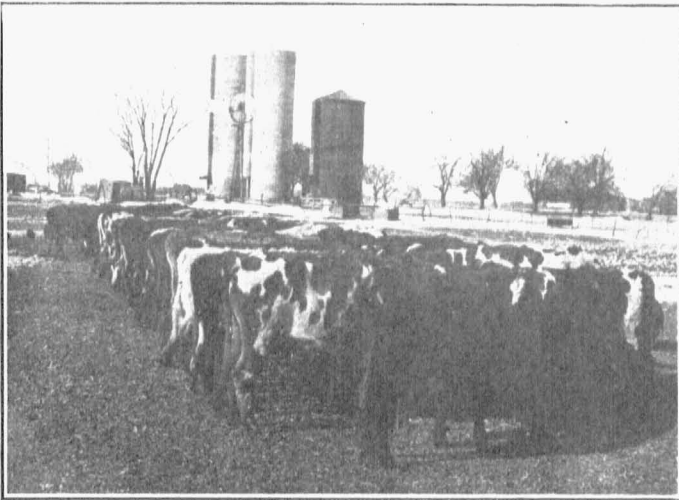


UNIVERSITY OF MISSOURI COLLEGE OF AGRICULTURE
AGRICULTURAL EXPERIMENT STATION
BULLETIN NO. 175

INFLUENCE OF CAPITAL
ON
FARM ORGANIZATION
I. IN A LIVE-STOCK SECTION



The feeding of silage was common on the more successful farms

COLUMBIA, MISSOURI
OCTOBER, 1920

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Influence of Capital on Farm Organization

I. In Live-Stock Section

O. R. JOHNSON, R. M. GREEN*

The amount of money a farmer has to work with is one of the most important factors in determining his success. The capital usually determines not only the kind of farming he shall undertake but also the locality which he chooses. As prices increase and as land values rise capital becomes more than ever a determining factor. To determine the importance of the amount of money a man has to work with, special study has been made in two sections of Missouri that contrast live-stock farming and high-priced land with grain farming and low-priced land. In this discussion only the first section studied will be dealt with. The second section will appear in a later report.

The region chosen for this part of the work was Saline County, Missouri. Two hundred and two farms were included and the figures from these are for the farm year 1914-15. Statistics were collected from farmers by means of the survey method. This included the obtaining of inventories for the beginning and close of a farm year, also the receipts and expenses for that year. Certain additional information is gathered regarding prices, crop yields and many farm practices. The object is not only to obtain the farmer's net income for the year but to have enough additional information to be able to give specific reasons for his success or lack of success.

The part of Saline County studied is about one-fourth or one-fifth of the county extending from Marshall north and west. The soil in the region is very fertile. It is primarily a corn and a live-stock feeding section. The average yield of corn is approximately forty bushels. As this particular region is better than the average of Saline County the yield will probably differ a little from that average. Wheat does not do particularly well yet yields of between twenty and thirty bushels are not unusual. The average yield of various crops on the farms studied for 1914 are: Corn, 36.3 bu.; wheat, 16.4 bu.; oats, 19.3 bu.; timothy and clover hay, 1.1 tons; alfalfa, 3.5 tons.

As this is a region where land values are very high, capital really plays an important part in farm operations. In attempting to find out what a farmer can do with a certain amount of capital, the farms must be grouped according to amount of capital actually possessed by the operator. He may rent some additional land, or he may rent all the land he farms, or he may be renting some of his owned land to another farmer, yet he is put into the group with men who actually possess an amount of capital which falls within this group. For illustration, in the first group of farms are men with a capital of less than \$5,000. In this group (Table 1) only two farmers owned all the land they operated, two others owned a little land and rented some additional. The remaining fifty-two farmers rented all the land

*Resigned, August, 1920.

they operated. These farms varied in size from 20 acres to 327 acres. Thus it is seen that different farmers have different ideas of how best to use a capital of less than \$5,000 in farming. The exact amount of capital he uses in the nature of rented land is shown in Table 1 for each group of farms studied. Table 2 shows that in all groups, some farmers use just their own land, some rent out some of their land, and others think they make more from farming the other man's land than by owning it, for which reason they rent additional land.

The object in dividing each group of farms studied into two classes should be explained. Farmers as well as men in other business believe that the best way to get pointers on successful methods of conducting their business is to study the methods and practices of successful business men engaged in that line of work and that the best way to learn what practices would fit their conditions is to study the successful operators in that line of business under similar conditions. A good way to have these differences firmly impressed on one's memory is to compare the two classes just men-

TABLE 1.—CAPITAL USED IN LAND RENTED BY OPERATORS IN EACH CAPITAL GROUP

Operator's capital group	Acres farmed	Owned capital per farm	Acres rented per farm	Value
Under \$5000				
Low labor-income.....	141.8	\$ 2,133	139.7	\$16,759
High labor-income	194.1	2,353	194.1	27,849
\$5000 to \$20,000				
Low labor-income.....	124.3	13,988	37.8	4,457
High labor-income	143.3	12,394	82.3	11,930
\$20,000 to \$40,000				
Low labor-income.....	208.7	29,740	20.5	2,758
High labor-income	212.1	29,380	41.7	6,585
Over \$40,000				
Low labor-income.....	321.2	62,563	48.8	5,674
High labor-income	369.4	65,125	46.8	6,179

TABLE 2.—LAND LEASING POLICY OF MEN IN EACH CAPITAL GROUP

Capital group	Number of farms	Per cent of operators		
		Farming own land only	Renting more land	Renting out land
Under \$5000				
Low	25	8	92	---
High	31	0	100	---
\$5000 to \$20,000				
Low	30	60	40	---
High	31	55	45	---
\$20,000 to \$40,000				
Low	24	46	21	33
High	17	59	35	6
Over \$40,000				
Low*	23	48	13	44
High*	22	44	32	32

*Some men in these groups rented out some land and then rented more to farm, themselves.

tioned; namely, the successful and the unsuccessful engaged in similar lines of business.

