UNITED STATES DEPARTMENT OF AGRICULTURE

BULLETIN No. 874

Contribution from the Office of Farm Management and Farm Economics
H. C. TAYLOR, Chief
In Cooperation with the Iowa Agricultural Experiment Station
C. F. CURTISS, Director

Washington, D. C. PROFESSIONAL PAPER August 23, 1920

FARM LAND VALUES IN IOWA

By

L. C. GRAY, Agricultural Economist in Charge
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and

O. G. LLOYD, Assistant Chief in Farm Management
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CONTENTS

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CONTENTS.

PURPOSE, SCOPE, AND METHOD OF INVESTIGATION.

The investigation upon which this bulletin is based was undertaken to determine the extent of increase in prices of Iowa farm lands, with special reference to the year 1919, the causes of the unusual activity in the buying and selling of lands in that year, and the probable effects of this activity upon the farming industry in the State of Iowa.

It was considered of special importance to ascertain what changes have occurred in the relationship between farm land values, farm earnings, and the shares received by landlords and by tenants, and to determine the probable effect of these changes on the opportunity of farmers to acquire the land they cultivate. It was also believed that the investigation would be of some value as a study of the phenomena of land speculation, an important topic in the general subject of land economics.

Unusual activity in land transfers and rapid increases in the prices of farm land have occurred over wide areas throughout the United States during the past year. If the resources for investigation had been ampler it would have been desirable to extend this study in other parts of the country. However, it seemed necessary to limit the area of investigation to a region sufficiently small to permit a reasonably intensive study. Since the activity in land transfers seemed to be central in the State of Iowa, the investigation was confined to a territory comprising about 60 counties in that State. (See fig. 1.)

Details concerning actual sales were obtained in 60 counties. It was at first planned to obtain initial data from the county records, but it was necessary to revise this plan because it was found that a large number of the sales made during the recent period of activitiy were not recorded. Consequently it was necessary to obtain data from real estate men, bankers, lawyers, and retired farmers who had participated in the drawing up of sales contracts.

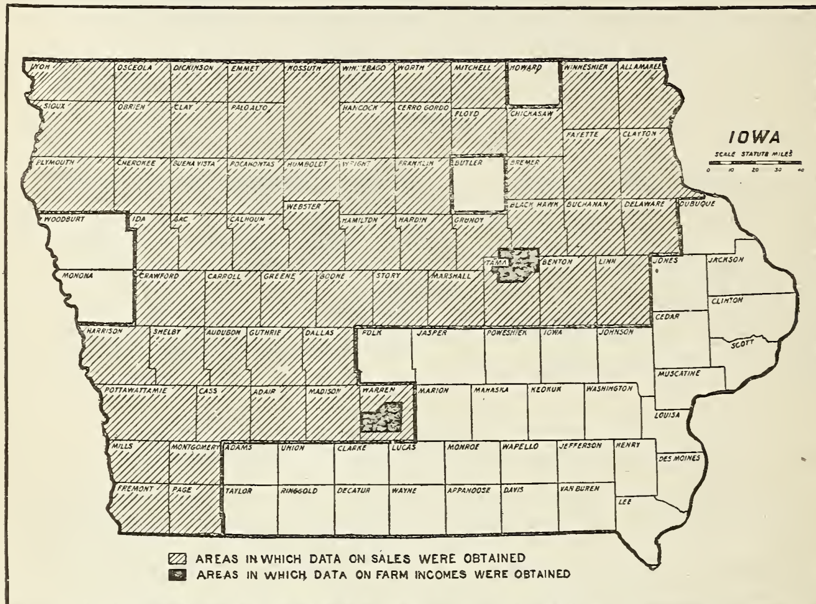

FIG. 1.—Map of Iowa showing region in which this investigation was conducted.

The investigators obtained certain general information concerning the subjects of investigation by inquiry from well-informed persons in each county visited. Data on net rents paid for farms for the year 1918 were obtained in 49 of the counties visited.

The Iowa Experiment Station contributed to the investigation data on farm earnings and the distribution of farm earnings, obtained from regular farm management surveys of 965 farms in adjacent townships of Blackhawk, Tama, and Grundy Counties for the year 1913, and of 832 farms, located in Warren County, for the year 1915.

To obtain comparative data concerning farm earnings for the year 1918 a farm management survey was made covering about 400 farms in the same areas. A large number of these farms were the same for which data had been obtained in previous surveys.[1]

TREND OF LAND VALUES IN THE COUNTRY AS A WHOLE.

Before beginning the study of farm land values in Iowa it is desirable to determine the extent of the area in the United States characterized by a marked advance in farm land values such as has occurred in that State.

In Table I, which comprises unpublished data supplied by the Bureau of Crop Estimates, are shown the estimated average values per acre of farm land and improvements for all the States, together with the estimated increase per acre and per cent of increase from March 1, 1919, to March 1 1920

TABLE I.—*Average value of farm land and improvements, by States, 1915, 1919, 1920, and increase per acre and per cent of increase, 1919 to 1920. (Estimates obtained by the Bureau of Crop Estimates.)*

State.	Average value per acre.			Increase 1919 o 1920.		State.	Average value per acre.			Increase 1919 to 1920.	
	1915	1919	1920	Per acre.	Per cent.		1915	1919	1920	Per acre.	Per cent.
Maine	$36.00	$47.00	$52.00	$5.00	10.6	N. Dakota	$34.00	$43.00	$50.00	$7.00	16.2
N. Hampshire	37.00	45.00	52.00	7.00	15.5	S. Dakota	58.00	80.00	110.00	30.00	37.5
Vermont	39.00	47.00	53.00	6.00	12.7	Nebraska	71.00	105.00	135.00	30.00	28.5
Massachusetts	72.00	80.00	100.00	20.00	25.0	Kansas	53.00	69.00	80.00	11.00	15.9
Rhode Island	95.09	90.00	95.00	5.00	5.5	Kentucky	38.00	81.00	85.00	4.00	4.9
Connecticut	63.00	67.00	85.00	18.00	26.8	Tennessee	38.00	65.00	77·00	12.00	18.4
New York	65.00	75.00	88.00	13.00	17.3	Alabama	20.00	29.00	38.00	9.00	31.0
New Jersey	90.00	113.00	125.00	12.00	10.6	Mississippi	20.00	32.00	45.00	13.00	40.6
Pennsylvania	64.00	79.00	92.00	13.00	16.4	Louisiana	30.00	43.00	65.00	22.00	51.1
Delaware	63.00	78.00	94.00	16.00	20.5	Texas	40.00	55.00	69.00	14.00	25.4
Maryland	56.00	69.00	91.00	22.00	31.8	Oklahoma	29.00	43.50	55.00	11.50	26.4
Virginia	34.00	60.00	68.00	8.00	13.3	Arkansas	23.00	42.00	55.00	13.00	30.9
W. Virginia	34.00	51.00	58.00	7.00	13.7	Montana	35.00	39.00	42.00	3.00	7.6
N. Carolina	33.00	47.00	75.00	28.00	59.5	Wyoming	35.00	50.00	60.00	10.00	20.0
S. Carolina	30.00	53.00	75.00	22.00	41.5	Colorado	55.00	66.00	75.00	9.00	13.6
Georgia	24.00	45.20	57.00	11.80	26.1	New Mexico	52.00	62.00	62.00	0.00	0
Florida	40.00	60.00	72.00	12.00	20.0	Arizona	107.00	130.00	185.00	55.00	42.3
Ohio	86.00	109.00	130.00	21.00	19.2	Utah	85.00	130.00	150.00	20.00	15.3
Indiana	90.00	120.00	145.00	25.00	20.8	Nevada	85.00	90.00	90.00	0.00	0
Illinois	126.00	164.00	204.00	40.00	24.3	Idaho	66.00	97.00	125·00	28.00	28.8
Michigan	61.00	80.00	87.00	7.00	8.7	Washington	99.00	115.00	150.00	35.00	30.4
Wisconsin	80.00	109.00	130.00	21.00	19.2	Oregon	75.00	95.00	120.00	25.00	26.3
Minnesota	65.00	94.00	124.00	30.00	31.9	California	175.00	218.00	190.00	28.00	......
Iowa	134.00	192.00	255.00	63.00	32.8						
Missouri	58.00	82.00	104.00	22.00	26.8	United States	59.91	81.89	99.24	17.35	21.1

[1] Acknowledgment is due the farmers and other business men who made this study possible and to the members of the staff of Iowa State College and of the Office of Farm Management, U. S. Department of Agriculture, who aided in the gathering and tabulation of the data used.

Survey data for 1913 and 1915 were collected by H. B. Munger, J. Whitson, Wm. Brand, Russell Engberg, Fred C. Fenton, R. J. Leth, E. H. Lott, W. T. Maaksted, M. B. Posten, Geo. X. Reed, Harold W. Reid, Louis Sawyer, Allan M. Smith, and L. B. Snyder, of the Farm Management Department, Ames, Iowa. Prof. H. B. Munger supervised the collection and tabulation of the results.

The data for 1918 and 1919 were collected by Earl D. Strait, C. O. Brannen, H. H. Clark, J. S. Donald, R. D. Jennings, Bruce McKinley, J. C. Rundles, C. F. Sarle, F. H. Shelledy, and C. C. Taylor, of the Office of Farm Management, United States Department of Agriculture. Messrs. Howard A. Turner and J. C. Rundles supervised the tabulation of the results.

It is clear that the advance of land values in Iowa is only part of a general rapid upward trend of land values, the average increase for all the States amounting to $17.35 per acre, or 21.1 per cent. In only one State, California, have land values declined during the year. Even in New England the value of farm lands increased over $10 an acre, or 16.2 per cent, the increase being most marked in Massachusetts and Connecticut. In the other Atlantic States the increase in value per acre was most notable in the Carolinas, reflecting the influence of high prices for cotton, "bright" tobacco, and peanuts. The increases for Virginia and West Virginia were comparatively small. The increases in values in the other Atlantic States are between the two extremes. The largest average increase per acre in the United States, but not the largest percentage of increase, occurred in Iowa, followed by Arizona and Illinois. Throughout the States lying largely in the Corn Belt there were increases per acre ranging from $21 in Ohio to $63 in Iowa, with the exception of Kansas, where the increase was only $11.

In States characterized by a fair degree of uniformity in agricultural resources, as in many of the States in the Corn Belt, averages for the State as a whole are frequently not indicative of the movement of values in certain sections. Thus, the increase for Kentucky averages only $4 an acre, yet in the Blue Grass Region there has been a very marked increase in farm land values and extraordinary activity in the buying and selling of land. There has been a considerable increase in the value of farm lands in Michigan, but the average for the State is low because of the influence of the large areas of cut-over lands in parts of the State. In the South the percentages of increase are large, although they do not represent large increases per acre.

INCREASE IN THE AVERAGE VALUE PER ACRE OF IOWA FARM LAND SINCE 1850.

TABLE II.—*Increase in the average value of improved farm land in Iowa from 1850 to March 1, 1920.*

Year.	Value per acre.	Increase per acre.	Year.	Value per acre.	Increase per acre.
1850	$6.09		1915	$134.00	$38.00
1860	11.91	$5.82	1916	153.00	19.00
1870	20.21	8.30	1917	156.00	3.00
1880	22.92	2.71	1918	174.00	18.00
1890	28.13	5.21	1919	192.00	18.00
1900	43.31	15.18	1920	255.00	63.00
1910	96.00	52.69			

The statistics for the years 1850 to 1910, inclusive, are from the Federal census. The statistics for 1915 to 1920, inclusive, are from unpublished data furnished by the Bureau of Crop Estimates, United States Department of Agriculture.

During the last decade the percentage increase, as well as the dollars per acre increase, was larger than that for any other decade in the history of the State. During the past year the increase in dollars per acre was greater than during the 50-year period from 1850 to 1900. From 1915 to 1920, the smallest increase in the price of land was in the year before the United States entered the World War, and the largest increase was the year following the signing of the armistice.

AVERAGE PRICES FOR 60 COUNTIES, 1918 TO 1919, WITH SPECIAL REFERENCE TO THE PERIOD OF THE "BOOM." [1]

TABLE III.—*Average price of improved farm land per acre and percentages of increase in 60 Iowa counties, 1918 to 1919.*

	Number of farms.	Average price per acre.	Increase over estimate of March, 1918. Per acre.	Increase over estimate of March, 1918. Per cent.
Estimated average value per acre March, 1918, of 1370 farms subsequently sold in 1919	1,370	$194	....	....
Sales of farms, January to March inclusive, 1919	127	237	$43	22.2
Sales of farms:				
April, 1919	120	240	46	23.7
May, 1919	244	238	44	22.7
June, 1919	382	247	53	27.3
July, 1919	367	255	61	31.5
August 1919	158	259	65	33.5
September, 1919	16	276	82	42.3
All sales:				
January to September, 1919	1,414	248	54	27.8
June to September, 1919	923	253	59	30.4

In order to determine the extent of change in land values in the region studied it was considered necessary to have an estimate of the value of farm lands on March 1, 1918, a date about one year before the general public became aware of the increased activity in sales of land and the marked increase of land values.

