

A COMPARATIVE STUDY OF THE TREND OF TEACHERS'
SALARIES IN NOWATA COUNTY AND OKLAHOMA
AS RELATED TO ECONOMIC AND
SOCIAL TRENDS

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By

Albert W. Dillon

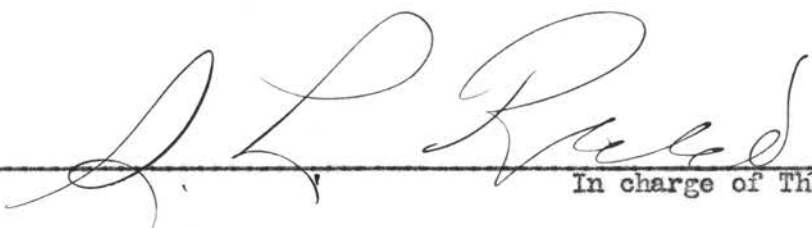
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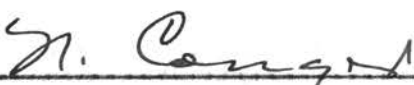
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CHAPTER I

THE PROBLEM AND DEFINITIONS OF TERMS USED

In campaigns to increase the salaries of teachers, dozens of local, statewide, and nation-wide studies of teachers' salaries have been made during recent years. These studies, some of which will be reviewed later, have shown not only the salaries of teachers of the several types of school services, but also some of them have shown the economic position of teachers as compared with workers in other fields of endeavor. No studies have been found concerning the wages of teachers of Oklahoma.

THE PROBLEM

Statement of the Problem. It was the purpose of this study (1) to observe and compare the trend of teachers' salaries in Nowata County and the State of Oklahoma for all the years for which data was available; (2) to compare the trend of teachers' salaries in Nowata County and the State of Oklahoma with Cost of Living items using as a criterion the concept of "real wages"; and (3) to compare the trend of teachers' salaries with the retail prices of certain commodities produced within the state.

Importance of the study. Considerably more than one-half of all school expenditures go to pay the salaries of teachers and other school officers. In view of the absorption of so large a proportion of all school expenditures by the salaries of teachers, any account of the trend of school costs must devote itself largely to a discussion of the trend of teachers' salaries.

In any movement to raise the standards of a school, one of the first questions of primary importance is the raising of the qualifications of the teaching personnel. Immediately the question of salaries comes into the picture, since it is axiomatic that school systems with the highest salary schedules tend to have the greatest choice of teachers. Excellent teachers are few in number and difficult to hold in lower salaried schools. In the setting up of a salary schedule which will safeguard a school from losing its well-qualified and efficient teachers many factors are to be considered, of which two outstanding ones are the trend of wages in the past and recognition of the cost of living.¹ This study has been made with these factors in mind, as well as an additional factor, the retail price of commodities produced within the state. The latter factor had been selected in order to find out if any definite relationship existed between the trend of retail prices of commodities within the state and the salaries paid to teachers, and if such a relationship existed, to use it as a basis for forecasting in advance the trend of teachers' salaries.

DEFINITIONS OF TERMS USED

Rural Schools. All one and two teacher schools in Nowata County and the South Coffeyville school. South Coffeyville was included in this group because it never became a consolidated school with four years of high school work.

Consolidated Schools or Village Schools. Village schools that later consolidated the neighboring outlying district and offered four years of high school work; also the consolidated districts not located

¹ Moehlman, Arthur B., Public School Finance, p. 122.

in villages. The multi-teacher schools were located in the villages before consolidation; and naturally were the center of consolidation when it took place in Nowata County, save in one of two instances when natural location caused consolidation elsewhere.

Real Wages. The real wages of a teacher are not the amount of money received stated in dollars and cents, but the purchasing power, the goods and services for which the money are expended. If a teacher's salary over a period of years is increased by 50 percent, while the cost of food, shelter, clothing, books, summer school tuition, and similiar items, increased 100 percent, the real wages of the teacher are less.

Average. The average used as the measure of central tendency of the frequency distribution of the salaries of teachers, was found by multiplying or "weighting" the midpoint of each step interval by the frequency on that step, adding all such products, and dividing by the number of teachers to obtain the average. This method is illustrated in the index in table I.

Index. The index is a statistical device to compare figures and items, either one with another, or from period to period. In this study base years were selected, and the index numbers expressed in terms of this base year being 100. These could well be read as percents, since they are found by dividing the average of each year compared into the average of the base year.

Trend. As meant in this study of teachers' salaries, the trend is the tendency or inclination of the average teacher's salary to increase or decrease.

CHAPTER II

REVIEW OF THE LITERATURE

Many studies have been made, particularly in recent years, by individuals and organizations of teachers' salaries. The setting up of a salary schedule by a school system necessitates such a study; the drive for an increase in teachers' pay by the teachers themselves has invited research; the work of administrators in determining school costs must consider salaries of teachers; and the statistics of economists include data on the wages of school employees. Only a brief summary of the works and studies closely related to this one at hand will be given.

The earliest comprehensive work on the general trend of teachers' salaries was made by M. Randolph Burgess for the Russell Sage Foundation in 1920¹. From a study that considered the weekly wages of men and women teachers since 1841 he evolved, through the use of an index, a series of trends which show the general tendency of teachers' salaries from the period just prior to the organization of the graded schools in 1841 up to 1920. Mean salaries paid to men and women teachers in rural and city schools during this period of 82 years were tabulated and graphed and comparisons made by means of index numbers and trend lines. Burgess made a comparative study of the salaries of these groups of teachers as they related, not only to each other, but also as they related to the cost of living and to the wage of unskilled laborers or artisans. Burgess concluded that the trend of salaries is

¹ Burgess, Randolph M., *Trends of School Costs*, *passim*.

best measured by the index number method; that the salaries of the four groups of teachers show in general very similiar trends; that in similiar communities men have been paid considerably more than women teachers; that city teachers have been paid more than country teachers regardless of sex; that women country teachers have had the largest percentage increase in salary, and city men teachers the smallest; that teachers' salaries have begun to overtake the cost of living, but only a beginning had been made; that there is a decided relationship existing between the wages paid to skilled and unskilled laborers and to the wages paid to the different groups of teachers as he classified them.

Since its establishment in 1923 the Research Division of the National Education Association has been probably the most prolific agency in collecting and disseminating data on teachers' salaries and in showing the unfavorable economic position of teachers compared with other workers. Beginning in 1923, and every two years thereafter, it has issued a bulletin containing summary data regarding salaries paid in public schools of the United States. Its most recent bulletin on the subject is that of March 1935;² among other facts this bulletin presented summary data concerning the salaries paid to the following groups of teachers: elementary-school teachers; high-school teachers; principals; supervisors; and superintendents and their assistants in city and rural school systems and in state departments of education. These groups of teachers are classified according to the size of population centers in which they are employed, beginning with cities from

2 Research Division, National Educational Association, Bulletin, Salaries of School Employees, 1934-35. XIII (March, 1935), passim.

2,500 to 5,000 in population. The trend of salaries for all groups of teachers has been downward since 1930-31 according to this investigation.

The National Educational Association, Research Division, has also issued bulletins regarding the economic position of the teacher, the latest of which is September, 1935.³ This is an excellent study, made by the questionnaire method to teachers in cities over 100,000 in population, collecting information regarding phases of their financial expenditures, comparing the trend of their salaries with the cost of living indexes and with other occupational groups. Since it was taken in the large population centers, conclusions reached in that study are not validly comparable to a more sparsely populated section such as the state of Oklahoma. The chief value of this study was the construction of a cost of living index for city public school teachers in general.

In 1927 McKay and Warne⁴ DEVELOPED a cost-of-living index for professional workers in Pittsburgh in connection with their survey of teachers' salaries in that city. This index was a weighted average of six separate commodity indexes which were already available; the weights were not determined solely by a study of the spending habits of Pittsburgh teachers, but were estimates based upon several different budget studies. These weights also varied from year to year, which introduces a variation in the standard of living whose cost is being measured,⁵ whereas the sole purpose of a cost of living index is to

3 Ibid. XIII (September, 1935)

4 McKay, Marion K., and Warne, Colston E. Survey of the Salaries of Teachers in the Public Schools of Pittsburgh in Relation to Cost of Living.

5 N. E. A. Research Division. Research Bulletin, Vol. XIII. No. 4 September, 1935. p. 227.

measure changes in the cost of maintaining a constant standard of living from year to year.

Bells⁶ in 1932 showed how a cost of living index might be constructed for teachers, weighted according to the spending habits of the teachers of Fresno, California. Butsch,⁷ in 1933, published a criticism of Bell's index, and presented a new series of index numbers for teachers based on somewhat different assumptions.

Shuttleworth of Yale University has made a study of the dollar and real incomes of public school teachers and of wage workers, from 1889-90 to 1934-35.⁸ He concluded that two factors have influenced fluctuations in the real incomes of teachers; (1) real incomes have tended to rise as the cost of living declined and to fall as the cost of living increased; and (2) dollar incomes have been almost completely determined by, and have lagged two years behind, changes in the cost of living. From these factors he opined that a method of predicting the real wages from a historical record of their trend could be used.

No study was found that endeavored to test a relationship between the prices of commodities produced within a locality and the wages paid the teacher in that locality. This study will attempt to discover if there is any such relationship.

In all of these studies that have been briefed, the teachers' salaries were taken from information gained from the larger population

6 Bells, Walter C., *Teacher's Salaries and the Cost of Living*, passim.

7 Butsch, Russell L. C., *Trends in the Purchasing Power of Teachers' Salaries*. *American School Board Journal*. (October, 1933) p. 87. 18-21

8 Shuttleworth, F. K., *The Dollar and Real Incomes of Public School Teachers and of Wage Workers*. *Educational Adm. and Supervision* 21. February 1935. pp81-96.

centers. It seems reasonable to believe that conclusions reached from such studies might not be applicable to the lesser populated areas, such as Nowata County and Oklahoma.

METHOD OF STUDY

The method used in comparing salaries of teachers is that of an index number. It is desirable to comment at this point on the properties of this method, since it will be used throughout the thesis to measure the trend and comparison of salaries, wages, and prices. The index number is a statistical device used in comparing figures and items, either one with another, or from period to period. The method of procedure in this instance was to secure and tabulate the figures for the average annual salaries of teachers over the county. These were tabulated as to rural, consolidated or village, and Nowata city. To secure the index number, the average was computed by the short method for each year. Because of the constant use of the same schools in the same county, any change which appeared in the series from year to year was due, not to a change in the number or kind of data, but certainly to some real change in the level of teachers' salaries. This is the fundamental characteristic of the index number. It gives a measure of changes from period to period by selecting quotations representative of large groups and drawing its quotations each year from the same source.

It has been widely used to measure the trend of wages, and the trend of prices.⁹

In trying to make the index number presented in this study an adequate measure of salary trends within the county, an exhaustive

⁹ National Industrial Conference Board, *Wages, Hours, and Employment in the United States, 1914-36.* pp. 11-12.

search was made of the reports within the county superintendent's office, and also of individual teacher's contracts, where the information was not otherwise available. Research was made in each of the independent districts which were not required to furnish such information to the county superintendent. From these sources it has been possible to secure the figures for the construction of the three index number of teachers' salaries, one for the rural schools, one for the village and consolidated schools, and one for the Nowata City schools. These index numbers are shown in table I as average salaries and in table VI as percents of 1911-12. One of the fundamental characteristics of the index number is that any year might be used as a base year.

The three columns show for each year from 1908 to 1936 the average annual salary of the teachers in the three types of schools, except for the Nowata City in the years 1908-1909, 1909-1910, 1910-1911, and 1916-1917. Data to find the average for these years were not available. Since the average salary for the village and consolidated schools and Nowata City includes principals and superintendents as well as high school and elementary, the levels of the index numbers for those groups tend to be slightly higher as compared to the rural groups which do not have such administrative groups. However, since the average salaries of the state contain these groups, it was thought best to use them in this study.

The average salaries of teachers in the state of Oklahoma were taken directly from the State Department of Education.

The salary received by the teachers has been computed on an annual basis by multiplying the salary the teacher received each month

by the number of months taught. This annual salary has been used for a number of reasons. In the first place, records were available by which the annual salary could be easily computed.

In the second place, the wage received for the period of a year is a fairer measure than the weekly or monthly basis. With the school year tending to grow longer and longer since statehood, almost every teacher was unable to engage in any other occupation as they did in the early years when school held for only a few short weeks or months. This may well be said of even the smaller one-room rural school teachers, with terms of eight and nine months. Then, too, there has been an increasing tendency for teachers to attend summer schools in order to better their professional preparation, which prevents them from engaging in any other gainful occupation.

In the third place, the annual wage offers a better basis of comparison with data available from the state department and with studies that have been made along this line. All of the studies of the National Educational Association Research Department have been made on the basis of annual salaries. The tendency of modern school finance and economics is to place the emphasis upon the yearly income of teachers, rather than upon the monthly or weekly income.

In that part of the study devoted to a comparison of the trend of teachers' salaries with cost-of-living items with the criteria of real wages in mind, much difficulty was found in making valid comparisons. All studies that have been made were for the larger cities, where the cost and standard of living are decidedly different. Such items as rent, light, fuel, and the like have an entirely different weight when applied to the teachers of Nowata County and Oklahoma. There has been

much difference of opinion on a cost of living index for teachers among research authorities in that line, Shuttleworth stating that there was an urgent need for an adequate and reliable cost of living index for teachers.¹⁰ The cost of living index for teachers is entirely different than that of wage earners, since they spend different proportions of their incomes for the component items of the index, and have additional items to be considered, such as professional advancement, charity, and the like. For this reason it was decided only to compare teachers' salaries in this study with the basic items of the cost of living index, such as food, clothing, house furnishing, and sundries, without giving them any weight or endeavoring to set up a valid cost of living index as so many other research workers have done. Such a task would be beyond the scope of this study.

For the comparison of the trend of teachers' wages with the retail prices of commodities produced with the county and the state, information for such retail prices was obtained from the Agricultural Statistical bulletin, 1936. The indexes of these prices were computed on the base year level, and tables and graphs set up to show the relationship, if any, existing between them and teachers' salaries.

The succeeding chapter of the thesis has to deal with the comparison of the trend of the wages paid to teachers in Nowata County from 1908-09 to 1935-36 and to teachers in the state of Oklahoma from 1922-23 to 1934-35.