It is obviously impossible to study by direct observation the methods and practices of any considerable number of farms. Therefore, a measure which is fair to all and which can be applied to a farmer's record, must be determined. For this purpose labor-income has been used for a number of years. Labor-income is what the farmer has left as wages for his labor and management after paying all operating expenses of the farm and allowing his capital 5 per cent as its fair earning for the year. The value of products furnished by the farm toward the family living, including house rent, is not charged as a farm receipt, neither are cash expenses of the family living charged as a farm expense.

The farms studied are divided into four groups and each group is further divided into a class of successful and a class of less successful operators. In several of these classes it will be noticed that the labor-income is given with a minus sign before it. This means that the operator failed by this amount to make 5 per cent interest on his investment. Table 3 shows the number of farms in each class of each group studied together with the average labor income made by this class.

In making the labor-income divisions in each group, a dividing point is used which gives approximately the same number of farms in each class. (Table 3.) The division used was \$100 labor-income in all classes except the first. In other words the class marked low labor-income included farms which made less than \$100 wages for the operator. Those marked high income made more than \$100 wages for the operator. This division had to be changed in the first group because not enough farms fell in the low group. It was found necessary to raise the division point to \$600.

After this general discussion each group will be considered individually and the practices of the more successful farmers will be contrasted with the practices of the less successful. This will eventually give a fair idea of what a man may expect to do with a given amount of capital, provided he conforms more or less to practices which seem to pay best in that particular group.

TABLE 3.—AVERAGE LABOR INCOMES MADE BY MEN OF EACH CLASS IN THE CAPITAL GROUP

Capital group	No. farms	Labor-income
\$5000 or Less		
Labor-income under \$600	25	\$ 210
Labor-income over \$600	31	1115
\$5000—\$20,000		
Labor-income under \$100	30	-354
Labor-income over \$100	31	1065
\$20,000—\$40,000		
Labor-income under \$100	24	-794
Labor-income over \$100	17	706
Over \$40,000		
Labor-income under \$100	23	-1927
Labor-income over \$100	22	2486

FARMERS POSSESSING LESS THAN \$5000 CAPITAL

In studying the operations of farmers who have less than \$5000 capital, it is found first that practically all men in this group are renters. These farmers virtually agree that with no more capital than this, their funds should be devoted to equipment and live stock. Only four farmers in the list made any attempt to own land. While these men agree as to the advisability of not trying to own land with the limited capital they possess, yet their ideas of a farm are decidedly different. One, for example, was farming 24½ acres, another 20 acres, and another 27 acres. On the other hand, there were 21 farming more than 200 acres of land. They also differed in regard to the amount of investment deemed advisable for live stock and machinery. Some farmers had such investments in work stock, for illustration, as \$175 on a 90-acre farm or \$390 on a 180-acre or \$150 on a 107-acre farm. On the other hand another man had as much as one-half of his capital invested in work animals. In regard to other classes of live stock we find similar variations. With machinery the situation is the same as with work animals. Considering the variation in men's ideas of the way they should invest their capital, it will be desirable to compare the men making fair incomes with those making poor incomes to see if the more successful farmers have any uniformity of methods or to see if their methods uniformly differ in any respect from those of the less successful ones.

These men are divided into two classes depending on whether they made a labor-income larger or smaller than \$600. Thirty-one farms in this group fall into the class of lower labor-incomes, and twenty-five fall into the class of higher incomes. The distribution of farms in each class is given in Table 4. While the farmers of each class possess about the same capital, yet 84 per cent of those in the high income class have more than \$1000 capital and less than \$4000 while 22 per cent of the low income class have less than \$1000, and 16.2 per cent have more than \$4000. There are fewer farms in the extreme capital divisions in the high income class.

Regarding the distribution of investment, the high income class have \$400 more invested in live stock and \$90 more in machinery. (Table 5.) The low income class have 14 per cent of their money invested in land. No doubt land is a factor of no small importance in explaining the difference in labor-income made by the two groups.

Studies of live stock and cropping systems give some further reasons for the difference in income. The high income class kept two more work

TABLE 4.—DISTRIBUTION OF OPERATORS CAPITAL IN GROUP I

Amount of capital	High income class		Low income class	
	No. of farmers	Per cent of total	No. of farmers	Per Cent of total
Under \$1000	3	12	7	22.6
\$1001—\$2000	7	28	11	35.5
\$2001—\$3000	10	40	5	16.2
\$3001—\$4000	4	16	3	9.7
Over \$4000	1	4	5	16.2

horses per farm than did the low income class. They also kept one more brood sow and raised more pigs. With other stock the amount kept was about the same in both classes. However, in the high income class a larger profit was made on all classes of live stock. With a total difference in labor-income of \$905, nearly 18 per cent of this sum was due to larger profits on hogs, 3 per cent to better management of cattle, and 6 per cent to poultry.