The result of 1,370 estimates of the values of individual farms in the 60 counties indicates an average value of $194 per acre on March 1, 1918. This figure is $20 higher than the estimate by the Bureau of Crop Estimates for the State as a whole. Previous statistics for 1915 indicated that the average value of farm land in the 60 counties studied is about $11 per acre higher than the average for the entire State. The remaining difference of $9 between the two estimates is attributable to the fact that the farms which changed hands most frequently in the region studied during the period of the recent activity were above the general average in quality for the region as a whole.[2]

[1] Throughout this bulletin the word "boom" is employed as a convenient expression to designate a period of unusual activity in the buying and selling of land accompanied by a considerable amount of speculation.

[2] A number of checks have been available, as follows: (*a*) The unpublished figures of the Bureau of Crop Estimates, quoted above; (*b*) results of investigations in 55 counties of the executive board of the State of Iowa for the period from January 1, 1918, to May 1, 1919, based on sales; (*c*) estimates prepared by Mr. T. A. Polleys, tax commissioner of the Chicago & Northwestern Railway, based on executors', administrators', and referees' sales, and inheritance tax appraisals in 19 counties; (*d*) results of a questionnaire sent by Senator H. S. Van Alstine to bankers in all the counties of the State; (*e*) estimates by 222 bankers and real estate men obtained by the field agents of the Office of Farm Management; (*f*) estimates on 238 farms for which data on net rentals were obtained by field investigators of the Office of Farm Management; and (*g*) estimates obtained in farm management surveys of over 400 farms in selected districts.

From a number of sources of information it has also been possible to check the accuracy of the increase shown by the table to have occurred from March 1, 1918, to August, 1919. According to this information it appears that from March, 1918, to March, 1919, the time the increased activity in land sales began to be manifested, there was an increase of not less than \$15 per acre and possibly as much as \$20.

Table III shows an average increase from the first of March, 1918, to August, 1919, of \$65 per acre. This may be compared with the increase of \$81 per acre from March, 1918, to March, 1920, according to the statistics of the Bureau of Crop Estimates. The latter figure reflects the full extent of the "boom," showing that there was an increase between August, 1919, and the cessation of unusual activity in sales of farms.

Assuming that the increase from March, 1918, to the beginning of the "boom" was \$15 per acre, there remains an average increase of \$50 to be attributed to the advance during the "boom" up to about the middle of August. There was probably a further increase before the cessation of activity in buying and selling land about the middle of September amounting to about \$16 an acre. Consequently it appears that an average increase of \$66 an acre may be attributed to the farm land "boom" of 1919.

It will be noted that the increase shown by the data on sales in Table III for the period of the "boom" for March to August inclusive, is only \$33 as compared with a probable average increase, as stated above, of approximately \$50. Two facts probably account for this. In the first place, the "boom" was really a popular awakening to an increase in values that had been going on steadily in the pre-"boom" period. When the awakening came there was a sudden jump in values manifested in the early months of the year. A second explanation is the tendency to sell the best grade of farms first. A supplementary investigation was made for the purpose of verifying this conclusion. A typical district was visited and additional sales data were obtained for 194 farms. These farms were classified into "A" grade and "B" grade farms, the first group having an average price of \$340 an acre and the second group, \$261. It was found that 30 per cent of the "A" grade farms were sold between January 1 and April 1, 1919, while only 18 per cent of the "B" grade farms were sold during the same period.

PROBABLE INCREASE IN VALUE OF LAND IN ENTIRE STATE, 1915 TO 1920.

On the basis of the figures given in Table II there has been an increase in the average value of Iowa farm land that is little short of astounding. The average value of Iowa farm land increased \$121 an acre from 1915 to 1920. This represents a total increase of \$3,987,-

077,776 for the entire State on the basis of the farm acreage of 1915. Of this enormous increase, $63 an acre occurred from March, 1919, to March, 1920, the period of the boom, an increase for the entire State of $2,075,916,528.

It is true that some of these increases represented additions of buildings, fences, and other similar farm improvements. It seems improbable, however, that a very large proportion of the increase is represented by these factors. Indeed, the value of improvements according to the Census of 1915 was only $479,903,698, as compared with $455,405,671, the value of buildings according to the Census of 1910, an increase of only 5.3 per cent.[1] However, there is one kind of farm improvement, drainage, not included in the above figures, a kind of improvement which probably is responsible for a considerable part of the increase in the value of farm lands. The activity in drainage of farm lands has been especially great in north central Iowa.

So striking an increase in the values of farm lands in a single State could not fail to have profound economic significance. While it is too early to determine all the economic consequences, it is time careful attention were given to the phenomena, and that serious consideration were devoted to the problem of determining what bearing this enormous increase may have upon the welfare and prosperity of the farmer, the progress of the farming industry, and the future land policies of the United States.

RANGE OF PRICES PAID FOR FARM LAND.

While the average price of land, as shown above, was $248 for sales from January to September and $259 for the month of August, it is important to consider the range of prices that result in the above averages. In Table IV is shown the range of prices paid in 1,448 sales of farms from January to September, 1919.

TABLE IV.—*Sales of farm land, classified according to price per acre.*

	Number of sales.		Number of sales.
Under $100 per acre	10	$350 and under $400	83
$100 and under $150	91	$400 and under $450	38
$150 and under $200	301	$450 and under $500	16
$200 and under $250	372	$500 and over	10
$250 and under $300	302		
$300 and under $350	225	Total	1,448

It will be noted that more than 80 per cent of the sales range from $150 to $350 per acre. Less than 5 per cent were $400 an acre or more. Only a few sales were found at $500 an acre or more. Among

[1] The figure in 1910 is for buildings, while in 1915 it is for "improvements." It is probable they represent substantially identical units of comparison.

these there were several sales at $600 or more. The writers have found references to a number of other cases of sales at $600 or more in a large number of clippings from Iowa newspapers. In one case the rate of sale was more than $900 per acre. This, however, involved only 10 acres of land and probably represented residential value. It is also true that a considerable number of other sales at $600 or more were small tracts, probably used as truck farms or for some other intensive purpose. The importance of the comparatively few sales at $400 or more was so exaggerated by newspaper publicity that the general public were led to believe $400 to be the going value of Iowa farm land as a whole.

EXTENT OF ACTIVITY IN BUYING AND SELLING FARMS, 1919.

PERIOD OF THE "BOOM."

Taking the State of Iowa as a whole, the unusual activity in land sales covers the period from the early spring of 1919 until the middle of the month of September. There are some indications that increased activity in land transfers occurred in certain counties in the fall of 1918, especially in Sioux, Plymouth, Cass, and Sac Counties. For this reason investigators were frequently told that the "boom" began in northwestern Iowa and spread from that region as a center. It seems clear, however, that while this tendency for the activity to spread from one county to another was more or less manifest and was intensified in every county by the stories of activity and of rapidly increasing values of other parts of the State, as well as by the movement from county to county of real estate agents, speculators, and buyers seeking to replace lands already sold, the entire movement was more or less spontaneous throughout the State. It was unquestionably due largely to general conditions everywhere favorable to such a tendency. Broadly speaking, the activity probably began a little earlier in some of the counties in the northwestern part of the State and a little later in some of the counties of the northeastern part of the State than in the majority of counties.

PROPORTION OF FARMS SOLD.

From the degree of excitement which prevailed during the spring and summer of 1919, one might have formed the conclusion that nearly all the farms of the State of Iowa were changing hands. In order to determine what proportion of the farms of the State were actually being sold, inquiries were made of real estate men, bankers, and other well-informed persons as to what proportion of the farms of their communities had changed hands during the "boom." The average of 93 estimates from 34 counties is 8.9 per cent[1], or 6,250

[1] A recent statement issued by a large Iowa trust company gives 19,600 as the number of farms sold during the "boom." This is approximately 10 per cent of the farms of the State, but the estimate covers a longer period than that given above.

farms out of a total of 70,053 as reported by the 1915 Census. There seem to be no conclusive data as to what percentage of sales would have occurred under normal conditions. However, some indication may be furnished by figures contained in a survey of Orange Township, Blackhawk County, Iowa, by Mr. George H. Von Tungeln, of the Iowa State College. According to this study, 6,936.66 acres in 48 tracts changed hands during the five-year period from August, 1910, to August, 1915. This represented about one-third of the number of farms with residences and a little less than one-third of the farm acreage of the township, or an average of about 6 per cent a year as compared with the estimate of 8.2 per cent for the period of the "boom." However, the activity in land transfers in the region in which Orange Township is located was greater than normal during the period from 1910 to 1915, inclusive.

EXTENT OF RESELLING DURING THE "BOOM."

It is probable that one travelling through the State of Iowa during the period of the "boom" would have gotten the impression that a large proportion of the farms sold changed hands more than once during the period. In fact, one heard of these cases frequently. The newspapers continually published instances of farms which sold from three to six times. The data concerning farm sales, however, do not indicate that the reselling of farms was practiced as extensively as might be indicated by casual observation. Of 1,024 farms sold between January 1, 1919, and the end of August, 1919, 693, or 67.7 per cent, were sold but once; 261 farms, or 25.5 per cent, were sold twice; 48 farms, or 4.7 per cent, were sold three times; and 22 farms, or 2.1 per cent, were sold four times or more. However, a number of instances came to the writers' attention of farms sold five or six times during the period.

Although the instances of reselling were less numerous than one might have believed from reading the newspapers during the "boom," the process was much more extensive than in normal periods. In short, this reselling was a characteristic land "boom" phenomenon.

PERSONS ENGAGED IN BUYING AND SELLING.

BUYERS AND SELLERS CLASSIFIED BY OCCUPATION.

In order to determine the real character and significance of the recent activity in land sales it is important to know what classes of persons were most active in the buying and the selling of farms. To this end the residence and occupation of each buyer and the occupation of each seller were ascertained. Table V presents a classification of buyers and sellers according to their occupations.

TABLE V.—*Purchasers and sellers of farms, classified by occupations.* [a]

Occupation.	Buyers.		Sellers.	
	Number.	Per cent.[b]	Number.	Per cent.[b]
Farmers	662	65.3	513	56.3
Retired farmers living in country	18	1.8	138	15.2
Retired farmers living in town	47	4.6		
Real estate men	70	6.9	104	11.5
Bankers	61	6.0	30	3.3
Merchants	42	4.1	29	3.2
Commission men, produce dealers, auctioneers, and traveling salesmen	22	2.1	24	2.7
Government employees and other salaried persons	23	2.2	15	1.7
Physicians, dentists, and veterinarians	14	1.3	14	1.5
Capitalists with no other occupation	11	1.1	11	1.2
Mechanics and small shopkeepers	11	1.2	12	1.2
Stock buyers	11	1.2	2	.2
Lawyers	9	.9	9	1.0
Miscellaneous urban occupations	12	1.3	9	1.0
Total known occupations	1,013	100.0	910	100.0
Unknown, joint or mixed occupations	22	....	14	....
Estates sold for settlement	....	....	14	....
Total farms	1,035	....	938	....
Total rural occupations	727	71.8	651	72.3
Total urban occupations	286	28.2	259	27.7

[a] Persons retired are classed according to their former occupations.
[b] The percentages are based on the total of known occupations.

One of the most striking facts indicated by the table is that farmers were apparently more active as buyers than as sellers of farms, constituting 65.3 per cent of the buying class and only 57 per cent of the selling class. On the other hand, retired farmers were very much more active as sellers than as buyers, while the same tendency was true of real estate men. Bankers, merchants, and stock buyers bought more extensively than they sold. Eighty-three per cent of the sales were made by three classes—farmers, retired farmers, and real estate men, while nearly 80 per cent of the purchases were made by these classes.

INTENTIONS OF BUYERS WITH RESPECT TO FARMS BOUGHT.

In order to ascertain to what extent the purchases and sales were of a speculative character, the buyers were asked to indicate their intentions with respect to disposition of the farms bought, and sellers were asked their principal reasons for selling. Table VI summarizes the results of the first inquiry. The various answers are classified in eight groups. Of the total of 988 cases in which the intentions of buyers were indicated it appears that 665, or practically two-thirds, had bought without intention of reselling, while 244, or a little more than one-fourth, bought with the definite intention of reselling. Ninety-nine, or about 10 per cent, bought with the intention of reselling, if possible, but with the expectation of operating or renting the farms in case they did not succeed in selling under favorable conditions. Probably the majority of this last-mentioned group bought for speculative motives and desire to resell rather than to retain the property for permanent investment.