10 Shuttleworth, (op. cit.) p. 96.

CHAPTER III

COMPARISON OF THE TREND OF AVERAGE SALARIES

PAID TO NOWATA COUNTY TEACHERS AND TO OKLAHOMA TEACHERS

In the year 1908-1909, rural school teachers in Nowata county were receiving an average salary of \$254 per year, while teachers in the village schools were earning on an average \$437 per year. There were no consolidated schools. The difference between the salaries of the two groups was due largely to the shorter terms taught in the rural schools. This was shortly after statehood in 1907, and the length of the rural school terms ranged from as short as one month to the full term of eight months. Neither village nor rural schools had a term as long as nine months.

After 1909 there were few terms of school within Nowata county less than five months in length. The longer terms of school gave the teacher more months of pay, increasing her annual salary. Salaries of the rural and the village teachers became more nearly the same. It is well, to note, however, that country schools have lagged in the teaching of the longer terms of school, even yet many holding eight month sessions, while all of the village or consolidated schools have consistently taught eight month terms, with an increase to nine months upon the installation of high school work. This has a corresponding effect upon the total salaries paid to teachers per year and is to be considered in the study and comparison of teachers' salaries and school costs.

In all of the three groups of schools of Nowata county salaries

have risen continuously since 1908. Table I gives the average annual salary of teachers classified as to the group in which they belong for the years from 1908 to 1935 for which information was available and could be gathered. Nowata city has consistently paid the highest average salaries in the county and the rural schools have paid the lowest. Figure 1, which was made from the data shown in table I, is a diagram that shows at once the general similiarity between the movements of the salaries of the different groups of schools within Nowata County. The increase was gradual but steady in the years preceding the World War, but from the year 1917 salaries rose rapidly until they reached their peak in 1921-22. In the period of financial depression which marked the closing of the War period the wages of the teachers fell away somewhat, but the gains that had been achieved were very largely retained. Reaching a low point in 1927, the average salary of each group was largely static, with only slight fluctuations, until 1930. Then they declined abruptly for three years, or until 1933-34. From that date until 1935-36 they have increased steadily and rapidly.

It is significant to note at this time the general similiarity between the movements of the salaries of the teachers of Nowata county during this period and the movements of the salaries of teachers throughout the United States during the period of the Civil War. In both cases there was a steady trend upward in the years preceding the war. Large gains were made just after the wars followed by a considerable leveling off. The gains of teachers in salaries over the United States were not rapid in the Civil War period until 1862, two years after the war had begun. In this study of the salaries of the teachers

TABLE I

AVERAGE SALARIES OF TEACHERS IN NOWATA COUNTY, OKLAHOMA

1908 to 1936

YEAR	RURAL	CONSOLIDATED AND VILLAGE	NOWATA
1908-09	254	437	---
1909-10	303	544	---
1910-11	423	562	---
1911-12	458	613	605
1912-13	455	625	621
1913-14	496	655	612
1914-15	535	687	673
1915-16	538	696	713
1916-17	563	705	---
1917-18	576	710	793
1918-19	685	865	845
1919-20	787	978	980
1920-21	970	1157	1365
1921-22	980	1192	1385
1922-23	957	1071	1326
1923-24	909	1133	1288
1924-25	871	1067	1171
1925-26	848	1015	1065
1926-27	840	986	1029
1927-28	899	993	1067
1928-29	846	943	1073
1929-30	901	997	1041
1930-31	758	937	1084
1931-32	755	830	1085
1932-33	654	837	1008
1933-34	596	714	984
1934-35	671	897	953
1935-36	675	927	1130

of Nowata County, rapid advances in salaries began in 1917, three years after the war had begun in Europe with its resultant of business expansion in this country. Salaries continued to increase after the Civil War until they reached a peak in 1870, five years after the war was over. In Nowata County salaries of all three groups continued to rise after the war until they reached their peak in 1921, three years after the signing of the Armistice. The curves of the salaries of the teachers of Nowata county during and following the World War period show a tendency to repeat the performance of the salaries of teachers of the United States during and following the Civil War period.¹¹

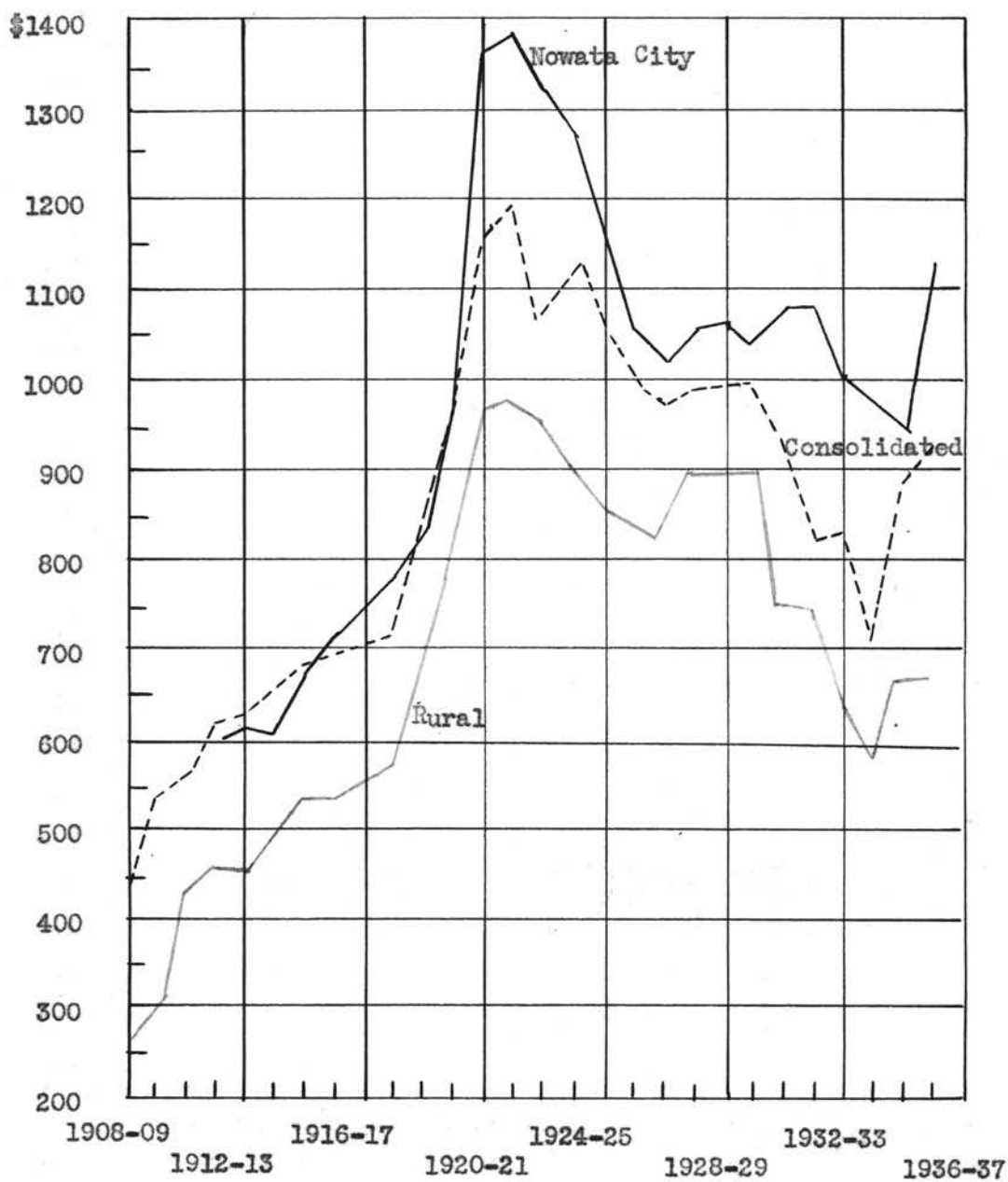
In comparing the salaries of the different groups of teachers in Nowata county by the use of figure 1 there are certain outstanding differences between the different curves. The teachers of the village schools start in 1908 at a point far higher than that of the rural teachers. This might be expected due to the consistently longer terms which were taught in the village schools. All of them at the time were holding eight month terms, while many of the rural schools had terms of only two to five months in length. After 1918-19 salaries of these two groups tended to be more nearly equal, due to the rise in salaries paid to rural teachers and to the longer terms of school becoming prevalent among them.

During 1911-12 the wages of the village schools and those of Nowata city were almost equal, beginning at practically the same point on the curve. Rural school wages were about three-fourths as much, and have continually lagged behind those of the other two

¹¹ Burgess, W. Randolph, *Trend of School Costs*, pp. 35-40.

FIGURE 1

COMPARATIVE TRENDS OF THE AVERAGE SALARIES OF TEACHERS
IN NOWATA COUNTY FROM 1908-09 TO 1935-36



groups. Salaries of the village schools and Nowata city schools remained on a par until the year 1920-21, at which time Nowata city salaries increased \$208 above those of the village or consolidated schools and have remained above them since that time until the present.

Figure 1 is made by plotting all three curves of the different groups of schools on one background. This is done in order to make clear some of the characteristic differences in the general movements of the three curves.

The salaries of the consolidated or village teachers and of Nowata city teachers started at a level a third above that of the rural teachers. Their gains were sufficient to keep them in the lead. The salaries of the Nowata city system and the village schools started together in 1911-12, but those of Nowata city passed the salaries of the village schools in 1920-21 due to their superior gains in the post-war period and continued thereafter to remain at a level above. The trend of the rural salaries has been considerably below all the others. It is well to note that since 1921 the trends of the rural and the consolidated schools in the wages they paid have been more nearly the same than that of Nowata city. Since 1923 both have fluctuated in considerably the same degree during the same years, while Nowata city has inclined to more nearly maintain a level standard. All tend upward since 1934.

While figure 1 shows the actual trends of the salaries in terms of amounts paid annually for teaching services, it is deceptive in one respect. It gives the impression that Nowata teachers made much the greatest proportional increases in the wages received and

that the rural teachers made the least. A more careful study of the graph with a different criterion gives a truer conclusion. Taking the year 1911-12 as a base year for computing index numbers, since that is the first year for which information is available regarding the salaries paid in all of the different groups, it can be seen that Nowata city did make the largest proportional increase. Their final average salary in 1935-36 was 187 percent that in the year 1911-12. The rural schools and the village schools increased their wages in almost the same proportion, about 150 percent that paid in 1911-12.

Figure 2 is inserted in order to make clear the relative increases in the salaries of the different types of school within the county. Here the index numbers are plotted, not at their value in dollars, but as percents, taking the year 1911-12 as the base year or 100 percent. These percents are listed in table II.

On the basis of the information shown in this table and in its accompanying graph it is evident what the proportional increase has been in each group by years. The trends of the salaries in the three groups of schools studied tend to be much the same except in the period from 1930 to 1935. Further discussion of the difference of this period will be given a little later in the thesis. In general the rural schools have had a higher percentage increase, year by year, than the consolidated schools, but at the end of the period studied, 1935-36, the salaries of both groups were approximately the same percentage of the wages paid in 1911-12. The rural schools were paying 148 percent above that base level, while the consolidated schools were paying 150 percent above what they were paying in 1911-12. Nowata city was paying 187 percent of their 1911-12 salaries.

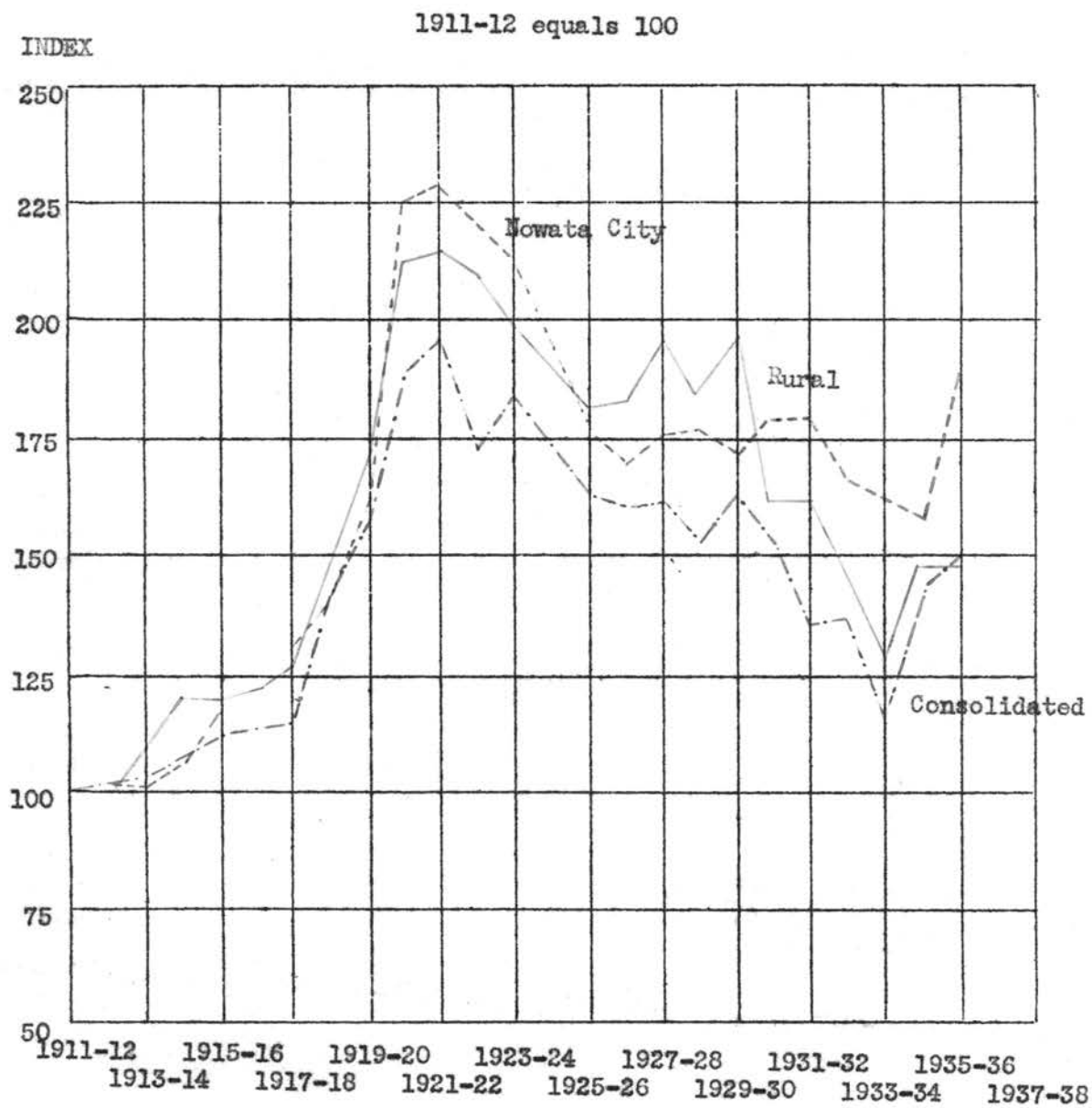
TABLE II

Teachers' Salaries in Nowata County from 1911 to 1935
in terms of percents of figures for 1911-12.