With crops the high income groups show a marked difference from the low in the two more important crops, corn and wheat. They grew approximately 50 per cent larger acreage of each crop, with 1080 bushels more corn and 359 bushels more wheat. The increased acreage and better yield of corn were responsible for 67.7 per cent of the difference in labor-income, while wheat was responsible for 4½ per cent of the difference. (Table 6.) Variation in crop yields was not marked. Most of the difference was due to increased acreage.

The larger acreage of crops grown by the more successful farmers

TABLE 5.—DISTRIBUTION OF INVESTMENT ON FARMS IN GROUP 1 (under \$5000)

Investment in—	High income class		Low income class	
	Dollars	Per cent	Dollars	Per cent
Land .....	.....	---	300	14
Work Stock	938	40	687	32
Other Live Stock	695	30	539	25
Machinery	380 *	16	290	14
Miscellaneous	340	14	317	15
Total	2353	100	2133	100

TABLE 6.—SIZE OF THE IMPORTANT ENTERPRISES ON THE FARMS OF GROUP I WITH PERCENTAGE EFFECT ON LABOR-INCOME

Enterprise	High income class	Low income class	Dollars difference	Per cent effect on difference in income Per cent
Acres of corn.....	72	49.6	\$612	67.7
Acres of wheat	54.7	28.8	42	4.5
*Animal units in cattle....	2.4	2.2	28	3.1
*Animal units in hogs....	3.7	3.0	159	17.7
*Animal units in poultry	1	1	55	6.0
Miscellaneous .....	.....	.....	9	1.0
†Feed fed per animal * unit	\$51	\$53	.....	.....
Difference in labor-income .....	.....	\$905.10	.....	100

*An animal unit is a mature work horse or its equivalent in other live stock based on relative amounts of feed consumed in one year. Thus each of the following are equal to one animal unit: 1 workhorse, 3 other horses, 2 dairy cows, 3 farm milk cows, 4 cattle under 2 years, 3 cattle over 2 years, 4 brood sows, 3 fattening hogs, 23 ewes and their lambs, or 122 hens and their increase.

†Feed fed per animal unit means value of feed produced on the farm, and not sold, for each unit of live stock kept. This indicates the relative efficiency with which feeds are utilized.

enabled them to use their work stock to better advantage. The feed cost for this work stock was practically the same on all farms, while the farmers making the larger incomes grew 19.5 acres of crops for each work horse as compared to 15.9 acres of crops for each horse kept in the group making lower incomes. (Table 7.)

The difference in incomes due to better management of their hogs on the more successful farms is because of the following conditions. The average figures for the group show that the better farms were obtaining one pig more per litter than was being obtained on the less successful farms. Also the practice of raising two litters of pigs a year from each brood sow was more common on the more successful farms. On the low income farms 55 per cent of the operators were securing two litters of pigs a year from each brood sow, while on the high income farms 87 per cent of the operators were getting two litters of pigs from each brood sow kept. Further, losses from disease amounting to 17.3 per cent were found on the farms making the low incomes and 6.4 per cent for the farms making the high incomes. (Table 8.)

Three recommendations for this region may be made, based on the study of this group of farmers. First, with less than \$5000 capital don't buy, but rent enough ground to employ men and horses effectively. Second, pay more attention to wheat yields while growing a larger acreage of crops. Third, take every precaution to prevent losses from disease among hogs, and practice the two litter system of raising hogs.

FARMERS POSSESSING BETWEEN \$5000 AND \$20,000 CAPITAL

In studying the farmers in this area possessing from \$5000 to \$20,000 capital, some interesting comparisons are found. First, of all farmers in

TABLE 7.—ACRES OF CROPS TENDED PER WORK ANIMAL

	High income class	Low income class
Group I. Acres per horse.....	19.5	15.9
Group II. Acres per horse.....	14.1	10.6
Group III. Acres per horse.....	13.9	15.6
Group IV. Acres per horse.....	20.8	14.8

TABLE 8.—SHOWING COMPARATIVE HOG LOSSES AND PIGS PER SOW

	Percentage loss of hogs raised and bought. <i>Per cent</i>	Pigs per sow
Group I.		
High income class	6.4	7.1
Low income class.....	17.3	6.2
Group II.		
High income class.....	11.0	9.1
Low income class.....	46.0	8.0
Group III.		
High income class.....	15.0	8.8
Low income class.....	31.5	9.0
Group IV.		
High income class.....	8.0	9.0
Low income class.....	30.5	6.8

this group, all but five owned at least a part of the land they farmed. There are 61 farmers in this group. When they are separated into two classes, as the first group were separated, 30 of them are found to be making less than \$100 labor-income and 31 more than \$100. The 30 farmers made a labor-income of \$-381 while the 31 more successful made an average labor-income of \$930. Fourteen of the more successful farmers rented additional land while 11 of the less successful rented additional land. This indicated that men with this amount of capital are undecided as to whether it is advisable to rent more land. However, the high income class owned 61 acres of land while the low income class owned 86½ acres. The average amount rented by the high income class was 82 acres while those in the low income class rented an average of 37 acres. Table 9 shows the results obtained in both the low income and high income classes by the renting of this additional land. The men in the low income class who rented additional land practically doubled the size of their farms and reduced their minus labor income from \$434 to \$225. Three of the four farmers in this class who made as much as 5 per cent on their investment were among those who rented additional land. They owned almost exactly the same acreage as those who did not rent but increased their holdings to a more economical unit by renting some additional land and increased their farm-income by more than \$200. In the high income class the men who rented additional land increased their income thereby more than \$1000. Those in this class not renting additional land made a labor-income of \$428. Those renting additional land increased their holdings thereby from 42 acres to 219 acres which gave them a farm of economical size and a labor income of \$1488. As was stated before, the men in this group apparently are not convinced that they should rent additional land. However, the resulting effect on the labor-income should convince the most doubtful.