TABLE VI.—*Intentions of buyers with respect to farms bought.*

A. DEFINITE INTENTIONS.		B. INDEFINITE INTENTIONS	
To rent:		Resell or rent	90
To rent	111		
As investment	50	Resell or occupy	2
Operate with renter	1	Operate or resell	5
For a home on retiring	1	Speculation or a home	1
Total	163	Sell one-half and occupy remainder	1
To operate:		Total	9
To occupy	359		
Operate with home farm	13	Not for resale, but uncertain tenure:	
To operate	56	Perhaps to occupy	2
Add to farm	9	To retain	6
Stock with cattle	1	Develop and improve	1
Pasture next year	2	Total	9
Operate with hired help	6		
Operate with sons	1	Uncertain or unknown:	
Settle in county	1	Continue operating farm in Minnesota	1
Continue operating as owner	1	Buy more land	1
Total	449	Uncertain	3
For relatives:		Unknown	20
Operate by relatives	22	Total	25
Bought for children	20		
Total	42	Total, all cases	1,011
To resell:		Known intentions	986
Resell	27		
Speculate	194		
Has been resold	3		
Total	224		

TABLE VII.—*Classification of motives for sale.*

To realize speculative profit:	
For profit	47
Had held as investment	117
Good sale	72
For speculation	40
Total (30 per cent)	276
Because of retirement from farming:	
Already retired	71
To retire	161
To move to town	9
Health failed	3
Couldn't give farm attention	1
Get rid of responsibility	2
Engage in other business	2
Total (27.1 per cent)	249
To buy other farm property:	
To buy again	191
Has already bought	4
Total (21.2 per cent)	195
To settle or divide estate of partnership:	
Settle or divide estate	46
Dissolve partnership	4
Divide interest	30
Settle business	1
Total (8.8 per cent)	81
Residence in another district:	
Lives in another State	12
Move away, change location, or transfer residence	5
Total (1.9 per cent)	17
Reduce holdings of farm land:	
Reduce holdings	8
Buy son smaller place	1
Reduce holdings of farm land—Continued.	
Continue on another farm	20
Has other farms	1
Sold part, continue on rest	3
Continue on home farm	5
Continue on own farm	4
Total (4.6 per cent)	42
Financial difficulties:	
Forced sale	1
For interest	2
Pay debts	5
Obtain money	2
Clear up business	2
Total (1.3 per cent)	12
Unsatisfactory character or location of farm:	
Unimproved and undesirable for renting	1
Get land near together	1
Total	2
Change type of investment:	
Go out of land business	6
Retire from banking	1
Use money otherwise	14
Prefer interest to rent	8
Change investment	3
To rent	10
Total (4.2 per cent)	42
Alternative motives:	
Buy again or retire	2
Rent or buy again	1
Total	3
Vague, undecided, or unknown	45
Total cases	964
Total known	919

Table VII presents a classification of the alleged motives of sellers in making sales of their farms. It is undoubtedly true that motives were in many cases mixed. Even when the motive given was the desire to retire from farming, to reduce the size of holdings, or some other reason, it is probably true that the making of the sale at the particular time was due to the favorable prices for farm land. However, back of this immediate motive was often some special reason for selling. In only 276 cases out of 919, or 30 per cent, was the primary motive given as the desire to realize a speculative profit. Even in this group only 40 sellers specifically asserted that they had sold for speculation. However, several other types of answers may be interpreted as indicating the desire for speculative profit as the principal motive. In 117 cases the sellers classed in this group asserted that they held the land as an investment, but gave no other reason for selling. It is assumed that they sold because of the opportunity of making a satisfactory return from the increase in value of the land, since they had abandoned their original intention of retaining the farm for investment.

One hundred and ninety-five sellers, or 21 per cent, assigned as the principal motive the desire to buy other farm property. It is probable that some of these sellers sold their farms in order to buy other farms that suited them better, either in size, quality of soil, location, or improvements. However, it is also probable that a very large number of these sellers who asserted that they were selling in order to buy again were simply speculating in farm land. They probably sold to realize a profit and bought again for the same purpose. Consequently a considerable number of this group belong to the class of persons who were selling for speculative reasons.

In 42 cases, or 4.6 per cent of the total, the alleged motive was the desire to reduce the holdings of farm land or to dispose of some of the holdings while retaining other land. However, a considerable number of answers in this group indicate that the desire was not so much to reduce the holdings as to take advantage of the opportunity of selling a portion of the holdings at high prices. Consequently some of this group belong in the speculative class.

Two hundred and forty-nine, or 27.1 per cent, of the total gave as their motive the desire to retire from farming. Probably most of these persons had been intending to retire at some time and seized the favorable opportunity of high prices of farm land to fulfill their intentions. The high prices for land made it possible for some to get enough for their farms to retire on, whereas otherwise they would not have been able to do so. Unquestionably, therefore, the large increase in the prices for land facilitated the tendency toward retirement from farming.

Eighty-one sales, or 8.8 per cent, were made primarily for the purpose of settling or dividing estates or partnerships. It is probable that most of these farms would have been sold sooner or later to accomplish the purpose alleged, but it was thought desirable to take advantage of favorable prices. Similar to this is the group of sales classed under "financial difficulties," although the number of these sales is small.

It is necessary to consider Tables V, VI, and VII together in order to determine their probable significance. It seems clear that the high prices of the "boom" period resulted in the sale of a larger number of farms by nonfarming classes than were purchased by these classes. The temporary agricultural prosperity born of war prices resulted in more farms being acquired by farmers, both owners and tenants, than were sold by farmers. Consequently it is probable that as a result of the tendency for absentee owners of farms to unload their holdings at "boom" prices, an immediate result of the "boom" will be an increase in the proportion of farms operated by owners.

This conclusion is further strengthened by the fact that of the number of buyers who definitely indicated their intentions, excepting those whose intentions were to resell, about two-thirds indicated that they would operate their farms rather than rent them to others. On the other hand, of the farms sold, 54 per cent had been operated by tenants before sale. In 1915 the Iowa State census showed the percentage of tenancy for the State to be 41. It is highly improbable that the percentage of farms operated by tenants increased from 41 to 54 during the 4-year period 1915 to 1919. Consequently the conclusion seems justified that a larger proportion of farms operated by tenants were sold than was the case with farms operated by owners, another indication of the tendency of nonfarming owners to unload during the "boom."

DIVISION OF INCREMENT BETWEEN DIFFERENT CLASSES.

An analysis of the total increase in value from the sale of farm lands was made for 392 cases in 22 counties. The total increase in value for these cases was $7,038,346. Of this increment $3,327,084, or 47 per cent, was received by people dwelling in towns or cities, while $3,711,262 was received by people dwelling in the country. However, these increments of value represented the difference between the price at the time of sale and the price at which the farm was bought, no matter how long ago the purchase was made. If we isolate the cases in which the property was purchased since March 1, 1918, and the sales effected during the period of the "boom," the total increment is $1,036,582. Of this amount $718,030, or

69.3 per cent, was received by dwellers in towns and cities, while $318,552 went to dwellers in the country.

It appears, therefore, that during the period of unusual activity the larger proportion of the gains made by purchase and sale were received by urban dwellers.[1] The division of increment for all sales, no matter when the purchase was made, probably represents pretty closely the normal ratio of the shares of the urban and rural classes in the increment of value, although probably to some extent affected by the larger share of urban dwellers in purchases and sales effected during the period of unusual activity. Assuming that the cases studied with respect to the division of increment represent a fair sample of the trend for the entire State of Iowa, and that the proportion of farms sold was 8.9 per cent, as shown by general inquiry in the 60 counties studied, we may estimate the total increase of value actually appropriated by sale and divided between urban and rural dwellers during the period of recent activity at $193,255,373. Of this amount urban dwellers received $90,830,025, while rural dwellers received $102,425,348.

In addition to the increment appropriated by nonrural classes as a result of the "boom," there also must be reckoned the gains of real estate men in commissions on sales made. Of 945 sales, 687, or about 73 per cent, were effected through an agent. The generally prevailing rate for farm sales appears to have been $2 an acre. Since the acres were very much higher in value than before the "boom," this would not constitute as large a percentage on the sale as formerly. There were also, of course, some variations from this rate. The average percentage of agents' commissions on the value of sales for which records were obtained was 1.61. The total appropriated by this class through commissions alone was probably above $3,000,000.

TERMS OF SALE.

In order to determine the probable consequences of the marked increase in farm land values and of the speculation in farm land, it was considered important to ascertain the terms of sale. Obviously, if the increase of value is abnormal the consequences will be more serious if a large element of credit has entered into the purchase of the land.

[1] There is some possibility of slight exaggeration in the percentage received by persons dwelling in towns and cities, on account of the fact that the records of sales were obtained by inquiry from persons dwelling in towns, and to some extent may have resulted in a larger proportion of cases of purchase and sale by town people than would be true if the inquiry had been carried into the rural districts. However, since a very large proportion of the farmers made their sales through agents or obtained the assistance of bankers and lawyers in towns in making their transfers, it is probable that the margin of error due to this cause is not very great.

PAYMENT AT TIME OF SALE.

It was found that the terms of sale tended more or less to conform to established custom which prevailed in the period before the "boom." In the Corn Belt it is a general practice to give possession of farms both to purchasers and to lessees on March 1. Accordingly, at the time of purchase a small cash payment is made to bind the sale, and the greater part of the cash payment is made on March 1, when possession of the farm is given.

Only about 5 per cent of the sales involved an initial payment of as much as 50 per cent of the purchase price. Nearly 95 per cent of the purchasers paid 10 per cent or less, while nearly three-fourths paid 5 per cent or less.

CASH PAYMENT MARCH 1, 1920.

Of a total of 918 sales 865 involved a cash payment March 1, 1920, averaging 33.3 per cent of the total sale price. The remaining 53 sales were cases involving full cash payment at time of sale or the initial cash payment plus the mortgage indebtedness left nothing to be paid March 1. Of the 865 cases involving a March 1 settlement, about 37 per cent agreed to pay less than 25 per cent of the purchase price March 1, 1920.

If we add the initial cash payment to the cash payment due March 1, we obtain what may be considered the total amount of cash, as distinguished from indebtedness, involved in the terms of sale. This total cash payment averages 40.7 per cent of the total consideration involved.

TABLE VIII.—*Total cash payment, including initial and March 1 payments.*

Number of farms purchased.	Per cent of purchase price to be paid in cash.	Per cent of all farms purchased.
87	100	9.3
238	50 and under 100	25.7
340	25 and under 50	36.7
262	25 and less	28.3

As shown in Table VIII, more than one-fourth of the total sales involved a cash payment of less than 25 per cent, while nearly two-thirds of the sales represented cash payments of less than 50 per cent.

MORTGAGE INDEBTEDNESS.

The sales involving one or more mortgages were 839 out of a total of 927. The average of all classes of mortgages is 64 per cent of the sale price of the farms mortgaged. As shown in Table IX, a considerable number of buyers, about one-eighth of all, have incurred indebtedness amounting to as much as 80 per cent or more of the purchase price, while somewhat more than half the purchases involved indebtedness of 65 per cent or more.

In the great majority of sales involving a mortgage there was only a first mortgage. In many cases, even when the amount of mortgage indebtedness was greater than 50 per cent of the sale value, the entire indebtedness was carried on a first mortgage. Since the established credit agencies will not ordinarily lend on so large a margin of the value of a farm, such mortgages were usually carried by the seller. Out of a total of 820 first mortgages it was found that 141 were for 75 per cent or more of the sale price, while 536 were for 50 per cent or more, the average of all first mortgages being 56.4 per cent. About one-fourth of the sales involved a second mortgage, which averaged 32.2 per cent of the sale price. In 10 cases the second mortgage covered 60 per cent or more of the purchase price, and in 68 cases 40 per cent or more of the purchase price. Such cases, however, probably represent instances where an existing first mortgage had been arranged with some credit agency at a lower level of value and the seller found it necessary to assume a very large part of the increase of value as well as a considerable margin of the old value by taking a second mortgage.

Table X is a summary of the duration of loans in the case of 701 first mortgages for which this information was obtained.

