

A STUDY OF THE SOURCE AND DISTRIBUTION  
OF INCOME ARISING FROM THE OWNERSHIP OF MINERAL  
RIGHTS IN PAYNE COUNTY, OKLAHOMA

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By

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## CHAPTER I. INTRODUCTION

### Location and Topography of Payne County

Payne County is located in the north central part of the State (Figure 1). It includes an area of approximately 716 square miles. Stillwater, the county seat, is also the location of the Oklahoma Agricultural and Mechanical College.

Payne County has a general surface slope to the southeast, with a range in elevation from 1,140 feet in the western part, to 800 feet in the valley of the Cimarron River in the eastern part. This river is the county's chief drainage channel, and Stillwater Creek, its main tributary in Payne County. The county is well drained by the tributaries of these two streams.

The well developed drainage has carved the topography into a rolling plain. However, in the western part of the county the streams have cut more deeply and the topography in this section is of sharper relief than that of the eastern part.

Payne County lies within the Sandstone Hills region, excepting the extreme western part, which is in the Red Beds Plains. Twin Mounds, limestone capped hills, 10 miles east of Ingalls, form the most striking topographic<sup>1</sup> feature of the county.

### History and Description of Payne County

Payne County was opened to white settlers in no less than three openings. The first opening of land now included in Payne County was on April 22, 1889, when Old Oklahoma or The Unassigned Lands was thrown open to settlement. The type of opening to settlement--that of racing for a farm--was the first event of its kind in the history of the United States. Another section of the

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<sup>1</sup> Oklahoma Geological Survey, Bulletin No. 40, Volume III, pages 159-160.



county was opened in 1891 and the remainder of Payne County was not open to white settlers until 1893.

It is reported that these openings were, "mad scrambles of civilized beings suddenly turned half savage in a race for a home."<sup>2</sup> Many raced against fate and never secured the desired one hundred and sixty acres of black prairie soil, while others secured a choice homestead.

David L. Payne tried for many years to establish a colony in the Unassigned Lands. Payne failed, and to his successor, William L. Couch, goes the credit of being the first white man to attempt to settle along the Still-Water Creek. In the year 1884, a colony under the leadership of Couch attempted a settlement on the property that is now Lowry's Addition to Stillwater. They stayed here only a short time as the federal troops were very active in driving out all boomers and this colony was no exception. Couch and his followers retreated to the banks of Boomer Creek where they threw up fortifications and prepared to fight the cavalrymen. After a short time, however, the colony was starved out.<sup>3</sup> This venture ended the first attempt to settle Stillwater.

Records of the weather bureau, for the 38-year period 1903-1940, show that this county has an average annual temperature of 59.4° F. There are a few extremes in temperature with an average maximum of 71.2° F., and an average minimum temperature of 47.5° F. August, with an average maximum temperature of 95.3° F., has the highest average temperature; and January, with an average of 25.0° F., has the lowest average temperature. The records show an average of 32.43 inches of rain per year for the 48-year period, 1893-1940.

<sup>2</sup> Gene Aldrich, Pioneers and Pioneer Life in Payne County, (Unpublished Thesis) Oklahoma Agricultural and Mechanical College, 1938, page 1.

<sup>3</sup> Ibid. Pages 1-2

<sup>4</sup> Payne County Soil Conservation District Program, July 1942, pages 1 and 3.

Payne County is an area of general agriculture. The principal crops are cotton, wheat, corn, oats, alfalfa, barley and grain sorghums. Farm herds of all the commonly recognized breeds of dairy, beef cattle, hogs, sheep and horses are found in the county.

In addition to agriculture, the industries of the county include sandstone quarries and concrete products, but most important is the oil and gas industry. Just east of the county line lies the important Cushing field.

The first oil and gas leases in Payne County were recorded in 1904, and the first mineral rights sales were recorded in 1915. Since the opening of the first oil fields in the county in 1914, the Ingalls, Quay, Ripley and Yale fields in the eastern part of the county, oil and gas development has continued to the present date.

#### Purpose and Scope of Study

The objective of this study is to determine the extent to which income arising from oil and gas development supplements the agricultural income of landowners.

The hypotheses of this study are that, first, the presence of oil and gas, actual or potential, constitutes an important source of land income and second, that the practice of leasing land and selling mineral rights is widespread. From data gathered from the records in the County Clerk's office this study proposes to confirm or disprove the above hypotheses.

#### Method and Procedure

Since a complete survey of the county would have been too costly, it was decided that a sample might be taken at random within the county which would be representative of the county as a whole.

To obtain such a sample each section and quarter was numbered and using a system of random drawings, 250 quarter sections were designated for study.

Public land and urban areas were eliminated from the universe. Eliminating these areas left 2,467 quarter sections from which a sample was selected. It is believed that the random selection resulted in sufficient dispersion to give validity to the results (Figure II). Therefore, results obtained in calculating data from the sample have been multiplied so as to reflect county figures rather than sample figures.

Tentative schedules were made and used in the collection of the data. The data were then tested to determine the efficacy of the schedule. From these results alterations were made in the schedule so as to obtain the necessary information. Information on the schedules was then gathered from records in the County Clerk's office. After the data were compiled the county was divided into three areas (Figure III) for more thorough analysis and detailed study.

Through an analysis of the data collected the hypotheses posed will be answered.

Chapter II will deal with the history of fee sales; Chapter III will take into account the practice of leasing land; Chapter IV will set forth the situation with respect to the sale of oil and subsurface rights. Chapter V will draw conclusions and make recommendations deemed desirable.

# ROAD MAP OF PAYNE COUNTY, OKLA.

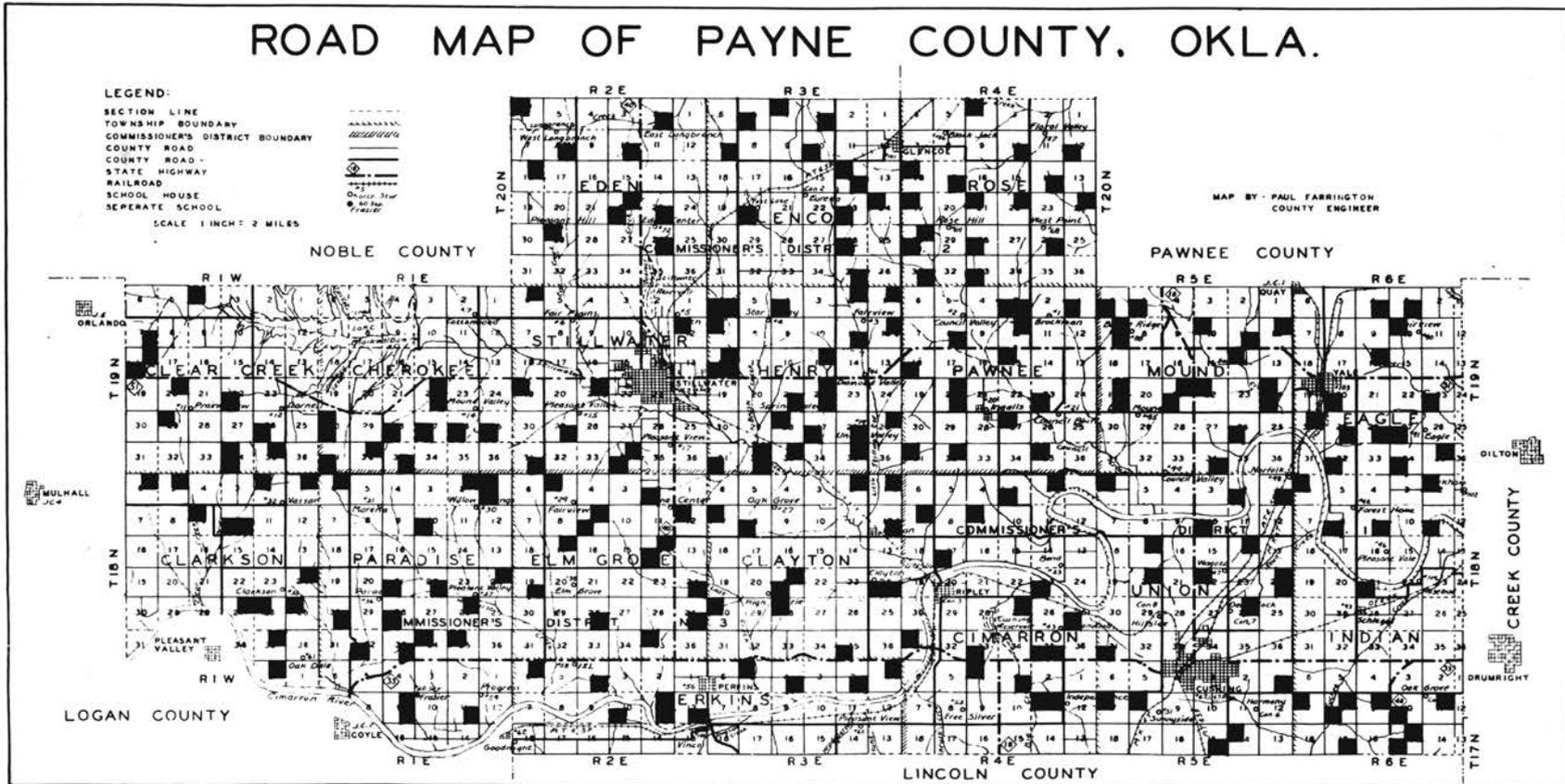
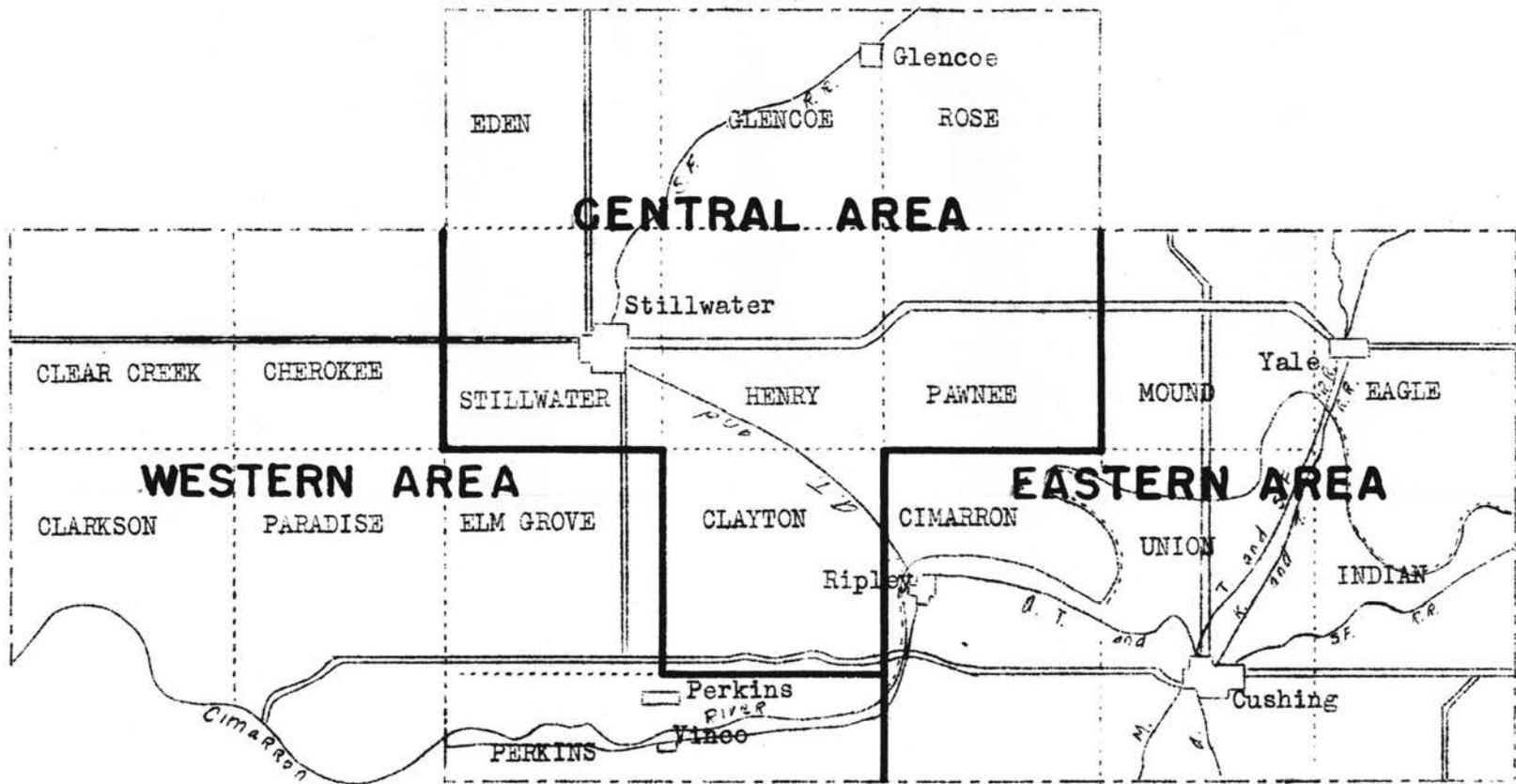


Figure II. Quarter Sections Used In Study



# PAYNE COUNTY

1" = 5 M.  
 = Highways

Figure III. Division of County Into Areas

CHAPTER II. HISTORY OF FEE SALES

Percentage of Land Sold By Years

1

The first fee sales recorded for the county were in 1891. Figure IV shows the highest percentage of fee sales to be in the period from 1899 to 1911, inclusive. This boom in land sales was due to the low prices at which the settlers were selling their homesteads during the early and difficult years of the settlement of the county.