There is only \$1600 difference in the amount of capital owned by each class. In determining where this capital is invested, it is found (Table 10) that the low income class has \$3000 more invested in land than does the high income class. This larger investment in land by the low income class greatly handicaps them in the matter of working capital. They have only 17 per cent of their total capital as working capital while the more successful farmers have 31 per cent of their capital with which to operate. This will eventually mean less live stock, poor equipment and less efficient work on the farm thus handicapped. The high income class have two and one-

TABLE 9.—PRACTICE AND EFFECT OF RENTING MORE LAND IN GROUP II (*Capital—\$5000 to \$20,000*)

Factor	High income class		Low income class	
	Those renting more land	Non-renters	Those renting more land	Non-renters
Number of farms.....	14	17	11	19
Average labor-income	\$1488.	\$428	\$-225	\$-434
Average acres owned	42	76.5	85.8	86.6
Additional land rented	177.2	.....	87.5	.....

half times as much money invested in other live stock as do the low income class. In machinery investment there is little difference. The low income class have about \$200 more in feed, seed, etc.

The high income class grow one-third more corn than do the low income class. Otherwise there is not much difference in the cropping systems. The low income class get a little better wheat yield while the high income class get a little better corn yield. The high income class get about 40 per cent more work from each work horse than do the low income class (Table 7). At the same time they feed two-thirds as much feed for each unit of live stock kept. (Table 11.)

The difference in returns from live stock is made up almost entirely by hogs and cattle. The low income class failed to break even with both hogs and cattle, while the high income class made a gain on all classes of stock except sheep. A considerable portion of the gain in the high income class is due to more economical feeding and fewer losses from cholera among their hogs. The low income class, in addition to feeding 50 per cent more feed to each animal unit, lost nearly one-half of the pigs farrowed, and the number of pigs raised per sow was less than on the high income farms.

TABLE 10.—DISTRIBUTION OF CAPITAL IN GROUP II (*Capital—\$5000 to \$20,000*)

Capital in—	High income class		Low income class	
		Per cent of total		Per cent of total
Land	\$8,566	69.2	\$11,644	83.2
Work stock	789	6.4	746	5.0
Other live stock	2,582	20.8	1,039	7.9
Machinery	363	2.9	274	1.9
Miscellaneous	94	0.7	284	2.0
Total	\$12,394	.....	\$13,987	.....
Value of the land rented	\$11,930	.....	\$ 4,457	.....

TABLE 11.—SIZE OF THE IMPORTANT ENTERPRISES ON THE FARMS OF GROUP II,
WITH PERCENTAGE EFFECT ON LABOR INCOME

Enterprise	High income class	Low income class	Dollars differ- ence	Per cent effect on difference in income <i>Per cent</i>
Acres of corn	41.9	30.8	\$576	40.6
Acres of wheat	26.6	24.4	0	0.0
Animal units in cows	1.6	1.3	158	11.1
Animal units in steers....	11.6	1.5	189	13.3
Animal units in hogs.....	12.8	3.7	371	26.2
Animal units in sheep....	.7	.2	*-61	-4.0
Animal units in poultry	1.2	1.5	117	8.3
Miscellaneous .....	.....	.....	70	4.5
Feed fed per animal unit	\$41	\$68	.....	.....
Difference in labor- income .....	.....	.....	\$1,420	.....

*The high income class lost on sheep, compared to the low income class.

The principal differences in these classes seem to be first, on the high income farms a much lower investment per acre with equal yields; second, uneconomical feeding practices on the low income farms with heavy losses from hogs.

FARMERS HAVING FROM \$20,000 TO \$40,000 CAPITAL

Forty-one farmers were farming with a total owned capital of from \$20,000 to \$40,000. Seventeen of these made a labor-income of more than \$100 while the remainder failed to make as much as \$100 above interest on investment. The average of the 24 remaining farms was \$-794.04. The average income of the 17 successful farmers was \$705, making a total difference in the two groups of \$1499.

In the low income class of this group five farmers rented additional land while six in the high income class rented more land. The result of renting additional land is shown in Table 12. The farmers in neither class were able to make the renting of additional land profitable. The results show that the operators who were renting additional land did this in an attempt to increase the size of their business. The result on their labor-income was not very satisfactory. They had a fairly good-sized business to begin with altho it was not as large as that of the non-renters. A few of the farmers in the non-renting class let out some land. This was not of great importance however.

In this group, as in the second, there is considerable difference in the investment in live stock, the high income class having 51 per cent more money invested in productive live stock than did the low income class. A considerably larger portion of the capital of the low-income class was invested in land. From the standpoint of making a labor-income, this was not so desirable, as the difference in capital invested in land was nearly \$2000 (Table 13). Considering the fact that their total capital was practically the same this \$2000 difference must be taken out of working capital. The sacrifice was made in machinery and live stock other than work stock. This resulted in a greater expense of production on the part of the low income class and affected materially their returns from live stock.