TABLE IX.—*Number of purchases involving mortgage indebtedness, classified by per cent of indebtedness to purchase price.*

Number of farms purchased involving mortgages.	Per cent of mortgage indebtedness to purchase price.	Per cent of all farms purchased.
110	80 or more	13.1
333	65 and under 80	39.7
265	50 and under 65	31.6
131	Less than 50	15.6
839		100.0

TABLE X.—*First mortgages, classified by duration of loan.*

Number of years to run.	Number of mortgages.	Number of years to run.	Number of mortgages.	Number of years to run.	Number of mortgages.	Number of years to run.	Number of mortgages.
1	6	5	246	10	241	16	3
2	12	6	15	11	5	20	9
3	35	7	27	12	4	25	1
4	27	8	27	14	1	30	1
4½	1	9	11	15	26	33	3

It appears from Table X that there is a strong tendency to make mortgages either for 5 years or for 10 years, nearly 70 per cent of the first mortgages being about equally divided between these two periods.

Following is a summary of rates of interest on first mortgages:

At 4½ per cent	1	At 5½ per cent	391
At 5 per cent	307	At 5¾ per cent	1
At 5¼ per cent	4	At 6 per cent	76

It seems clear that practically all mortgages are either for 5 per cent, 5½ per cent, or 6 per cent, those made at 5½ per cent predominating, closely followed by those made at 5 per cent.

The duration of second mortgages is shown in table XI.

TABLE XI.—*Second mortgages classified by duration of loan.*

Number of years to run.	Number of cases.	Number of years to run.	Number of cases.
2	4	8	5
3	14	9	2
4	7	10	28
4½	1	12	3
5	17	15	6
6	2	20	1
7	6	33	1

As in the case of first mortgages, 5 years and 10 years are the outstanding periods. The average duration for second mortgages is 6.6 years as compared with 7.7 years for first mortgages.

Rates of interest on second mortgages are as follows:

At 5 per cent	31	At 7 per cent	4
At 5½ per cent	56	At 8 per cent	3
At 6 per cent	79		

There seems to be a stronger tendency toward a 6 per cent rate than in the case of first mortgages. However, the rate of interest for second mortgages is not to a marked extent greater than for first mortgages, the average being 5.7 per cent for second and 5.3 per cent for first mortgages.

A few third mortgages were found, numbering, in all, 11. Four of these were for 4 years, 5 for 5 years, 1 for 6 years, and 1 for 8 years. Seven were given at 6 per cent, 3 at 5½ per cent, and 1 at 5 per cent.

A study of the terms of the loans indicates that on the whole they are not more liberal in percentage of cash payment required on purchase price than was the practice before the "boom." One of the authors of this bulletin has made a comparative study of terms of loans covering both periods [1] and has found that the percentage of average sale value required in cash during 1919 corresponds very closely to the percentage required in the period before the "boom." There appears to be a strong tendency toward conventional rates of interest and periods of loans.

[1] "Studies of Land Values in Iowa," by O. G. Lloyd, the *Iowa Agriculturist*, December, 1919, page 361.

There are enough deals on narrow margins of cash and at substantial rates of interest to cause considerable trouble if fundamental conditions should become unfavorable to agriculture in the near future. It may be a matter of some concern, considering the high levels of value characterizing these purchases and the great uncertainty as to the future course of prices of agricultural products, that more than one-fourth of the sales were effected on a total cash payment of 25 per cent or less, while nearly two-thirds of the cases involved cash payments of less than 50 per cent; that the average mortgage indebtedness incurred is 64 per cent of the sale price, and in 110 of the cases involving mortgages it is 80 per cent or more of the sale price; that one-fourth of the sales involved second or third mortgages, and that a considerable majority of the mortgage indebtedness is contracted at rates of interest amounting to 5½ per cent or more, whereas the ordinary rate employed in calculating farm labor income is 5 per cent.

LEGAL CHARACTER OF CONTRACTS.

No systematic and comprehensive study of the legal character of contracts was made with a view to determining the relative number of the different kinds of contracts, but by general inquiry various methods employed were ascertained and certain conclusions may be drawn therefrom.

Generally speaking, there was no extensive buying and selling of mere options of purchase. It is indeed fortunate that the methods employed were not carried to this extreme.

The great majority of the contracts were contracts of specific performance, that is, the seller agreed to deliver possession and title of a specific piece of land in substantially the same condition as at time of sale, meanwhile keeping buildings, fences, and other improvements insured and repaired. The delivery of title was made contingent upon the making of certain cash payments and the assumption of certain other obligations on the part of the buyer. For the most part, as already noted, the delivery of title and possession was to take place on the March 1 subsequent to the making of the contract, and at that time the buyer was to make a substantial cash payment upon the land and at the same time to assume formally such indebtedness as had been agreed upon.

Generally, in case of subsequent sale before acquisition of title, the former purchaser entered into a formal contract of sale with the new purchaser, although not yet the holder of the title which he agreed to transfer. In some cases a series of these contracts of sale were made for the same piece of land.

The fact that the contract called for specific performance in the delivery of a particular piece of land is of significance because if for any reason one of the parties to any of the series of contracts failed to carry out his part of the contract, the fulfillment of all subsequent contracts would necessarily be defeated. For instance, if the first buyer of a farm failed to obtain title because of his inability either to make the necessary cash payments or to get valid title, he would be unable to fulfill his contract of sale with the second buyer, who, in turn, would find it impossible to carry out his contract of sale with the third buyer; and so on throughout the series. Unless the matter could be settled by mutual agreement, the recourse of the several parties who have purchased the right to receive title to the land would be a suit to enforce performance and action for damages in case of nonfulfillment. Consequently such a situation involves the possibility of considerable litigation as well as a large degree of financial uncertainty for the parties concerned.

In some instances contracts call for the specific forfeiture of the purchaser's initial payment in case of his failure to perform his part of the contract. Generally, however, the seller retained the alternative right of compelling the purchaser to complete the cash payments agreed upon. Usually the contracts did not include a clause involving a waiver of performance on forfeiture of initial payment.

In some cases legal methods of dubious character from an ethical point of view were employed for the purpose of reducing the liability and risk of the speculator. Two principal methods appear to have been used for these purposes. The first consisted of the formation of a corporation with limited liability for the purpose of buying and selling farm lands. The members of these corporations bought land under ordinary contracts of sale, using the greater part of the capital for the purpose of making initial payments with the intention of reselling the land at a profit. However, in case the land failed to advance in value and the buyers found themselves overloaded, the liability would be limited to the assets of the corporation and the individual assets of the stockholders would be immune. A second method was the employment of a "dummy" buyer. The real buyer bought the land in the name of another person who possessed no valuable assets. The "dummy" then assigned his rights of purchase for a nominal consideration to the real buyer, while still retaining the obligations contained in the contract. The assignment was commonly expressed as follows: "For and in consideration of the value received I hereby sell, assign, transfer, and convey to John Doe my rights of purchase in and under the attached contract." Apparently such a clause attached to a contract of sale conferred upon the person mentioned in the clause the right to complete the original contract without obligating him to pay or be held accountable to the first seller for the terms of the contract.

In some cases, real estate men, not satisfied with regular commissions, introduced a dummy buyer as a means of sharing the increment. Having obtained the listing of a farm at a certain minimum price and having found a purchaser at a considerably higher price, the real estate man might arrange a sale to a friend at the minimum price with the understanding that the profit derived from the subsequent sale would accrue to the real estate man and his friend.

FARM EARNINGS AND INCOMES OF OWNERS, TENANTS, AND LANDLORDS, 1913, 1915, 1918, 1919.

The value of the farm is so large a part of the total capital employed in farming that a considerable change in that value must have a profound influence on the incomes of owner operators, tenants, and landlords. In order to measure the effects of the radical change in land values in the past few years on the several classes of incomes, data on farm earnings and incomes have been assembled by the survey method for three different years, 1913, 1915, and 1918, and covering the same areas in each of two years.

The two districts studied in this manner are shown by solid black areas on the map, figure 1. One of the districts consists of contiguous townships in Tama, Blackhawk, and Grundy Counties. Since the majority of the farms surveyed in this district are in Tama County, the district will be referred to hereafter as the "Tama" district. Data on farm earnings were obtained for 965 farms in this district in 1913 and for 211 farms in 1918. The other district lies wholly in Warren County, principally in the southern portion of the county. Data on farm earnings were obtained for 832 farms in this district in 1913 and for 183 farms in 1918.

The two districts differ considerably in character. Measured both by value of land per acre and by farm income per acre, the Tama district is shown to be characterized by more productive land than the Warren district. The average size of farms is greater in the first district, and the percentage of tenanted farms of the total number surveyed greater—46 per cent as compared with 31 per cent in the Warren district. Finally, farm earnings in the Warren district were considerably reduced in 1918 because of an unusually poor crop of corn. This fact is reflected in all comparisons of incomes for the two districts. Because of these contrasts the data are presented separately for the two districts. These data are presented from several standpoints.

In order to interpret correctly the significance of these changes in income it is necessary to consider, not only the changes measured in dollars, but also changes in the purchasing power of the dollar for the period covered. Unfortunately there are no detailed statistics on farmers' budgets that are adequate for the purpose of weighting changes in prices according to the relative importance of the several items in the farmer's budget. According to the index numbers of the United States Bureau of Labor, wholesale prices increased 123 per cent from 1913 to October, 1919. However, the estimated increase in retail prices, weighted according to the relative importance of the various articles in the family budgets of urban populations, was only 83.1 per cent. There is no reason to believe that the prices of commodities bought by farmers have increased at a lower rate, especially, as there has been a general increase in the level of prices since October, 1919. It is probable that a 100 per cent increase from 1913 to January, 1920, is a conservative estimate of the increase in the cost of maintaining the farmers' budget of 1913.

The same comparison substantially applies to the period from 1915 to 1920, for average wholesale prices increased only 3 per cent from 1913 to 1915.

FARM INCOME ON FARMS CLASSIFIED BY TENURE.

The questions to be first considered are: (1) What increase has occurred in the earning power of farms as a result of increased prices of farm products and other causes? (2) Has this increase in earning power been greater or less in proportion than the increase in the average value of land?

These questions may be answered by comparing the increase of farm incomes with the increase of land values for the corresponding periods. By farm incomes is meant the difference between the farm receipts and expenses for the year, plus any gain or minus any loss from inventory. No deduction is made for the interest on the capital employed or for the value of the farmer's labor and for his uninsured risk.

TABLE XII.—*Farm incomes for farms classified by class of tenure.*

I. TAMA DISTRICT.

Tenure.	Number of farms.		Average farm income.		Average farm income per acre.		Per cent increase per acre.	Average value of land per acre.		Per cent increase over—	Average size of farm.	
	1913	1918	1913	1918	1913	1918	1913	1913	1918	1913	1913	1918
All farms	965	211	$2,607	$4,570	$12.59	$20.79	65.1	$197	$239	21.3	*Acres.* 207	*Acres.* 219.8
Owners	308	86	2,471	4,272	13.14	19.33	47.1	206	241	17.0	188	221.0
Owners additional [a]	154	28	3,121	4,951	12.95	23.85	84.1	197	243	23.3	241	207.6
Tenants	503	97	2,533	4,721	12.18	21.22	74.2	192	236	22.9	208	222.5
II. WARREN DISTRICT.												
	1915	1918	1915	1918	1915	1918	1915	1915	1918	1915	1915	1918
All farms	832	183	$1,454	$2,241	$9.32	$12.67	35.9	$117	$145	23.9	156	176.9
Owners	345	84	1,270	1,997	8.58	11.63	35.5	119	148	24.3	148	171.6
Owners additional [a]	190	43	1,630	2,673	9.94	13.75	38.4	117	146	24.7	164	194.4
Tenants	297	56	1,556	2,273	9.73	13.26	36.2	116	139	19.8	160	171.4

[a] Owners who rent additional land.

In Table XII it will be noted that average farm incomes for owners and tenants of the Tama district nearly doubled between 1913 and 1918. The increase per acre was somewhat less, because there was a considerable increase in the average size of the farms both of owners and of tenants. The percentages of increase of farm income per acre were 47 for owners, 84 for owners additional, and 74 for tenants. For all farms the increase in farm income per acre was 65 per cent. In contrast with these rates of increase in farm income average land values of these farms increased only from 17 to 23 per cent during the same period. In the Warren district the percentages of increase in farm income as compared with the percentages of increase in land value were not so marked because of the fact, already noted, that in this district the corn crop of 1918 was far below normal. Yet, even under these unfavorable conditions the percentages of increase in farm income were larger than the percentages of increase of land value, the former averaging 36 for all classes of farms as compared with 24 per cent for the latter.[1]

These facts appear to indicate that up to 1918 the increase of Iowa land values had lagged behind the increase of average farm income, and there can be little doubt that this created a favorable condition for the sudden and rapid advance in land values during 1919 and the accompanying "boom."