Figure V shows that the percentage of fee sales for all areas of the county was high during the period 1890-1911.

Each acre in the county has been sold on an average of 3.42 times (Table I).

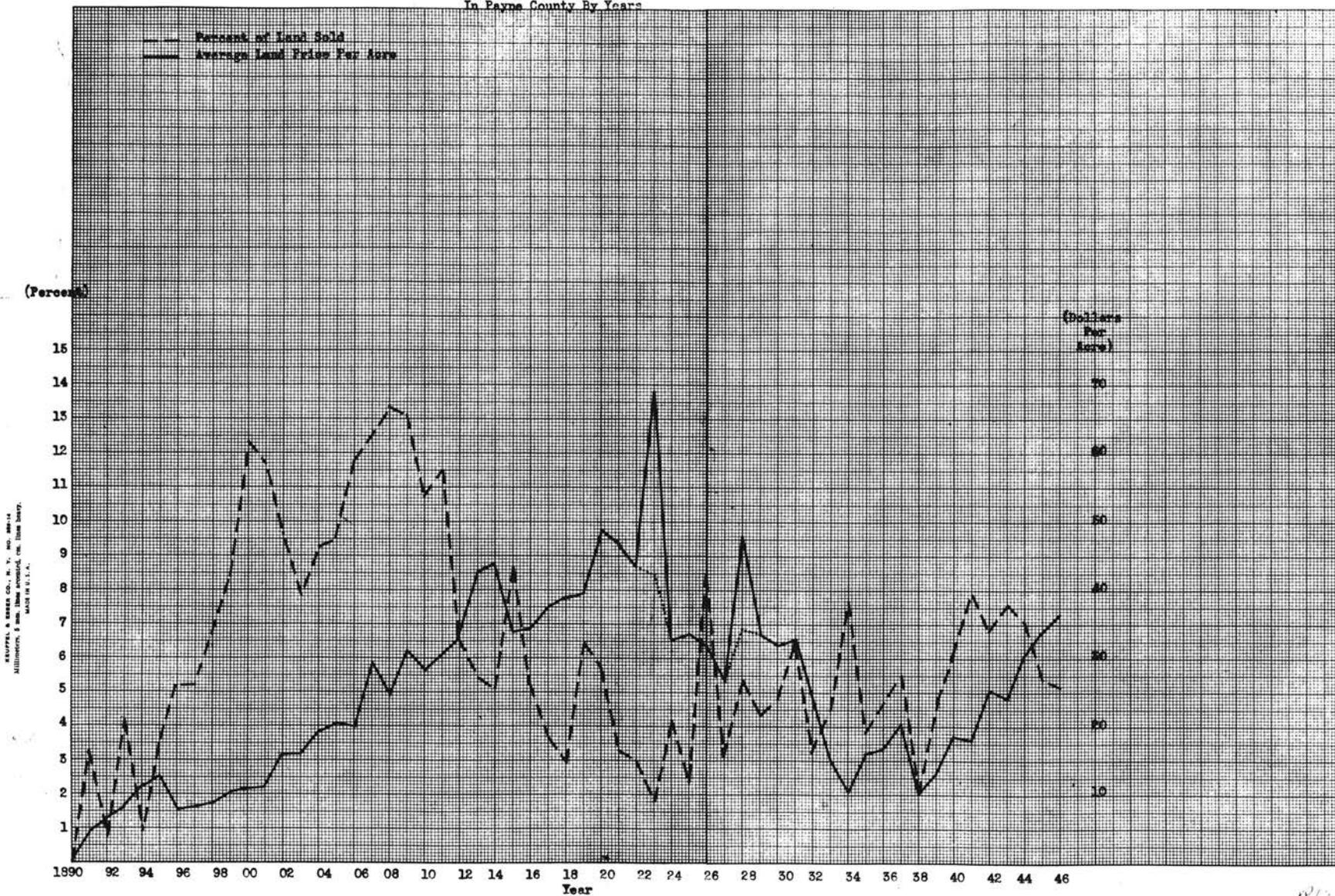
Table I. Acres Fee Sales and Number of Times Each Acre Has Sold, Payne County

Area	Total Acres In Area	Acres Fee Sales (1890-1946)	Average Number of Times Each Acre Sold	Average Number of Years Between Sales
Western	142,240	510,891	3.59	15.6
Central	161,280	668,930	4.15	13.5
Eastern	142,560	344,505	2.42	23.2
County	446,080	1,524,326	3.42	16.4

The table also shows the number of sales by areas. Each acre in the Western Area has been sold on an average of 3.59 times; Central Area, 4.15 times; and Eastern Area, 2.42 times. These figures show an inverse relationship between the number of sales and extent of oil and gas development. Where oil and gas development has been most extensive, in the Eastern Area, the number of fee sales has been the lowest. In the Central Area, where oil

<sup>1</sup> A fee sale is the sale of surface and subsurface rights in land.

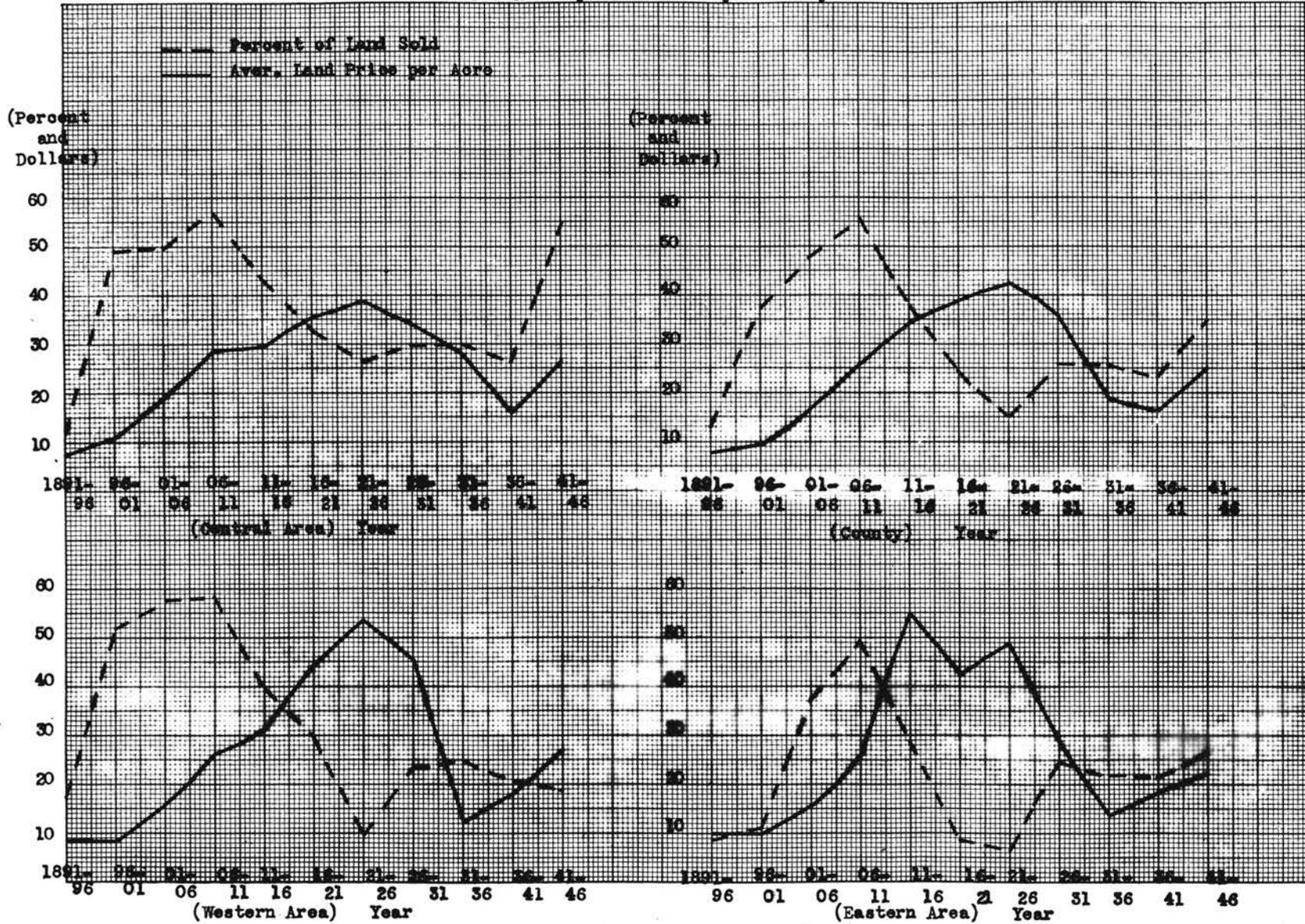
Figure IV. Percentage of Land Sold and Average Price of Land  
In Payne County By Years



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Figure V. Five-Year Average of Percentage of Land Sold and Average Price Per Acre By Areas and Payne County



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R10

and gas development has been least extensive, the number of fee sales has been the highest.

Over the 56-year period, 1890-1946, the average number of years between fee sales for each area and the county has been: Western Area, 15.6 years; Central Area, 13.5 years; Eastern Area, 23.2 years; and for the County, 16.4 years (Table I).

#### Land Values Per Acre By Years

Figure IV shows the average land values in the county by years. Land values were extremely low during the first few years of the settlement of the county.

The only possessions of the settlers were a wagon and a team and a few tools and household goods. Very few were fortunate enough to have any money. Therefore, during the early years a lot of them left to find work in the neighboring states. Some homesteads were abandoned and could be had by merely filing on them, others could be had for a horse or even less.<sup>2</sup>

From 1900 to 1920 the trend of land prices was rising. This rising trend was due to the rapid settlement of the county. As more settlers came in and population grew, land became more scarce and could not be had as cheaply as before. This rising trend was climaxed by the end of World War I, and from 1920 to 1938 the trend of land prices was falling.

There were two abnormal peaks during this period, however, in 1923 and 1928. The peak in 1923 was caused by three excessively high sales. These three sales averaged \$89.25 per acre. When they are eliminated the average land price drops from \$69.31 to \$42.36 per acre. (Shown by dotted line in Figure IV).

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<sup>2</sup> Gene Aldrich, op. cit. Pages 7-8.

The peak in 1928 was also caused by three abnormal sales. The three excessively high sales averaged \$82.50 per acre. When these three sales are eliminated the average land price in 1928 drops from \$47.93 to \$34.21 per acre. (Shown by dotted line in Figure IV).

The falling trend of land values from 1920 to 1938 was partially due to the farm-to-city movement of the population and the low level of prices for agricultural commodities. The high prices of machinery and land taxes caused production costs of agricultural products to be high. As the demand for farm lands comes primarily from farmers, the depletion of the purchasing power of farmers during this period influenced the falling trend of land prices.

The trend of land prices has been rising since 1938 because of the recovery from the depression of the 1930's and the effects of World War II.

The average price of land in Payne County, for the 56-year period, 1890-1946, has been \$23.84 per acre. The average price of land during the same period for the Western Area has been \$22.04 per acre; Central Area, \$24.35 per acre; and \$25.14 per acre for the Eastern Area.

#### Relationship Between Land Sales and Value

Figure IV shows that when the average price of land is high, the percentage of land sold in Payne County is low.

Table II shows a five-year average of the percentage of land sold and average price of land per acre for each area of the county and for the county as a whole.

Figure V shows, in graphic form, the calculations of Table II. It can be seen that for each area of the county there is the same relationship between high average land price and low percentage of land sold.

Table II. Yearly Average (By 5-Year Periods) of Percentage of Land Sold  
and Land Price By Area and For  
Payne County, 1891-1946

Years	Western Area		Central Area		Eastern Area		County	
	Percentage:	Average	Percentage:	Average	Percentage:	Average	Percentage:	Average
	of Land	Land	of Land	Land	of Land	Land	of Land	Land
	Sold	Price	Sold	Price	Sold	Price	Sold	Price
	(Percent)	(Dollars)	(Percent)	(Dollars)	(Percent)	(Dollars)	(Percent)	(Dollars)
1891-1896	17.41	8.63	11.58	7.66	8.93	9.94	12.56	8.51
1896-1901	51.37	8.55	48.51	10.26	10.39	10.03	37.53	9.53
1901-1906	57.03	14.81	49.05	18.36	37.33	15.13	47.93	16.28
1906-1911	58.10	25.62	56.77	28.27	49.94	24.99	55.31	26.44
1911-1916	39.69	30.26	42.30	29.48	28.86	55.05	37.31	35.10
1916-1921	29.31	44.38	32.23	35.28	8.89	42.10	24.06	39.53
1921-1926	9.38	53.87	26.39	38.72	6.12	49.51	14.83	42.91
1926-1931	23.01	45.21	29.50	34.24	24.90	28.98	26.05	45.89
1931-1936	24.76	12.06	29.78	28.43	21.60	13.93	25.68	19.86
1936-1941	20.73	17.26	26.34	15.43	21.54	18.52	23.11	16.79
1941-1946	18.41	26.44	54.86	26.75	26.25	22.39	34.69	25.90

### Summary

The percentage of fee sales in the county was high during the early years of settlement. The percentage dropped off after the difficult years of the settlement, however, and even though there have been wide fluctuations since, the volume of sales has never reached the high level of the first 20 years.