The outstanding difference in results obtained in the two classes was in handling hogs and cattle. More than 70 per cent of the \$1500 difference in labor-income can be traced directly to hogs and cattle. The gains from

TABLE 12.—PRACTICE AND EFFECT OF RENTING MORE LAND IN GROUP III.
(Capital—\$20,000 to \$40,000)

Factor	High income class		Low income class	
	Those renting more land	Non-renters	Those renting more land	Non-renters
Number of farms.....	6	11	5	19
Average labor-income	\$486	\$870	\$-1206	\$-713
Average acres owned	147	184	171.6	219
Average acres rented	118.2	.....	98.6	.....
Average acres rented out .....	.....	10	.....	31.6

feeding cattle and hogs were approximately \$600 on the high income farms while on the low income farms a loss of practically the same amount was incurred. This was largely due to more economical feeding by the high income farmer. They fed only about 60 per cent as much feed per animal as did the low income class. The low income class kept nearly twice as many horses and mules as did the high income class, thus making the feed and all farm operations cost considerably more (Table 7). There was not much difference in the cropping systems followed. The acreage of wheat was almost the same. The low income class grew a few more acres of corn and obtained exactly the same yield of corn. The high income class obtained three bushels more wheat an acre than did the low income class. This, combined with a lower cost of production because of cheaper horse labor gave them a gain over the low income class in crop production. Thirty-five per cent of the difference can be traced directly to steer feeding. Nine of the 24 farmers in the low income class had ten or more steers each. Only one of these steer feeders was using silage. Twelve of the more successful farmers were handling steers. Six of this number were feeding either silage or grass. Difference in buying and selling prices or the managers' skill in trading was a bigger factor than the difference in feeding practices. The average labor-income of the nine steer feeders in the low income class was \$-936. Those not handling steers in this class



Pasture land is not working at full capacity because of poor care given it

TABLE 13.—DISTRIBUTION OF CAPITAL IN GROUP III. (*Capital—\$20,000 to \$40,000*)

Capital in—	High income class		Low income class	
		Per cent of total		Per cent of total
Land	\$24,427	83.1	\$26,254	88.2
Work stock	1,171	3.7	1,062	3.5
Other live stock.....	2,963	10.0	1,900	6.7
Machinery	498	1.7	383	1.2
Miscellaneous	321	1.5	141	.4
Total	\$29,380	.....	\$29,740	.....
Value of the land rented	\$ 6,586	.....	\$ 2,758	.....

made \$-744. In the high income class the 12 who were feeding steers made 3713 labor-income and those who were not feeding steers made \$786. However, the six farmers who were feeding silage or grass made labor-incomes of \$887.

Thirty-one per cent of the difference in incomes of the two classes was due to difference in success with hogs. The low income class had an average hog loss of 31.05 per cent while the high income class lost only 15 per cent. The difference in loss totaled \$171. The remainder of the \$465 difference in hog profits in the two classes was due principally to feeding practices. The number of pigs saved per sow in both classes was practically the same. (Table 8.)

The problems indicated in the study of this group are practically the



One of the better managed pastures in the area studied. Pays a lower rate of interest than crop land but conserves fertility and is helping solve a vexatious labor problem

TABLE 14.—SIZE OF THE IMPORTANT ENTERPRISES ON THE FARMS OF GROUP III WITH PERCENTAGE EFFECT ON LABOR-INCOME

Enterprise	High income class	Low income class	Dollars difference	Per cent effect on difference in income
Acres of corn	54.3	62.7	†\$-90.	16.6
Acres of wheat	40.	40.8	340	
Animal units in cows....	2.9	2.0	223	14.8
Animal units in steers....	25.2	8.9	529	35.0
Animal units in hogs....	13.1	8.6	465	31.0
Animal units in sheep....	.....	.....	-7	*
Animal units in poultry	1.3	1.3	17.	1.1
Miscellaneous .....	.....	.....	22.	1.5
Feed fed per animal unit	\$42.50	\$72.00	.....	.....
Difference in labor-income .....	.....	.....	\$1499.	.....

*Loss of less than one-half of one per cent.

†Corn was more profitable on the low income farms.

same as in group two, except that the renting of additional land is not so important while the retaining of enough capital as operating capital is important. As in group two, the low income farmers are not feeding economically and they are apparently not so skilled in buying and selling. The problems in regard to cropping systems correspond generally to those of group two.

FARMERS FARMING WITH OVER \$40,000 CAPITAL

This group comprised the 44 largest land owners in this area. One half of this group were making more than \$100 labor-income or an annual labor-income of \$2486. The other half of the group made an average labor income of \$-1927. In the low income class ten farmers let out part of their land while three of the group rented some additional land. One of the three also appears in the group of those who rented out land. The effect of this renting and letting out of land is shown in Table 15. In the high income class seven let out land while seven rented some additional land. Two of the seven who let out land in turn rented some additional land. The number of acres operated in each class is about the same. In studying the amount of capital devoted to various investments not a great deal of difference is found (Table 16). The more successful farmers are using about \$1000 more in live stock other than work stock. However, this is not of so great importance in that the less successful have more than \$5000 so invested. The reason for the difference in income must be looked for in other quarters.