For the years studied, and in both districts, "owners additional" (those who rent land in addition to their own holdings) made a larger average farm income than either owners or renters. Moreover, owners appear the least efficient of the three classes, whether efficiency is measured by total farm income or by farm income per acre, with the single exception of 1913 in the case of farm income per acre (refers to Tama County).

FARM LABOR INCOME CLASSIFIED BY TENURE.

In farm income, as discussed above, no allowance is made for the annual interest on the value of capital employed, including the value of the farm. To whatever extent a farmer borrows the capital employed, he must pay interest out of the income from the farm. If he employs his own capital, he should receive a return for it corresponding to what he could get in other kinds of investment. In farm economic studies it has been generally customary to consider 5 per cent a reasonable allowance for the use of capital in farming. It should be recalled, however, that of the recent sales of farms a large number were made on the basis of mortgages bearing 5½ per cent. Moreover, for short-time loans obtained from banks, the

[1] This increase in farm values for the Tama district is considerably smaller than that indicated by statistics of the Census and Bureau of Crop Estimates, which for the entire State was about 40 per cent from 1913 to 1918.

Iowa farmer pays not less than 6 per cent and commonly 8 per cent. It is also important to recognize the fact that although farmers can obtain at least 5 per cent for their own capital at the present time by investing in bonds of undoubted security, they have largely preferred to invest in land yielding an annual return, not counting increase of value, of much less than 5 per cent.

Table XIII shows the farm labor income at different periods; that is, what is left to pay for the labor and risk of the farm operator after charging the farm with the use of the capital employed. This charge is made both at 5 per cent and at 5½ per cent. In order to determine the effect of increased value of land on farm labor income, these percentages are calculated both on the value of total capital in March, 1918, and on the value of total capital in August, 1919. The farm income in both cases is that of 1918, a year characterized by normal production in one of the districts, as well as by the high level of war prices for farm products; therefore, in at least one district, a year as favorable from the standpoint of income as the farmer may expect in the near future.

TABLE XIII.—*Farm labor income classified by tenure, 1913, 1915, 1918, 1919.*

TAMA DISTRICT.

Tenure.	Number of farms.		Farm labor income after charging 5 per cent for capital.[a]			Farm labor income after charging 5½ per cent for capital.[a]		
	1913	1918	1913	1918	Aug., 1919.	1913	1918	Aug., 1919.
All farms	965	211	$306	$1,537	$222	$75	$1,234	[b]—$213
Owners	308	86	253	1,166	[b]—148	32	855	[b]—590
Owners additional	154	28	435	2,030	642	167	1,737	210
Tenants	503	97	298	1,723	429	74	1,423	[b]— 1

WARREN DISTRICT.

	1915	1918	1915	1918	Aug., 1919.	1915	1918	Aug., 1919.
All farms	832	183	$370	$746	$69	$262	$597	[b]—$149
Owners	345	84	212	506	[b]—207	106	357	[b]—427
Owners additional	190	43	495	1,017	335	382	851	101
Tenants	297	56	474	897	275	366	759	75

[a] In this table and subsequent tables the investment value per farm for 1918 is that of March 1 and that of 1919, Aug. 1. The value at a particular time, rather than the average value at beginning and end of the fiscal year, is employed because of the marked changes in farm land value during the period and in order to show the effect of these changes on incomes. For 1913 and 1915 the usual method of averaging values at beginning and end of year is employed.
[b] Loss.

On the basis of land values in 1918, farmers of all classes of tenure in the Tama district made farm labor incomes averaging $1,537 for all farms, after deducting 5 per cent on the value of all farm capital, including the value of land, whereas in 1913 the average for all farms was only $306. Even charging 5½ per cent on the value of farm capital, the farm labor incomes averaged $1,234 as compared with $75 in 1913. These labor incomes may be compared with the estimated value of the time spent by the farmers in labor and superintendence. In 1913 this averaged $719, or $413 more than the average farm labor income calculated at 5 per cent, and $644 more than the farm labor income calculated at 5½ per cent. In 1918 the estimated value of farmer's labor and superintendence was $1,169. Consequently, the farmers of this district made labor incomes which, calculated at 5 per cent, averaged $368 more than the value of labor and superintendence. When calculated at 5½ per cent the excess of labor incomes above the value of labor and superintendence averages $65.

When calculated on the basis of a 5 per cent deduction for capital, the farm labor incomes of the Tama district in 1918, as compared with those of 1913, increased several hundred per cent. Thus, the farm labor incomes of owner operators were 361 per cent higher; those of owners additional, 367 per cent higher; and those of tenants, 478 per cent higher than in 1913. Even making allowance for the decline in the purchasing power of the dollar, there can be no doubt that the farmers of this district earned a considerably larger return for operator's labor and risk than in 1913, a larger return attributable to the favorable combination of good crops, high prices for farm products, and land values that had not yet advanced in proportion to farm income.

In the Warren district the increase in farm labor income is not so marked on account of the poor crop season. Nevertheless, the increase in this district ranges from 89 per cent for tenants to 139 per cent for owners.

If farm labor income be calculated by charging 5½ per cent instead of 5 per cent for the use of capital, the average farm labor income for each of the several classes of tenure in the Tama district is, of course, smaller than when capital is charged only 5 per cent. However, the increase in percentage as compared with 1913 is even greater than when calculated on the 5 per cent basis, for the higher rate charged for capital accentuates the relative advantage of 1918 due to the failure of land value to increase in the same proportion as farm income. Thus, in the Tama district the average farm labor income was about sixteen times as great in 1918 as in 1913. This result may be expressed in another way by saying that it was impossible for the average farmer to pay 5½ per cent for all of his capital in 1913 and have any considerable remainder for his own time and risk, while the proportionately greater increase of farm incomes of 1918 as compared with the increase of land values enabled the farmer to pay 5½ per cent on capital and still have a substantial remainder.

The same tendencies prevailed in the Warren district, though the increase in farm labor income was on a much smaller scale.

When farm labor incomes are calculated on the basis of the land values of August, 1919, the situation is entirely changed. The deduction of 5 per cent for the use of capital results in a minus labor income of $148 for owners in the Tama district and a minus labor income of $207 for the same class in the Warren district. In the Warren district the average labor incomes of farms of the several classes of tenure were actually less than in 1915, while in the Tama district the average for all farms is somewhat less than in 1913. In the Tama district farm labor incomes of owners additional and tenants, on the basis of land valnes of August, 1919, are about 50 per cent higher than in 1913; an increase however, that is not as great as the decline in the purchasing power of the dollar from 1913 to 1919. Consequently the labor incomes of 1913 represented a greater amount of purchasing power than those based on land values of August, 1919.

It is well to pause in the presentation of these facts to emphasize their significance.

It is apparent that the level of land values prevailing in 1919 was too high to make it possible to pay 5 per cent on these values and still to earn a fair return for the labor and risk of the farmer. This was especially true of farms operated by owners, which make a poorer showing than the farms operated by other classes of tenure—a result which is also shown by the statistics of 1913 and 1915. Consequently, under these conditions, the average farm owner in this area who operates his farm must be willing to take a lower return than 5 per cent on the market value of his farm or to give his own time for less than nothing. In case a large part of the capital is borrowed at interest rates of 5½ to 6 per cent, the financial outlook for such a farmer is not a promising one.

It may be said that the income considered is that of 1918, while the land values are those of 1919. However, it is probable, as already stated, that in the Tama district the good yields and unusually favorable prices of 1918 resulted in incomes as high as may be expected for some years. Furthermore, recent data indicate lower farm labor incomes for the crop year 1919 than for 1918.

OPERATORS' LABOR INCOMES OF TENANTS AND OWNERS ADDITIONAL.

In Table XIII, above, farm labor incomes were calculated on the basis of allowing 5 per cent or 5½ per cent for the use of all capital employed, including the value of the land. Tenants, however, obtain the use of the land by paying rent rather than by paying a certain rate of interest on the value of the land, while owners additional obtain a part of their land by payment of rent.

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In the State of Iowa net rent from farms tends to be less than 5 per cent on the average value of farm land and improvements. Data concerning rents were obtained for 238 farms in 49 Iowa counties,[1] and these data are summarized in Table 14.

TABLE XIV.—*Average rentals on 238 Iowa farms, 1918; percentage of average net rentals to average value of farm land and improvements, Mar. 1, 1918, and Mar. 1, 1919.*

	Cash.	Share cash.	Share.	All farms.
Average gross rent per acre	$6.37	$11.84	$12.28	$8.53
Average net rent per acre	$4.72	$9.51	$10.21	$6.63
Average value of land and improvements per acre:				
Mar. 1, 1918	$181.30	$206.22	$204.64	$190.94
Mar. 1, 1919	$207.61	$236.19	$228.57	$218.33
Per cent of average net rent, 1918, to average value of land and improvements:				
Mar. 1, 1918	2.71	4.96	5.29	3.47
Mar. 1, 1919	2.35	4.33	4.73	3.03
Number of farms	145	79	14	238

As shown by Table XIV, the percentage of net rent is less than 5 in all systems of renting except in the case of the percentage of stock share rentals to land values of 1918, and that in a year when crop conditions and prices in the State were favorable to substantial returns under the share systems of renting.[2]

TABLE XV.—*Operators' labor income.*

TAMA DISTRICT.

Tenure.	Number of farms.		Operators' labor income.		Operators' labor income per acre.	
	1913	1918	1913	1918	1913	1918
Owners	308	84	$253	$1,166	$1.35	$5.28
Owners additional	154	28	961	2,129	3.99	10.26
Tenants	503	97	1,315	3,053	6.32	13.72

WARREN DISTRICT.

	1915	1918	1915	1918	1915	1918
Owners	345	84	$212	$506	$1.43	$2.86
Owners additional	190	43	548	1,012	3.34	5.21
Tenants	297	56	725	819	4.53	4.78

If, in calculating the labor incomes of tenants and owners additional, the actual rent of leased land be deducted, instead of 5 per cent on the value of the land, the result may be quite different from that obtained in calculating farm labor incomes by deducting 5 per cent on the value of all capital. In Table XV, tenants are charged

[1] These data are additional to those obtained for the two areas selected for intensive study.

[2] A survey of 114 farms in 1912 showed an average percentage of return to landlords of 3.7 for all farms, 4.1 for stock share leases, 2.3 for cash leases, and 4.1 for share cash leases.—Farm Leases in Iowa by O. G. Lloyd, Bulletin 159, Iowa Experiment Station.

with 5 per cent on operating capital and with the rent paid for use of the land. Owners additional are charged 5 per cent on operating capital and land owned by them, and with the rent of land leased. The labor incomes thus obtained are called "operators' labor incomes" to distinguish them from farm labor incomes presented in Table XIII. For purposes of comparison the farm labor incomes of owners, which are also operators' labor incomes, are included. The data for operators' labor incomes are summarized in Table XV.

The figures for operator's labor income emphasize the relative financial disadvantage under which the farmer must labor in owning the land farmed as compared with renting all or part of it, if as an owner he must charge himself with 5 per cent on the value of the land owned. The disadvantage is even greater when the charge for capital is 5½ per cent. This relative disadvantage is especially great in the Tama district because the percentage of landlord's net rent to value of land is much less than in the Warren district. (See Table XVI.) While owners in the former district were able to earn average labor incomes of $1,166 after deducting 5 per cent on land values of 1918, and minus $148 after deducting 5 per cent on land values of 1919, tenants earned average labor incomes of $3,053 after paying the rent charged. Owners additional earned average labor incomes of $2,129 after deducting rent paid on land leased and 5 per cent on the value in 1918 of the land owned by them. The incomes of this class would have been considerably less if calculated on the 1919 value of the land owned by them.

However, these comparatively large labor incomes in the Tama district—considerably more than double those earned by the corresponding classes in 1913—are based on rents paid in 1918. It is probable that somewhat higher rents prevailed in 1919, for there are indications that rents are increasing. Not only is this conclusion justified by general reports from various sources, but it was verified by a supplementary investigation of the cash rent paid on upwards of 100 farms for lease years beginning March 1, 1918, 1919, and 1920. The average cash rent was $7.71 in 1918, $8.31 in 1919, and $10.07 in 1920.

In view of the fact that tenants' average labor income in the Tama district was only 132 per cent higher than in 1913, no large increase in rent could occur in this district without lowering the relative purchasing power of the tenants' labor income; for, as shown above, the purchasing power of the farmer's dollar was probably not more than half as great in 1919 as in 1914. Moreover, 1918 was probably an unusually favorable year in yields and in prices obtained for farm products.