YEAR	RURAL INDEX	CONSOLIDATED OR VILLAGE INDEX	NOWATA CITY INDEX
1935-36	148	150	187
1934-35	148	146	158
1933-34	130	117	165
1932-33	144	137	166
1931-32	168	135	180
1930-31	168	153	180
1929-30	196	163	172
1928-29	185	154	177
1927-28	195	162	176
1926-27	184	161	170
1925-26	182	166	176
1924-25	190	174	193
1923-24	199	185	213
1922-23	209	174	219
1921-22	214	194	229
1920-21	212	189	225
1919-20	172	159	162
1918-19	150	141	140
1917-18	126	116	131
1916-17	123	115	---
1915-16	119	113	117
1914-15	119	110	111
1913-14	111	107	101
1912-13	100	102	103
1911-12	100	100	100

FIGURE 2

THE COMPARATIVE TRENDS OF THE AVERAGE SALARIES OF TEACHERS
IN NOWATA COUNTY FROM 1911-12 TO 1935-36



The course of the salaries in the state of Oklahoma is outlined in figure 3. The information shown in this figure was gotten directly from the State Department of Education for as many years as it was available. Quoting Marshal Gregory, Head of the Research Division of the State Department of Education;

"I am attaching the salary information which you requested for as many years as it is available. Prior to 1929-30 the State Department of Education had no Research Division and statistics therefore received very little attention." 12

It is fortunate and opportune that the salaries for the years 1922-23 and 1923-24 are listed since those years are taken as base years from which to compute index numbers in so many of the comparisons to be made, such as the Cost of Living.

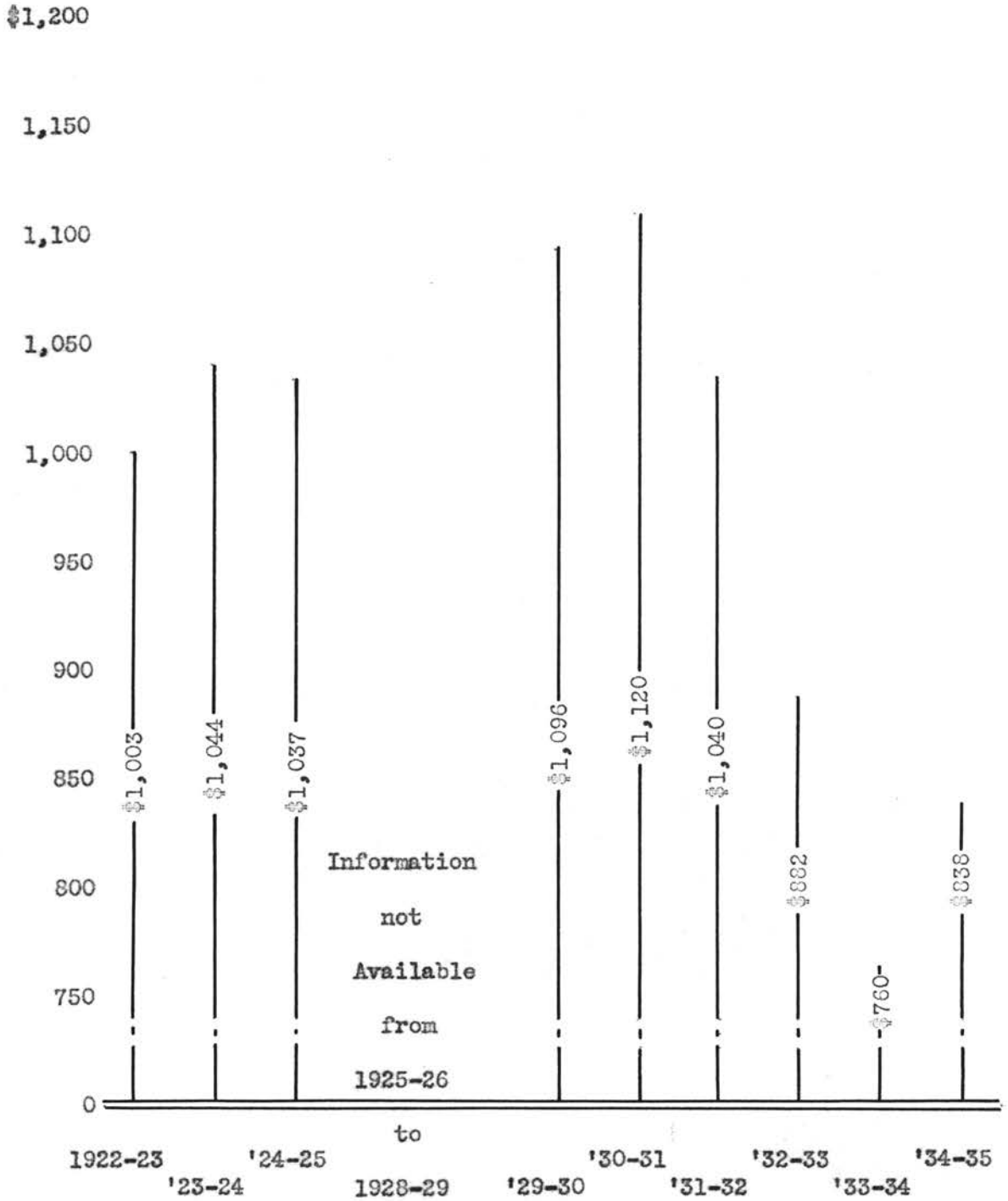
Figure 3 is largely self-explanatory. The trend of salaries over the state had been downward from 1931 to 1934, the year in which the average salary was the least. The trend upward since 1934, might be expected as an aftermath of the panic period since 1930 through which the country as a whole had just passed.

In order to compare the average salaries paid in Nowata county with those paid in the state of Oklahoma as a whole, figure 4 was made. It is made by plotting the average salary of each group, the rural, the consolidated, and the Nowata city, of Nowata county for each year on the same diagram with the average salary paid over the state of Oklahoma for each year information is available. From this figure it is evident that the trend of salaries in the state of Oklahoma and in Nowata county have been considerably similiar.

12 Gregory, Marshal, Personal correspondence with State Department of Education, February 5, 1937.

FIGURE 3

AVERAGE SALARIES OF TEACHERS IN OKLAHOMA
FROM 1922-23 TO 1934-35



Particularly is this true of the wages paid in the consolidated and rural schools of Nowata county. The curves of these groups decline and rise in the same years, and in much the same proportion, as that of the state.

While Nowata city and the consolidated schools were both above the state average in years from 1922 to 1925, the consolidated schools paid less than the state average from the year 1929 to 1933-34, and paid more than the state average in 1934-35. Information concerning salaries in the state were not available for 1935-36 in order to make a comparison for that year. The teachers of the rural schools have been always paid less than the state average in the years studied.

Since the state average includes the salaries of administrators and supervisors over the state, and such salaries are inclined to be higher than those of classroom teachers, that average is higher because of that fact. Rural school teachers average salaries tend to be lower because of the absence of such administrative salaries.

The movements of salaries in the past years since 1929 are so distinctive as to warrant a separate accounting. Table 4 presents the figures of the four salary indexes from 1929 to 1936 as percentages of the year 1923. The year 1923 was taken as the base year to find these indexes because the year 1923 has been adopted by the National Industrial Conference Board, Inc. as the base period upon which to compute all indexes.

"The year 1923 was chosen because it represented the first post-war year of relatively stable economic conditions." ¹³

¹³ Beney, M. Ada, The Cost of Living in the United States, 1914-36. p. 14.

In order to use 1923 as the base year upon which to compare the percentage increases or decreases of the teacher's salary shown in figure 4, the following method was used. The arithmetical mean of the average salaries paid in each group during the school years 1922-23 and 1923-24 was taken as the base index of 100 percent. This was done since approximately half of the 1922-23 salaries was paid in 1923 and approximately half of the 1923-24 salaries was paid in 1923. Using the average of that two year period as the base index of 100 percent in each case, the indexes of the school years from 1929-30 to 1935-36 were computed by simple division and supplied the information for table IV.

Reading the table it is seen that the salaries of the rural teachers in 1929-30 were 97 percent of what they were in 1923. The consolidated schools were paying 91 percent of what they paid in the base year, Nowata city was only paying 77 percent of their 1923 salaries, while the state as a whole was paying 7 percent above the 1923 level, or 107 percent of that base. If one would consider that the salaries paid in 1923 were normal salaries, in the years 1929-30, 1930-31, and 1931-32, the state as a whole was paying wages to teachers above that norm, while Nowata county in all their types of schools were paying below the norm.

It is significant to note that while the trends of the four groups of salaries for the years 1929 to 1935 was quite similar when graphed as amounts in figure 4, the curves are very dissimilar when drawn as index values of the year 1923 in figure 5. Nowata city salaries never varied more than 12 percent during this period of time. Rural salaries in Nowata county, on the other hand, dropped from an

TABLE 4

Table Showing the Trend of Salaries in Nowata County and
the State of Oklahoma from 1929 to 1936.

1923 equal 100*

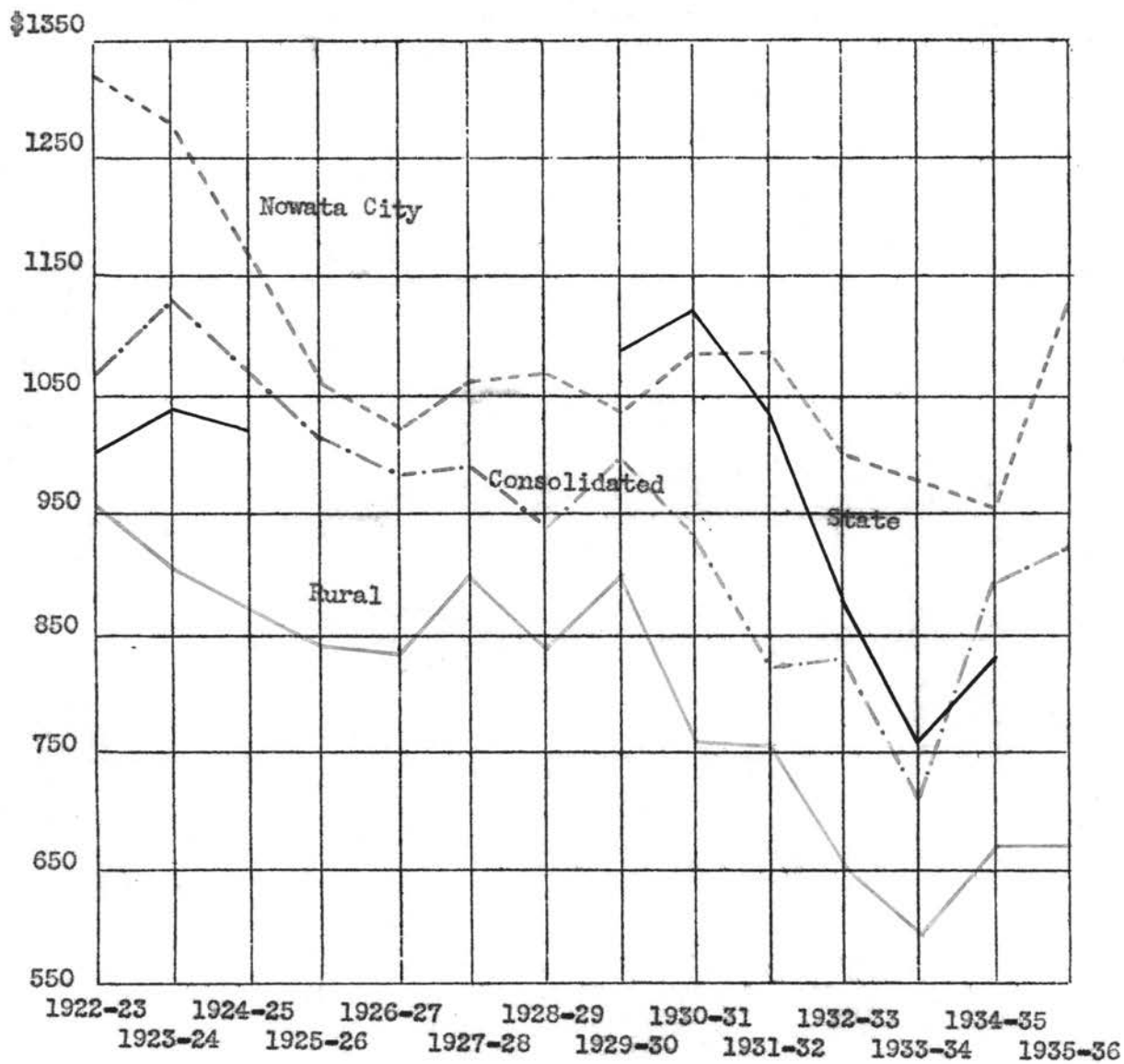
YEAR	RURAL SCHOOLS	CONSOLIDATED OR VILLAGE SCHOOLS	NOWATA CITY	STATE SCHOOLS
1929-30	97	91	80	107
1930-31	81	85	83	110
1931-32	81	75	83	102
1932-33	49	76	77	86
1933-34	44	65	75	74
1934-35	72	80	73	82
1935-36	72	84	87	--

*The index number of 1923 equal 100 is computed by taking the arithmetical mean of the average salaries paid in each group for the two years 1923-24 and 1922-23. These index numbers are as follows:

State schools-----100 equals \$1024
 Nowata City schools---100 equals \$1307
 Consolidated schools--100 equals \$1102
 Rural schools-----100 equals \$ 933

FIGURE 4

COMPARISON OF SALARIES PAID IN NOWATA COUNTY AND THOSE
PAID IN THE STATE OF OKLAHOMA FROM 1922-23 TO 1935-36



index of 97 in 1929-30 to an index of 44 in 1933-34, a variance of 55 percent. They rapidly regained much of that loss, until in the school-year 1935-36 they were almost on an equal par with Nowata city in terms of their index numbers. Consolidated school salaries varied from a high level of an index of 91 in 1929-30 to a low level of 66 in 1933-34, a range of 25 percent.

The trend of salaries over the state as a whole was upward in 1929-30, and did not decline until 1931-32, one year after the decline had taken place in all of the schools of Nowata county. The cause of this is a matter of speculation.