Land values were low during the first years of the settlement of the county. The trend was rising up to 1920, however, and from then until 1938 the average price of land was falling. The trend has again been rising since 1938.

When land values are high the percentage of land sold is low.

The above summary of the fee sales in the county also holds true for each area in the county.

## CHAPTER III. THE PRACTICE OF LEASING LAND

### Percentage of Land Under Lease By Years

"Oil and gas leases define the relationship of operating companies and landowners in nearly all of the producing fields of Oklahoma. Very few landowners have found it possible or advantageous to produce oil and gas on their own lands. Even if the landowner is sure of obtaining oil and gas on his land, the initial cost of drilling and equipping the wells and establishing market outlets ordinarily prevents him from carrying on the enterprise. On the other hand, operating companies as a rule have not found it to their advantage to acquire title to the land upon which they locate their wells and equipment." <sup>1</sup>

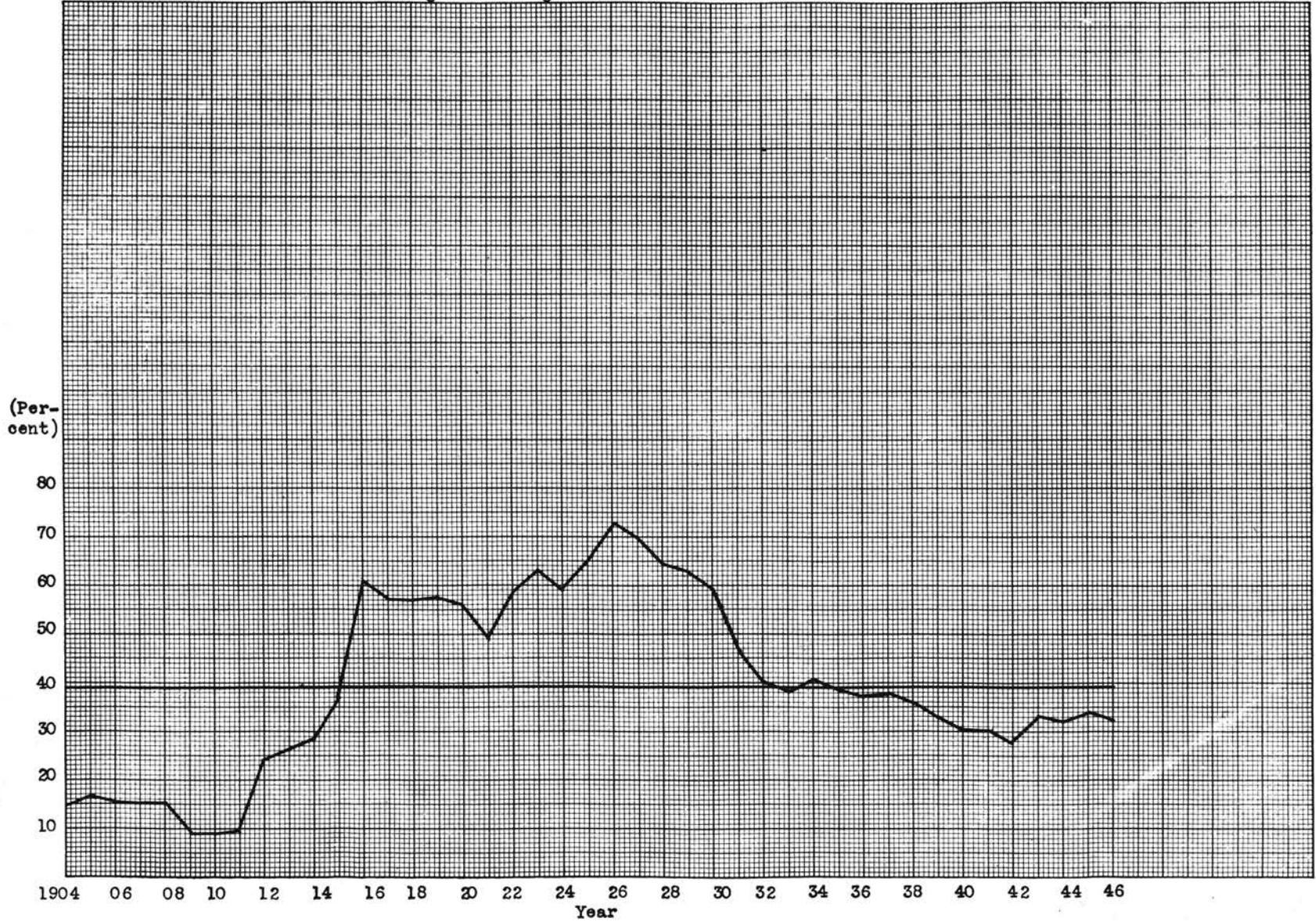
The first oil and gas leases recorded for Payne County were in 1904. Since 1913 more than 25 percent of the land in the county has been under lease at all times (Figure VI). With the discovery of the Cushing field the percentage of land under lease in the county began to rise and from 1916 to 1930, inclusive, the percentage of land under lease was above 50 percent except for 1921 when it dropped to 48.6 percent. The highest percentage of land under lease at any one time in the county was in 1926 when it rose to 72.9 percent. After the delineation of the boundaries of the known pools in the county, the percentage of land under lease followed a downward trend from 1926 to 1940. Since 1940, the percentage of land under lease has been between 27 and 34 percent.

The percentage of land under lease by areas by years is shown in Figure VII. The first oil fields opened in the county were in the eastern part, which accounts for the earlier increase in the percentage of land under lease in the Eastern Area and the Central Area than in the Western Area. The percentage of land under lease increases as oil development increases.

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<sup>1</sup> R. D. Davidson and Kenneth Wernimont, "Tenure Arrangements In Oklahoma Oil Fields," reprinted from The Journal of Land and Public Utility Economics, Vol. XIX, No. 1, February, 1943, page 46.

Figure VI. Percentage of Land In Payne County Under Lease By Years and Average Percentage of Land Under Lease For Period 1904-1946



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Figure VI shows the percentage of land under lease since 1916 was highest in 1926, and lowest in 1942.

In the Western Area, 77 quarters were under study. Seventy of these quarters, or 90.9 percent, had a part or all of their land under lease in 1926 at the peak of leasing (Table III). During the low leasing period (1942), the Western Area had 36 quarters out of the 77 studied, 46.7 percent, with a part or all of their land under lease.

Table III. Percentage of Quarters With Part or All of Land Under Lease At The Peak and Low Leasing Periods By Areas and for Payne County, 1926 and 1942

Year	Western Area	Central Area	Eastern Area	County
	(Percent)	(Percent)	(Percent)	(Percent)
High 1926	90.9	80.0	64.1	78.4
Low 1942	46.7	28.4	21.8	32.0

In 1926 the Central Area had 76 of the 95 quarters under study in this area, 80.0 percent, with a part or all of their land under lease. In 1942, this area had 27 of the 95 quarters, 28.4 percent, with a part or all of their land under lease.

The Eastern Area has 78 quarters under study. During the high leasing period (1926), this area had 50 quarters, 64.1 percent, with a part or all of their land under lease. In 1942, the low leasing period, the Eastern Area had 17 quarters, or 21.8 percent of the quarters with a part or all of their land under lease.

The Eastern Area has had a smaller percentage of land under lease than the Western and Central Areas at both the peak and low of leasing. The reason for this is because oil development was earlier and more extensive in

the Eastern Area. After the boundaries of a field are defined leasing tends to be confined within those boundaries. After oil is discovered and as long as it is produced on a quarter that land is not subject to lease.

A prospective land buyer, then, probably could expect to keep more land under lease in the Western and Central Areas than in the Eastern Area.

Table IV shows the number and percentage of quarters by areas and for the county with a part or all of their land under lease on the basis of the number of years leased since 1904.

Table IV. Percentage of Quarters By Areas and For County  
With A Part or All of Their Land Under Lease  
On The Basis of The Number of Years Leased  
Payne County, 1904-1946

Number of Years Leased	Western Area (Percent)	Central Area (Percent)	Eastern Area (Percent)	County (Percent)
0 - 5	6.5	7.4	7.7	7.2
6 - 10	6.5	10.5	12.8	10.0
11 - 15	20.8	17.9	17.9	18.8
16 - 20	18.1	20.0	23.1	20.4
21 - 25	20.8	20.0	14.1	18.4
26 - 30	14.3	13.7	14.1	14.0
31 - 35	7.8	7.4	7.7	7.6
36 - 40	5.2	3.1	2.6	3.6

Of the 250 quarters studied, there were two which had never been under lease. None of the quarters have kept a part or all of their land under lease every year since 1904.

A greater percentage (20.4 percent) of the quarters in the county, with a part or all of their land under lease, have been under lease from 16 to 20 years (Table IV).

Table V shows the percentage of quarters by areas and for the county with a part or all of their land under lease on the basis of the percentage of time under lease since 1904.

Table V. Percentage of Quarters By Areas and For County  
With A Part or All of Their Land Under Lease On The  
Basis of Percentage of Time Under Lease  
Payne County, 1904-1946

Percent of Time	Western Area (Percentage of Quarters)	Central Area (Percentage of Quarters)	Eastern Area (Percentage of Quarters)	County (Percentage of Quarters)
0 - 25	16.9	21.0	24.4	20.8
25 - 50	41.5	45.3	42.3	43.2
50 - 75	35.1	27.4	29.5	30.4
75 and over	6.5	6.3	3.8	5.6

The Western Area has had a higher percentage of quarters with a part or all of their land under lease for a greater proportion of the time than any other area. The reason for this is because the boundaries of the oil fields in this area are not defined. Leasing in this area will continue to be widespread until the boundaries of the fields are delineated and oil and gas development has become extensive or it is proven to be unproductive.

There is more probability that a landowner in the Western Area will keep his land under lease for a longer period of time than a landowner in any other area of the county.

For the 43-year period 1904-1946 the average yearly percentage of land under lease by areas and for county has been: Western Area, 41.4 percent; Central Area, 39.9 percent; Eastern Area, 36.3 percent; and County, 39.2 percent.

A royalty owner's probability of leasing by areas is as follows:

Western Area--6 chances out of 100 that he can keep his land leased more than 3 out of 4 years, 42 chances out of 100 that he can keep his land leased more than 2 out of 4 years, 83 chances out of 100 that he can keep his land leased more than 1 out of 4 years and 1 chance out of 100 that his land will never

be leased; Central Area--6 chances out of 100 that he can keep his land leased more than 3 out of 4 years, 34 chances out of 100 that he can keep his land leased more than 2 out of 4 years, 79 chances out of 100 that he can keep his land leased more than 1 out of 4 years, and 1 chance out of 100 that his land will never be leased; Eastern Area--4 chances out of 100 that he can keep his land leased more than 3 out of 4 years, 33 chances out of 100 that he can keep his land leased more than 2 out of 4 years, 76 chances out of 100 that he can keep his land leased more than 1 out of 4 years, and no probability that his land will never be leased.

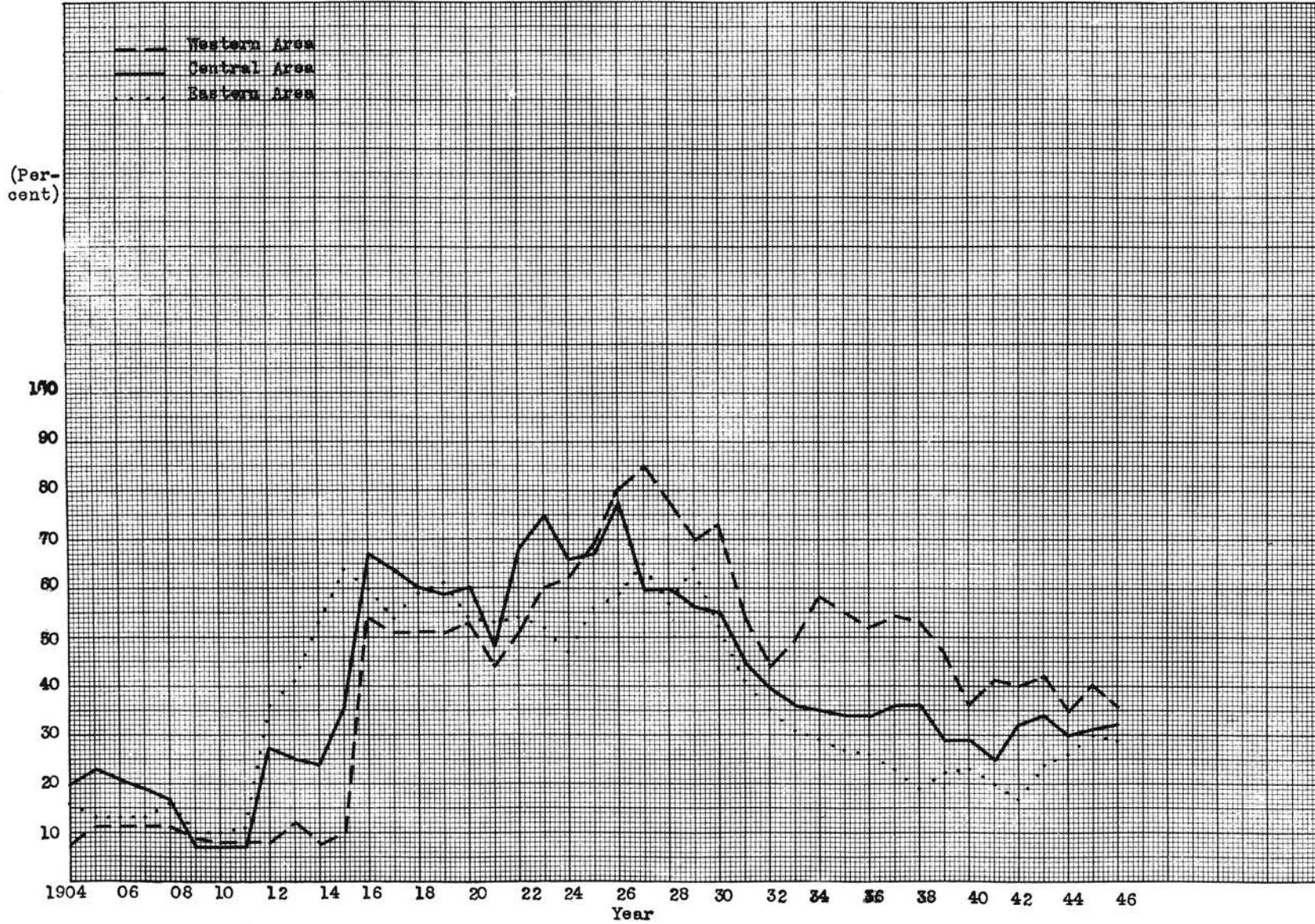
#### Income From Lease Rent

Since the lease rent is almost consistently \$1.00 per acre per year, the income from lease rent for the county (Figure VIII) will show a direct correlation with the percentage of land under lease. The correlation can be seen by comparing Figures VI and VIII.