In the Warren district the operator's labor income of tenants, $819, was even less than the farm labor income for this class, for the net rent paid by tenants averaged 5.33 per cent on the value of the land in 1918 (see Table XV); whereas in 1915 the average operator's labor income of tenants was $725. Although the small labor income of 1918 is partly due to a poor corn crop in this district, it does not appear that landlords could materially increase the rent charged without seriously reducing the labor income of the tenant.

PER CENT OF LANDLORDS' NET RETURN ON PRESENT VALUE OF INVESTMENT, AND ECONOMIC RENT.

In Table XVI is shown the percentage of the landlord's net rent to the total value of the land and buildings owned by him. The table shows also the economic rent of the land—that is, the amount that could be paid as rent if all the other factors of production were allowed just the amount necessary to obtain their services. This quantity has been calculated by deducting from farm income (1) 5 per cent on the operating capital of the farmer (excluding land value), and (2) the value of the farmer's own labor and supervision. The remainder includes only one other item besides the annual value of the land—namely, uninsured risk. Disregarding this item, the remainder may be considered as the maximum amount that may be attributed to the land without depriving the other factors of production—labor, equipment, and superintendence—of the competitive value of their services.[1]

TABLE XVI.—*Landlord's per cent of net return on investment; economic rent.*[a]

TAMA DISTRICT.

Tenure.	Number of farms.		Per cent of landlord's net re-return on farm capital.			Economic rent per acre.[a]	
	1913	1918	1913	1918	Aug., 1919	1913	1918
Owners	308	86				$7.89	$12.01
Owners additional	154	28	2.73	4.10	2.76	8.46	15.90
Tenants	503	97	2.48	2.43	1.65	7.59	14.42
Cash	326	76	2.15	1.90	1.30	7.43	14.62
Stock-share	51	7	2.82	4.03	2.82	6.74	10.06
Share-cash and share	126	14	3.19	4.54	3.00	8.65	15.93

WARREN DISTRICT.

Tenure.	1915	1918	1915	1918	Aug., 1919	1915	1918
Owners	345	84				$4.00	$4.92
Owners additional	190	43	5.06	6.82	4.49	5.83	7.95
Tenants	297	56	3.95	5.33	3.60	5.37	6.89
Cash	88	9	2.95	3.13	2.09	3.92	2.53
Stock-share	70	16	3.85	4.24	2.98	5.87	6.95
Share-cash and share	139	31	4.65	6.52	4.37	5.86	8.03

[a] Economic rent—the amount that could be paid as rent if all the other factors of production were allowed just the amount necessary to obtain their services.

[1] The term "economic rent" is usually employed to mean the annual economic value of the land over a period of years, taking both fat and lean years into consideration and excluding the annual value of improvements. For lack of a better term, the expression is here applied to the earnings imputable to the land in a single year, and no attempt is made to separate the values of land and improvements.

The statistics on economic rent and landlords' per cent of net return on present value of investment in Table XVI are of great interest and significance. The statistics may be considered from several standpoints.

In the first place, we may compare the increase of economic rent per acre with the increase in land value per acre for the corresponding periods. In the Tama district economic rent increased about 74 per cent for all classes of farms from 1913 to 1918, while land values increased only 21 per cent. This disparity indicates forcibly the condition that produced the radical readjustment in land values during the recent "boom." On the other hand, while the economic rent increased 74 per cent from 1913 to 1918, land values from 1913 to 1919 increased 82 per cent, indicating a tendency for the increase of land values to outrun somewhat the increase of economic rent. This tendency was particularly marked in the Warren district. As a result of the poor corn crop of 1918 economic rent for that year was only 28 per cent higher than in 1915, whereas the influence of the boom caused land values to advance 89 per cent during the same period.

The two districts present interesting contrasts in respect to the per cent of the average net return of landlords to the average value of landlords' investment. For all systems of renting the percentage of landlords' return is higher in the Warren district than in the Tama district. Thus, for all rented farms the percentage of landlords' net return in the Warren district averaged 3.95 per farm in 1915 and 5.33 in 1918, while in the Tama district the percentages are 2.48 and 2.43 for the respective periods. However, comparisons for all tenant farms are somewhat affected by the different proportions of cash and share-rented farms in the respective periods, as well as in the two districts, and safer conclusions may be derived from comparing changes in landlords' per cent of returns under the same system of renting.

In the Tama district the percentage of landlords' return on farms rented for cash slightly declined from 1913 to 1918, indicating that cash rents failed to keep pace with the advance in land values, while in the Warren district the percentage of return on cash-rented farms increased somewhat. In both districts, however, the landlords' participation in the benefits of rapidly advancing prices of products under the systems of share renting resulted in considerable increases in percentages of landlords' return on share-rented farms. Since a higher per cent of the farms in the Warren district were rented on shares than in the Tama district, this fact explains the relatively large landlords' per cent of return for all tenant farms in the Warren district.

If the landlords' per cent of return on present value of investment be calculated on the basis of the ratio of 1918 rents to the land values of August, 1919, the percentages for various systems of renting in both districts are reduced below the percentages of 1913 and 1915, respectively, the percentage falling to 1.65 in the Tama district and 3.60 in the Warren district.

It is, of course, possible that these percentages may be increased through the increase of rent rates. The possibility of this may be determined by comparing contract rents and economic rents. This comparison is presented in Table XVII. In the last line of the table is shown the estimated rent per acre that landlords must receive in order to have as large a percentage of return on the basis of land values in August, 1919, as they received in 1913 and 1915, respectively

TABLE XVII.—*Comparison of economic rents and contract rents, all tenant farms.*

	Tama district.	Warren district.
Economic rents per acre:		
1913	$7.59	
1915		$5.37
1918	14.42	6.89
Net contract rents per acre:		
1913	4.79	
1915		4.72
1918	5.76	7.24
Estimated contract rent on basis of land values, August, 1919	8.60	11.44

The table shows that in the Tama district contract rent per acre in 1913 averaged but little more than half the economic rent, while in the Warren district contract rent per acre in 1915 was also substantially less than economic rent. The difference, of course, between economic rent and contract rent accrued to the tenant as a return for his enterprise and risk, in addition to the estimated value of his labor and superintendence. In 1918 economic rent in the Tama district had advanced to such an extent that it was two and one-half times as great as contract rent. In the Warren district, however, as a result of poor crops, contract rent was more than 5 per cent higher than economic rent. In the Tama district economic rent of 1918 is more than sufficient to pay the same rate of return on the land values of August, 1919, as prevailed in 1913, but in the Warren district the amount necessary to pay the same rate of return on land values of August, 1919, is about 66 per cent greater than the economic rent of 1918.

Even in the Tama district, however, if the landlords should receive the same percentage of return on land values of 1919 as they received in 1913, the labor income of tenants would have to be $2.84 per acre less than it was in 1918. This would reduce the tenant's labor income to an average of $2,421 as compared with $1,315 in 1913. Considering the change in the purchasing power of money during the period, the tenant would probably have a smaller real income.

Whether the economic rent of 1918 may continue to be maintained depends, of course, on future yields and future prices. The former can undoubtedly be substantially increased in the Warren district, but it is at best doubtful whether the high average economic rent of the Tama district will be maintained in subsequent years.

It is not to be assumed, of course, from the above discussion that contract rent should be as high as economic rent, for the latter has been calculated by allowing the tenant only the estimated value of his labor and superintendence, with no allowance for his enterprise and risk.

PER CENT NET RETURN OF ALL CLASSES OF OPERATORS ON OPERATORS' CAPITAL.

In order to determine how profitably the farmer's capital is employed in production it is desirable to ascertain the net return on his capitalization. To determine this net return it is necessary to deduct from the average farm income the rent paid for land not owned by the operator, together with the value of the labor and supervision of the farmer. The percentage of this remainder to the farmer's capital, whether represented by land, operating capital, or live stock, may provide a measure of the return on capital for the different classes of farmers, as contrasted with the return on investments in other lines of business, and it may also afford a test of the relative profitableness of farming under different tenures. The increased value of the land is regarded as reinvested capital in the case of owners operating their farms. These facts are presented in Table XVIII.

It will be noted that on his comparatively small investment the average per cent of return of the tenant is much higher than that of either owners or owners additional. In 1913 tenants in the Tama district earned 18.3 per cent as compared with 3.98 per cent for owners and 5.6 for owners additional. In 1918 tenants in this district earned nearly 32 per cent as compared with 5 per cent for owners and 7 per cent for owners additional. In the Warren district tenants earned 12.4 per cent in 1915 as compared with 3.6 per cent by owners and 5.3 by owners additional. In 1918, however, tenants in this district made only 2.3 per cent on total capital, while owners earned 3.6 per cent on capitalization, and owners additional 5.5 per cent. The small relative return to tenants in this case is due to the large proportion of share tenants in Warren County, for all classes of share tenants paid the landlord about 5.8 per cent on the 1918 average value of the farms rented.

Although, because of their relatively small investment, the percentage of return on capital earned by tenants varies to a much greater extent than do the returns of owners and owners additional, the general tendency has been for tenants to earn a higher percentage of return on their capital than either of the two other classes.

TABLE XVIII.—*Per cent of average net returns of all classes of operators on average value of operators' capital.*

TAMA DISTRICT.

Tenure.	Number of farms.		Per cent return on operator's capital.			Average value of operator's capital.		
	1913	1918	1913	1918	Aug., 1919.	1913	1918	Aug., 1919.
Owners	308	86	3.98	4.99	3.50	$44,352	$62,132	$88,404
Owners additional	154	28	5.58	7.02	4.89	16,012	45,555	65,448
Tenants	503	97	18.30	31.98	31.98	4,537	7,081	7,081

WARREN DISTRICT.

	1915	1918	1915	1918	Aug., 1919.	1915	1918	Aug., 1919.
Owners	345	84	3.63	3.59	2.43	$21,159	$29,823	$44,080
Owners additional	190	43	5.31	5.49	3.95	16,012	24,411	34,008
Tenants	297	56	12.36	2.34	2.34	2,492	3,160	3,160

PRECARIOUSNESS OF FARMERS' INCOMES.

The preceding discussion of farmers' incomes is in terms of averages. From the standpoint of farmers who may be undertaking the purchase of farms on large margins of indebtedness it is important to consider not only the average incomes earned, but also what proportion of farmers were unsuccessful as measured by the failure to make a plus farm labor income. Table XIX shows the per cent of all farmers of each class of tenures making a minus labor income in 1918, and likewise on the basis of 1919 land values. The table also shows the per cent of all farmers of each class of tenure making less than the estimated average value of farmers' labor and supervision in the periods mentioned. In all cases the allowance for use of capital is 5 per cent.

TABLE XIX.—*Percentages of farmers making minus labor incomes and percentages making less than estimated average value of farmers' labor and supervision.*

District and tenure.	Per cent making minus labor income.		Per cent making less than average value of labor and superintendence.	
	1918	Aug., 1919.	1918	Aug., 1919.
Tama district:				
Owners	22	49	57	78
Owners additional	11	32	46	71
Tenants	11	39	42	65
Warren district:				
Owners	32	62	73	85
Owners additional	19	42	56	74
Tenants	20	38	47	61

It is apparent that by either of the methods of measurement a larger percentage of owner operators were unsuccessful than was the case with either of the other classes of tenure. Moreover, the percentages of unsuccessful farmers by either method of measurement is higher in the Warren district, with a single exception, than in the Tama district, owing to the poor crop year of 1918 in the former district. The single exception is the per cent of tenants making a minus farm labor income on the basis of the land values of August, 1919.

The percentages of those failing to make any labor income in 1918 are not large for the Tama district, but it is a striking fact that under the favorable conditions of 1918 in that district the farm incomes based on the land values of 1919 result in minus labor incomes for 32 per cent of the owners additional, 39 per cent of the tenants, and 49 per cent of the owners. The percentages failing to earn the estimated average value of the labor and superintendence of the farmer, even on the basis of 1918 land values, range from 42 per cent for tenants to 57 per cent for owners. When calculated on the basis of 1919 land values, those failing to earn the value of the farmer's labor and superintendence constitute nearly two-thirds of the tenants and over three-fourths of the owners.

As already pointed out, it must be borne in mind that the actual conditions are not so serious in the case of the tenant as in that of the owner, because the former usually pays an average rent of less than 5 per cent on the value of the real estate, and consequently his operator's labor income is higher than the farm labor incomes calculated by the deduction of 5 per cent for all capital employed in farming. On the basis of operators' labor incomes, as distinguished from farm labor incomes, only 3 per cent of the tenants in the Tama district made minus labor incomes in 1918, although 11 per cent failed to earn the estimated value of operators' labor and superintendence. On the other hand, in the Warren district, where the per cent of rent to land values in 1918 averaged somewhat higher than 5 per cent, 9 per cent of the tenants failed to make plus operators' labor incomes in 1918, while 59 per cent failed to earn the value of the farmer's labor and superintendence.