This study would indicate that the trends of the salaries of the rural schools, the village or consolidated schools, and the Nowata city schools have been decidedly similar since statehood. They have tended to follow the trends of salaries paid over the State of Oklahoma. Since 1929 the salaries of Nowata city have varied the least and those of the rural teachers the most. The trend of the wages of all groups studied is upward at the present time, but they are far from reaching the high point of 1921-22, and almost as far from reaching the 1923 level, the year taken as being most nearly normal in the period following the World War. Salaries have just passed their low point in 1933 and 1934 in the present movement upward.

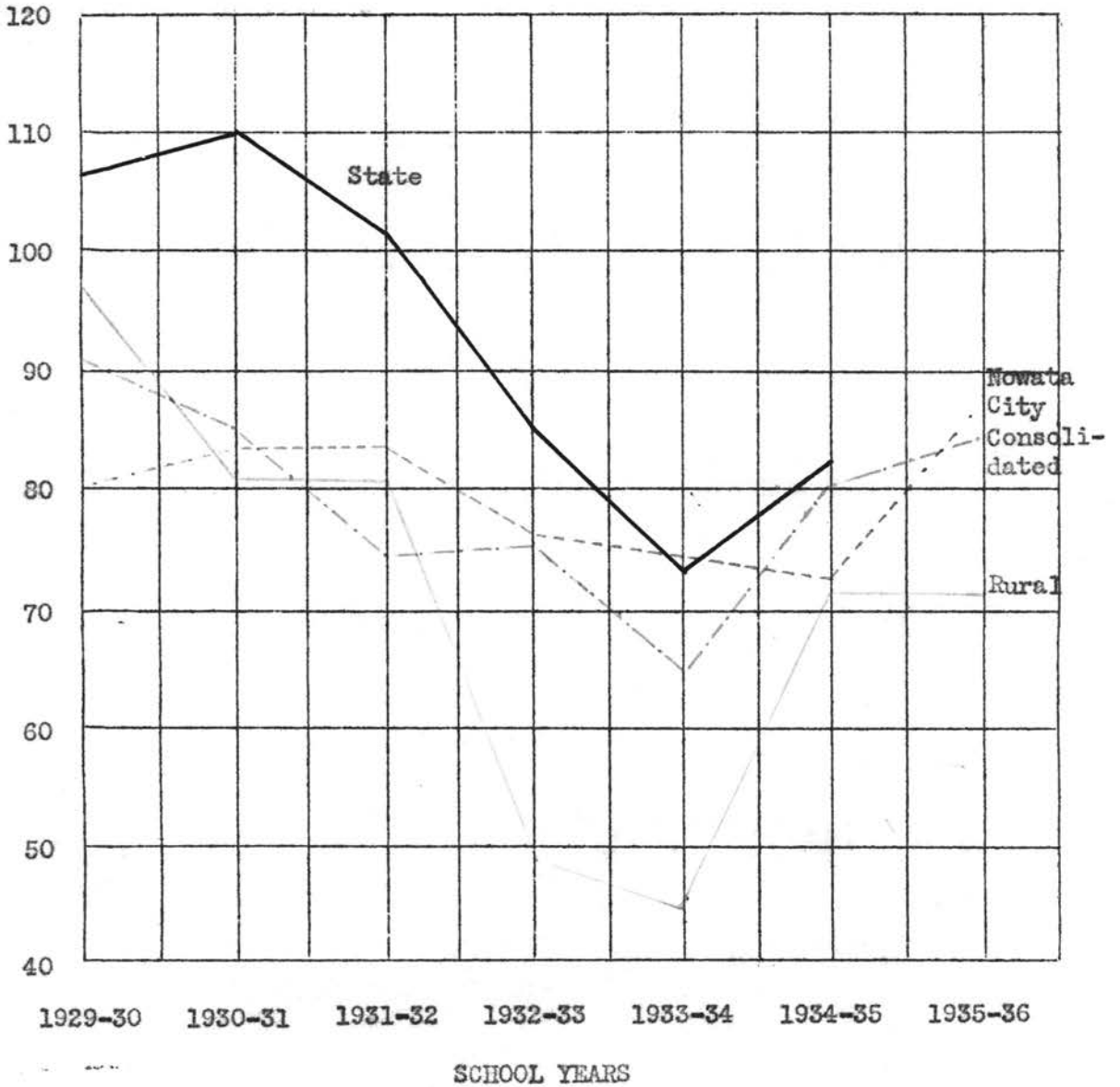
As stated in the introduction, two factors determine whether or not there has been an actual increase or decrease in teachers' salaries. One of these factors, the number of dollars paid to the teacher, has been treated in this chapter. The next chapter will deal with the other factor, the cost of living.

FIGURE 5

COMPARATIVE TRENDS OF THE AVERAGE SALARIES OF THE TEACHERS OF
NOWATA COUNTY AND OF OKLAHOMA

1923 equals 100

INDEX



CHAPTER IV

CHANGES IN THE COST OF LIVING ITEMS WITH REFERENCE
TO TEACHERS' SALARIES.

During the past five years the economic depression has brought an insistence upon reductions in school costs, and particularly in teachers' salaries. Taxpayers supporting school finances have argued that because of the large drop in the cost of living since 1929, substantial decreases in teachers' salaries could be made. This chapter undertakes to reveal the facts concerning changes in living costs as they have affected the purchasing power of teachers' salaries during the past years in Oklahoma. Such an undertaking requires a critical study of the nature and measurement of changes in cost of living.

All cost of living inquiries involve "standard of living". It may seem inaccurate to apply the term "standard" to such a variable element as the manner of living of individuals, but despite such variations, however, there is a tendency towards similiarity among individuals whose income is of approximately the same size and who live in the same or similiar circumstances.¹ When used in connection with cost-of-living inquiries, the term standard of living refers to the kinds and quantities of various goods and services purchased generally by the persons whose living costs are under investigation. If cost of living indexes are to be most valid, they must be computed from the prices of commodities of the same kind and quality, combined according to the proportions which those commodities occupy in the budgets of persons whose cost of living we wish to measure. It can

1 Beney, M. Ada, Cost of Living in the United States, 1914-36. p. 4-5.

only be considered valid for the average member of the group. Moreover, such an index must be applied with caution, if at all, to any group whose standard of living and distribution of expenditures are significantly different from those of the original group for which the index was computed.

The desirability of constructing a special cost of living index for teachers is suggested by the marked differences between the spending habits of city teachers and those of wage-earners and small-salaried workers.² The weights assigned to the separate commodity indexes in computing the composite index should be based upon the spending habits of the group, which fact suggests that a suitable cost-of-living index for teachers in Oklahoma might exhibit a trend significantly different than that shown in other studies. In the most recent study made by the Research Division of the National Educational Association,³ where a budget investigation was made of 2358 city teachers, the average salary in 1932-33 was \$2043. Of this amount, 16 percent was devoted to saving, 13 percent to giving, 65 percent to necessities, and 6 percent to betterment. Upon this basis the cost-of-living index for the group was computed, by weighting the items clothing, food, etc. according to the proportion they occupied in the teachers' expenditures.

These figures are based on returns from the larger cities only, and do not necessarily apply to teachers in small towns and in rural areas. Other factors being equal, the percent of income required for

2 Bells, Walter C., Teachers' Salaries and the Cost of Living. pp. 28-29.

3 Research Division, National Educational Association, op. cit. XIII p. 189.

necessities decreases as incomes increases. The average salary of a teacher in Oklahoma in 1932-33 was \$682, as compared to the average salary of the groups of teachers investigated by the N. E. A., \$2034. No adequate figures are available to show the extent to which the cost of living of city teachers are higher than that of the teachers of Oklahoma, but whatever these differences are it might be shown that the difference in the costs of living are to a large degree proportionate to the standard of living that may be enjoyed. In other words, the greater the costs, the greater are the comforts and enjoyments of life that may be obtained. Low costs of living in more thinly populated areas do not justify low salaries.

"Instead a low cost of living is now interpreted as an index of meager living conditions, and a deterrent to trained experienced teachers."⁴

In reviewing the indexes of the cost-of-living used by all past investigators the validity of each was found to be questionable for this study. Burgess⁵ used the cost of food index alone as his index number of the cost of living. The cost of living indexes prepared by the Bureau of Labor statistics and the National Industrial Conference Board are for wage-earners in skilled and unskilled labor. Bells⁶ study was for the teachers of the city of Fresno, California, and gives excessive weight to miscellaneous articles and services. Butsch⁷ index appears to be sounder in principle than that of Bell's, but it

4 Bureau of Education, Salaries and Salary Trends of Rural School Teachers. Bulletin No. 6, 1929. p. 14

5 Burgess, op. cit.

6 Bells, op. cit.

7 Butsch, op. cit.

too, was for the higher salaried groups of teachers. The indexes for Pittsburgh teachers⁸ is questionable because of the variation in weights assigned to the several commodities in different years. The cost-of-living index set up by the Research Division of the National Education Association⁹ is probably the most satisfactory measure of its kind now available, but because it dealt with the teachers in larger cities, and because of the difference in salaries of the teachers of that group as compared to the teachers in Oklahoma, it was felt that to use that cost-of-living index would not be particularly valid in this study.

Discarding all previous cost-of-living indexes as unsuitable, the problem arose as to what items could be used upon which information was available in determining what the trend of salaries of teachers in Nowata County and Oklahoma might be in comparison with cost of living items and in terms of "real wages". In analyzing the component items of a cost of living index it was found that certain basic elements were always present, regardless of the method of weighting these items in constructing the index. These major groups into which teachers expenditures are usually classified are food, rent, clothing, fuel and light, sundries, house operation, taxes, interest, and transportation. The commodities and services to be priced under each group could, of course, comprise all of the numerous items which enter into the expenditures. From these groups it seemed that clothing, food, and sundries, would be most comparable to the salaries of teachers in Oklahoma.

8 McKay, op. cit.

9 Research Division, National Education Association, op. cit. XIII.

Information concerning these groups of commodities was obtained from a study of the National Industrial Conference Board.¹⁰ No effort was made to weigh them, or combine them into a cost of living index, since no information is available as to what proportion of the average teachers' income in Oklahoma is spent for each item.

The index numbers are given in tables five, six, and seven, for the teachers of Nowata county, classified as to rural, consolidated, and Nowata city teachers. In the first column is given the commodity index as taken from the National Industrial Conference report, and the succeeding column contains the teachers' salaries index computed on the base year 1923 equals 100, followed by the purchasing power index of the salaries. As before mentioned, the purchasing power index was found by dividing the index price of the commodity for each year into the salary index for that year.

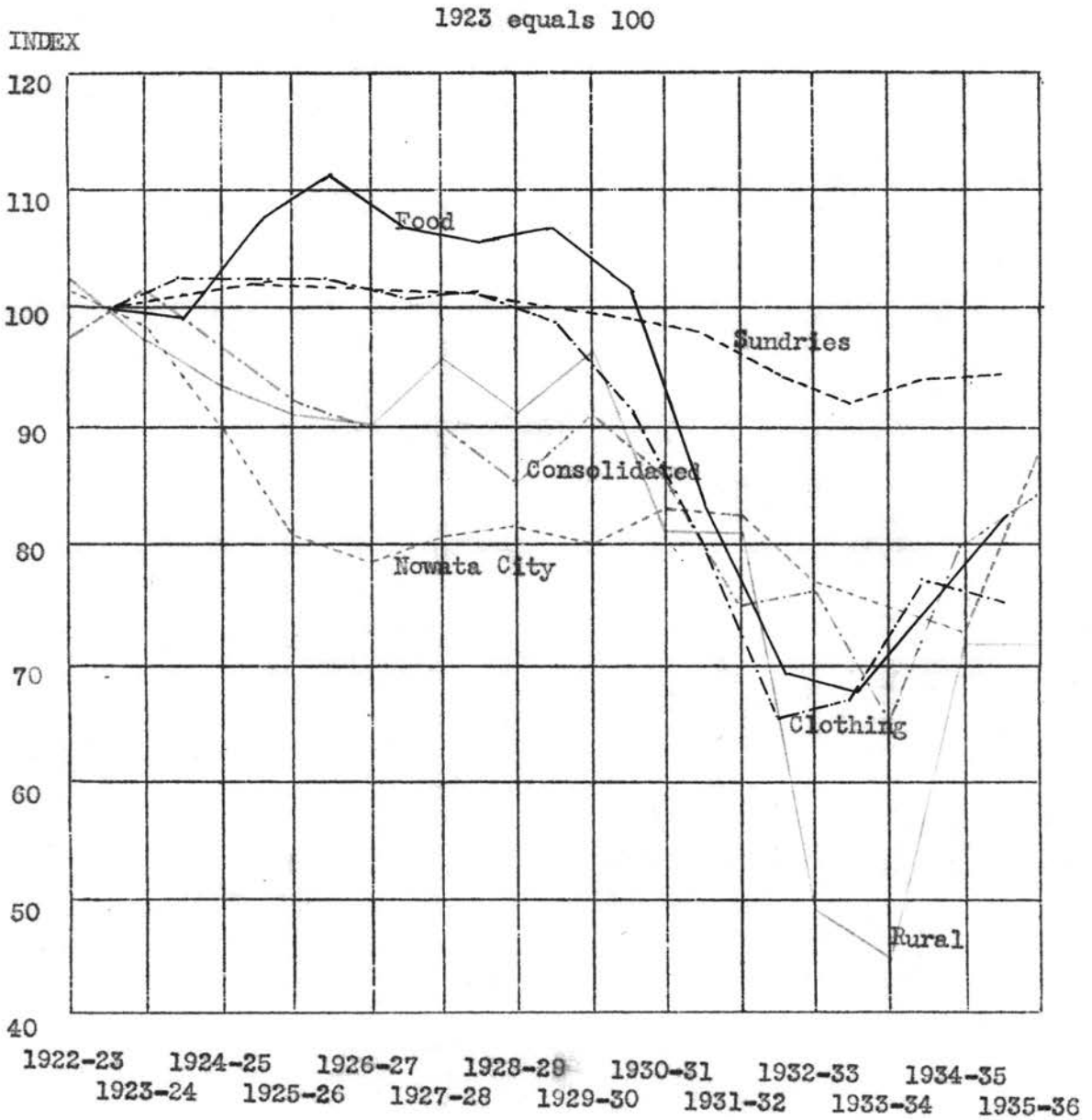
Figure six graphically describes the trend of the teachers' average salaries of Nowata county in each group as compared with the trend of the prices of food, clothing, and sundries. During the period of years in the early twenties, the trend of the commodities prices was practically level in the case of clothing and sundries, while food tended upward. Salaries at this time in all three groups dropped. Beginning in 1929 and 1930, the trend of all prices and salaries was downward. Food reached its low point during the depression in 1932, while clothing and sundries were one year later in reaching their low point. Salaries were at their lowest for the consolidated and rural schools in 1933-34, lagging approximately one year

10 Beney, National Industrial Conference Board, op. cit.

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FIGURE 6

RECENT TRENDS IN THE TEACHERS' AVERAGE SALARIES OF NOWATA COUNTY
AS COMPARED WITH THE TRENDS OF PRICES OF FOOD, CLOTHING, AND
SUNDRIES



behind the commodities on reaching their low point, and consequently, lagging also in the trend upward after that date. From this study it would seem that there is a definite relationship between the salaries paid to teachers and the retail prices of commodities. Shuttleworth¹¹ found that the lag of the trend of teachers' salaries behind the trend of the cost of living was as high as two years. Figure six would seem to indicate that the trend of the teachers' wages in Nowata county did not lag so far behind as two years. When studying the trend of teachers' salaries with reference to the well-being of the teacher, it is necessary at the same time to consider the salaries in relation to what they will buy. One must determine whether changes in wages have been accompanied by changes in the prices of commodities and services commonly purchased by the salary earners. For example, if the annual salaries have risen 10 percent during a given period, and prices have likewise advanced 10 percent, the teacher is not in a better position than he was before. If, on the other hand, the annual salary has risen 10 percent and prices only 5 percent, the salary has slightly greater purchasing power than before. In order to determine the effect of the changes in prices of food, clothing, and sundries, on teachers' salaries, indexes of real earnings have been computed by dividing the indexes of the actual salaries by the indexes of the various commodities.