Figure IX shows that the relationship found in the county as a whole is also found in each area. The relationship can be seen by comparing Figures VII and IX.

The total income from lease rent for the county for the period 1904-1946, inclusive, has been \$7,434,567. This is an average yearly income of \$172,897 from lease rent for the county as a whole or an average income of \$0.39 per acre per year. The average income accruing to each acre of land in the county from leasing alone for the 43-year period, 1904-1946, is \$16.77 (Table VI). The table also shows the lease income for each area of the county.

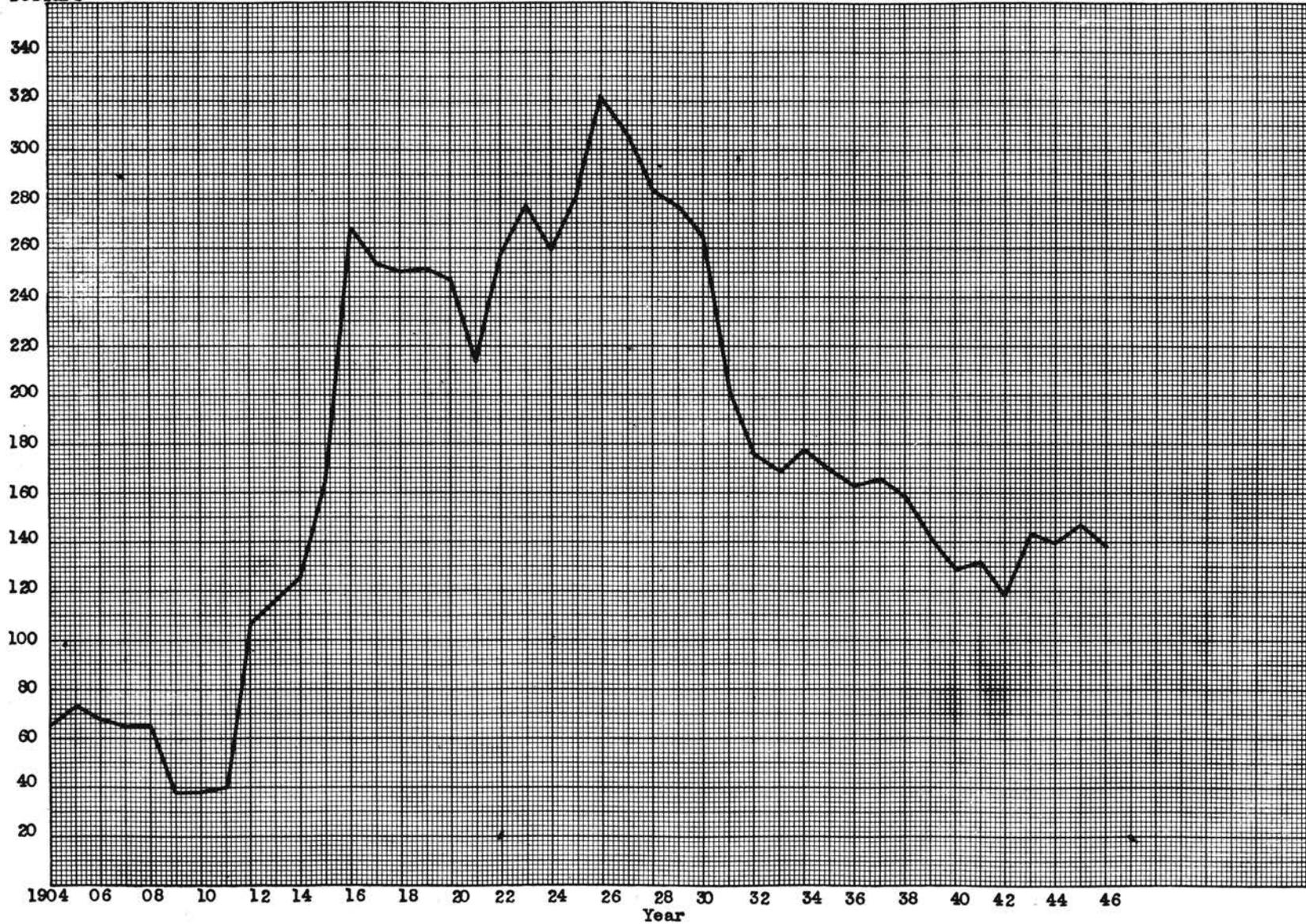
Figure VII. Percentage of Land Under Lease By Areas By Years



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(000)  
Dollars

Figure VIII. Income From Lease Rent For Payne County By Years



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KEUFFEL & ESSER CO., N. Y. NO. 258-14  
Millimeters, 5 mm. lines accepted, cm. lines heavy.

(000)  
Dollars

Figure IX. Income From Lease Rent By Areas By Years

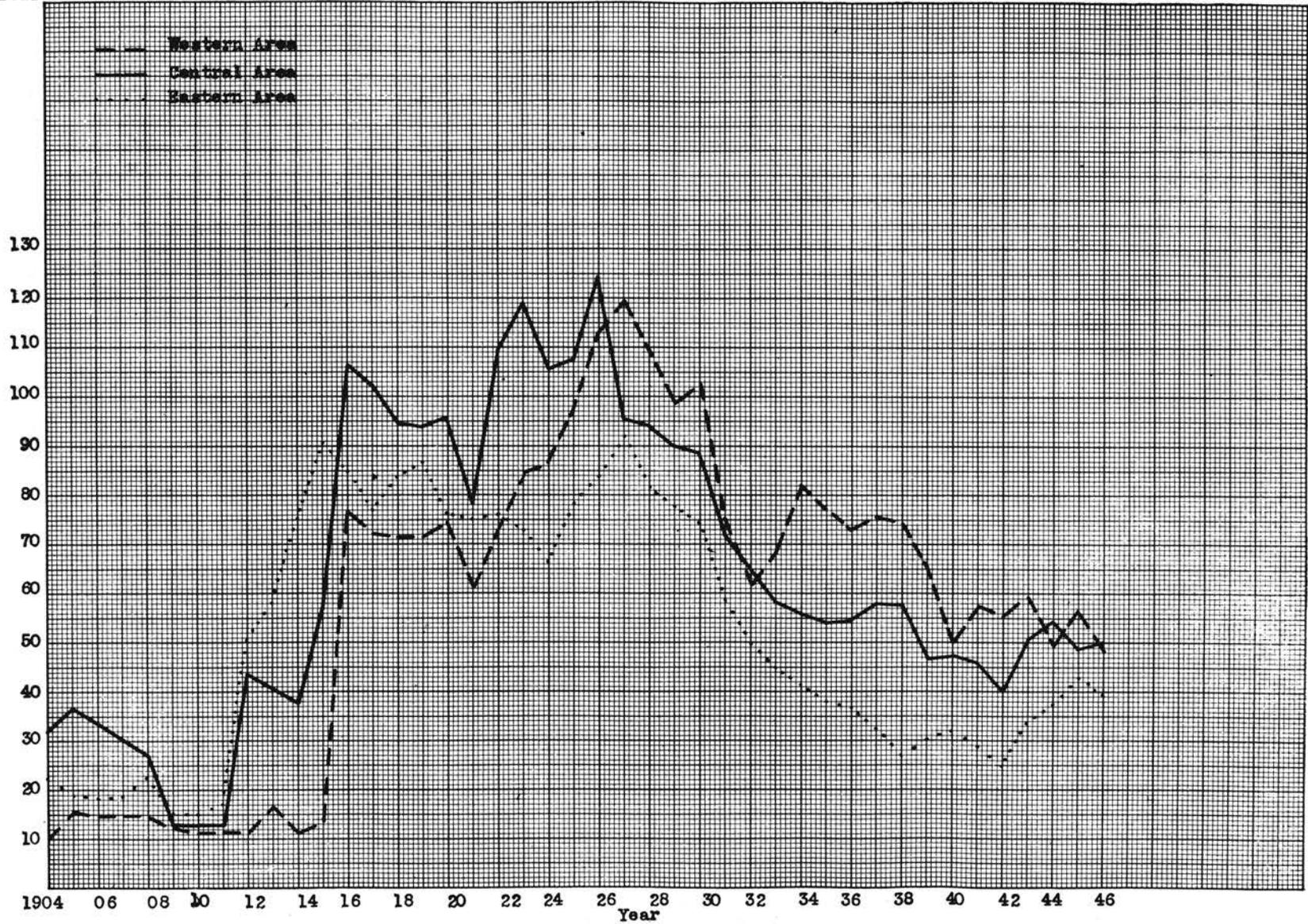


Table VI. Total, Yearly Average, Average Per Acre, and Average Per Acre Per Year Income From Lease Rent By Areas and Payne County, 1904-1946

Area	Total Income	Average Yearly Income	Average Income Per Acre (1904-1946)	Average Income Per Acre Per Year
	(Dollars)	(Dollars)	(Dollars)	(Dollars)
Western	2,501,280	58,169	17.63	0.41
Central	2,732,310	63,542	16.77	0.39
Eastern	2,200,977	51,186	15.48	0.36
County	7,434,567	172,897	16.77	0.39

#### Bonus Income From Leasing

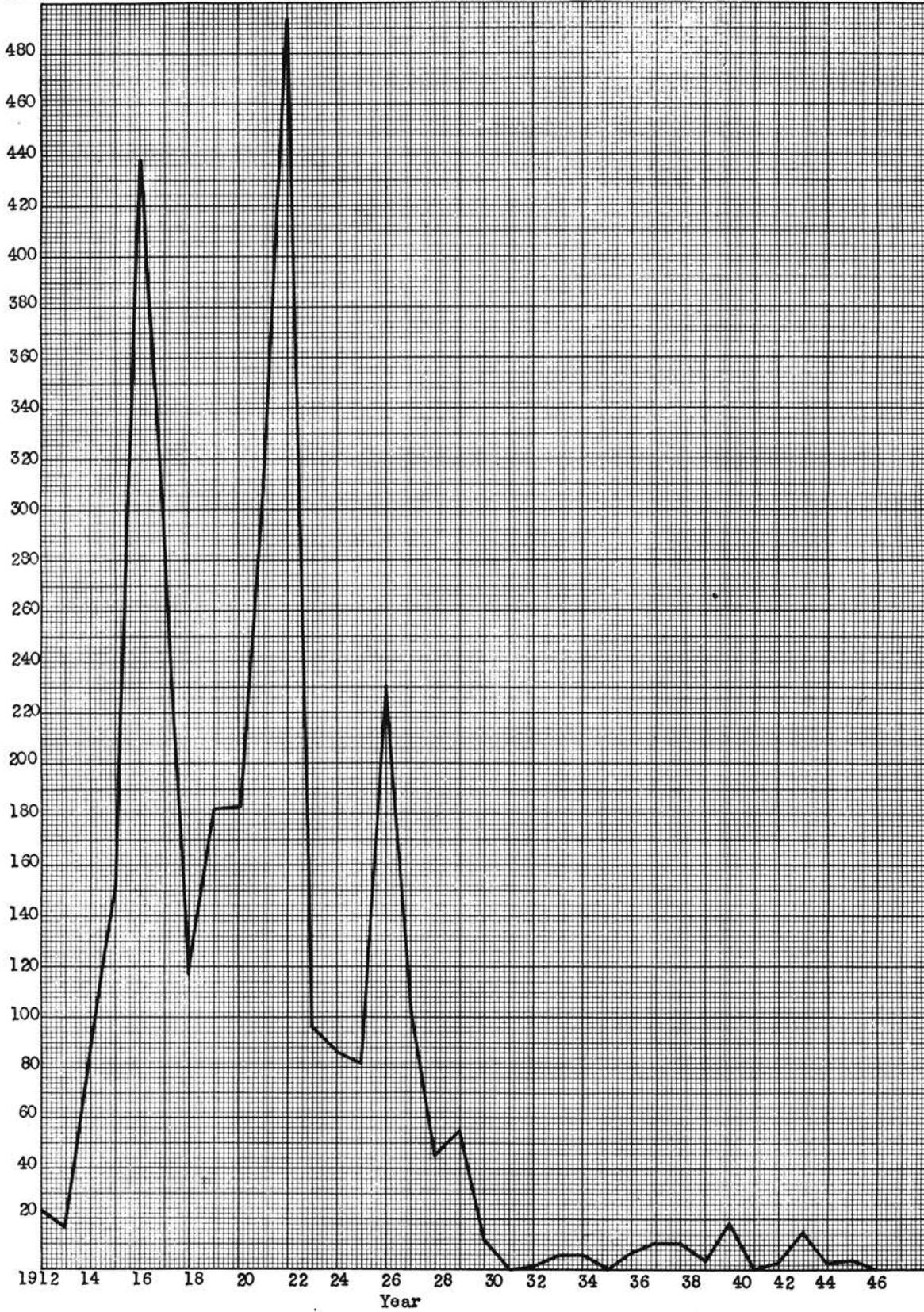
In addition to rental and royalty payments it is customary, whenever there is strong competition in obtaining leases, to pay the landowner or the lessor a bonus. Negotiations with reference to bonuses are on a personal basis and the contract some of the time does not contain reference to it, nor is the lease affected in any way by it. In practice these bonuses are used as a means of adjusting total consideration paid to the landowner in terms of the more or less uniform rental rates of one to five dollars per acre to allow for differences in the estimated values of mineral leases on the various tracts of land within the prospective field.<sup>2</sup>

