districts; 4) computation of tax limits for municipalities and school districts; and 5) computation of debt limits of municipalities and school districts.[10]

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, but there are also differences in ratios within counties. These differences may be due to the fact

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8. Federation of Tax Administrators, Preliminary Report of Equalization Programs and Other State Supervisory Activities in the Property Tax Field, January 1957, pp. 15-16.

9. ibid.

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

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 during the course of the study, 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 sale 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 involving (a) individuals related by blood or marriage, (b) affiliated companies, (c) governmental agencies, (d) eleemosynary institutions, and (e) transfers of convenience, such as those represented by correction deeds and sales of partial interests.

In addition, investigations by the staff were made by correspondence and field checks of other transactions that were, for one reason or another, questioned. In many cases, this 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 this 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 may be termed developer's rates for new subdivisions, 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 valuation on the "grazing land" basis to a sales price 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 emphasizes the need for continuing the sales ratio study.

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 by the staff of the Legislative Council upon receipt of the certificates was to separate 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 which was 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 good will were included in the consideration reported. In this event, the dollar value of such items was needed as a basis for making the necessary correction 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 not reported in all cases.

A form letter was prepared 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 in a 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.

Letters 1, 2, and 3 were sent to the buyers and sellers of approximately 4,000 properties. As a result, approximately 55 per cent of the conveyance certificates relating to such properties were made usable.

During the course of field trips made in the summer of 1958, 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, the adjustment to 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 major 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 or excluded from the computations of sales ratios.

Coding the Certificates for Card Punching

Coding of the certificates was necessary to make possible punching of the cards and tabulation of the data for preliminary analysis; and preliminary analyses of the data were required in the determination of classifications to be used in the study. This meant that the coding plan should call for as much detail as could conceivably be needed. It was not known at the outset, for example, whether the sales ratio for new one-family dwellings was different from that of comparatively old one-family dwellings and, if so, what age groups should be distinguished. By having the age in years punched on the cards, any appropriate grouping was feasible. Similarly, to make possible any desired grouping according to property classification, each of the broad classes of property as set forth in the Assessor's Manual [11] was distinguished.

Hence, a comprehensive coding plan was developed so that detailed information could be punched on the cards. The coding plan included the name of the county, the names of incorporated towns, all unincorporated towns within a county as a group, all rural areas divided into sub-classes as indicated below, 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 types of instruments including contracts 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 the classification of the property.

Because sizeable 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, 1957, were excluded from the study. Warranty deeds (exclusive of special warranty deeds) accounted for the great bulk of the certificates found to be usable. Because quit claim deeds represented a sizeable 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 ordinary 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 values and records the total. Assessed valuations for 1957 were used exclusively in determining all county and state-wide sales ratios.

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

III

DETERMINING AVERAGE SALES RATIOS

After the preliminary analysis referred to above was made, it was decided that sales ratios would be ascertained, 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 group
   a. 1 to 8 years of age (built 1950 to 1957, inclusive)
   b. 9 to 18 years of age (built 1940 to 1949, inclusive)
   c. 19 to 28 years of age (built 1930 to 1939, inclusive)
   d. 29 to 48 years of age (built 1910 to 1929, inclusive)
   e. Over 48 years of age (built prior to 1910)

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, the two miscellaneous rural land 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 nonexistent 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 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 regarded as dependable measures of the relationship of assessed valuations to market prices.

Separation of one-family dwellings into age groups was necessary for two reasons. First, the preliminary analysis of the data led to the discovery, generally speaking, that sales ratios are higher 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 and hence 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 property, 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 effects 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 middle two-thirds of 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 sale price figure and the average ratio for each class of property in each county was thus determined.

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 valuation of locally assessed real property yielded the average sales ratio for the county. Table I, on the following page, 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 (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 ($25,550,000) 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.

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 of all sixty-three counties.

IV

SALES RATIOS IN COLORADO BY COUNTY AND BY CLASS OF PROPERTY

The study is based upon a total of 24,670 property transfers. The number per county ranges from 5,413 in Denver to 5 in Mineral. Transfers of one-family dwellings in towns and cities account for 69 per cent of the total, and other urban sales account for 18 per cent. About 13 per cent were of rural properties.

The average state-wide sales ratio, all classes of property combined, is 27.9 per cent. The average for urban areas is 29.5 per cent, and for rural areas the average is 24.3 per cent.

There is a wide variation in the county average ratios among the sixty-three counties of the state. The range is from 14.1 per cent for Jackson County to 40.9 per cent in Saguache County. Seven of the counties have average ratios above 35 per cent and eight of them have ratios below 20 per cent. However, the ratios for one-third of the counties fall within the four percentage point range from 24 per cent to 28 per cent. (See Table II, Page 16 and 17).

Most of the counties with comparatively high average ratios are found in the southern and southwestern parts 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. (See Chart I, Page 15).

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, is 21.4 per cent in contrast to the over-all urban average ratio of 29.5 per cent. (See Table III, Page 19).

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 it is 31.8 per cent; and for those that are over 48 years old it is only 22.0 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, 37.1 per cent. Miscellaneous rural land without improvements is the class with the lowest average ratio, 16.7 per cent.