In table six is shown the purchasing power or "real wages" of the teachers of Nowata county in terms of what the salaries of the teachers of that county would buy in clothing from 1922 to 1936. The teachers' salaries are classified as to rural, consolidated, and Nowata city schools. From this table it should be clear that a rise in

¹¹ Shuttleworth, Op. cit.

TABLE 5

Indexes* of the Purchasing Power in Terms of Food of
the Teachers' Salaries of Nowata County, 1922 to 1936.

1923 equals 100

YEAR	FOOD INDEX 12	RURAL INDEX	PURCHASING POWER INDEX	CONSOLIDATED INDEX	PURCHASING POWER INDEX	NOWATA INDEX	PURCHASING POWER INDEX
1922-23	96.8	102.6	106	98	101	102	105
1923-24	100	97.4	97.4	102	102	99	99
1924-25	99.1	85.4	94.3	97	98	90	91
1925-26	107.2	90.9	84.8	92	86	81	76
1926-27	110.6	90	80.5	90	81	79	71
1927-28	107	96.4	90.1	90	89	81	76
1928-29	105.6	90.7	85.9	86	82	82	76
1929-30	106.9	97	90.7	91	89	80	75
1930-31	101.7	81	79.6	85	84	83	82
1931-32	83.7	81	96.8	75	90	83	99
1932-33	69.7	49	70.3	76	109	77	110
1933-34	67.8	44	64.9	65	91	75	111
1934-35	75.3	72	95.6	80	107	73	97
1935-36	82.1	72	88	84	102	87	106

*Indexes are calculated to the nearest hundredth.

TABLE 6

Indexes* of the Purchasing Power in Terms of Clothing
of the Teachers' Salaries of Nowata County, 1922-36.

1923 equals 100

YEAR	CLOTHING INDEX ¹³	RURAL SALARIES INDEX	PURCHASING POWER INDEX	CONSOLIDATED SALARIES INDEX	PURCHASING POWER INDEX	NOWATA SALARIES INDEX	PURCHASING POWER INDEX
1922-23	91.4	103	113	98	107	102	111
1923-24	100	97.4	97.4	102	102	99	99
1924-25	102.8	93.4	91	97	94	90	88
1925-26	102.5	90.9	89	92	90	81	79
1926-27	102.5	90	88	90	88	79	77
1927-28	100.5	96.4	96	90	90	81	80
1928-29	101.2	90.7	90	86	85	82	81
1929-30	98.7	97	98	91	92	80	82
1930-31	92	81	88	85	92	83	90
1931-32	79.5	81	101	75	96	83	104
1932-33	66.5	49	74	76	117	77	117
1933-34	67.6	44	65	65	96	75	111
1934-35	77.5	72	92	80	103	75	93
1935-36	75	72	96	84	112	87	116

*Indexes are calculated to the nearest hundredth

TABLE 7

Indexes* of the Purchasing Power in Terms of Sundries
of the Teachers' Salaries of Nowata County, 1922 to 1936

1923 equals 100

YEAR	SUNDRIES INDEX ¹⁴	RURAL SALARIES INDEX	PURCHASING POWER INDEX	CONSOLIDATED SALARIES INDEX	PURCHASING POWER INDEX	NOWATA SALARIES INDEX	PURCHASING POWER INDEX
1922-23	101	103	102	98	97	102	101
1923-24	100	97.4	97.4	102	102	99	99
1924-25	101	93	92	97	96	90	89
1925-26	101.7	91	90	92	90	81	80
1926-27	101.4	90	89	90	89	79	78
1927-28	101.2	96	95	90	89	81	80
1928-29	100.7	91	90	86	85	82	81
1929-30	100.7	97	97	91	91	80	80
1930-31	98.7	81	82	85	86	83	84
1931-32	96.6	81	84	75	78	83	86
1932-33	93.6	49	52	76	81	77	82
1933-34	91.4	44	48	65	70	75	82
1934-35	93.2	72	78	80	86	73	78
1935-36	93.8	72	77	84	89	87	93

*Indexes are calculated to the nearest hundredth.

¹⁴ Beney, M. Ada, National Industrial Conference Board, op. cit.
pp. 57 to 61.

the cost of clothing diminishes the value in dollars of a teacher's salary, and vice versa, a decline in the cost of clothing enhances the value of a teacher's salary; the purchasing value of a dollar in terms of clothing, food, or any commodity, varies inversely with the prices of that commodity. It can be computed, as mentioned in the preceding paragraph, by dividing one dollar by an index of price, and this is the method used in the tables in this chapter. The salary index for a particular year is divided into the commodity index for that year in order to obtain the purchasing value or "real wage" value of the salary.

Two of the factors that influence the purchasing value of a salary or wage are the cost of living commodities, whether they increase or decrease, and the amount of salary paid. In 1935-36 the real wage of a rural teacher in terms of clothing was 96 percent of the actual wages she received in 1923; the real wages of a consolidated school teacher in Nowata county was 112 percent, and the real wages of a Nowata city school teacher was 116 percent. Since the price of clothing was the same, it is evident that the rural school teacher of the county was under paid in comparison with her fellow teachers of that county. It would be logical to assume that in the years from 1932-33 to 1935-36, when the purchasing power in terms of clothing of the rural school teachers was the least, and much below that of the other teachers in the county, that she had to buy less clothing, or clothing of a poorer quality.

The trend of the real wages of the teachers' of Nowata county may be seen in graphic form in figure seven. Nowata city, the community of average ability to support education in Oklahoma, paid

such salaries in the 1920's that their purchasing power in clothing was far below the trend of the clothing cost line. Only in 1929-30 did the salaries of that city in terms of real clothing wages tend to go above the cost line, and have remained above it since. The rural school salaries and the consolidated school salaries have consistently tended to be below the cost line, except for one or two of the depression years. Whether or not the trend upward in the purchasing power of teachers' salaries in terms of clothing will continue remains to be seen.

It is well to keep in mind that the index of clothing prices was taken from an index constructed for workmen and their families. Therefore the index may not give sufficient weight to the kind and quality of clothing which is usually purchased by teachers. However, while the actual cost of a commodity in dollars at a given time depends upon the kind and quality selected, the trend in cost of teacher's clothing may be similar to the trend in cost of clothing purchased by workmen's families.

In the comparison of the trend of teachers' salaries with the cost of food, the relatively satisfactory index of food prices published by the National Industrial Conference Board, Inc., was used. This food index is not a perfect measure of changes in food cost of teachers, because it is based solely on retail prices of food products and does not take into account prices of boarding. It is, however, the best measure available and is used here to represent the trend in the cost of teachers' food. Logically, it would seem that there would be a positive correlation between the retail prices of groceries and the prices of boarding.

Table 5 shows the purchasing power indexes of the salaries in terms of food of the teachers of Nowata county, classified as to groups. Column I gives the food index. The Purchasing Power index of each group in terms of food is calculated as with clothing, by dividing the salary index of a group into the food index for that year. Table 5 indicates that the purchasing power of each group has declined steadily since the base year, 1923, until the depression years after 1930. The rural school teachers' salaries never did attain the purchasing power during the depression years that the salaries of consolidated school teachers and the Nowata school teachers attained. For example, in 1932-33, the "real wage" index in terms of food for rural teachers of Nowata county was 70, that of the consolidated teachers was 109, and of the Nowata teachers, 110. These facts indicate the disparity of salary fluctuations within the county.

The comparative trends of the salaries of these three groups in terms of their "real food wages" is best shown in figure 8. The trend of all three groups of teachers' salaries within Nowata county was much the same until 1930-31. At that date the trend of the rural salaries in terms of their food purchasing power indexes declined, while the trend of the other two groups was upward. While the salaries of all three groups had been reduced, the change in the prices of food had worked to the advantage of the consolidated school teachers and to the Nowata city teachers during the depression period. This could not be said of the rural teachers.

Figure 9 shows the comparative trend of the real wages of teachers of the three groups in terms of sundries. Sundries' prices did not fluctuate much in any of the years studied, their lowest index in 1933