The major part of this difference in income seems to be in the selling of crops and the feeding of steers. The high income class grows nearly twice as many acres of crops as does the low income class (Table 17). They have 120 acres of corn as compared to the 64 acres of the low income class, and 98 acres of wheat as compared to 51 for the low income class. They have nearly 20 per cent more cattle and 30 per cent more hogs than does the low income class. Each work horse does one-half more field work on the farms of the high income class (Table 7). Yields of crops were practically the same in both classes. In fact the low income class received a slightly larger yield of corn. Turning to the live-stock figures it is found that nearly 32 per cent of the difference in the incomes of the two classes is due to steer feeding.

TABLE 15.—RENTING POLICY ON FARMS HAVING OVER \$40,000 CAPITAL AND THE EFFECT ON INCOME

Factor	High income class		Low income class	
	Those renting more land	Non-renters	Those renting more land	Non-renters
Number of farms	5	17	3	19
Average labor-income	\$3,935	\$2,135	\$-7,974	\$-1,110
Average acres owned	245.6	447.	353.3	298.1
Average acres rented	166.	.....	406.6	.....
Average acres rented out .....	.....	101.2	.....	70.8

In both classes several farmers maintained breeding herds of beef cows. Five in the low income class kept an average of 15 cows while eight in the high income class kept an average of 17 cows. The percentage of calves for the year on the low income farms was 65 and on the high income farms, 80. This percentage is calves saved and does not include the entire number of those dropped. Thirteen of the low income farms sold one or more cars of fat steers while 19 of the high income farms made such sales. Twelve of the low income farms had feeders on hand at the end of the year but there were only two silos filled on these 12 farms. Twelve farms in the high income class had feeders on hand with ten filled silos. The farmers handling steers in the low income class made an average income of \$-2880. The nine not handling steers, \$-1365. The 19 handling steers in the high income class made \$2700 labor-income while the three not handling steers made \$1602.

The farmers in this group are facing some very serious problems. First, some of them are leaving most of their land in grass. This may be due to labor shortage or it may be due to a greater or less degree of retirement on the part of the farmer because of old age or the accumulation

TABLE 16.—INVESTMENT DISTRIBUTION AND AMOUNT USED THRU RENTING ON FARMS OF GROUP IV. (*Capital over \$40,000*)

Investment in—	High income class		Low income class	
		per cent		Per cent
		of total		of total
Land	\$54,662	83.9	\$54,450	87.0
Work stock	1,764	2.8	1,261	2.0
Other live stock	6,467	9.9	5,397	8.6
Machinery	659	1.3	563	0.8
Miscellaneous	1,572	2.4	891	1.4
Total capital	\$65,124	.....	\$62,562	.....
Value of the land rented	\$ 6,179	.....	\$ 5,673	.....

TABLE 17.—COMPARISON OF MAJOR ENTERPRISES IN GROUP IV WITH PERCENTAGE EFFECT ON DIFFERENCE IN GAINS

	High income class	Low income class	Dollars difference in net income	Percentage difference <i>Per cent</i>
Acres of corn	120.8	64.4	\$1,139.	25.8
Acres of wheat	97.7	51.0	572.	13.0
Animal units in cows....	3.3	2.3	*-11.	-0.2
Animal unit in steers....	59.0	52.	1,403.	31.7
Animal units in sheep....	8.3	.2	243.	5.5
Animal units in hogs.....	23.7	16.7	947.	21.4
Animal units in poultry	1.5	1.0	64.	1.5
Miscellaneous .....	.....	.....	58.	1.3
Feed fed per animal unit	\$47.00	\$55.50	.....	.....
Difference in labor income .....	.....	.....	\$4,414.00	.....

*The high income class lost on cows, as compared to the low income class.

of enough money to live on comfortably without hard work. A problem closely related to this is the matter of renting out land. Many of the farmers in this group have rented out so much land that they do not have enough left to operate economically. Under some circumstances their income from land rented out will be greater than if they farm the land themselves. Another factor of great importance with these cattle feeders is the use of silage to cheapen rations for steers. Also the matter of skill in buying and selling has a great deal to do with their success. These farmers also had the same problem with hogs as did groups two and three combined; namely, the matter of getting more pigs per sow each year and reducing losses from various diseases. The problem of economic use of horse labor is really included in the problem of farming or not farming their land.



On the larger owned farms cattle feeding is the principal method of marketing the corn crop

UNDER PRESENT PRICE CONDITIONS

The foregoing work was done under 1914 price conditions, which obviously would not apply to those of 1920. To translate these results in terms of 1920 prices certain changes must be made. Table 18 shows how prices and cost of production have increased since 1914, taking the average prices and costs of 1910 to 1914 as a base, or 100 per cent. The cost of growing corn has increased from 100 per cent in 1910-14 to 165.5 per cent in 1919, while the average farm price of corn has increased 230 per cent. With wheat the 1920 price has increased a very little more than cost of production, while with hogs and beef the increase has not nearly kept pace with the cost of production. Labor incomes have increased since 1914 because with a higher price scale farm labor receives better wages, and labor of production is figured at these wages. Also, farmers decreased their activity along less profitable lines and increased along those which are better paying. Thus they are cutting down on cattle and hogs and increasing corn and wheat. The labor-income made in this area, assuming 1920 prices, is shown in Table 19.