THE FARMER'S POWER OF ACCUMULATION AS INDICATED BY DATA ON NET WORTH.

In obtaining data concerning the income of Iowa farmers in 1918 information also was obtained with regard to the net worth of the farmers at the end of the fiscal year 1918; that is, on March 1, 1919. These facts are shown in Table XX.

The table shows the average net worth of farmers who own their farms in the Tama district to be the very substantial amount of

$65,464, while it is $30,915 in the Warren district. The owners additional in both districts have average net worth somewhat less than that of owners.

TABLE XX.—*Net worth, March 1, 1919, of farmers classified by ages and tenures.*

Tenure and age group.	Tama district.		Warren district.	
	Number of farms.	Net worth.	Number of farms.	Net worth.
I. Owners:				
Under 31	7	$57,216	5	$10,775
31 and under 41	30	65,153	19	31,020
41 and under 51	28	57,060	20	34,287
51 and over	21	79,864	40	31,695
All ages	86	65,464	84	30,915
II. Owners additional:				
Under 31	3	28,202	4	19,040
31 and under 41	7	42,541	9	20,376
41 and under 51	14	50,653	11	27,509
51 and over	4	43,990	19	27,593
All ages	28	45,269	43	25,266
III. Tenants:				
Under 31	28	6,639	15	4,502
31 and under 41	40	9,258	18	3,138
41 and under 51	21	13,138	15	2,816
51 and over	8	11,818	8	3,238
All ages	97	9,552	56	3,415

It should not be inferred that the comparatively large sums represented by the net worth of owners and owners additional have been accumulated wholly by farming. They are largely the results of increase in value of land acquired by purchase, by marriage, or by inheritance at an earlier time, supplemented to some extent by other wealth acquired by marriage or inheritance. In a few cases, perhaps, net worth is the result of unusual agricultural efficiency combined with thrift or fortunate investments outside of farming. What may be acquired by actual farming, as distinguished from increase of land values, is suggested by the figures showing net worth of tenants of various ages. The average net worth of tenants of all ages is $9,552 in the Tama district and $3,415 in the Warren district.

It might be supposed that the comparatively small average net worth of tenants is attributable to the fact that the more successful tenants have risen to the position of owners or owners additional, leaving only the less successful in the tenant class. While there is undoubtedly some truth in this supposition, yet it is not likely that it applies with much force to the groups of tenants below the age of 41. Comparatively a small proportion of Iowa tenants become owners before the age of 41. In fact, only about one-third of the owners have acquired ownership before the age of 41, and undoubtedly these have received substantial assistance from wealth acquired by inheritance, marriage, or gift, either of the farm itself or of the means by which it is purchased.

The general truth of the proposition that owners of Iowa farms have acquired present net worth largely by increase in land values may be roughly tested by interpreting available facts with regard to the average period of ownership and the average increase in land values for the period. The essential facts are shown in Table XXI.

TABLE XXI.—*Average present age of owners who operate their farms, average years an owner, average years of ownership of present farm, Tama district.*

Age groups.	Average present age.	Average years an owner.	Average years owner of present farm.
Under 31 years	28.5	3.8	3.4
31 and under 41	36.5	8.9	7.4
41 and under 51	46.1	12.1	10.5
51 and over	56.2	21.2	16.1
All farmers	44.0	12.7	10.5

The average period of ownership is 12.7 years. Assuming that the acreage owned throughout the period has been the same as the present acreage owned, the average addition to net worth for the period of ownership from increase of land value alone may be estimated at over $60,000. As shown in Table XX, the average net worth on March 1, 1919, was $65,464. However, of the total increase a little more than $18,000 occurred from March, 1919, to August, 1919, making a corresponding addition to net worth. Accordingly, it appears that of a total net worth of about $84,000, approximately $60,000 is due to increase of land value.

It may be said, of course, that it is incorrect to assume that the same acreage has been owned throughout the period of ownership, and there can be no doubt that this introduces a factor of uncertainty into the estimate, especially in view of the fact that there has been a tendency for the average size of Iowa farms to increase. However, the fact should be noted that there is no discernible tendency for the average size of the farm to increase with the age of ownership. Indeed, there is a decline during the first three age-groups, with a slight increase in the last. Moreover, the assumption takes no account of the increment of value obtained from parcels of land acquired and resold, nor of the increment from additional farms owned by the individual farmer. Consequently it is not improbable that at least $60,000 of the total net worth of farm owners in the Tama district may be accounted for by increased land values.

Moreover, the farmers have attained their present net worth in part by inheritance, gift, and marriage. The double influence of inheritance, marriage, and gift on the one hand and of retirement from farming on the other is shown by the small difference between the average net worth of the youngest and oldest age-groups. The former group is largely recruited by young men who have obtained their wealth by inheritance, marriage, or gift. This is indicated by the figures on inheritance, the average being much larger for the youngest age-group than for the older age-groups. On the other hand, the eldest age-group is constantly being depleted by retirement from farming.

It should be noted that the amount of net worth not accounted for by the above explanations was not all acquired during the 12 years of ownership, for many owners had acquired considerable net worth as tenants before becoming owners.

Finally, there can be little question but that a considerable part of the present average net worth is due not only to increase of land values but also to accumulations made possible by the unusually favorable conditions of the war period affecting farm incomes.

It is difficult to see how tenants with an average net worth of $9,552 can hope to acquire the ownership of farms which together with necessary operating capital represent an average investment per farm of $86,957 in August, 1919. The process of climbing to the top of the agricultural ladder may have been easier in 1913 when the total investment averaged $46,029, or even in 1918 when it was $60,663, than it is likely to be in the future. The process of acquiring ownership by borrowing a large part of the purchase price of a farm must be especially difficult when under the favorable conditions of 1918 owners of farms made an average net return which would yield only 3.5 per cent on the average value of the farm investment in August, 1919. Moreover, the relative financial undesirability of assuming ownership under present conditions is emphasized by the fact that tenants were able to earn 32 per cent on their invested capital besides earning the estimated value of their labor and superintendence. (See Table XVI.)

In the Warren district conditions are in some respects more favorable to the passage from tenancy to ownership than in the Tama district. Not only has the average value of land been lower, but also it has been capitalized at a higher rate of interest, which is shown by the fact that the average net return of landlords, even in the unfavorable year of 1918, was 5.33 per cent, as compared with 2.43 per cent in the Tama district. (Table XIV.) However, the annual labor income of farmers in this district from which savings may be derived was very much lower than in the Tama district, not only in the unfavorable season of 1918, but also in 1915. This general fact is reflected in the lower average net worth of tenants in the Warren district, which is less than half that of the Tama district.

The difficulties of acquiring ownership of this high-priced land should not be confused with the question of the possibility of accumulation of wealth by tenant farmers. The average labor income of tenants in the Tama district was $3,053 in 1918; in addition to this, the tenant was allowed $354 for his working capital, as well as the value of the labor performed on the farm by members of the family and the value of living obtained from the farm. Certainly the favorable conditions of the war period made possible considerable accumulation by tenants. In 1913, however, the average labor income of tenants was but $1,315 in the same district.

SUMMARY OF CAUSES AND PROBABLE EFFECTS OF THE "BOOM."

CAUSES.

The great attention attracted by the recent unusually rapid increase in the values of farm lands and in the activity in buying and selling farm land has resulted in the advancement of numerous theories in explanation of these phenomena. It would be difficult to suggest probable causes which have not already been mentioned in popular discussion. However, it may be desirable to indicate the relative importance of the several causes mentioned, to test them so far as possible by the known facts, and to suggest their mutual interrelation.

From the standpoint of causes it is desirable to distinguish to some extent the increase in activity in buying and selling from the increase in values. An increase in value, if not too abnormal, may occur without being accompanied by any considerable increase in buying and selling activity. In fact, a steady increase in value was taking place prior to the beginning of the "boom" of 1919. However, it is clear that the increase in value and the increase in sales activity were due in part to identical causes during the spring and summer of 1919, and, moreover, the increase in values and increase in sales activity mutually influenced one another—that is, the increase in value tended to stimulate activity in buying and selling, while this activity in turn reacted upon values.

Foremost as a cause is the fact that farm income, as a result largely of war prices for farm products, increased for a time more rapidly than land values. This fact is clearly established by the analysis of farm incomes. (See above, p. 21.)

This truth was sometimes expressed in popular discussion by the statement that there was "little or no increase in land values during the war period, and an increase was, therefore, about due." This is, of course, but a half truth, for it has been shown that there was a probable average increase of approximately $15 per acre during the period from March, 1918, to March, 1919, if this may be taken to comprise a greater part of the war period. If the latter term is employed to coincide with the entire duration of the European war—from 1914 to the beginning of 1919—there was undoubtedly a much larger increase.

If the primary cause for the "boom" was the marked increase in the net income of farms, it is in point to consider what conditions were responsible for this increase.

It is sometimes asserted that it was due to the fact that the dollar had fallen to less than half its purchasing power before the European war. Sometimes this cause is invoked as the immediate cause of the rise in the value of farm land, on the assumption that if the dollar is worth only half as much as formerly it should require twice as many dollars to purchase the same farm as formerly. Sometimes the more indirect explanation is offered, that the fall in the value of the dollar has resulted in a great rise of the prices of farm products—specifically $23 hogs, $2 corn, etc.

It should be clear, however, that people buy farm land primarily because of the desire for the net earnings to be derived from ownership. Net earnings attributable to the land are not only dependent on the prices of products, but also on the expenses of production. If prices of products are doubled and the expenses are also doubled, the net earnings attributable to the land, expressed in dollars, also will be doubled. If expenses increase in greater proportion than prices of products, net income will increase in less proportion than the prices of products. Conversely, if the expenses of production increase in less proportion than the prices of products net earnings will increase in greater proportion than the latter.

As a matter of fact, the latter tendency seems to have prevailed during the period 1914 to 1918, inclusive. The December price of corn for Iowa increased 112 per cent from 1914 to 1918, while the price of oats increased 62 per cent. The January price of hogs increased 150 per cent from 1915 to 1919.[1]

On the other hand, the wages of farm labor without board increased 112 per cent from 1914 to 1918, inclusive, and the average prices of 17 important commodities used by farmers in production increased 85 per cent.[2] Moreover, during this period farmers used many kinds of equipment bought at the earlier prices of the prewar period, such as machinery, work horses, harness, etc. It should be noted that the rise in prices of farm products reached its peak in August, 1919, a time when the "boom" was at its height.

In short, expenses did not increase as rapidly as the prices of products. Likewise, land values lagged behind, for some time was required before the increase in net earnings attributable to the land was fully reflected in the demand for land. There is a widespread belief in Iowa that the demand for land was even retarded during the war

[1] The January prices of hogs for 1915 and 1919 are taken because they are the nearest comparable figures to those for December of the preceding year in each case. The difference is only 1 month instead of 11 months, as would have been the case in comparing December and January of identical years.

[2] Including various kinds of farm machinery, fertilizers, harness, lumber, fencing, and other items. These figures as well as those for Iowa prices of farm products are from the "Monthly Crop Reporter."

because farmers who would otherwise have purchased farms for their sons postponed these purchases until the boys should return from the army, while many farmers were investing in Liberty Bonds instead of in land. With the close of the war and return of the soldiers this source of demand for land again became effective. It is difficult to prove this theory, but it seems probable that it may account in part for the "boom," although undoubtedly a subsidiary cause.

The large increase in the net earnings of farmers was responsible for the "boom" in still another way. It increased the investable funds in the hands of farmers. This condition was also rendered still more favorable by the easy market for credit which prevailed in 1919. Both conditions were reflected in the financial status of State and savings banks and trust companies. A statement of the condition of 371 State banks, 926 savings banks, and 23 trust companies in the State of Iowa, published in the press under date of July 22, showed that bank deposits had increased more than $100,000,000 during the year, or about 17 per cent, while loans and discounts had increased less than $40,000,000, a little over 8 per cent.

By easy market for credit is not meant easy terms of credit. We have no grounds for believing that during the period of the "boom" there was a strong tendency to lower the standards of security ordinarily required in Iowa for farm purchases financed by credit. What is meant is that loanable funds both for mortgage and for personal credit were abundant. Not only was this true of bank credit, but it was especially true of credit furnished by the sellers of farms. Large numbers of farmers who had prospered during the war desired to retire, and many of them were glad to avoid the responsibility of, and risk involved in, renting land, by converting their equities so far as possible into farm mortgages.