Figure X shows the bonus income by years for Payne County. It would take a great deal more study to be able to explain the excessively high peaks in 1916, 1922, and 1926. They may have been caused, however, by the expansion of the field after its opening. The Cushing field was discovered in 1912. The Ingalls, Quay, Ripley and Yale fields were discovered in 1914 and the March and New Cushing fields opened in 1922. After 1926 the fall in

<sup>2</sup> Ibid. Pages 46-47.

(000)  
Dollars

Figure X. Bonus Income By Years For Payne County



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Millimeters, 5 mm. lines accented, cm. lines heavy.  
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bonus income may have been a result of the establishment of boundaries of the major fields in the county, or it may have been caused by the practice, after 1926, of omitting reference to a bonus in the lease contract.

The bonus income by areas by years is shown in Figure XI. The Central and Eastern Areas show a much greater bonus income than the Western Area. In the Western Area, many leases were made without a bonus of any sort, and when a bonus was paid it generally was small (Table VII).

Table VII. Total Bonus Income, Acres Bonus Paid On, Average Bonus Price, Yearly Average Bonus Income, Average Bonus Income Per Acre Per Year By Areas and Payne County, 1912-1946

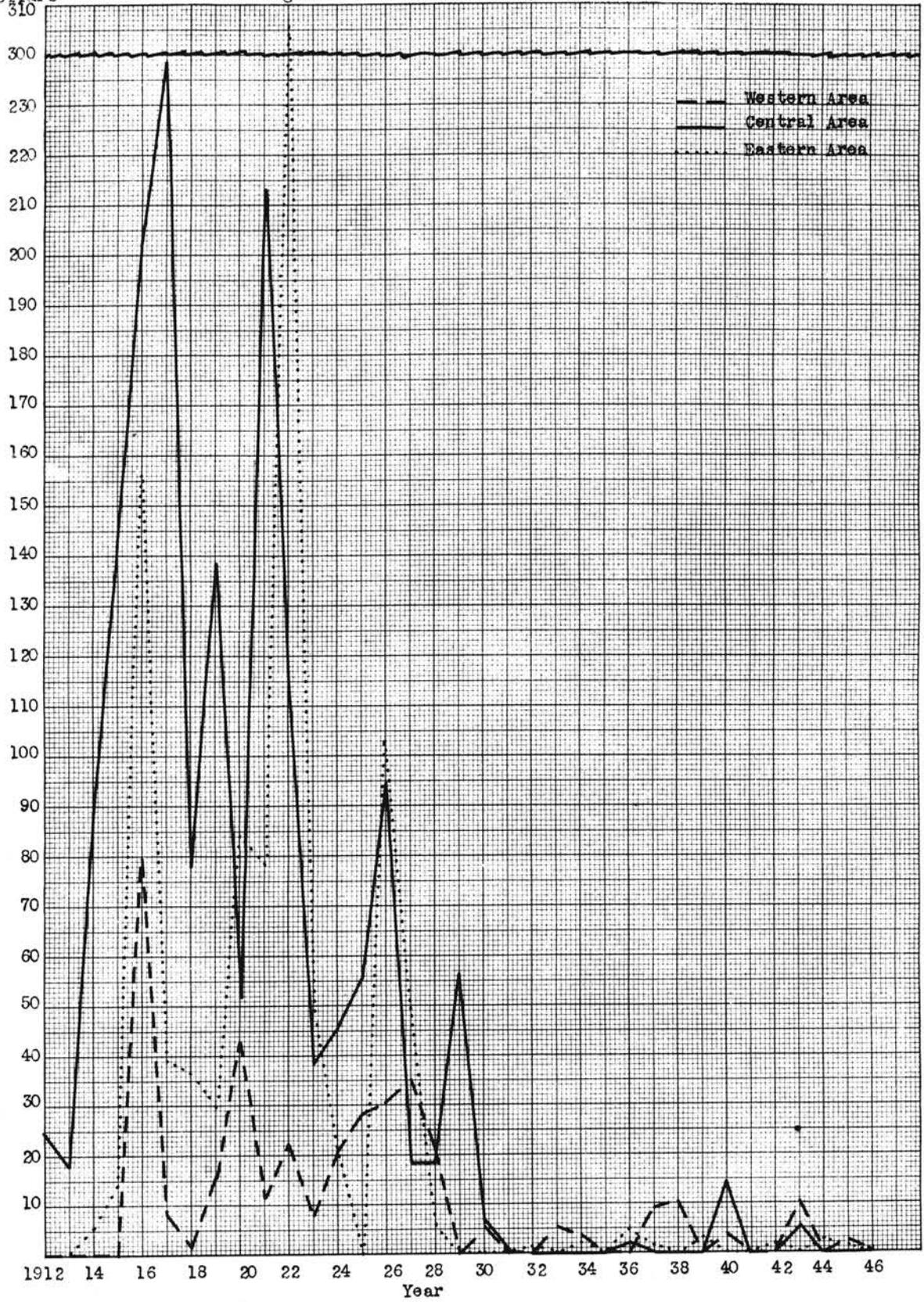
Area	Total Bonus Income (1912-1946)	Acres Bonus Paid On (1912-1946)	Average Bonus Price Per Acre (1912-1946)	Average Yearly Bonus Income (1912-1946)	Average Bonus Income Per Acre Per Year (1912-1946)
	(Dollars)	(Acres)	(Dollars)	(Dollars)	(Dollars)
Western	380,641	153,299	2.48	10,875	0.08
Central	999,101	190,554	5.24	28,546	0.18
Eastern	1,673,875	131,514	12.73	47,825	0.34
County	3,053,617	475,367	6.42	87,246	0.20

Table VII shows the total bonus income for the county for the 35-year period, 1912-1946, to be \$3,053,617. The total bonus has been paid on 475,367 acres, making the average bonus price \$6.42 per acre. Some farms have had bonuses paid on them several times. The average yearly bonus income for the county for the period 1912-1946 has been \$87,246 or an average bonus income of \$0.20 per acre per year.

The Eastern Area, where oil and gas development has been most extensive, has received more income from bonuses than the Western and Central Areas combined. Apparently, the presence or absence of oil in the area is the chief determinant of the size of the bonus.

(000)  
Dollars

Figure XI. Bonus Income By Areas By Years



KEUFFEL & ESSER CO., N. Y. NO. 3-1  
Millimeter 5 mm. Lines accented in blue.  
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### Income From Lease Rent and Bonuses

The total lease rent and bonus income for the county for the period 1904-1946 is \$10,488,184. For the 43-year period the average yearly income for the county, from lease rent and bonuses, is \$243,911. The average income per acre for the 43-year period is \$23.51 or an average income of \$0.55 per acre per year for the county from lease rent and bonuses (Table VIII).

Figure XII shows the total income to the county from lease rent and bonuses by years for the 43-year period 1904-1946.

The total income from lease rent and bonuses by areas by years is shown in Figure XIII.

Table VIII. Total, Yearly Average, and Average Per Acre  
Per Year Income From Lease Rent and Bonuses By Areas  
and Payne County, 1904-1946

Area	Total Income From Lease Rent and Bonuses	Average Yearly Lease Rent and Bonus Income (1904-1946)	Average Income Per Acre For Period (1904-1946)	Average Income Per Acre Per Year
	(Dollars)	(Dollars)	(Dollars)	(Dollars)
Western	2,881,921	67,021	20.26	0.47
Central	3,731,411	86,777	23.14	0.54
Eastern	3,874,852	90,113	27.18	0.63
County	10,488,184	243,911	23.51	0.55

3

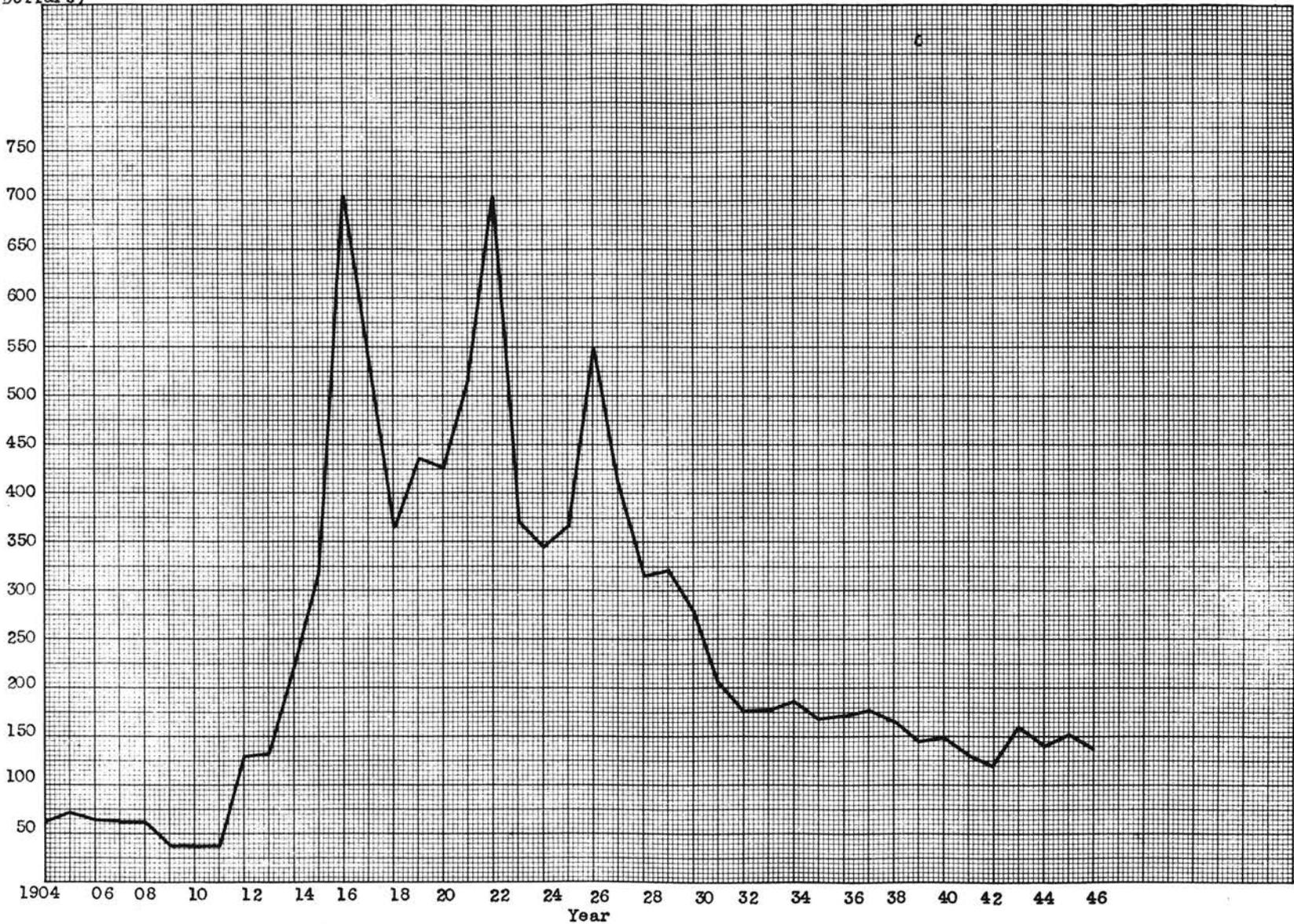
A recent study of all the bona fide sales in the county showing prices paid for land conveyed, with varying proportions of the mineral rights, was made for the five-year period 1941-1945. There were 748 sales in the county for this period, transferring 81,628 acres. After adjustment was made for

<sup>3</sup> Unpublished data from files of Department of Agricultural Economics, Oklahoma Agricultural and Mechanical College.