FIGURE 7

COMPARATIVE TRENDS OF THE PURCHASING POWER IN TERMS OF CLOTHING
OF THE AVERAGE SALARIES OF THE TEACHERS OF NOWATA COUNTY

1923 equals 100

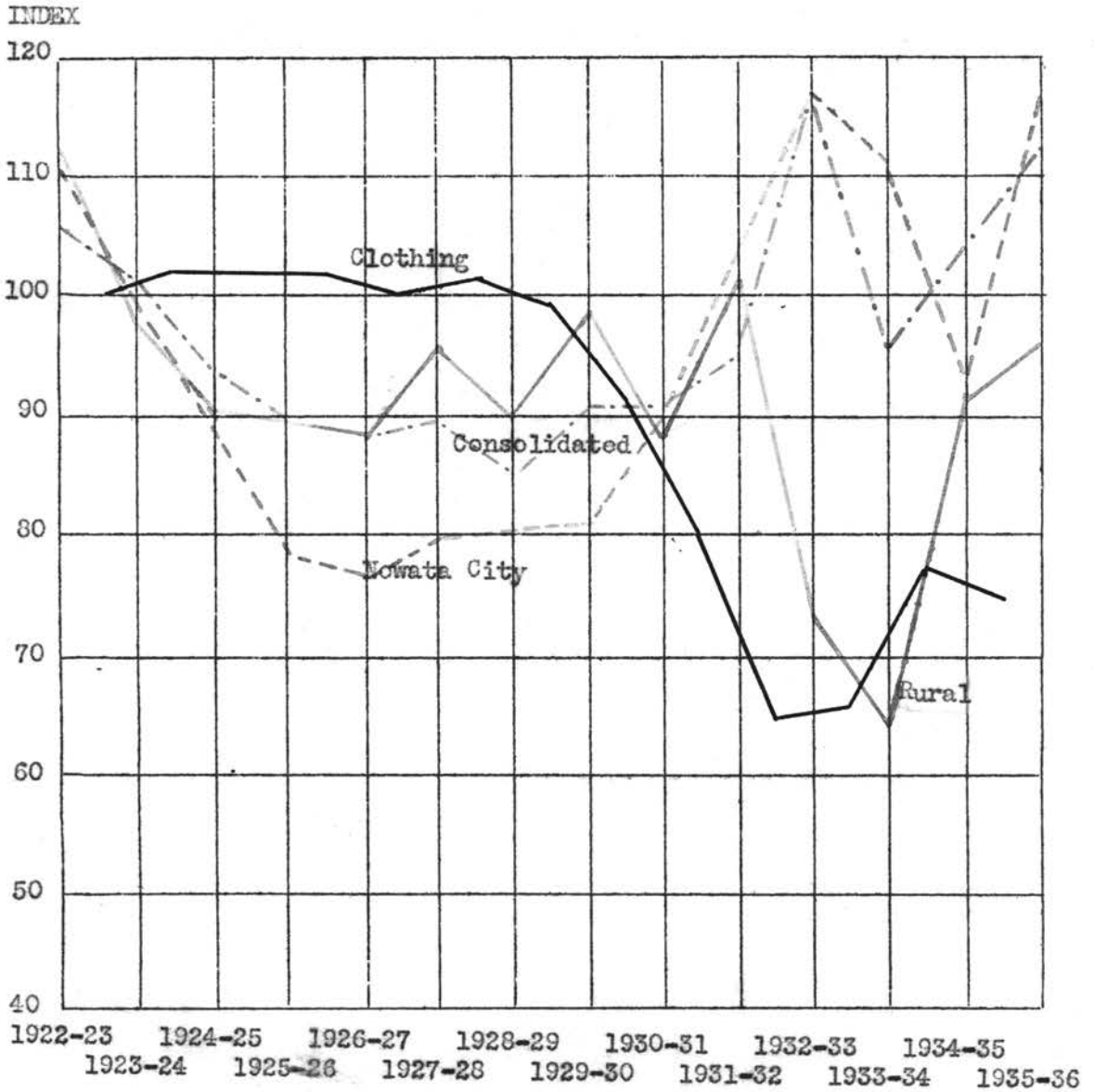


FIGURE 8

COMPARATIVE TRENDS OF THE PURCHASING POWER IN TERMS OF FOOD

OF THE AVERAGE SALARIES OF THE TEACHERS OF NOWATA COUNTY

1923 equals 100

INDEX

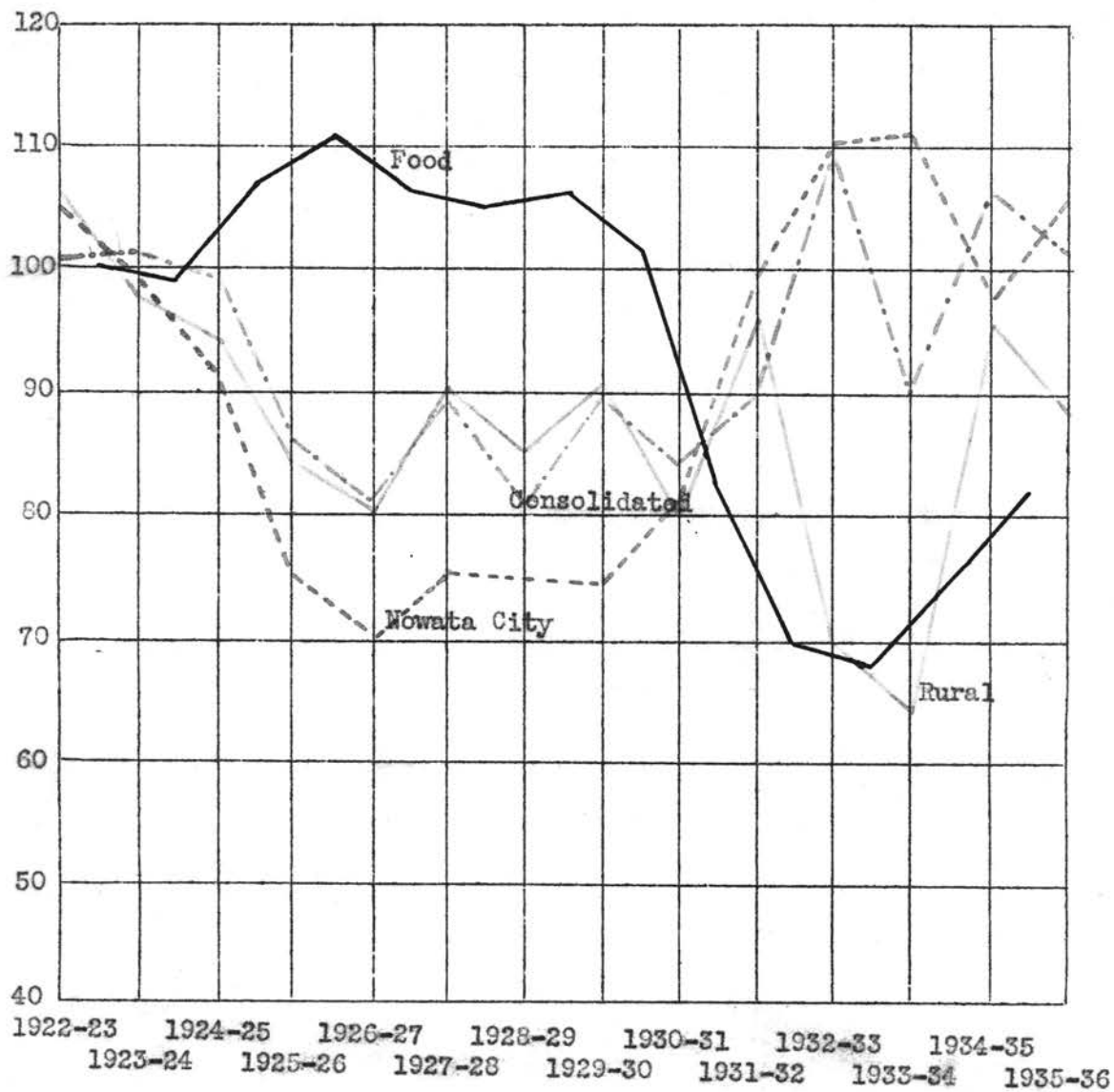
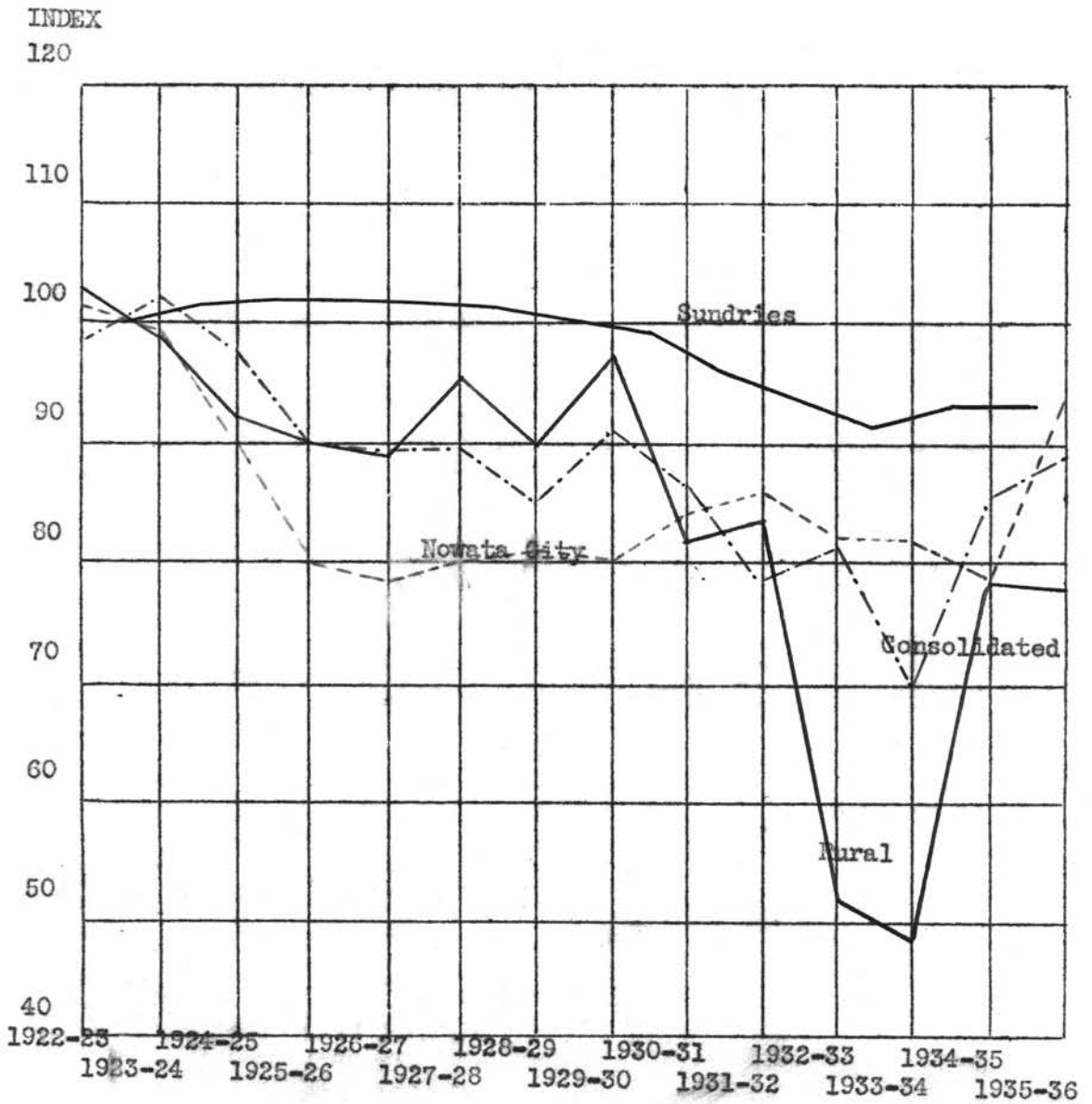


FIGURE 9

COMPARATIVE TRENDS OF PURCHASING POWER IN TERMS OF SUNDRIES OF
THE AVERAGE SALARIES OF TEACHERS OF NOWATA COUNTY

1923 equals 100



being only ten percent below their highest point in 1925. The purchasing power of teachers' salaries, therefore, following much the same direction as though they were plotted directly in terms of their actual amounts.

Since information was not available for five of the years immediately after 1924 in studying the trend of the teachers' average salary for the state of Oklahoma, it was thought best to use the years since 1929 to 1934. These years include the depression years during which one would expect the most fluctuations in all items to occur. The indexes of the average teacher's salary in Oklahoma and its purchasing power for each year in terms of the three commodities, food, clothing, and sundries, are tabulated in table 8. By studying this table it can be seen that in terms of what a teacher's salary could actually purchase in terms of food and clothing, the incomes of an average teacher in Oklahoma have increased during the depression. The average teacher actually gained greater in the purchasing power of these items than any loss in dollars caused by salary reductions. In 1933, the year in which salaries over the state were lowest, their purchasing power in terms of food, was 109 percent of their 1923 level; and in terms of clothing, 109.5 percent of their 1923 level: Only in sundries did their purchasing power drop below the 100 level in 1932, 1933, and 1934. The decrease in the cost of the food and clothing items during the past depression has more than kept pace with the immediate decrease in the amount of salaries paid to the teachers. The usual lag of a year or more occurred between the downswing of the prices of living necessities and the reduction in teachers' wages. Figures ten, eleven, and

TABLE 8

Indexes of the Purchasing Power of the Average Teacher's Salary
In Oklahoma in Terms of Food, Clothing, and Sundries.

1923 equals 100

YEAR	INDEX OF TEACHERS' SALARY	FOOD INDEX ¹⁵	REAL FOOD INDEX	CLOTHING INDEX ¹⁵	REAL WAGE INDEX	SUNDRIES INDEX ¹⁵	REAL WAGE INDEX
1923	100	100	100	100	100	100	100
1924	99.4	99.1	100.1	102.8	96.7	101	98.4

1928	107	106.9	100.1	98.7	108.4	99.7	107.3
1930	110	101.7	108.2	92	119.6	98.7	114.3
1931	102	83.7	121.9	79.5	128.3	96.6	105.6
1932	86	69.7	123.4	66.5	129.3	93.6	91.9
1933	74	67.8	109.1	67.6	109.5	91.4	81
1934	82	75.3	108.9	77.5	105.8	93.2	88

Information not available.