Another factor which would affect results is the enormous increase in the price of land. The capitalization of farms in the area was \$141 an acre in 1914. In 1919 the average capitalization was \$198 an acre. Clearly, computing the labor-income on the latter basis will lower materially the results obtained. The effect of this factor is also shown in Table 19. This

represents what a man can expect who buys his farm under 1919 price conditions and pays 5 per cent on his money. The era of greatest profit for farmers has clearly passed. Increased land values have more than made up for a high product price scale. For the man who rents all the land he farms, if the share of the crop charged him has not been raised, he is still in a good position. Rent rates tho slower in adjusting themselves will generally take care of this, however.

TABLE 18.—MISSOURI COST AND PRICE INDEX IN 1920 ON THE BASIS OF 1910-14 FIGURES

	Cost of production index	Price index
*Corn	165.5	230.0
Wheat	279.8	281.0
Pork	226.5	212.1
Beef	238.0	218.0
*U. S. Price Index for All Crops and Live Stock.....		234.3†

*These figures are for 1919 as 1920 figures cannot yet be computed. The remaining ones are for 1920.

†Taken from Bureau of Labor Statistics, 1920.

TABLE 19.—LABOR-INCOMES AS INFLUENCED BY RISE IN PRICES AND IN LAND VALUES

	In 1914	*At 1919 Prices with 1914 Land Values	*At 1919 Prices with 1919 Land Values
Group I.—			
High labor income	\$1,115.46	\$2,185.30	\$2,185.30
Low labor income	210.36	401.78	387.06
Group II.—			
High labor income	\$1,065.37	\$2,013.55	\$1,395.63
Low labor income	354.39	-212.63	-889.51
Group III.—			
High labor income	\$ 705.83	\$1,941.03	\$ 225.86
Low labor income	-794.04	-341.43	-1,754.82
Group IV.—			
High labor income	\$2,486.36	\$5,668.90	\$2,113.40
Low labor income	-1,927.43	-1,908.15	-3,719.93

*These figures assume the same system of farming in 1919 as in 1914. In most cases the system has been modified. Wheat and hogs were increased materially and other operations were reduced. Farmers generally modify their system to some extent to meet changed price conditions.

With this comparison of present day conditions with those of 1914, a brief sketch of the strong and weak practices of a few exceptional farms in each class is given. These comparisons show special evidence of skill or lack of skill in management which averages in the preceding tables could not show. Obviously it would be impossible to use in general tables anything but averages of groups or classes so that these few farms selected because of outstanding features will show more clearly individuality in operators.

Group I. Low Incomes.

No. 1. Labor Income \$458. Of 27 acres, 20 cash-rented for \$5 an acre. Receipts from working out were double the average. Receipts from eggs were double the average. Forty-bushel corn yield on 21 acres. Kept only one sow to raise meat.

No. 2. Labor Income \$575. Of 41 acres, 40 were in corn. Gave two-thirds for rent, landlord furnishing land, machinery, work stock, and a milk cow. Forty-eight-bushel corn yield on 40 acres. Kept only one sow to raise meat.

No. 3. Labor Income \$511. Of 90 acres, 82 are tillable and all in corn. Gave half of corn for rent. Receipts from working out twice the average. Forty-one-bushel corn yield on 82 acres. Fed no hogs; bought hogs to butcher.

No. 4. Labor Income \$-969. Of 370 acres, 120 in pasture. Kept 18 to 20 cows to raise calves. Fed out cattle but no hogs. Even bought hog to butcher. Corn all fed out, none sold. Farm living for 6, \$1148.

Group I. High Incomes

No. 5. Labor Income \$1532. Size, 120 acres, all rented. One hundred and five acres in corn at one-half rent. Receipt from working out five times the average. Fifty-one-bushel corn yield on 105 acres. Kept one sow. Ninety-six per cent receipts from sale of crops.

No. 6. Labor Income \$1122. Size, 120 acres, all rented. Horse trading and handling of purebred horses accounts for extra income.

No. 7. Labor Income \$749. Size, 240 acres, all rented. Lost 88 head of hogs with the cholera.

No. 8. Labor Income \$776. Size, 240 acres, all rented. Lost 24 head of hogs with the cholera. Had 26 acres of wheat damaged by fly so that it wasn't worth cutting.

No. 9. Labor Income \$3225. Size, 327 acres, all rented. In crops, 272 acres; 165 in corn, 95 in wheat, and 12 in timothy. The 165 acres of corn averaged 50 bushels. The 95 acres of wheat averaged 20 bushels. Seventy-five and three-tenths per cent receipts from sale of crops. Better producing cows and poultry.

Group II. Low Incomes

No. 10. Labor Income. \$-548. Size, 70 acres, owned. Only 12 in corn, 30 acres in wheat. Kept five head of work stock, two cows, one sow, and thirty hens.

No. 11. Labor Income \$-798. Size, 80 acres, owned. Had in no corn, bought all feed. Only 14 acres in wheat. Sixty-four acres out of 80 in pasture and land valued at \$150 an acre. Lost 10 steers on way to market. Loss \$300 to \$350 above \$400 insurance received.

Group II. High Incomes

No. 12. Labor Income \$799. Size, 38½ acres, owned. Twelve acres corn averaged 50 bushels to the acre. Two acres melons, 1 acre raspberries, 2½ acres strawberries. Teaches school part of the year.

No. 13. Labor Income \$840. Size, 40 acres, owned. Stock buyer and trader. All land in pasture. Makes money trading rather than farming.