KEUFFEL & ESSER CO., N. Y. NO. 359-14  
Millimeters, 5 mm. lines accented, cm. lines heavy.  
MADE IN U. S. A.

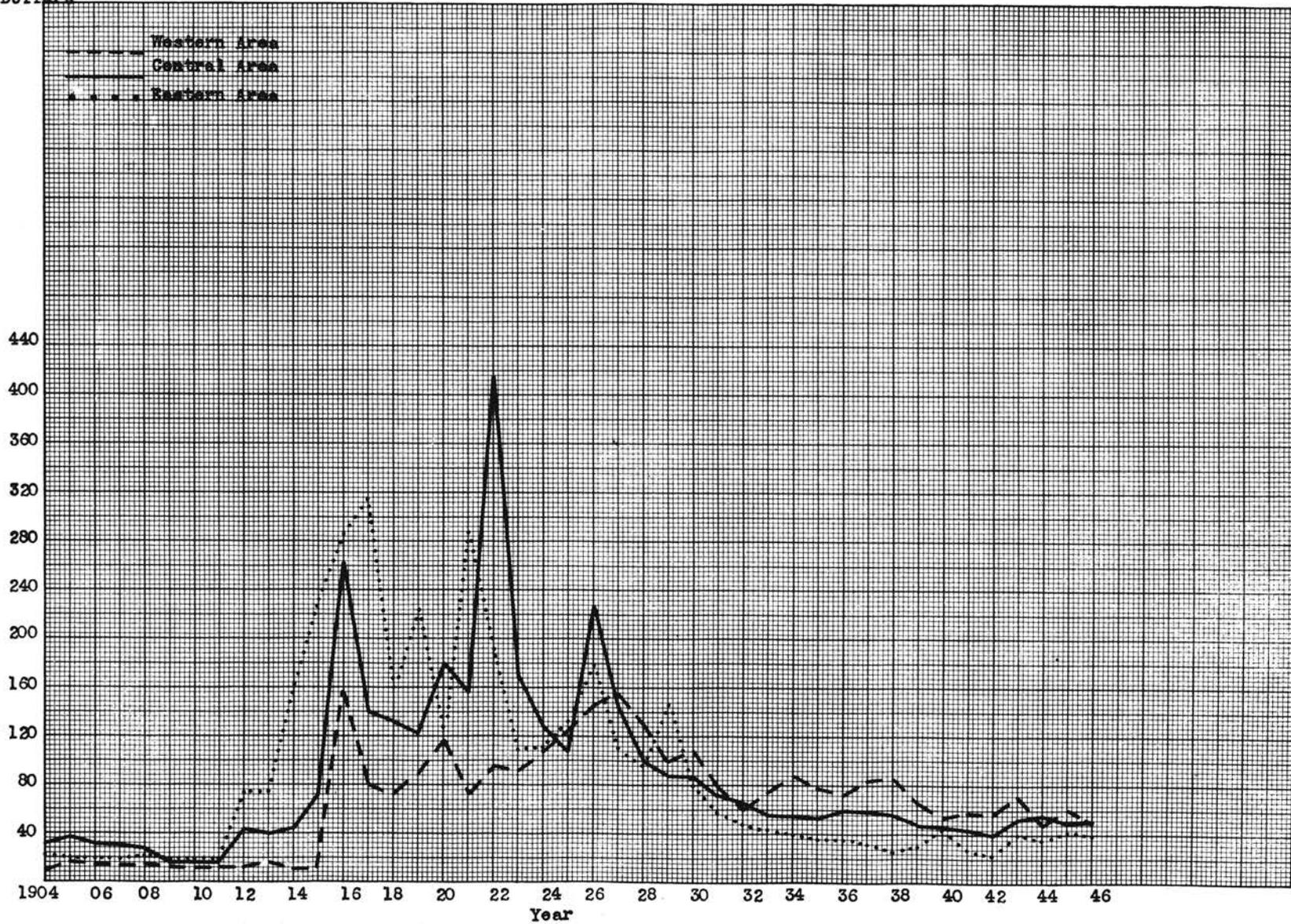
Figure XII. Total Lease Rent and Bonus Income To County By Years

(000)  
(Dollars)



(000)  
Dollars

Figure XIII. Total Lease Rent and Bonus Income By Areas By Years



differences in land price due to quality of land<sup>4</sup> the sales price of land with all the minerals transferred was \$10.45 higher per acre than land sold with none of the minerals transferred.

Table VIII shows the average income per acre per year for the county from lease rent and bonuses is \$0.55. If a capitalization rate of 5 percent is used, then farmers can afford to pay \$11.00 per acre more for land in Payne County with all of the minerals than for land with none of the minerals or a difference of only \$0.55 more per acre than the study reveals they do pay. If we take the average income per acre per year for each area from Table VIII and use a capitalization rate of 5 percent, then we find the average value of mineral rights to be: \$9.60 in the Western Area; \$10.80 in the Central Area; and \$12.60 in the Eastern Area.

#### Summary

The total lease rent and bonus income to the county for the 43-year period, 1904-1946, has been \$10,438,184 or an average income of \$0.55 per acre per year. If oil and gas continues to develop in the future as it has in the past, then the average land value, in Payne County, is \$11.00 per acre for the lease rent and bonus income alone when a capitalization rate of 5 percent is used.

The highest income from lease rent and bonuses was during the period 1916-1926.

The highest income ever received in any one year from lease rent and bonuses was in 1916 when the income to the landowners of the county was \$705,160 or \$1.58 per acre.

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<sup>4</sup> The quality of land is reflected by assessed value.

It is reported that some dealers in mineral rights in the county have a standing offer of \$10.00 per acre for minerals. Data covering the past 43 years indicate that such an offer was not unreasonable provided the dealers got a wide enough coverage so that averages would apply.

The total income from lease rent and bonuses now, however, is not so great as it has been in the past, which may have been caused, after 1926, by the practice of omitting reference to a bonus in the lease contract. An average of the total income for the past 10 years shows an average yearly income from lease rent and bonuses of \$148,596 or an average of \$0.33 per acre per year. If we capitalize this income at 5 percent, then the average land value, in Payne County, in the past 10 years has been \$6.60 per acre for lease rent and bonus income alone.

On the basis of the income from lease rent and bonuses for the past 10 years, the standing offer of \$10.00 per acre for minerals by some of the dealers is too high unless the areas for purchase are chosen rather carefully so that some income from oil sales could be expected, or so that the tracts bought have a better than average chance of receiving income from leases and bonuses.

## CHAPTER IV. THE SALE OF SUBSURFACE RIGHTS

### Separation of Surface and Subsurface Property Rights

A mineral deed severs the subsurface estate from the surface estate and the right to explore for the minerals beneath the land can be sold with the use of this instrument. The phrases used in a mineral deed to convey the seller's rights to the buyer are similar in intent but not identical with the usual phrase of a warranty deed. A warranty deed, unless qualified, conveys a fee simple title to the land in question for all time to come. A mineral deed ordinarily makes the same permanent disposition of the minerals beneath the surface, but mineral deeds for a term of years are becoming more common.

An estate in minerals may be created through exception or reservation in a warranty deed. If the owner of the land decided to sell the land and keep the minerals himself, he would use an ordinary warranty deed with clauses<sup>1</sup> reserving the mineral rights or excepting them from conveyance.

### Percentage of Subsurface Rights Sold By Fee Owner

The first sale of subsurface rights recorded in Payne County was in 1915. Since that date, 85,617 acres or 19.2 percent of the subsurface rights of the county have been sold by the fee owners (Table IX).

Figure XIV shows the percentage of subsurface rights sold in the county by years. The highest percentage of subsurface rights sold in the county in any one year was in 1938 when 2.05 percent was sold.

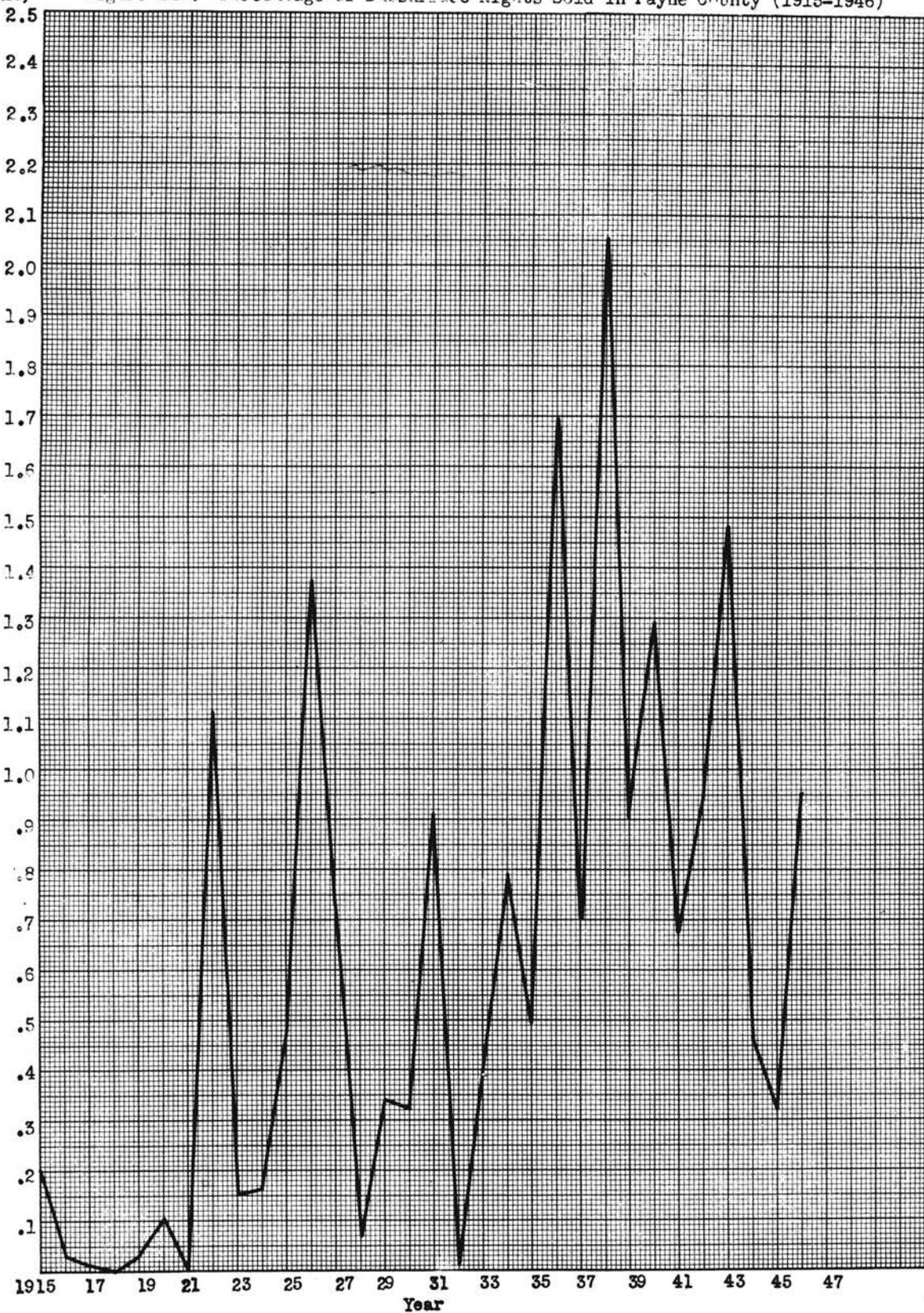
The total income in the county from the sale of subsurface rights by fee owners has been \$5,467,694 or an average price of \$63.86 per acre.

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<sup>1</sup> Davidson and Wernimont, op. cit., pages 41-43.

(Per-  
cent)

Figure XIV. Percentage of Subsurface Rights Sold In Payne County (1915-1946)



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Millimeters, 5 mm. lines accented, cm. lines heavy.  
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Table IX. Acres, Percentage, Income, Average Price, and  
Average Size of Subsurface Rights Sold By Fee Owner  
Payne County, 1891-1946

Area	: Acres : Subsurface : Rights : Sold By : Fee Owners	: Percentage : of : Subsurface : Rights : Sold	: Income : From Sale : of : Subsurface : Rights	: Average : Price : Per : Acre	: Average : Size of : Subsurface : Sale : (Acres)
	(Acres)	(Percent)	(Dollars)	(Dollars)	(Acres)
Western	33,733	23.7	1,411,001	41.83	34.9
Central	36,911	22.9	1,912,054	51.80	20.0
Eastern	14,973	10.5	2,144,639	143.23	24.4
County	85,617	19.2	5,467,694	63.86	24.7

In Chapter III lease rent and bonus income was capitalized at 5 percent and it was found that mineral rights in Payne County were worth \$11.00 per acre. Now it is found that the average price which has been paid for mineral rights in Payne County is \$63.86 per acre. A possible reason for this difference is that when mineral rights are sold apart from the surface fee they are frequently located in an area of "hot play" and therefore sell for high prices. Also, the county average price for mineral rights may be misleading because of the high prices paid in the Eastern Area. In this area 17.5 percent of the mineral rights sold brought 39.2 percent of the total income from this source. It will be noted in Table X that 579 acres in this area sold for more than \$2,000.00 per acre. A small proportion of the severed mineral rights sold are sold at around \$10.00 an acre because the landowners have accepted this as a current value in unexplored areas.