Indexes are calculated to the nearest hundredth

15 Cost of Living in the United States, M. Ada Boney, National Industrial Conference Board, Inc., pp. 58 to 61.

FIGURE 10

COMPARATIVE TREND OF TEACHERS' AVERAGE SALARY IN OKLAHOMA

IN TERMS OF ITS PURCHASING POWER IN TERMS OF CLOTHING

1923 equals 100

INDEX

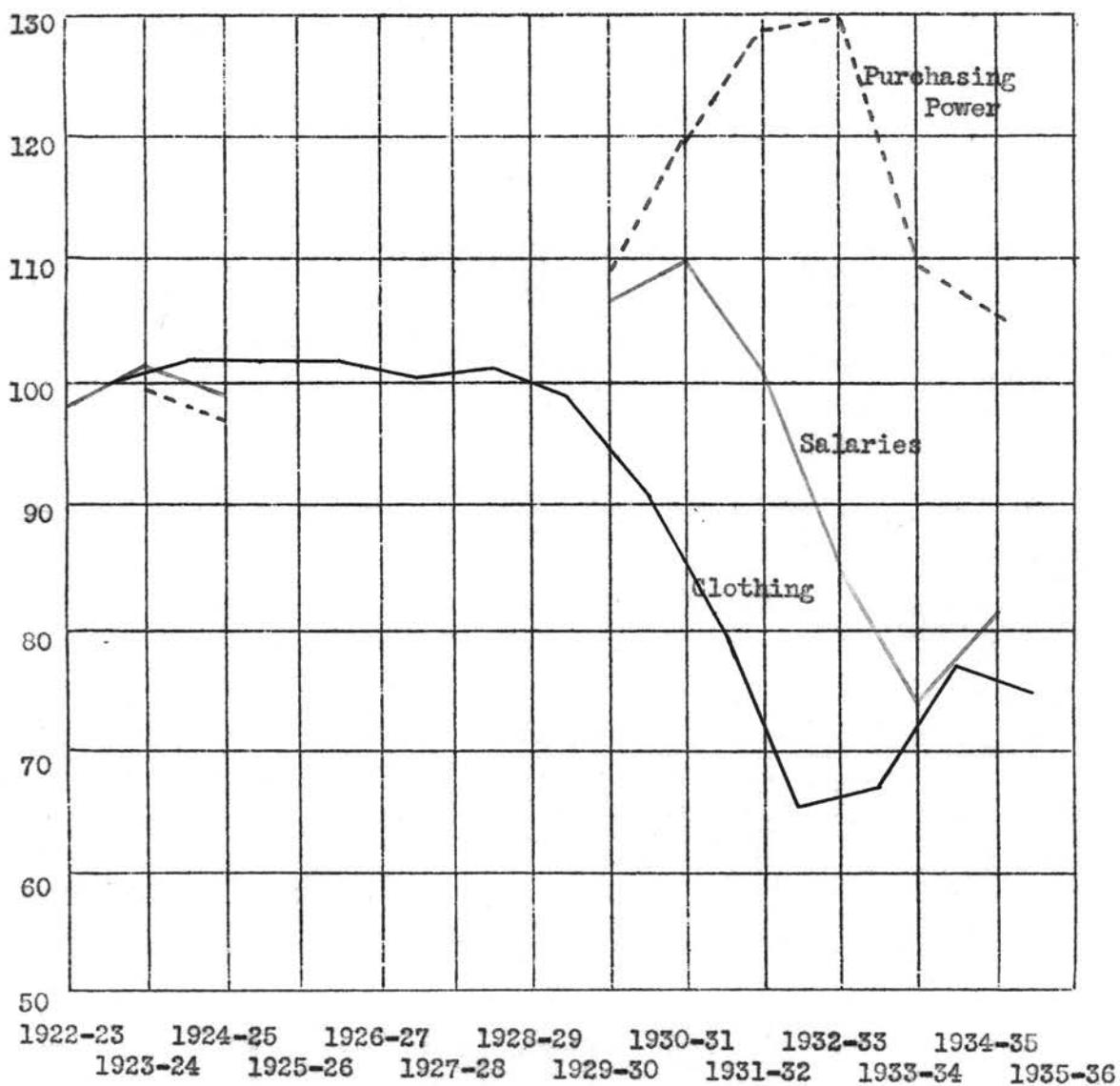


FIGURE 11

COMPARATIVE TREND OF TEACHERS' AVERAGE SALARY IN OKLAHOMA

IN TERMS OF ITS PURCHASING POWER IN TERMS OF FOOD

1923 equals 100

INDEX

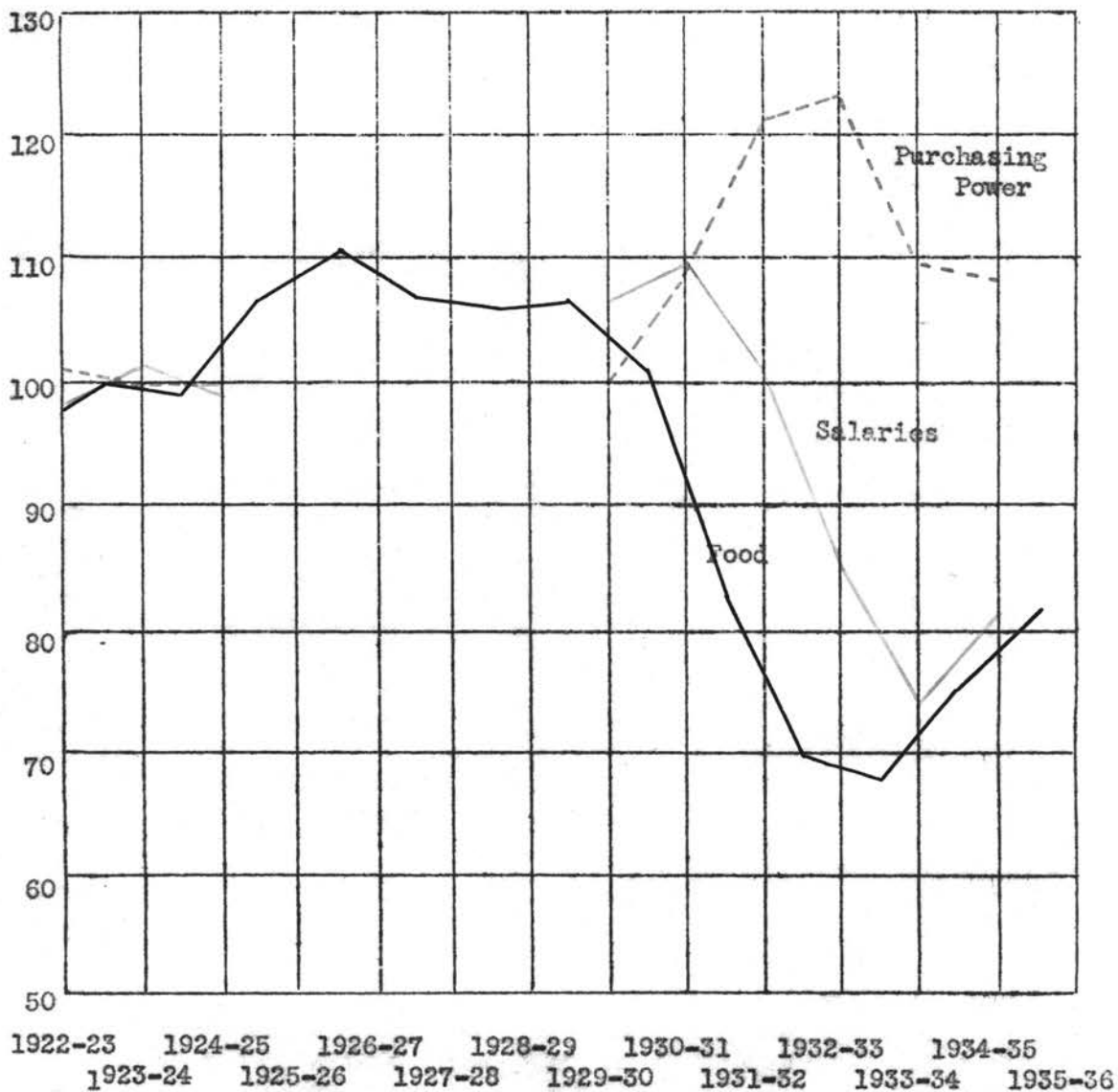


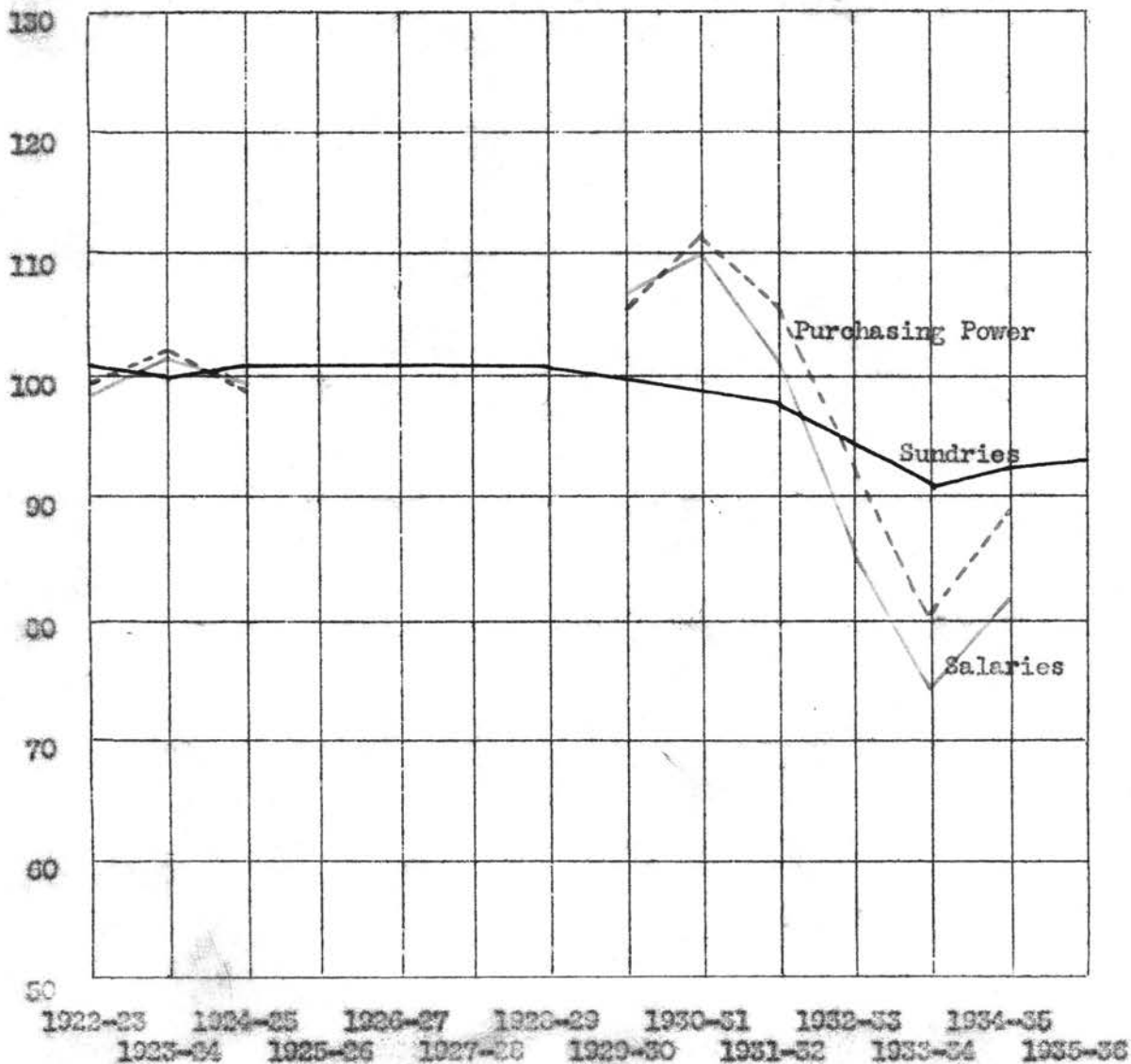
FIGURE 12

COMPARATIVE TREND OF TEACHERS' AVERAGE SALARY IN OKLAHOMA

IN TERMS OF ITS PURCHASING POWER IN SUNDRIES

1923 equals 100

INDEX



twelve, show this lag remarkably well. In figure ten the low point in the price of clothing was reached in 1932, while the low point in salaries over the state occurred in 1933-34. In figures eleven and twelve, the low point in the prices of food and sundries was reached in 1933. The direction of the cost lines of each item and the direction of the salary line is almost identically the same and would almost coincide were the salaries lines shifted back a year in time. We can conclude from this that the trend of the wages of teachers in Oklahoma can be quite accurately forecast from the trend of the price of food and clothing costs. This could not be said of sundries.

In these graphs showing the comparative trend of food and clothing prices with teachers' salaries in Oklahoma, it is noteworthy that when the indexes of real wages are plotted, the direction of the line depicting purchasing power is upward at the times when the other two lines have a downward direction. The prices of the commodities were declining more rapidly than the teachers' salaries were being reduced. In the light of this fact, it would seem that as the normality period approaches following this depression, the prices of cost of living commodities would increase more rapidly than the salaries of the teachers in the state, and the teachers would be losers economically, i. e., their purchasing power would be decreased. The peak of "real wages" in terms of food and clothing as depicted in figures ten and eleven was reached in 1932 and 1933, the years in which the cost of these commodities were the lowest, and the average salary trend over the state was continued downward. As soon as the cost lines on food and clothing turned upward, the purchasing power declined, even though salaries were on the increase. This indicates

that teachers will be poorer in terms of the commodities that their salaries will buy during the next few years, even though they obtain substantial increases in the amounts of dollar wages paid them.

From the study in this chapter regarding the factors which have determined the fluctuations in the real incomes of the teachers of Nowata county and of the teachers of Oklahoma it is evident that two factors have influenced these fluctuations: (1) Real incomes have tended to rise as the cost of living commodities declines, and to fall as the cost of these commodities increases; and (2) dollar incomes have been almost completely determined by, and have lagged nearly a year behind, changes in the cost of living.

In using the above conclusion to forecast the future trend of the salaries in Nowata county and the state of Oklahoma one can predict that the salaries of all the groups of teachers studied will increase as the cost of living commodities increase in price. This increase will lag the increase in prices of living commodities with a consequent loss of the purchasing power of a teacher's salary. This lag in the trend of teachers' salaries as compared to the cost of living commodities will probably never be overcome, since it is undoubtedly due to the way in which the moneys for teachers' salaries are raised. Factors affecting the cost of living commodities change quite rapidly, while it takes time for assessors to change valuations, for officials to agree on tax rates, for school boards and administrators to propose budgets, for excise boards and legislative bodies to make appropriations; and for the numerous other legal procedures which must go on in order to change the financial status of our schools. In view of the fact that the state support of education in Oklahoma is

legislated in advance for two years by appropriation of state money, the lag in the direction of teachers' salaries as compared with cost of living commodities will tend to lengthen to two years or more. Changes in prices of commodities occur rapidly while legislative procedures or raising funds proceed slowly.

It should be kept in mind that this is not a study of the adequacy of the teachers' salaries in Nowata county and in Oklahoma. The fact that the average teacher in Oklahoma had a purchasing power of 129 in terms of clothing in 1932 only signified that that teacher was better off economically to buy clothing than she was in 1923. She may have been poorly paid in 1923, or in any and all of the years since then. This study is not for the purpose of determining that question. It should be evident, however, that changes in the direction of dollar incomes are not a particularly important factor in determining changes in the "real wages" paid a teacher. The real incomes of teachers have been influenced very little by the depression to move downward, due to the tendency of the cost of living to fall during such periods. This study shows that the teachers in Oklahoma and Nowata county were better paid during depression years in terms of the food, clothing, and sundries their salaries would buy than at any time since the World War.

CHAPTER V

CHANGES IN THE PRICES OF SELECTED FARM COMMODITIES
AS RELATED TO THE TREND OF AVERAGE TEACHERS' SALARIES IN
NOWATA COUNTY AND OKLAHOMA.

Agriculture is and has been the chief industry in Nowata County and in the state of Oklahoma. Farm products contribute the largest amount of the gross income of the state. It is feasible to believe, therefore, that fluctuations in the prices of these products would affect the salaries paid to teachers. Wages of teachers are paid by tax-payers; a large proportion of the tax payers in Nowata county and Oklahoma derive a major part of their income from farm products, either directly or indirectly; and in a large measure the ability to tax is dependent upon the ability of the tax-payers to pay. In the light of this reasoning there should be a relationship between the prices paid for farm commodities produced in a given locality and the salaries paid to state employees, provided those salaries are not set by law.

Wheat and corn are the two major crops produced in Nowata county. Cattle raising is also a chief industry of the county. Since it is likely that the value of livestock is dependent in a large degree upon the prices of the feed necessary to produce them, it was assumed that the fluctuations in the price of cattle would closely follow the fluctuations in the price of the grain.

In table nine is shown the average price per bushel of No. 2 Hard Winter Wheat at the Kansas City market for the years from 1911 to 1934.

The prices paid for wheat at the Kansas City market determine the prices paid for wheat in Nowata county and in the state of Oklahoma, with deductions for the freight carriage to that city. The index numbers have been computed by the same method as used in the balance of this study. Table ten lists the average price per bushel of corn as based on the Chicago market, from 1911 to 1934. The Chicago market determines the price paid for corn in the state, with deductions for freight. The trend of the prices of wheat and corn within Nowata county and Oklahoma, therefore, follow the same trend as the prices of these two markets.

Figure 13 depicts in graphic form the relationship existing between the prices of these two small grains and the salaries of the teachers in Nowata county. Since 1911 the direction of the prices of wheat and corn was on the whole upward, as were the salaries paid to all three groups of teachers within the county. Corn and Wheat reached their peak prices in 1917, 1918, 1919, with slight variations during these years. Teacher's salaries, on the other hand, reached their peak in 1920, 1921, 1922, with slight variations during these years. In other words, there was a lag of approximately three years in the peak of teachers' salaries behind the peak of wheat and corn prices.

Corn broke in price more rapidly than wheat following the war, reaching a low point of fifty-five cents in 1921, while wheat dropped to its low level of \$1.08 in 1923. Salaries of teachers declined steadily after their peaks until 1926 before again moving upwards. Again they lagged five years behind the price of corn, and three years behind the price of wheat. After some fluctuation, the prices of wheat and corn began to break steadily downward following 1927. Salaries of

TABLE 9

Index Numbers and Average Price¹ per Bushel of No. 2 Hard Winter
Wheat at Kansas City from 1911-12 to 1934-35.