No. 14. Labor Income \$1980. Size, 160 acres, owned 80 acres. Of this 150 in crops; 50 in clover and timothy. Fifty-bushel corn yield on 40 acres. Keeps about 500 hens. Sales from poultry near \$700. Reached a good September market with steers.

No. 15. Labor Income \$6609. Size, 400 acres, all rented for two per cent on land investment. One hundred and fifty acres in corn. Kept 40 brood sows and bought over 300 head of hogs. Used silage in feeding.

No. 16. Labor Income \$705. Size, 440 acres, all rented. Giving one-half on all crop land and \$5 an acre for pasture. On 160 acres got 15 bushels of wheat an acre; 2 bushels an acre less than average of best farms. Loss of hogs, 31.5 per cent of number produced.

Group III. Low Incomes

No. 17. Labor Income \$-1034. Owned 198 acres. Rented out 189 acres. Rents out all crop land for half. Too old to do much farming. Kept 3 head of work stock just to drive.

No. 18. Labor Income \$-1144. Owned 180 acres. Rented out 80 acres. Lost all hogs with cholera. Rents out corn and wheat land at one-half. Old man to be farming.

No. 19. Labor Income \$-3160. Owned 160 acres and rented 208 acres, paying \$6.50 an acre for land rented, one-half of which was used for pasture. Only crop in, 160 acres of corn. One hundred and ninety-six acres in pasture. Straight corn and hay feeding.

Group III. High Incomes

No. 20. Labor Income \$2004. Size, 150 acres, owned. Close to town and run as a dairy farm selling mostly whole milk. Better than average yielding cows. A 35-bushel wheat crop in 1914.

No. 21. Labor Income \$3082. Size, 180 acres, owned. Exceptionally good buy made on nearly 100 head of steers that gained better than average, accounts for exceptional showing. Other returns ordinary.

No. 22. Labor Income \$353. Size, 345 acres. Owned 200 acres. Got only 10-bushel wheat yield. Got only about one-half of pig crop from 30 sows.

Group IV. Low Incomes

No. 23. Labor Income \$-1293. Size, 310 acres, owned. Rented out 215 acres; 80 at \$5.50 an acre cash, 135 at one-half share rent, the latter in corn and wheat. Had \$200 an acre land. Tenant made a crop of 26 bushels corn to the acre and 7 bushels wheat to the acre. Lost one crop of pigs with cholera.

No. 24. Labor Income \$-4069. Owned 310 acres. Rented out 80 acres on shares of one-half the corn. Had \$200 land. Wheat made only 11 bushels. Had 67 per cent of crop land in wheat. Put in only 22 acres of corn himself. Lost by cholera 26 shoats out of 100 head bought, and lost all pigs raised from seven sows except four pigs for meat.

No. 25. Labor Income \$-17271. Owned 450 acres and cash-rented nearly 1000 acres more. Total acreage was in grass. All feed bought, none raised. Speculated heavily in live stock. Owned land valued at \$125 and was all used for pasture.

Group IV. High Incomes

No. 26. Labor Income \$1648. Owned 220 acres and operated it all. Averaged seven to eight pigs per sow for each of two litters. Corn yield 38 bushels or well up with the average. A 24-bushel wheat crop. No loss of hogs from cholera.

No. 27. Labor Income \$6123. Owned 298 acres and rented nearly 200 additional. A 25-bushel wheat crop. Two litters of pigs a year, seven or eight to litter from 15 to 17 sows. No loss from hog cholera. Hit good cattle market in early September.

No. 28. Labor Income \$11,137. Owned 160 acres and rented 270 more. Stock dealer, buying and selling much live stock. Bought all hogs handled. Corn crop 50 bushels an acre on land rented for cash at \$6 an acre. Seventy-six per cent of crop land in corn. From \$15,000 to \$20,000 invested in live stock all the time, or about as much as he had in his own land. Favorably situated for securing good buys in live stock.

SUMMARY

Men with less than \$5000 capital should not attempt to own land in a moderate to high-priced farming section. A better income will be realized by using all their capital as working capital.

Renting a large enough area to employ men and horses efficiently is important.

In this area the more successful men raise two litters of pigs a year from their brood sows. They also hold down losses from disease.

In the group of farms with from \$5000 to \$20,000 capital, the main differences are in investment and efficiency with live stock. The low income class kept out too little capital as operating capital and had too much invested per acre for the yields they were getting; while they were poorer feeders of live stock and had greater losses from disease than did the more successful.

The problems confronting men with from \$20,000 to \$40,000 do not differ greatly from those with \$5000 to \$20,000 except that the renting of additional land is not important. These farms are more strictly hog and beef-cattle farms. Plenty of working capital and reforms in feeding practice are even more essential here than in the group with from \$5000 to \$20,000. Increase in wheat yields is worth trying for in all classes.

On farms with over \$40,000 capital the first thing noticed is that those making low incomes are not farming their land. They live on an interest return of 3 per cent to 4 per cent. Some of the owners rent out part of their land and live on the rent. The land they retain had better be rented and their working capital loaned out, as they do not retain enough land to farm economically.

Another source of trouble is use of silage in cattle feeding. Those making money used silage to cheapen their rations. Skill or luck in buying and selling is not a small factor in their success with cattle.

With hogs, they need more pigs per sow, and the eradication of cholera would mean a big saving.