The acres of mineral rights sold by areas and for Payne County at different prices per acre is shown in Table X. The median value is \$28.69; the modal value is \$50.00; and the average value is \$63.86 per acre.

The total income from oil production royalty in Payne County has been \$14,430,494 or \$32.35 total average income per acre of all land in the county. Only 5.1 percent of the quarters in the county have production on them, therefore, the total average income per acre in these quarter sections is \$634.31.

Table X. Acres Mineral Rights Sold By Areas and For Payne County at Different Prices Per Acre

Price Per Acre	Western Area	Central Area	Eastern Area	County
(Dollars)	(Acres)	(Acres)	(Acres)	(Acres)
0.0 - 17.50	12,909	7,393	3,347	23,649
17.51 - 35.00	5,925	12,114	3,393	21,432
35.01 - 65.00	8,311	9,357	4,644	22,312
65.01 - 125.00	5,319	4,410	567	10,296
125.01 - 200.00	931	901	1,413	3,245
200.01 - 300.00	151	2,082	1,042	3,275
300.01 - 450.00	175	54	0	229
450.01 - 1,000.00	0	97	0	97
1,000.01 - 1,500.00	0	0	0	0
1,500.01 - 2,000.00	0	0	0	0
2,000.01 - 2,500.00	0	0	579	579

The total average income per acre of all land in the county from oil sales (\$32.35) is \$3.66 greater than the median price (\$28.69) per acre for mineral rights.

If mineral rights are purchased purposively in such a way that the potential chances of production are twice that of random purchase, then the total average income (\$64.70) from oil production royalty roughly equals the average price of mineral rights (\$63.86).

When a farmer buys the minerals with a piece of land, he concentrates his holdings to a small area; therefore, the income from lease rent and bonuses sets the value of mineral rights to him at \$11.00 per acre. When a speculator buys minerals, however, he scatters his holdings and will be more

likely to buy several small holdings rather than one large holding so that he owns a small proportion in many quarters. Therefore, his potential chances of owning minerals that will eventually yield production are greater than the chances of a random buyer or farmer. The average total income per acre per year to royalty owners from oil and gas development has been \$1.30 per acre. (This does not include income from the sale of mineral rights). If we use a capitalization rate of 5 percent then the mineral rights in the county are worth, on an average, \$26.00 per acre to speculators.

The average size of the subsurface right sales in the county by fee owners has been 24.7 acres.

Table IX also shows the same calculations for each area as well as for the county. In the Western Area there have been 33,733 acres of subsurface rights sold or 23.7 percent. The total income from the sales in this area has been \$1,411,001 or \$41.83 per acre. The average size of the subsurface sales in this area has been 34.9 acres.

In the Central Area there have been 36,911 acres of subsurface rights sold or 22.9 percent. The total income from the sales in this area has been \$1,912,054 or \$51.80 per acre. The average size of the subsurface sales in this area has been 20.0 acres.

In the Eastern Area there have been \$14,973 acres of subsurface rights sold or 10.5 percent. The total income from the sales in this area has been \$2,144,639 or \$143.23 per acre. The average size of the subsurface sales in this area has been 24.4 acres.

There is an inverse relationship between the percentage of subsurface rights sold and the average price per acre for subsurface rights.

Since a mineral deed generally conveys a title to the subsurface for all time to come, it reduces the potential income from oil and gas development to

the landowner. As was shown in Table IX, 19.2 percent of the subsurface rights of the county has been sold; therefore, only 80.8 percent of the royalty income from the development of oil and gas which would go to land-<sup>2</sup> owners will now go to them. In other words, they only get 80.8 percent of 1/8 of the oil sales and 80.8 percent of the income from lease rent and<sup>3</sup> bonuses and the speculators get 19.2 percent.

One who owns subsurface rights as such becomes a co-tenant in the fee and has no right beyond the portion of the mineral rights conveyed. For purposes of the study this individual is known as a non-fee mineral owner.

The average size of the sale of mineral rights in the county by non-fee mineral owners has been much smaller than the sale by the fee owners. The average size of subsurface sale by fee owners in the county (Table IX) has been 24.7 acres. While the average size of subsurface sales by non-fee mineral owners in the county has been 9.8 acres.

The percentage of mineral rights held by the surface fee owner at present by areas and for the county are shown as follows: Western Area, 76.3 percent; Central Area, 77.1 percent; Eastern Area, 89.5 percent; and County, 80.8 percent.

In the Eastern Area, where oil and gas development has been most extensive, the surface fee owner at present holds a higher percentage of the

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<sup>2</sup> For the purposes of this study a landowner is one who owns both surface and subsurface rights.

<sup>3</sup> For the purposes of this study a speculator is one who owns subsurface rights. The speculator may also be a landowner. For example, he may own 160 acres of both surface and subsurface rights on a farm and thus be a landowner. In addition, he may own 80 acres of subsurface rights somewhere in the county and in this respect be a speculator. It is recognized that some sales of mineral rights are non-participating, that is, the buyer does not receive any of the income from leasing and bonuses.

mineral rights than in any other area of the county. The reason that more of the mineral rights are held by the surface fee owner in the Eastern Area than any other area is because when oil development is extensive the landowner hesitates to risk the sale of any of his royalty rights for fear that he will have to divide his income from oil production with someone else. However, it is probable that a good portion of the mineral rights has been retained in the Eastern Area because those fields were developed and fairly well defined before the practice of selling mineral rights became common. Moreover, it seems likely that opportunities have been few to sell any royalty rights because after the fields were delineated the market for royalty outside the fields has not been strong.

The possibility of buying a farm with all of the mineral rights is greater than in the Eastern Area than in any other area.

Figure XV shows the percentage of mineral rights held by the surface fee owner at present on the 250 quarters used in the study.

Table XI shows the percentage of the quarters by areas and for the county that have 100 percent, 50 percent or more, less than 50 percent and none of the mineral rights held by the present fee owner.

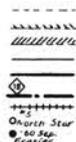
Table XI. Percentage of Mineral Rights Held By Surface Fee Owner  
By Areas and Payne County, 1946

Area	Percentage Holdings All Minerals	Percentage Holding More Than Half	Percentage Holding Less Than Half	Percentage Holding None
	(Percent)	(Percent) <sup>*</sup>	(Percent)	(Percent)
Western	45.4	24.7	18.2	11.7
Central	38.9	31.6	13.7	15.8
Eastern	61.6	20.5	12.8	5.1
County	48.0	26.0	14.8	11.2

# ROAD MAP OF PAYNE COUNTY, OKLA.

## LEGEND:

- SECTION LINE
- TOWNSHIP BOUNDARY
- COMMISSIONER'S DISTRICT BOUNDARY
- COUNTY ROAD
- COUNTY ROAD -
- STATE HIGHWAY
- RAILROAD
- SCHOOL HOUSE
- SEPERATE SCHOOL



SCALE 1 INCH = 2 MILES

MAP BY - PAUL FARRINGTON  
COUNTY ENGINEER

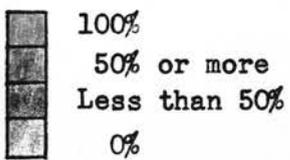
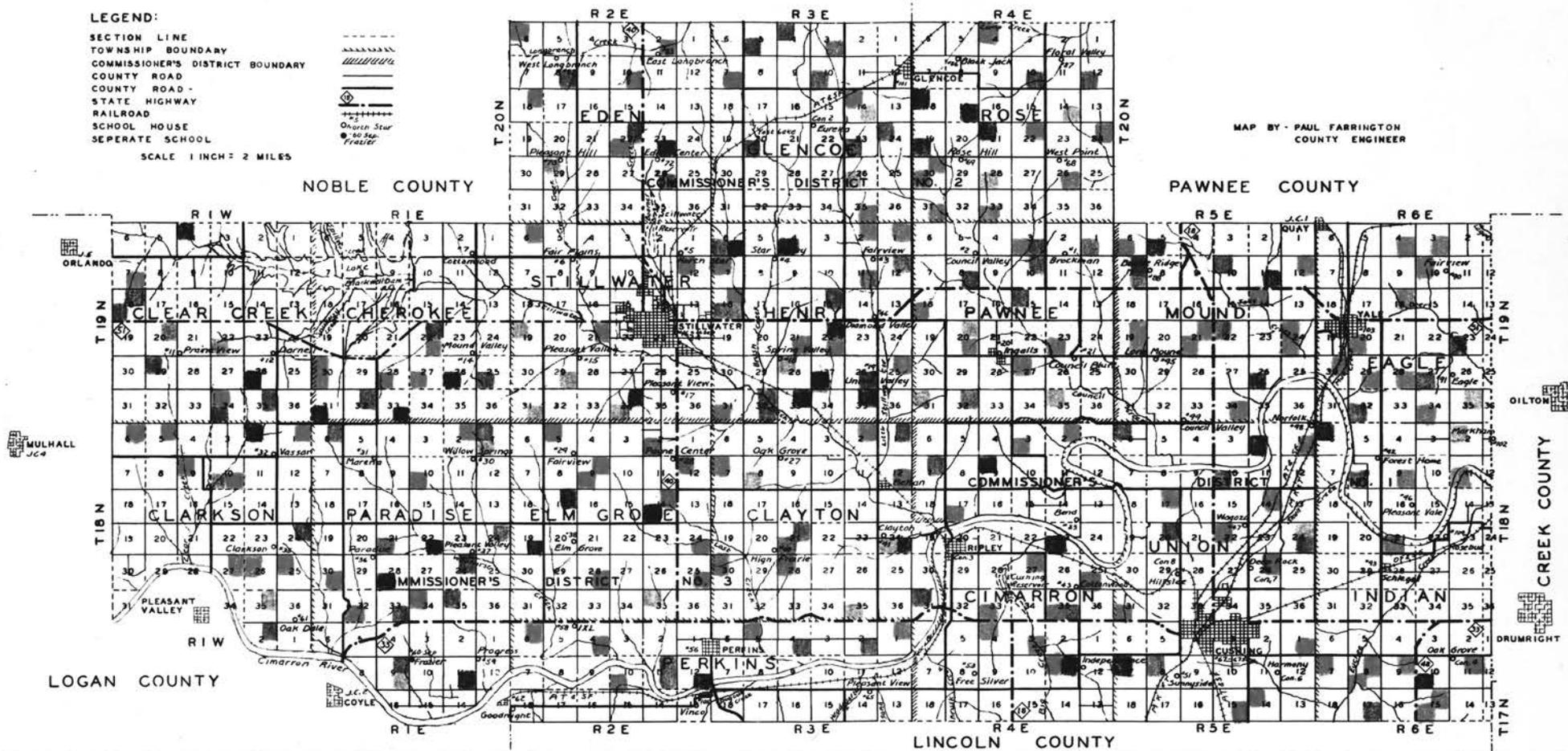


Figure XV. Percentage of Mineral Rights Held By Surface Fee Owner at Present

## Income To Royalty Owners From Oil Sales

4

Figure XVI shows the income to royalty owners from oil sales by years from 1919 to 1946. The highest income ever received in any one year from oil sales was in 1926 when the royalty owners in the county received \$1,201,032. The lowest income ever received by royalty owners from oil sales was in 1933 when they received \$112,424.

From June 1918 to December 1946, inclusive, the total income to the royalty owners, in the county, from the sale of oil has been \$14,430,494,<sup>5</sup> or an average monthly income to the royalty owners, in the county, of \$42,194. The average yearly income to the royalty owners in Payne County from the sale of oil since June 1918 has been \$506,328. The average income to the county per acre per year from oil sales has been \$1.14.

Table XII shows that out of the 2,788 quarter sections in the county, 142 have producing wells on them. Therefore, only 5.1 percent of the land in the county has received income from oil sales.