YEAR	PRICE PER BUSHEL	INDEX 1911-12=100	INDEX 1923=100
1911-12	\$0.97	100	
1912-13	.88	91	
1913-14	.84	87	
1914-15	1.05	108	
1915-16	1.19	123	
1916-17	.71	72	
1917-18	2.52	226	
1918-19	2.19	223	
1919-20	2.42	247	
1920-21	1.83	189	
1921-22	1.20	124	
1922-23	1.13	117	
1923-24	1.05	108	100
1924-25	1.35	140	129
1925-26	1.63	168	155
1926-27	1.35	140	129
1927-28	1.35	140	129
1928-29	1.12	115	107
1929-30	1.20	124	114
1930-31	.76	79	72
1931-32	.47	48	39
1932-33	.51	53	49
1933-34	.88	91	84
1934-35	.98	101	96

1. United States Department of Agriculture. Agricultural Statistics, 1936, p. 19.

TABLE 10

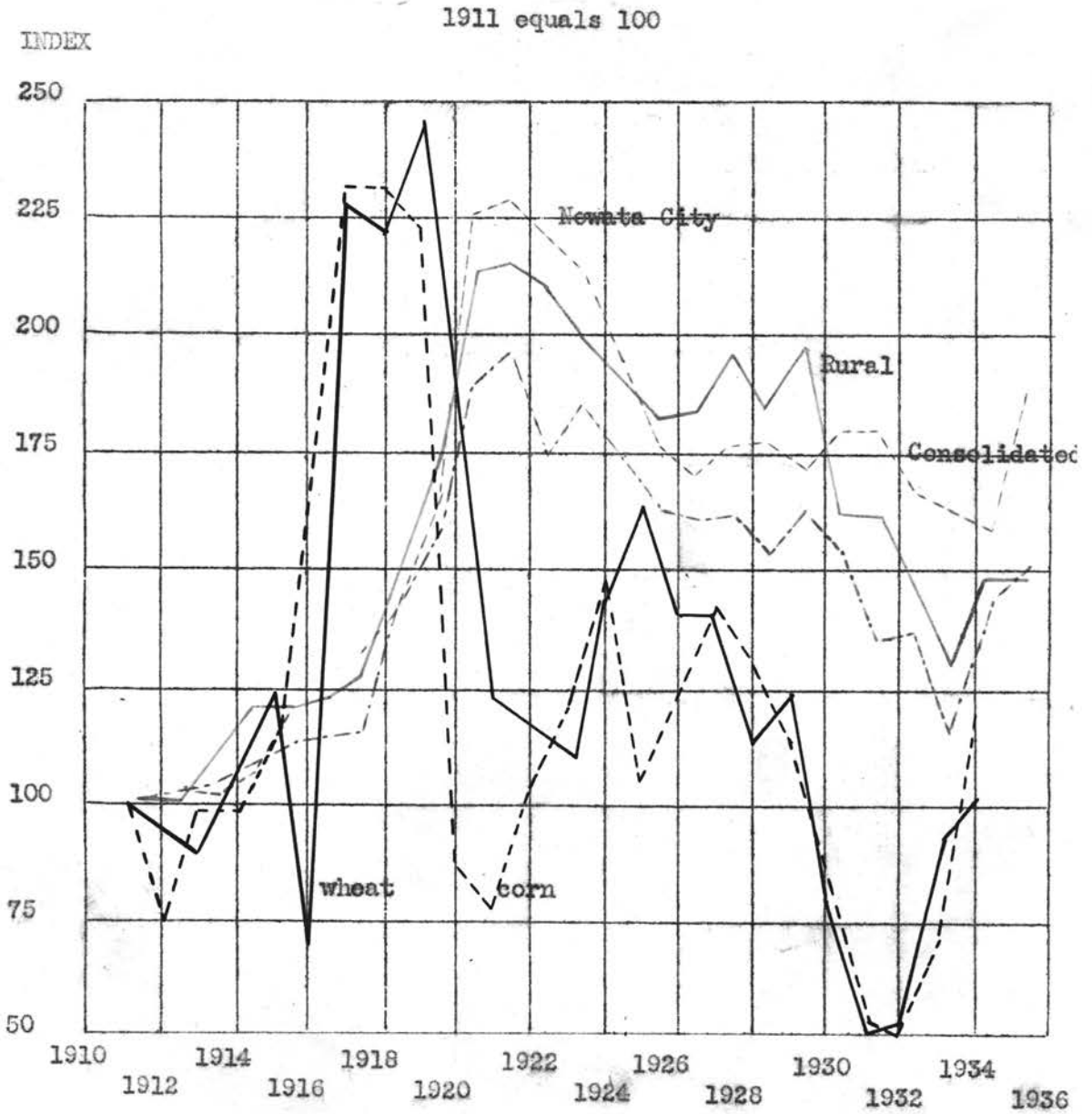
Index Numbers and Average Price² per Bushel of Corn
at Chicago from 1911 to 1935

YEAR	PRICE PER BUSHEL	INDEX 1911=100	INDEX 1923=100
1911	\$0.71	100	
1912	.53	75	
1913	.70	99	
1914	.70	99	
1915	.79	111	
1916	1.11	156	
1917	1.63	229	
1918	1.62	229	
1919	1.59	224	
1920	.62	87	
1921	.55	77	
1922	.73	103	
1923	.83	123	100
1924	1.06	149	120
1925	.75	106	85
1926	.87	122	99
1927	1.01	142	126
1928	.92	130	105
1929	.83	117	94
1930	.60	84	68
1931	.36	51	41
1932	.35	49	40
1933	.52	73	59
1934	.86	121	98

² United States Department of Agriculture. Agricultural Statistics, 1936, p. 33.

FIGURE 13

COMPARATIVE TRENDS OF AVERAGE TEACHERS' SALARY IN NOWATA COUNTY
AS RELATED TO PRICES OF WHEAT AND CORN, 1911 TO 1935



the consolidated teachers declined after 1929, and salaries of the rural school teachers and the Nowata City teachers turned downward following 1930. Wheat and corn both reached their low during the depression in the years of 1931 and 1932. The consolidated school teachers were drawing their lowest salaries of this period in 1933, and the other two groups of teachers their lowest salaries in 1934.

It would seem from the study of this relationship between the trend of teachers' salaries in Nowata county and the prices of corn and wheat that there is a tendency for teachers' salaries in that county to follow the direction of the prices of those farm commodities. There is a lag of approximately three years in teachers' salaries in all groups. This principle might well be used to forecast what the trend of teachers' salaries in that county are going to be.

Turning from the study of the salaries of the teachers of Nowata county to those of the state it is more difficult to draw a valid comparison due to the fact that information concerning the average salary paid to teachers in Oklahoma is not available completely for a long period of time. It is possible, however, to study the trend of a teacher's average salary in Oklahoma as related to the prices of commodities produced within the state from 1929 to 1934. This period of five years is the depression period with consequent large fluctuations in both prices and salaries.

In comparing the trend of teachers' salaries in the state with the prices of farm commodities it was thought well to include cotton with wheat and corn in the study, since cotton is one of the large staple crops in the state. Table eleven lists the average price paid for cotton on the New Orleans market, the nearest exporting center to

TABLE 11

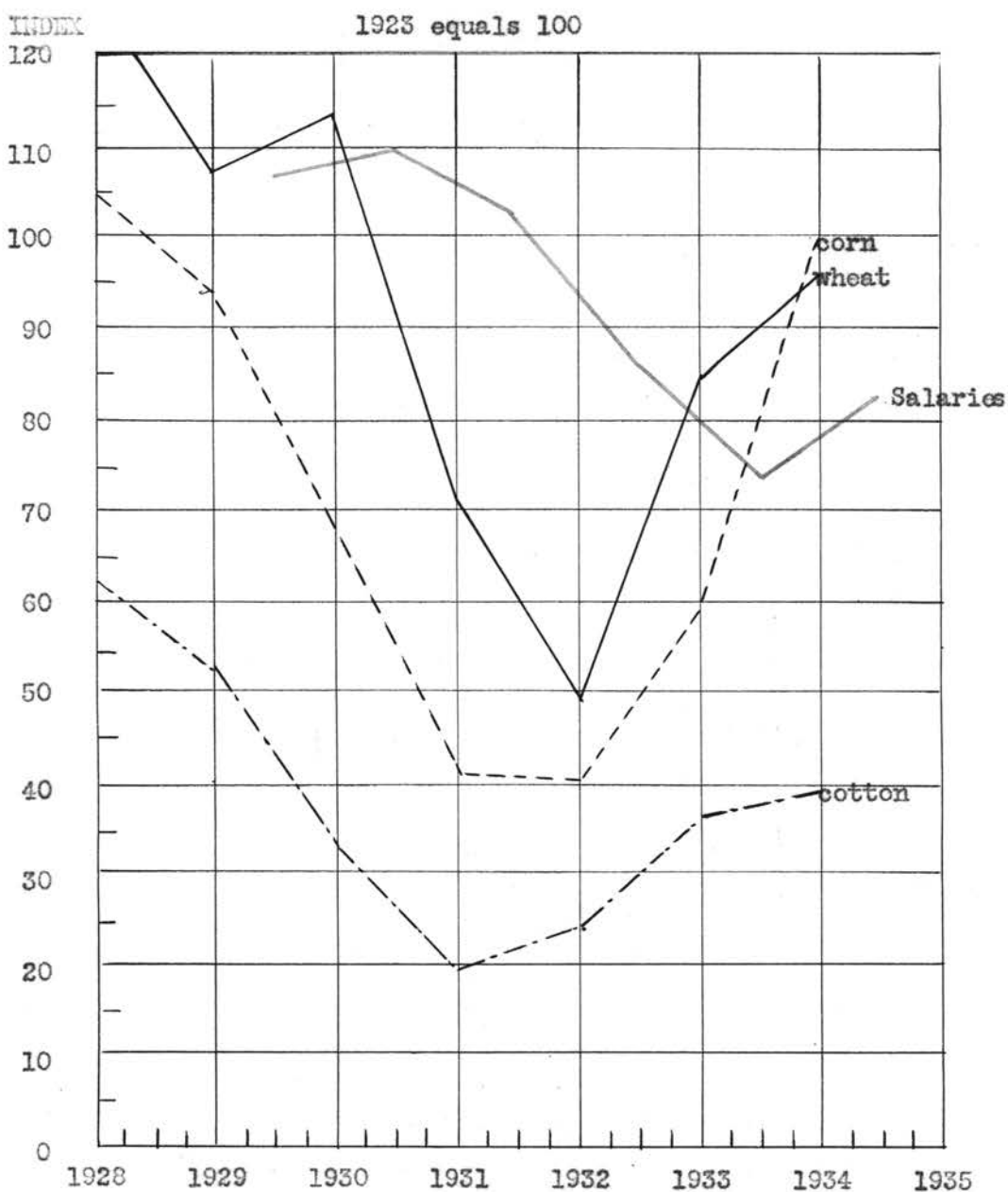
Index Numbers and Average Prices³ per Pound
Of Cotton at the New Orleans Market

YEAR	PRICE PER POUND	INDEX 1923=100
1923	30.33	100
1924	24.21	80
1925	19.71	66
1926	14.74	46
1927	19.98	67
1928	18.98	62
1929	16.16	53
1930	10.33	33
1931	6.20	20
1932	7.26	24
1933	10.92	37
1934	12.44	39

³ United States Department of Agriculture, Agricultural Statistics, 1936, p. 76.

FIGURE 14

COMPARATIVE TREND OF TEACHERS' AVERAGE SALARY IN OKLAHOMA AS
 RELATED TO THE RETAIL PRICES OF COMMODITIES
 PRODUCED WITHIN THE STATE



Oklahoma.

The relationship between the trend of the prices of wheat, corn, and cotton to the trend of teachers' salaries in Oklahoma is graphically depicted in figure 14. The lowest prices paid during the depression for wheat and cotton was in 1931. Corn was at its lowest price in 1932, with almost as low a level in 1931, its average price during 1931 being 36 cents, and its average price during 1932 being 35 cents. It could validly be said, then, that corn was at its low level in 1931. The average teacher in Oklahoma was drawing his lowest salary in 1933-34, three years after these farm commodities were lowest in price, and had already begun to increase in price. This bears out the conclusion reached in the study of the comparative trend of teachers' salaries in Nowata county as related to the prices of wheat and corn. Upon this basis it is feasible to forecast that since the prices of wheat, corn, and cotton have continually increased since 1931 to 1934, the average salary paid to the teachers in Oklahoma have increased from year to year since 1933-34, to the present date. As additional information concerning salaries paid over the state becomes available it will be possible to test this hypothesis.

CHAPTER VI

CONCLUSION

On the basis of this study it is evident that the teachers of the rural schools in Nowata county have been underpaid in comparison to the wages that were being paid in the consolidated and Nowata city schools. While part of this disparity may be due to the fact that higher average salaries are being paid in the consolidated and Nowata city schools on account of administrative allowance, it is not likely that all the difference is due to this factor. Nowata city has continually paid the highest salaries in the county since 1919-20. Nowata city has also increased their salaries the largest proportional amount since 1911, while the consolidated and rural schools have increased theirs in about the same proportion.

Nowata city, the community of average ability to support education in Oklahoma, tended to pay above the state average, while the consolidated schools and the rural schools tended to pay average salaries below the state average. The trend of the salaries of all groups of teachers within the county and of the teachers over the state was much the same for the years comparable, any difference being largely a matter of the degree of fluctuation.

This study indicated that there is a direct relationship between the trend of cost of living items--food, clothing, and sundries--and the direction of teachers' salaries, both in Nowata county and in the state of Oklahoma. Salaries of teachers tended to lag behind the

fluctuations of the prices of these commodities approximately one year, certainly not more than two. This principle might well be used to forecast the future trend of teachers' salaries.

The salaries of the teachers within Nowata county and within Oklahoma have tended to increase during the depression period in terms of what they were able to purchase. The cost of food, clothing, and sundries decreased faster than the lowering of salaries, with a consequent increase in the "real wages" of all groups studied. Only in the case of the rural teachers of Nowata county did the changes in the prices of the commodities studied not work to the decided advantage of the teachers in terms of purchasing power. This was true because the salaries of the rural teachers of the county decreased almost as rapidly and in almost as great a proportion as did the prices of food, clothing, and sundries. As Shuttleworth¹ had indicated in his study, real incomes have tended to rise as the cost of living commodities declined, and to fall as the cost of these commodities increased; and dollar incomes have been almost completely determined by, and have lagged a year behind, changes in the cost of living.

This study also indicated that the trend of teachers' salaries in Nowata county and in Oklahoma tended to follow the trend of the prices of farm products produced within the state; notably, wheat, corn, and cotton. The period of lag between the fluctuations of teachers' salaries and the variations in the prices of these products ran as high as five years in some instances, with the average lag being approximately three years in length. It seems feasible that this may be another method by which the future trend of salaries

¹ Shuttleworth, op. cit.

within Nowata county and within the state of Oklahoma could be forecast. The direction of teachers' salaries will tend to be upward within a continued increase in the prices of farm products, and will continue upward for a period of three years after farm products prices have begun to decline. The reverse will also be true; that a trend downward will continue for a period after the prices of farm products have recovered.

This lag during a depression, of course, adds to the difficulty of rural taxation, and argues for state support for education.

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Typist:
Max Flynn