Such were the important conditions which formed the basis of increased activity in buying and selling land in the spring and summer of 1919, and the accompanying increase of land values.

This movement, however, was cumulative, increasing of its own momentum. As soon as it became apparent that land values were rising the speculative interest developed. Many people who otherwise would not have been interested in the land market bought for the purpose of selling again within a short time. The motive was not for investment and had little reference to the earning power of the land except so far as this might form a basis for judging the probability of further increase of value. This class of buyers increased the volume of demand for farm land. Moreover, since most of this class also desired to sell again as soon as a substantial speculative profit could be realized, the volume of supply was considerably increased. From one-fourth to one-third of purchases and sales were made primarily for speculative motives. There were many persons, including large numbers of farmers who had prospered during the war, who had been intending to purchase farm land, but who for one reason or another had postponed action. Fearing that their desires might not be realized before values rose too high, these people hastened to buy. On the other hand, there were shrewd landowners who had long held land for an increase of value who believed it a good time to take their speculative profits by selling. There were many farmers who found themselves able to retire on a comfortable competence by selling their lands at the increased level of values.

The professional land dealers did their part to increase the activity and intensify the excitement. They rode from farm to farm persuading farmers to sell and encouraging others to buy, sometimes stimulating the movement by fictitious sales. As already noted, a large proportion of high-grade farms were sold in the early months of the year, and the high prices received were widely advertised. Inveterate optimists and professional "boosters" found their optimism confirmed by the fact that Iowa farm land had "never gone back." Stories of sales at unheard-of prices and of large profits made over night were prevailing topics of conversation and occupied much space in local newspapers. The press made much of the high prices of farm products and helped to create the widespread impression that high prices of products would continue for a long time.

Thus there sprang into being among many people a supreme confidence that prices of farm products would remain at the present high levels and that land would continue to increase until $500 and $600 per acre would be prevailing values of Iowa farms. Consequently the great activity in buying and selling land reacted on land values, pushing them up more rapidly than they would have increased otherwise, while the rising values stimulated increased activity in buying and selling.

IMMEDIATE CONSEQUENCES.

One of the most important immediate consequences demonstrated by this study is that the increased activity in buying and selling farm land resulted in increasing the proportion of farm owners operating their farms while correspondingly reducing the number of farms owned by urban dwellers and operated by tenants. While a considerable number of farm operators seized the opportunity to sell out and retire, this reduction in the number of farms operated by owners was more than compensated by the number of farms purchased by tenants or by owner operators who increased their holdings. It is probable, however, that this tendency will not affect to a marked extent the percentage of tenant farmers, because probably not more than 10 per cent of the farms of the State changed ownership during the "boom." On the other hand, this small percentage of change in ownership may be considered fortunate in that a comparatively small proportion of the present farmers of Iowa have assumed the heavy financial handicap involved in the purchase at the excessively high level of values resulting from the "boom." Probably not more than 5 per cent of the farms of Iowa were acquired by actual farmers at boom "prices." The remaining 95 per cent of the farmers have marked up the prices of their farms, and in case of necessity can mark them down again.

The "boom" was a process of rapid recapitalization of Iowa farm lands on the basis of the high prices of farm products and relatively high farm earnings of the war period. The process brought about an average increase of about $66 an acre, amounting to an increase of about $200,000,000 for farms actually sold, and, if imputed to all the farms of the State, resulting in a total increase of more than $2,000,000,000. Active farmers assumed a larger proportion of the recapitalized values than they had held of former values. Urban owners took advantage of the process of recapitalization to realize the increments of land values that had accrued during the period of ownership, with the result that these urban dwellers received nearly half of all the increment of value in the case of farms owned by the sellers before the beginning of the "boom" and more than two-thirds of the increment derived from resales of farms purchased during the period of the "boom."

The process of recapitalization and redistribution of ownership occurred without any serious tendency toward "shoestring" speculation such as sometimes accompanies a land "boom." There were unquestionably some instances of this character, but they were exceptional. The great majority of buyers were people of substantial means, and the terms of sale were not much less conservative than those sanctioned by prevailing custom in the region. Moreover, the practice of reselling contracts of sale was not as extensive as was generally believed. Consequently the March settlement following the "boom" occurred without a serious credit stringency. Some uncertainty and resulting litigation may grow out of the complications from resales, but this is of minor consequence.

Some temporary inconvenience and delay in the making of tenant contracts also resulted from the "boom" due to the uncertainties of ownership, but this was also a minor consequence because of the fact that not more than 10 per cent of the farms were sold and not more than one-fourth of these were resold.

ULTIMATE CONSEQUENCES.

The immediate consequences of the "boom" of 1919 are of relatively minor significance as compared with the ultimate consequences. The latter grow out of the relation of farm values to farm incomes and the probable effect of this relationship on the possibility of farmers acquiring ownership. For the relative increase in farms operated by owners is an immediate, but not necessarily an ultimate, result of the "boom" and the accompanying increase in land values.

By every method of analysis employed it is shown that relative to farm earnings, even under the favorable conditions of 1918, the increase of land values was excessive. In the Tama district, where both good prices and excellent crops combined to produce unusually high farm earnings, farm income of all farms increased 65 per cent from 1913 to 1918, while land values increased 82 per cent to August, 1919. As a result of high prices for farm products farm labor incomes were relatively higher in 1918 than in 1913, even if allowance be made for the change in the purchasing power of the dollar, whether the calculation be made by charging 5 per cent or 5½ per cent for use of the capital. However, when farm labor incomes are calculated on the basis of 1919 land values, a marked change occurs. When capital is charged 5 per cent, the payment for the farmer's labor, enterprise, and risk declines from $306 in 1913 to $222 in 1919. On the basis of a 5½ per cent charge for capital, the average farm labor income for 1919 in the Tama district is $213 less than nothing. When allowance is made for the decline in purchasing power of the dollar, the decline in labor incomes is further intensified.

Thus it appears that high prices of the war period increased farm labor incomes in considerably greater proportion than the decline in the purchasing power of the dollar, but the advance in land values more than absorbed all the gain, forcing labor incomes, even measured in dollars, far below what they were in 1913. Furthermore, the result of increased land values is to increase the percentage of farmers making minus labor incomes from 15.6 on the basis of land values in 1918 to 42.2 on the basis of land values in August, 1919.

If these are the results under the favorable conditions of good crops and high prices, what may be anticipated when the crops are poor and prices lower? The effect of poor crops is shown by the statistics of income for the Warren district, but the effect of a general fall in the level of prices will be far more serious, for it will not apply merely to an occasional year.

While the comparison of labor incomes for the several periods serves to show that land values increased more rapidly than earning power, some may question the practice of deducting 5 per cent for the use of capital, including land value.

For some years there has been a tendency, not only in Iowa but in certain other farming regions of the United States, to capitalize land at a lower rate than 5 per cent—that is, to value it so high that it will not yield, over a period of years either to owner operator or to landlord, as much as 5 per cent on the value.

This tendency is attributable to several causes. The most important is the fact that constantly increasing values of land have yielded an increment which may be counted as a substantial addition to the income derived annually from the rent or use of the land. It is obvious, however, that whether this fact may be considered a justification for the present high land values depends on whether the increase may be expected to continue. The reply of many people in Iowa is that land always has increased in value; therefore it will continue to increase.

Another reason for the low rate at which farm land is capitalized is the fact that the farm is not only the source of money income, but also yields satisfaction as a home. Therefore a part of the high land values represents allowance for home advantages, including residence and other conveniences, good roads, schools, and other social benefits.

A most important reason, however, is the tendency for farmers to invest in land with little consideration for the possibilities of other lines of investment. This tendency may be explained by ignorance of other methods of investment, by the belief that investments in farm land are peculiarly safe, and by the pride of ownership, or the mere blind passion for ownership which causes many farmers—especially peasant immigrants—to accept a low standard of living in order to acquire land.

As a result of these conditions the average cash rental of farm land in 49 Iowa counties in 1918 was 2.71 per cent of land values, March 1, 1918, and 2.35 per cent of land values, March 1, 1919. The percentage of land values for August, 1919, would be still less. In the Tama district cash rentals were 2.15 per cent of land values in 1913, 1.90 per cent in 1918, and 1.30 per cent of the land values of August, 1919. It should be noted, however, that owners operating their farms are able to earn a slightly larger percentage of return than would be derived from renting them to others for cash rent. Thus, the per cent of average return to owners from operation in the Tama district was 3.98 in 1913, 4.99 in 1918, and 3.5 on the basis of land values in August, 1919.

If, on account of the various motives mentioned above, farm owners are willing to pay prices for land which will make it necessary to take considerably less than 5 per cent for the use of the land, shall we consider the value of farm land abnormal, and the condition itself one to be deplored?

The question may first be considered from the standpoint of farm owners, however they may have attained that status. If the owner is free of debt, the rent of the land combined with the income assignable to the labor of the farmer and his family, together with interest on operating capital, may enable him to live in considerable comfort.

Thus, the average farm income in 1918 of owners in the Tama district was $4,272, and in the Warren district, $1,997, besides living obtained from the farm and such income as may be attributed to the labor of the farm family.

However, even supposing an owner to be clear of debt, he would obtain a larger income by selling his farm property and becoming a tenant, investing the surplus wealth not needed for operating capital in sound bonds or mortgages. Thus, the owner of the average farm capital of $88,404 could invest $7,081 as farm operating capital, and under the conditions of 1918 could earn a labor income of $3,053 after paying rent, besides 5 per cent interest on the $7,081 invested amounting to $354. The remaining capital, $81, 323, invested at 5 per cent would yield $4,066.15. Thus the total income obtained by this method would be $7,473.15 in addition to living obtained from the farm and such income as was credited to the labor of the farm family.

The above analysis assumes that the farmer owns outright the total amount of the farm capitalization. If half the capital value as of August, 1919, were borrowed at 5½ per cent, only $1,841 of the farm income in the Tama district would remain, and this under the favorable conditions with respect to crops and prices in 1918. In the Warren district such an owner would have had only $784.80 left, after paying his interest, from which to live and reduce the principal of the loan. If the debt had amounted to three-fourths the value of the investment—and one-fourth of the sales involved at least this per cent of indebtedness—the remaining income after paying interest would have been $626 in the Tama district and $179 in the Warren district.

By inference from the above analysis we may derive the relation of the present high level of land values to the status of a tenant. It was shown clearly that even if a farmer has sufficient wealth to purchase a farm outright, he can obtain a larger total income by remaining a tenant and investing in bonds or mortgages the remainder of his wealth, above the amount needed for operating capital. Hence, there is a financial premium on remaining a tenant rather than becoming an owner.

On the other hand, even if the tenant desires to become an owner, the financial handicap of paying 5 per cent or more on borrowed capital to purchase land which will yield 3 per cent or less on the investment demands serious consideration, with special attention to the possibility that prices of farm products may decline. Finally, it is obvious, since the average net worth of the tenant is so small as compared with the total value of the farm investment required to operate as an owner—about 11 per cent—that at least 89 per cent of the total investment must be borrowed by the tenant who buys under these conditions. Heretofore, these obstacles have not been so great, for the increase of land values alone has been sufficiently large to amortize a large part of the indebtedness. Thus, a tenant who bought land in the Tama district at the average value of $192 an acre in 1913 could have borrowed 85 per cent of the purchase price and sold the farm for enough to repay the debt out of the increase in value during the six years. Unless farm land may be expected to continue to advance steadily in the future, this important means of acquiring wealth sufficient to repay indebtedness incurred for purchase will not be available.

It appears, therefore, that in view of the financial undesirability, as well as the almost insuperable difficulty, of tenants acquiring ownership under present conditions, comparatively few tenants may be expected to change their present status, unless there occur a marked change in conditions.

The question whether the present level of land values is to be considered abnormal and to be deplored should finally be tested not only by the interest of the individual owner or tenant, but also by the general public interest.

Is it to the public interest that farmers must pay so much to acquire the ownership of land that they can earn very much less on their investment than if they invested in other lines of business? Is it to the public interest that the making of a return equal to the market value of the farmer's labor is so precarious, on account of the high capital charges of the business, that from 65 to 85 per cent of the farmers, in a time when conditions were unusually favorable to agriculture, failed to earn that amount? Finally, is it desirable that land values should be so high that it is financially both undesirable and impossible for a large percentage of tenants to acquire the ownership of a farm?

The reader may answer these questions according to his own point of view. From the point of view of the writers the questions themselves suggest the unwholesomeness of the tendency toward the overcapitalization of the earnings of farm lands—a tendency prevailing not only in Iowa, but in other agricultural regions before the recent "boom," but carried to a greater extreme in the rapid recapitalization of land values that has been described in this study.

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