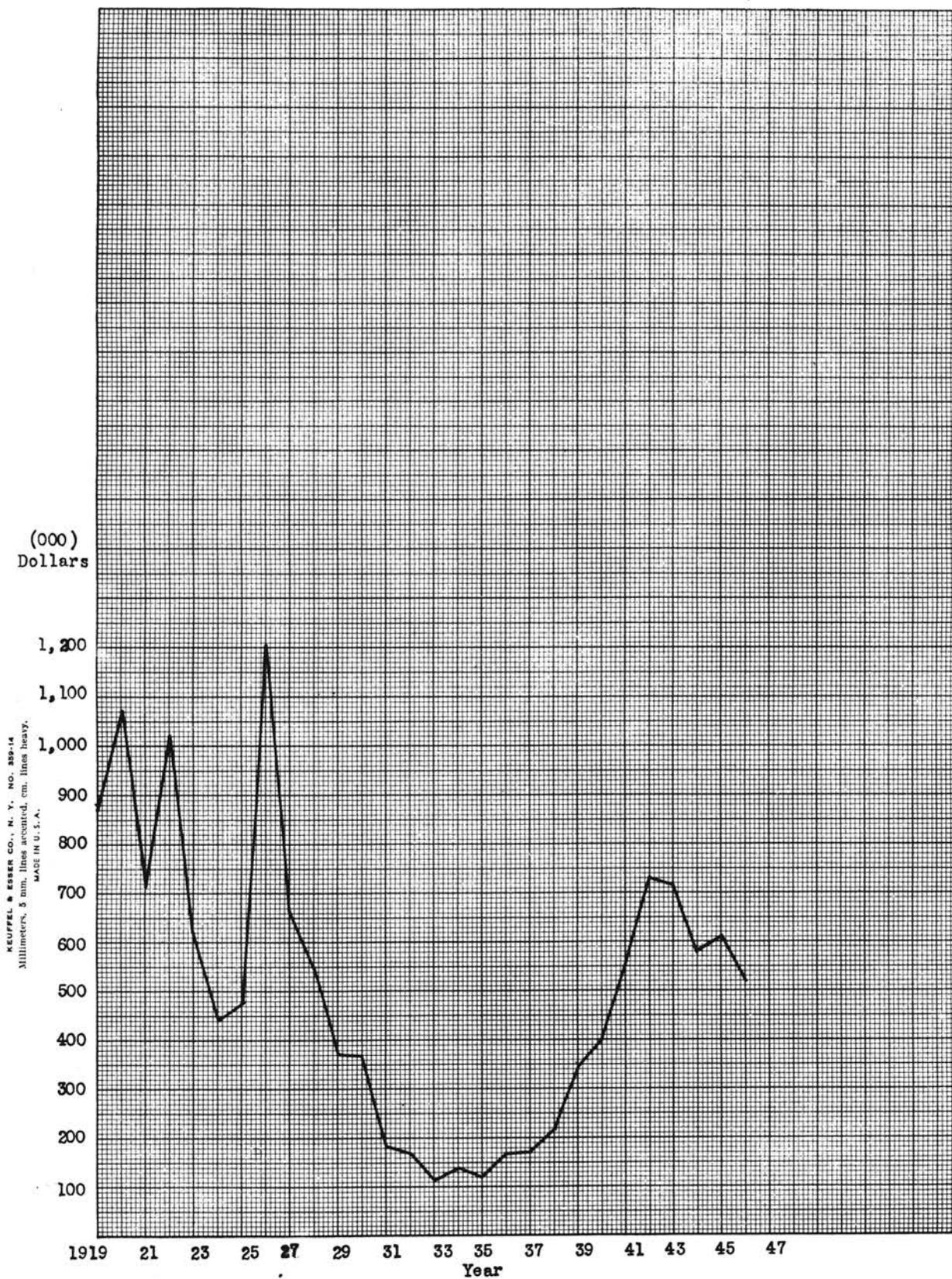
Table XII. Number and Percentage of Quarters With Producing Wells on Them By Areas and Payne County

Area	: Number of : Quarters : In Area	: Number of Quarters : With Producing : Wells on Them	: Percentage of Quarters : With Producing Wells : on Them
	(Number)	(Number)	(Percent)
Western	889	27	3.0
Central	1,008	25	2.5
Eastern	891	90	10.1
County	2,788	142	5.1

<sup>4</sup> Royalty owners are both landowners and speculators.

<sup>5</sup> Figures are not available for the income from the first four years, 1914, 1915, 1916, 1917, of oil sales and six months of 1918.

Figure XVI. Income to Royalty From Oil Sales (1919-1946)



### Summary

Since 1915, 85,617 acres of subsurface rights have been sold in the county for \$5,467,694 or \$63.86 per acre.

In selling the 85,617 acres of subsurface rights there were 3,471 transfers, or an average of 24.7 acres were sold with each mineral deed (Table IX).

The average size of subsurface sales by non-fee mineral owners is 9.8 acres or 14.9 acres smaller than the average size of sales by fee owners.

The highest percentage of subsurface rights sold in any one year in the county was in 1938 when 2.05 percent of the mineral rights in the county was sold (Figure XIV).

The Eastern Area, where oil and gas development has been the most extensive, received the highest average price per acre for subsurface rights and in this area a smaller percentage of the subsurface rights were sold than in either of the other two areas of the county (Table IX).

The total income to royalty owners from oil production from June, 1918, to December, 1946, inclusive, has been \$14,430,494. The highest royalty income ever received in any one year was in 1926 when they received \$1,201,032. The lowest income they ever received in any one year was in 1933 when they received \$112,424. The average yearly income to royalty owners in Payne County from the sale of oil has been \$506,328.

## CHAPTER V. SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

### Summary

The percentage of fee sales was highest in Payne County from 1890 to 1911. After the difficult years of the settlement of the county the percentage of fee sales dropped off and they have never reached the high level of the first twenty years. When the percentage of land sales was high, the average price per acre for land was low.

The average price of land in Payne County, for the 56-year period, 1890-1946, has been \$23.84 per acre.

The total income to the county from lease rent, for the 43-year period, 1904-1946, has been \$7,434,567 or an average yearly income of \$172,897 to the county from lease rent. The average income from lease rent in the county, for the 43-year period, has been \$16.77 per acre.

The total bonus income to the county, for the 35-year period, 1912-1946, has been \$3,053,617<sup>1</sup> or an average yearly income of \$87,246 from bonuses. The average bonus income to the county, for the 35-year period, has been \$6.42 per acre.

The total lease rent and bonus income to the county, for the 43-year period, 1904-1946, has been \$10,488,184 or an average yearly income of \$243,911 to the county from lease rent and bonuses. The average income from lease rent and bonuses in the county, for the 43-year period, has been \$23.51 per acre.

The average income from lease rent and bonuses (\$23.51 per acre) is only \$0.33 less than the average price of land (\$23.84 per acre) in Payne County.

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<sup>1</sup> This total includes only those bonuses mentioned in the lease contracts. After 1926 very few lease contracts make reference to a bonus.

The total income to the county from the sale of subsurface rights has been \$5,467,694. It was found that mineral rights in Payne County are worth \$11.00 per acre for the income from lease rent and bonuses, yet the average price paid for mineral rights has been \$63.86 per acre. A possible reason for this difference is that when mineral rights are sold they are frequently located in an area of "hot play" and therefore sell for high prices.

The total income to the county from oil production royalty has been \$14,430,494. The first four and one-half years of oil production in the county are not included in this total because the figures for those years are not available.

Table XIII shows that the total income to the royalty owners of the county from lease rent, bonuses, mineral rights and oil sales has been \$30,380,333. The average total yearly income to the royalty owners of the county from oil and gas development has been \$706,519. The average total income to the county, for the 43-year period, has been \$68.11 per acre.

The income to royalty owners in the county from lease rent, bonuses, mineral rights and oil by years is shown in Table XIII.

Table XIV shows the total income, from oil and gas development in Payne County, to landowners, speculators, owner operators, and non-operator owners. The income per acre per year is also shown for the landowners.

The total income to landowners in Payne County from oil and gas development, for the 43-year period, 1904-1946, has been \$28,422,035.

The average total income per acre per year to landowners from oil and gas development in Payne County has been \$1.70 per acre. This includes income from lease rent, bonuses, sale of mineral rights, and oil sales.

Table XIII. Total Income To Royalty Owners of Payne County From Oil and Gas Development  
By Years, 1904-1946

Year	Income To Royalty Owners From				Total Income To Royalty Owners	Year	Income To Royalty Owners From				Total Income To Royalty Owners
	Lease Rent	Bonuses	Mineral Rights	Oil			Lease Rent	Bonuses	Mineral Rights	Oil	
	(Dollars)						(Dollars)				
1904	64,623	-	-	-	64,623	1928	283,389	46,420	58,322	540,159	928,290
1905	71,427	-	-	-	71,427	1929	277,953	56,684	146,792	579,414	860,843
1906	66,353	-	-	-	66,353	1930	264,936	12,407	65,366	369,918	712,627
1907	63,425	-	-	-	63,425	1931	204,304	-	412,482	186,236	803,022
1908	64,564	-	-	-	64,564	1932	175,241	927	6,007	169,969	352,144
1909	38,754	-	-	-	38,754	1933	170,225	5,877	1,256,605	112,424	1,545,131
1910	37,834	-	-	-	37,834	1934	178,430	5,871	113,117	139,553	436,971
1911	39,663	-	-	-	39,663	1935	169,661	-	180,095	121,275	471,031
1912	105,164	24,318	-	-	129,482	1936	163,718	6,777	168,486	173,387	512,368
1913	114,492	18,227	-	-	132,719	1937	165,349	11,029	218,638	169,884	564,900
1914	124,013	94,555	-	?	218,568	1938	158,451	10,709	724,188	218,610	1,111,958
1915	161,368	155,787	9,016	?	326,171	1939	142,547	3,219	151,356	342,414	639,536
1916	266,580	438,580	24,794	?	729,954	1940	128,989	18,779	227,090	395,717	770,575
1917	251,001	286,991	-	?	537,992	1941	131,922	-	99,739	558,022	789,683
1918	249,536	116,518	-	307,127	673,181	1942	119,374	2,643	231,598	731,299	1,084,914
1919	251,462	184,034	18,776	870,189	1,324,461	1943	143,923	16,266	219,314	720,943	1,100,446
1920	245,881	180,193	8,565	1,068,933	1,503,572	1944	140,485	2,682	83,060	583,467	809,694
1921	213,953	303,255	2,817	714,549	1,234,574	1945	147,438	4,045	36,064	605,123	792,670
1922	256,900	446,964	120,702	1,016,103	1,840,669	1946	138,112	-	157,780	529,122	825,014
1923	275,754	95,734	28,175	617,539	1,017,202						
1924	257,940	87,675	28,175	448,845	822,635	Total	7,434,567	3,053,617	5,461,655	14,430,494	30,380,333
1925	282,507	84,102	54,096	475,955	896,660						
1926	320,495	228,379	376,024	1,201,032	2,125,930						
1927	306,431	103,970	234,416	663,286	1,308,103						

Table XIV. Total Income to Landowners (Both Owner-Operators and Non-Operator Owners) and Speculators From Oil and Gas Development In Payne County By Years and Income Per Acre Per Year to Landowners, 1904-1946

Year	Income Per Year To				Income Per Acre Per Year To Landowners	Year	Income Per Year To				Income Per Acre Per Year To Landowners
	Landowners	Speculators	Owner- Operators	Non- Operators			Landowners	Speculators	Owner- Operators	Non- Operators	
	(Dollars)						(Dollars)				
1904	64,623	-	40,196	24,427	0.14	1928	887,074	41,216	300,718	586,356	2.29
1905	71,427	-	43,570	27,857	0.16	1929	819,695	41,148	268,860	550,835	2.10
1906	66,353	-	39,679	26,674	0.15	1930	676,283	36,344	214,382	461,901	1.72
1907	63,425	-	37,167	26,258	0.14	1931	754,760	48,262	241,523	513,237	1.90
1908	64,564	-	37,060	27,504	0.15	1932	330,945	21,199	106,895	224,050	0.82
1909	38,754	-	21,780	16,974	0.09	1933	1,446,088	99,043	471,425	974,663	3.56
1910	37,834	-	20,809	17,025	0.09	1934	405,509	31,462	133,412	272,097	0.99
1911	39,663	-	21,220	18,443	0.09	1935	434,762	36,269	144,341	290,421	1.05
1912	129,482	-	67,719	61,763	0.31	1936	464,257	48,111	155,062	309,195	1.14
1913	132,719	-	67,819	64,900	0.32	1937	507,845	57,055	170,636	337,209	1.27
1914	218,568	-	109,065	109,503	0.54	1938	976,855	135,103	330,177	646,678	2.49
1915	325,519	652	158,528	166,991	0.81	1939	556,013	83,523	189,044	366,969	1.45
1916	728,275	1,679	345,931	382,344	1.84	1940	659,997	110,578	226,379	433,618	1.75
1917	536,701	1,291	248,493	288,208	1.37	1941	670,994	118,689	248,939	422,055	1.77
1918	671,565	1,616	302,876	368,689	1.73	1942	910,568	174,346	363,317	547,251	2.39
1919	1,320,885	3,576	579,869	741,016	3.45	1943	907,318	193,128	387,425	519,893	2.37
1920	1,498,009	5,563	639,650	858,359	3.96	1944	663,787	145,907	302,023	361,764	1.72
1921	1,230,006	4,568	510,452	719,554	3.25	1945	647,294	145,376	311,348	335,946	1.67
1922	1,813,427	27,242	732,625	1,080,802	4.78	1946	665,869	159,145	338,927	326,942	1.71
1923	1,000,622	16,580	393,244	607,378	2.64						
1924	807,910	14,725	308,622	499,288	2.13						
1925	876,306	20,354	325,110	551,196	2.30	Total	28,422,035	1,958,298	11,131,623	17,290,412	
1926	2,048,546	77,384	737,477	1,311,069	5.35						
1927	1,250,939	57,164	437,829	813,110	3.24						

### Conclusions

1. The income arising from oil and gas development in Payne County, Oklahoma, is an important supplemental income to the agricultural income of landowners.
2. The presence of oil and gas, actual or potential, constitutes an important source of land income.
3. The practice of leasing land and selling mineral rights is widespread.
4. In relating the income from mineral rights to the average price of land in Payne County, Oklahoma, for the 56-year period, 1890-1946, the question might be raised as to whether the value of mineral rights has been fully reflected in the price of land.

### Recommendations

Since the average total income per acre per year to royalty owners in Payne County from lease rent, bonuses, and production royalty has been \$1.30 per acre, it would appear advisable for the landowners to maintain possession of their mineral rights until they can get an average of \$26.00 per acre for them.

When buying land in Payne County, a farmer apparently can afford to pay no more than an average of \$11.00 per acre for the mineral rights because his holding is concentrated and the probability of income from mineral rights is thereby reduced.

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